Understanding The Basics

- What is the Internet?

Expert knowledge means success

Contents

Introduction

The Internet started out in the 1960s. US researchers were experimenting with ways to link computers together over the telephone network. This 'Internet' gradually developed, first being used by the US military, then academic institutions and family businesses and home users. What started out as a link between two computers in a laboratory is now a link between over 25 million computers in over 180 countries.

Defining the "Internet"

On October 24, 1995, the Federal Networking Council (FNC) unanimously passed a resolution defining the term *Internet*. "Internet" refers to the global information system that:

- "is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons;

- is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols;

- provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein".

Put more simply, the Internet is a worldwide collection of computer networks connecting academic, governmental, commercial, and organisational sites. It provides access to communication services and information resources to millions of users around the globe. Internet services include direct communication (e-mail, chat), online conferencing (Usenet News, e-mail discussion lists), distributed information resources, (World Wide Web, Gopher), remote login and file transfer (telnet, ftp), and many other valuable tools and resources.

Any computer system directly connected to the network has an IP (numeric) address and may have a domain name. The domain names are typically of the form *system.site.domain* - for example www.bizezia.com.

The most common domain types are:

.ac.uk	UK academic institutions
.biz	commercial organisations
.co.uk	commercial organisations
.com	commercial organisations
.gov.uk	UK government organisations
.ltd.uk	UK registered limited companies (name must match registered company)
.net.uk	UK Internet Service Providers
.org	non-commercial organisations
.org.uk	non-commercial organisations
.plc.uk	UK registered PLCs (name must match registered company)
.uk, .au, .ge, .de, .fr etc.	country codes for countries other than the USA

Other less common domain types include:

.arts	cultural sites
.edu	educational organisations
.firm	businesses
.info	information services
.mil	military organisations
.nom	individuals
.rec	recreational activities
.store	companies selling products
.web	sites relating to the World Wide Web
.ws	World Site

Like other forms of communication, the Internet can be correct, persuasive, opinionated, up-to-date, fascinating, diverse, and complex. It can also be simple, entertaining, silly, incorrect, or haphazard. Its content is neither regulated nor controlled.

As a communications facility, the Internet allows users' computers, called client computers, to send e-mail messages to other users' computers anywhere in the world. It allows client computers to access information (text, pictures, sounds, etc.) stored on service computers, called servers, anywhere in the world.

Various facilities exist on the Internet, and more are being invented every day. The most famous is the World Wide Web. Sometimes it is considered to be synonymous with the Internet when it is actually just a part of it. The most used Internet facility is e-mail, which not only enables people to send and receive personal and business messages, but also to take part in electronic discussions using newsgroups and lists.

Internet Access Statistics

In October 2005, the National Statistics Omnibus Survey "Individuals accessing the Internet" found that:

- In the three months prior to interview, 64% of adults in Great Britain (29 million) had accessed the Internet. This represents 92% of the adults who have ever accessed the Internet.

- 61% of those who had accessed the Internet in the three months prior to interview had bought or ordered goods, tickets or services.

- People aged 25-44 were most likely to buy on-line (67%), while people aged 65 and over were least likely to buy on-line (41%).

- The most common place to access the Internet was at home (86%), 48% accessed at work, 33% at another person's home, 16% at a place of education and 10% at a public library.

- Of those adults who have ever used the Internet, 92% had used a search engine to find information, 78% sent an e-mail with an attachment, 32% posted a message in a chat room or newsgroup, 22% had used peer to peer file sharing, such as exchanging music and films and 20% had created a web page.

- In the three months prior to interview, 48% of men who had used the Internet had done so for Internet banking compared with 39% of women.

- More women (33%) than men (28%) had used the Internet for school, college and university related activities.

For more information visit: www.citizensonline.org.uk/statistics

A *client* is a computer that is connected to the Internet by a user to access services and information. For example a client computer which has a browser installed on it can access the World Wide Web. Similarly, a client computer which has an e-mail package installed on it can use *mailboxes* on an e-mail server computer to send and receive messages.

E-mail or Email is short for *electronic mail*. Electronic mail is the sending of messages from one computer to another over a network. Computers called mail servers are used to send, receive and store the mail messages for the e-mail user.

TCP/IP stands for *Transmission Control Protocol/Internet Protocol*. It is the electronic protocol that is used by all communications in networks belonging to the Internet. No network can be part of the Internet if it does not use TCP/IP to make its communications compatible.

A *server* is a computer that is connected to the Internet to serve Internet users by storing and providing information. For example a World Wide Web server stores Web pages which can be accessed by a user's browser. Similarly, a mail server provides *mailboxes* for Internet users who use e-mail to send and receive messages.

What is the World Wide Web?

The Internet is a vast global computer network but it is not the World Wide Web. The World Wide Web (WWW or Web) is just a part of the Internet.

The World Wide Web is the visible part of the Internet. It is a network of computers that provide Web pages to Internet users. These pages consist of linked hypertext documents that may include text, pictures, videos and sounds on a wide range of topics. Users access these pages using a browser that uses the addresses of the links to connect to and download the pages.

Web pages are maintained by companies, institutions, and individuals. Using special software, these pages can be navigated to allow users to read, look at, or listen to a variety of data.

A *Web page* is a page of information stored in a server computer connected to the Internet as part of the World Wide Web. The page consists of text with imbedded tags. These tags show the World Wide Web browser how to format the page of information on the user's computer screen, how to link to other computers which are storing other Web pages, what images to put on the screen and where, and so forth.

The address of each Web page on the Internet is called a Universal Resource Locator (*URL*).

A *browser* is a program, which runs on a user computer to access and display Web pages stored on server computers that are part of the World Wide Web. The most commonly used browsers are

- Internet Explorer: http://windows.microsoft.com/en-GB/internet-explorer/products/ie/home
- Google Chrome: http://www.google.com/chrome/intl/en-GB/more/features.html
- Apple Safari: http://www.apple.com/safari/
- Opera: http://www.opera.com/
- Mozilla Firefox: http://www.mozilla.org/en-US/firefox/new/

Who needs the Internet?

The amount of information stored on the Internet is vast and much of it can be accessed for free. If you need to find something out, you can probably find it on the Internet, so it is an invaluable reference tool.

Broadband Access

The Internet is typically accessed via "dial-up" or Broadband. "Dial-up" access uses a standard phone line to access the Internet via a modem. It is relatively slow – speeds are typically up to 56kbps -, and it disables the phone from being used for incoming or outgoing voice calls.

Broadband provides a high-speed connection to the Internet that is 'always on'. Its high-speed (basic Broadband is now many times faster than dial-up) allows you to access data that may be too slow to access effectively

Broadband growth

The Broadband Forum and Point Topic report says that the world added 17.4 Million new broadband ISP lines during Q3-2011, which has taken the global total to 581.3 Million. The strong quarterly growth of 3.08% (12.89% annually) means that more subscribers were added in Q3-2011 than at any time since early 2009.

The largest broadband region in the world is Asia (246,064,195 - 42.34% market share), fuelled by growth in China, and is followed by a distant Europe (173,268,468 - 29.81%). The Americas (North and South) account for the third largest market (144,526,008 - 24.87%), while the Middle East and Africa hold a very distant fourth (17,350,008 - 2.98%).
Source: http://www.ispreview.co.uk/story/2012/01/13/global-broadband-internet-subscribers-total-581-million-in-q3-2011.html

using a dial-up facility: for example downloading large files, watching movies, playing games etc.

Broadband is delivered over a standard non-cable telephone line: there is no requirement to have a new phone line installed. However, it acts as though it is using a separate phone line, so you will be able to talk on the phone at the same time as being online. It requires a computer that meets the minimum requirements, plus a Broadband modem and microfilters (phone adapters).

In most cases, your telephone number will not need to be changed and you will be able to install the components yourself. For some packages, installation by an engineer may be required.

How much does it cost?

To use the Internet, you need an account with an Internet Service Provider (or ISP for short). The costs vary depending upon the time of access required, the speed of access, and the support available. There are always offers available from the ISPs in this highly competitive market. If the Broadband facility is available in your area, you may choose to access the Internet using Broadband instead of using dial-up access.

A single ISP may offer a variety of Internet access packages to suit many needs at differing costs. The uswitch.com website provides comparisons of the cost of the latest offerings from ISPs:
www.uswitch.com/broadband/packages/

Is connection to the Internet easy?

If your requirements are limited to a single connection from a single computer requiring the ability to browse the Web and send e-mails, the connection process is quite simple. You will need to subscribe to an Internet account with an ISP – such as BT Internet, Virgin, etc. If your PC does not have a built-in modem, and your ISP does not provide

one, you will need to purchase a suitable modem. A modem can be bought for as little as £30.00 for a 56kbps model. You will also need browser software - typically Microsoft Internet Explorer. Installing the software and connecting the modem to your computer and the telephone line is a fairly simple procedure.

Your subscription to the Internet usually gives you up to 5 e-mail boxes. Typically the subscriber and members of the family use these. You will get a user name and a password to collect your mail and gain access to the Internet - these can be changed as required.

Connecting office network users to the Internet with multiple e-mail boxes and internal mail distribution may be more complex. Usually an experienced network person will be required to make the necessary connections and you may need additional software and hardware to achieve the connections you require.

Is the Internet dangerous?

The Internet is huge and isn't controlled by any one organisation. This means that people are more or less free to use the Internet for any purpose they like. Sadly, this does include illegal activities but despite the media hype, this is still only a small part of the Internet.

Probably the biggest threat from the Internet is the receipt of viruses (usually via email), spying software, phishing attacks (where an email purports to be from a legitimate source and invites you to impart confidential financial information) and unwanted messages (spam). Most ISPs offer additional security at either no cost or at a moderate cost to alleviate this threat. Offerings may include anti-virus checking, firewall protection and Identity Theft Support.

Further Information

This guide is for general interest - it is always essential to take advice on specific issues. We believe that the facts are correct as at the date of publication, but there may be certain errors and omissions for which we cannot be responsible.