

Welcome to the sample chapter of Conquering Computers – How to be Computer Wise. This is taken from Chapter 2 of the book. Some pages have been omitted. Please note there may be some small format differences between this file and the section in the book.

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Chapter 2

THINGS THE KIDS RAVE ABOUT

You can bet that if it's cool and something their parents don't understand, kids will be into it. With computers they're no different. In this chapter we'll look at some of the computer things kids rave about. We'll have a look at the Internet, multimedia, mp3 music, computer games, and computer viruses. So let's get into it.

What Is The Internet?

I was watching TV with Bill, a close friend of mine, just over 40 years my senior. A flashy ad bounced off the TV at us, advocating the benefits of a notable computer product, explaining that with its use we could 'surf the net' faster, do everything faster, have a happier life, turn water into wine... etc, etc. I turned to Bill and asked him,

"Bill do you know what the Internet is and what it means to 'surf the net'?" His reply was as I suspected,

"No," he quietly muttered. The advertising agency had targeted the computer literate, assuming only they would be interested in 'surfing the net.' My studious friend Bill would undoubtedly benefit from the Internet, if only someone took the time to explain it to him. Instead the world goes its merry way, and like a blind bull in a china shop, if you don't keep up or keep clear you become a permanent floor furnishing!

You've probably heard the term Internet; it would be unusual if you haven't, unless you live in an isolated village somewhere in the middle of the African Congo. Everyone seems to be talking about it, why it's the latest craze since yo-yos, rock music and those four pommies from Liverpool.

Commercials tell us to 'surf the net' or promise we can be Internet capable, politicians argue over censorship issues because of 'porn. (pornography) on the net'. Then there's the kid who gets hospitalized after a bomb explodes out of cue, the instructions for building it he found on the Internet. It all leaves the ignorant feeling pretty much bewildered. Who's got the guts to ask some wide-eyed junior to explain the Internet? Well you need not embarrass yourself; I'll fill you in right now.

Where It Started and What It Is

Back in the cold war days of the 1960's when getting nuked seemed inevitable, the US military convinced their government that surviving a nuclear war would not necessarily be an advantage. Not unless the military could still communicate and blow the stuffing out of any 'baddies' left.

Although their computers were connected together, the problem was they were point to point or connection dependent. In English then; if the 'baddies' blew up a site in one place the entire national network would fail, which would mean they wouldn't be able to co-ordinate retaliatory mass-destruction. To illustrate; suppose you connect 5 light bulbs in what is called a series. 3 of the bulbs are connected only to other bulbs. The two bulbs on each end carry one wire each to the power supply. This works fine until you break any bulb – it breaks the circuit and causes all the bulbs to go out. Not a great way of wiring light bulbs together, but potentially disastrous for military communications when you're trying to rule the world. For a deeper discussion on

networks, and why on earth anyone would want to have computers linked together have a look at chapter 7 'Networks and Stuff - Making Computers Talk with Each Other'.

Anyway back to the cold war for a moment. This connection dependent network was obviously a problem for paranoid militarists, who could see their entire communications network grind to a halt should just one link be destroyed. One could assume that with the possible loss of strategic prowess, they must have been really worried, something had to be done. The nations' brains started to revolve.

A chap at the RAND Corporation came up with the idea of a grid system network that wasn't dependent on any one link. If one link was destroyed, there would still be many other routes to connect and hence get the 'baddies.' He even went to the trouble of preparing an 11-volume report for the Pentagon, but the idea was shelved. (Bet that impressed him!)

Latter his idea was resurrected and used to create a decentralized network at four US universities, and so the Internet was born. Ironically it started life as a secret US military project, now known and used even by the 'baddies' as the Information Super highway, it even penetrates the classroom. We would be remiss not to pause for a moment and thank all the unsuspecting US tax payers of the 1960's. I really wonder what those paranoid militarists think today about their secret now very public information super-highway.

The Internet has enjoyed incredible growth since the 60's. It's the kind of growth you wish your investment portfolio would make. In 1993 it had an annual growth rate of 341,634%! For those not mathematically minded, - that's a hell of a lot! In 1996 more than 150 countries around the world were connected to the Internet. Today 100s of millions of people use the Internet and commerce on the Internet runs into the billions of dollars; marketers couldn't resist it. So what does the term 'Internet' refer to?

Today the Internet is a vast resource of information, connecting via satellite, cable or other means thousands of networks and millions of computers right around the world. The Internet most often piggybacks on top of the telephone network which contributes to its penetration into the middle of nowhere.

With just about everyone including the Queen using it, the Internet is akin to downtown at rush hour in several ways:

- Everything you want is there.
- You can get there any number of ways.
- There is so much traffic and noise, it can be slow going.

Like the downtown nightmare you also need to have a vehicle (computer equipment), gas (an account with a service provider) and time. With all three ingredients there's no limit to where you can go.

There are four bits of equipment needed to access the Internet, most obviously a computer, then a

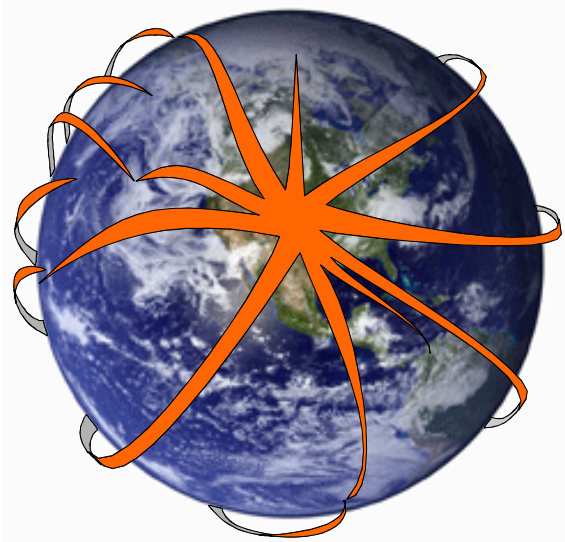


Figure 1. The Internet is truly global and not controlled by any one person or state.

modem, a telephone connection and Internet software. We'll look at modems and software later.

The fuel needed is an account with an Internet service provider (or ISP). An ISP provides Internet access for a fee. Obviously they're not volunteers working for the betterment of mankind, but businesses interested in bucks. You pay either a flat monthly fee or an hourly rate for their services. Most ISPs provide complementary services like e-mail and Usenet; I'll explain all that in a minute. Some require a registration fee to be paid first, others don't. Like shopping for a long distance telephone company, it's common sense to shop around for the best deal. Just a point about what I call rip-off registrations: Many ISPs will charge something like \$25 registration fee and woo you with 5 'free' hours Internet time. With a rego. of \$25, your 5 'free' hours are costing \$5 each! (Even I could work that out!) Many ISPs don't charge a rego. and have lower monthly rates; \$10 - \$ 30 per month is common for broadband when bundled with your telephone account.

Currently there are two main types of ISP accounts; dialup and broadband. Dialup is the slower cheaper solution. It has been around the longest. It gets its name from the way the computer connects to the internet. The computer has to dial a phone number and connect to the internet. Broadband is much faster and doesn't need to dial anything. The most common broadband system is called ADSL. With ADSL Broadband your phone line has been modified at the telephone exchange, the device that connects the computer (known as a modem) simply taps into the line. You can still use your phone line for phone calls and faxing while simultaneously using ADSL broadband on the same line. Prices are slightly dearer for broadband. The advantage of broadband over dialup is that of speed. Typical dialup speed is 56kbps (56 thousand bits per second) as opposed to broadband's whooping bottom end speed of 256kbps. The main disadvantage of broadband is that it only works on your modified phone line. Take your computer over to a friend and you will not be able to access your broadband account; i.e. no internet! With dialup you can access your account pretty much anywhere there is a phone line. Some ISPs cover this shortfall by selling you broadband and throwing dialup access in for free.

The Internet is used by people of all backgrounds and provides several useful services, the most common and useful being its global access to information. The benefits just blow you away. For instance, say you wanted information on Swedish yodeling. How would you obtain it? You might go to the library, but what if the library has no publications on that subject? (This is becoming an increasingly annoying phenomenon with the research I often do and besides how many books can there be about Swedish Yodeling?) Next stop is an inquiry to the State or National library. After looking for your proverbial needle and running around in traffic for several hours, you might find the prize, then again you might not. Don't forget you've got to obtain copies too. Murphy's law states that if you're lucky enough to ferret out a book on Swedish Yodeling, it will be out on loan, lost on loan or is a reference item that can't be borrowed! It follows that if it's a reference item, the library's sole photocopier is either out of order or you're out of coins and the library doesn't give change. If you had gone on the Internet, you'd be able to obtain the information within minutes. Incidentally yodeling is a Swiss thing the Swedes aren't into it!

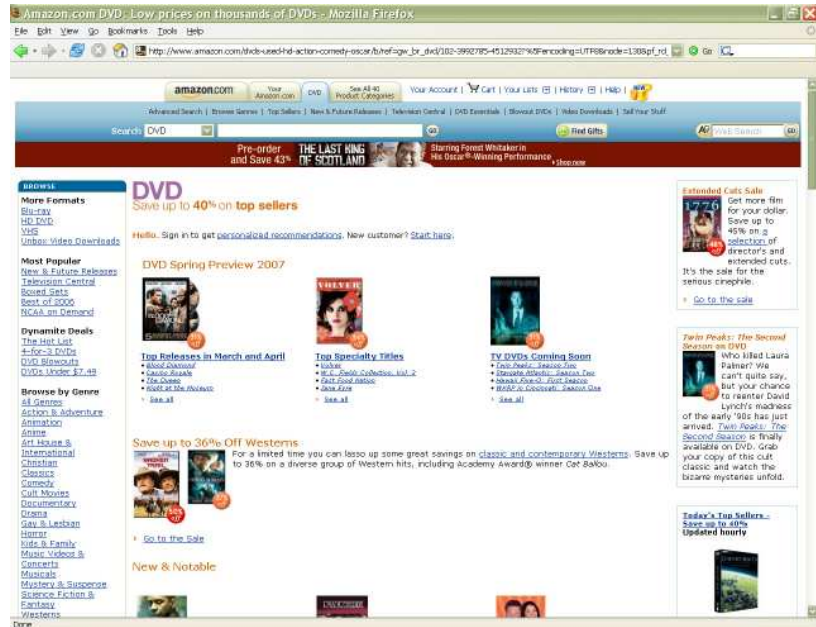
Lets go sailing for the day; having an up-to-the-minute weather report would be a bonus. Once again the Internet is useful. We can access up to date weather reports, even the latest satellite picture on the Internet, all in less than 30 seconds.

Like shopping? Here's one for the shop-a-holic; shopping can be done through the Internet. No need to traipse around the shops, find it on the Internet, and pay through your credit card, a couple of days later it gets delivered, (great for buying things you're to embarrassed to buy over the counter.) The world wide phenomenon known as amazon.com is one such online shopping site. The demise of the multilayered marble coated shopping malls is not sealed; most of us still enjoy traipsing around the malls, window shopping while basking in the air-conditioning, taking refuge from the hot sun outside.

Like any society, which the Internet is, come less desirable aspects. The Internet has hosted pedophiles, fanatic terrorist factions and even satanic groups. Such persons use the Internet as a way of gaining new converts or victims and as a pulpit to preach their ideals.

Understandably the alarm bells clang loudly here especially for concerned parents. It's as if these nasties are just waiting around some virtual corner waiting to pounce on our kids. Well the truth

is they could be, but think about this; would you let your kids wander alone downtown tonight where similar nasties could be lurking? An unsupervised free-for-all on the Internet is little different. I'd hate to see any kid damaged by these demented individuals with sick minds, agendas and attitudes. If you're a parent and your kids have access to the Internet, wise up and watch what they're doing. We need to remember that the Internet is an information source, useful and not so useful information abounds there



as it does elsewhere. The main difference with the Internet is the speed, accessibility and sheer volume of information available.

Figure 2. You can shop for just about anything now on the internet.

Let's now look at some other services the internet has to offer. One very popular service is e-mail; an electronic mail system.

What Is E-mail and Is It Contagious?

Somewhere in the last few decades, some people got lazy and rebelled at licking stamps and going down to the post office to post letters. These people were also impatient, and so found the delivery times of the government sponsored mail systems completely unacceptable. They started to wonder whether there was an electronic equivalent and searched for a way to avoid licking stamps and waiting for mail. They came up with e-mail; some others came up with the idea of self adhesive stamps and express mail, while others decided to use the telephone.

Using the Internet as a delivery vehicle like a postie scooter, electronic mail including junk mail can be sent to anyone with an e-mail address; the equivalent of a mailbox. There are some advantages of this system over the push-bike postie service.

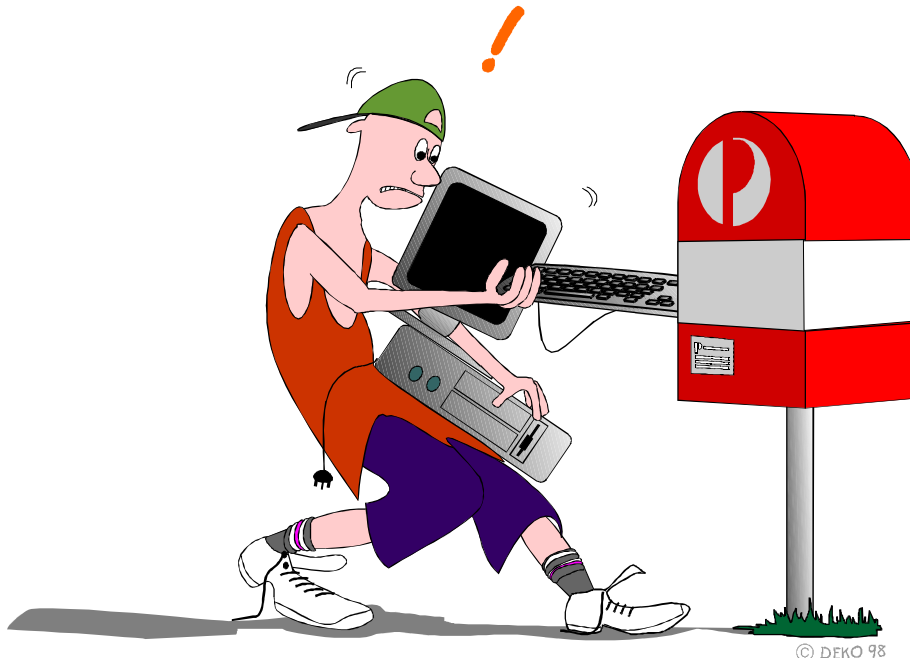
- It's entirely electronic being sent through the international telephone system; No push-bikes, scooters or dangerous courier vans to collide with.
- It's instantaneous; e-mail takes seconds and minutes not days and months. The main drawbacks are:

You need computer equipment and an electronic mailbox with an Internet Service Provider (ISP); that all costs money.

- You can only send electronic media, no jams, jumpers or jellies allowed.
- It costs you in one way or another every time you check your mailbox.

So how does it all work? E-mail is similar to its older contemporary 'snail-mail' in several ways. Mail in electronic form, is addressed to an individual then sent to an electronic post office connected to the Internet. This electronic post office is just an automated computer system, not somewhere you can buy stamps, envelopes and 'Bananas in Pajamas' paraphernalia. The electronic address is unique in the world and identifies a unique network location. My e-mail address for instance is; eldeko@eldeko.com Sending me e-mail addressed otherwise wouldn't even get here, you'd think me rude, and snobby for not replying, and I'll be ignorant that you sent me any mail and unaware I had upset you. So just like snail-mail you've got to get the address right.

So what does the address mean, The first 'eldeko' part is the postbox name and could be anything! The funny '@' symbol means 'at the following location'. The second 'eldeko' is the network where my electronic postbox is held; in this case it's the name of my business domain. This could also be the name of a service provider like Dodo, Optus, or Primus. All addresses have either a 'Com' as I have here an 'org' (short for organization; used particularly for government) 'net' (network) or 'co.' The dots after each word are simply separators. Most addresses will also have a two letter country abbreviation at the end of the address. It could be for example 'uk' for United Kingdom or 'au' for Australia and so it goes. I don't have an abbreviation here because my domain is American. US domains and addresses don't have the country abbreviation at the end because the Internet sprang up from there and country codes weren't needed until it went international. You can only send e-mail to someone who has an e-mail postbox.



One relatively new development since this book was first published is the appearance of hotmail and other free email accounts. Companies provide free accounts to people in exchange for them putting up with a few advertisements when they use their email. This is a great idea for those who don't have a computer or an ISP account. Maybe you're wondering though 'how do they check

their email if they don't have a computer?' Let you in on a little secret, it's called a library. Most now have computers and internet access. Some provide the service for free, so in theory you could be on the internet for zero cost!

Like locks on your letterbox to prevent mail theft, passwords and such prevent unauthorized users accessing your e-mail. For a discussion on passwords see the section 'Security - the Digital Locks' in chapter 7.

You can send almost anything electronic through e-mail, including sounds, pictures and even short video clips. New possibilities are developing all the time; soon you may even be able to e-mail entire movies to fifty people simultaneously around the world. Perhaps those silent unsteady home movies of dad pushing the kid on the swings decades back will get resurrected and circle the globe through the Internet; scary thought isn't it?

Is e-mail contagious? Not really, but its popularity is rapidly growing. Some who depend on it become e-mail junkies, believing they can't do without it. Proof of e-mail overload is seen in some modern e-mail programs. These have a filtering system to screen out unimportant mail. Yes you do get junk email; it's called spam and is proving to be a big headache for business people dependant on email. Some executives get so much e-mail they can't possibly read it all; wasn't that what secretaries were invented for?

Another less known service of the Internet is Usenet. This is a conglomeration of thousands of different newsgroups spread worldwide.

Usenet

To understand Usenet we first have to have a handle on newsgroups, uh? Keep with me here, what's a newsgroup, let me illustrate.

We're all into our own thing, which is sometimes a bit funny to others. You might be into stamps, butterflies, golf, crochet, or even paper clips? Surprisingly, whatever it is we're into, there's always others equally interested in it too. Our geographical location though is often a problem. If your strange diversion isn't shared by a few locally, there's no chance you can have club meetings, swap notes and prized paper clips.

Not so, enter into the picture the Internet and Usenet. We'll peer into the life of a character called Justin; names have been changed to protect the innocent. Justin lives for collecting paper clips. He has thousands of different brands, colors and designs. His family aren't entirely sympathetic, he has no friends because he's too busy looking for new and different paperclips, and as he knows of no one else of a similar bent, he has had to delve into the dark shady underworld of paper clips all alone, stumbling into the big brands as he goes. Okay I'll admit I'm drawing this out a bit aren't I?

Justin gets a computer and gets onto the Internet; he accesses a newsgroup called Paper Clip Monthly, subscribes and now receives information via e-mail relating to the shady world of paper clips. He can post messages on the newsgroup bulletin board; an electronic notice board, also called a forum. Why though would he want to?

Well if he was looking for a genuine 1950's WD Pentold Stainless Steel Paper Clip to add to his collection he could place an ad on the bulletin board. But where does Usenet come in? Well suppose there were other similar newsgroups, some for collectors, others for dealers and some devoted to manufacturers. Usenet is a system of collaboration of all these similar newsgroups, sharing relevant information to each user. The name comes from 'User Network.' To all intends

however, you only ever really notice newsgroups rather than Usenet and I guess that is the way it should be.

Obviously Usenet has a lot more usefulness than what I've just outlined; hundreds of subjects are covered by thousands of newsgroups. A similar Internet service is called the Internet Relay Chat, or more commonly Chat Rooms. Let's take a look back at Justin now that he has discovered chat rooms.

Chat Rooms

Justin now wants some companionship in his lonely hobby. The newsgroup keeps him informed but he wants more. To chat with others who share his love of paper clips is really what he wants; a therapist is probably what he needs.

He finds a chat room called the 'Revolutionary Council for the Global Recognition of Paper Clips' and begins communicating with equally bent individuals from around the world. The Internet Chat Room is like a telephone party line; many can join the conversation simultaneously and from anywhere in the world. The main difference with telephone party lines is chatting takes place in text not audible speech.

Chatting takes place in real time or almost. As he types, the letters not only appear on his computer screen but on the computer screens of everyone connected to the chat room. Anyone can reply, so in Justin's case conversation ensues about paper clips and protest raids on paperclip factories! The fact that anyone can reply and an alias is commonly used highlights a real danger for young people who commonly use such chat rooms to make 'friends.' It's not uncommon to hear of pedophiles using chat rooms to lure young children so caution is obviously needed.

Technology has moved to a new phase of chat room, called videoconferencing. Think of a chat room but with live video and sound! In the near future this could become a standard medium for communication. The down side of this is if you habitually pick your nose while on the telephone, everyone can now see it. I wonder how many friends we'll keep then.

What other parts of the Internet have you heard about? One of the most shaken killed and trodden on words used in the computer industry is web. There's the World Wide Web, web pages, web sites, web strategies and web browsers, the list goes on. So what is the 'web?'

The World Wide Web - Nothing to Do With Spiders

The World Wide Web (WWW) is like an Internet window that's merged with a kind-of cross-referencing system. The Internet window looks at computer generated screens called web pages. Each screen or web page is cross-referenced to one or more other screens/web pages by special connectors called web links or hyperlinks. Hyperlinks usually stand out from the rest of the text as differently colored and underlined. Sometimes icons, symbols, buttons, pictures or even animations function as hyperlinks. Hyperlinks are activated by clicking them with the mouse. (I'll tell you all about the mouse and clicking later.)

A web site is a collection of several web pages linked together. For example, 'Larry's Luxury Loos' might have a web site containing 4 web pages. A home page, which is like the title page, table of contents and advertisement all rolled into one. Two pages of products (luxury loos of course) and a contact page or order form. Each page contains hyperlinks to the other three, so from any page you can navigate to any other. Use the same principle for a real company; add 150 pages and you really have something!

Companies and businesses often talk about web strategies. This is planning the web site to be both attractive and useful so that many will want to view it; getting the message across to the

maximum audience so in theory making lots of dollars! Some strategies include putting a zany animation on their pages so that impressed viewers will tell their nerdy friends; “Hey you’ve got to see this cool web site!” The hoped for end result of such strategies is that more will view the site. Other strategies include putting useful programs or information into the site to attract users, like the latest weather information, the time in 30 major cities or even cool free programs to download.

The means of displaying these web pages is done through a program called a web browser. Most browsers today cost nothing. Microsoft even bundle their ‘Internet Explorer’ with the windows operating system. Others can be downloaded free from the internet. We’ll have a closer look at these browsers in a chapter 4.

By activating a hyperlink you in effect push a button that opens a web page. A hyperlink on one web page might open a web page stored on a computer on the other side of the earth. A hyperlink on that page might open a page stored somewhere else again and so it goes. By activating these links and ‘traveling’ here and there, you’re surfing the net. In the comfort of your own home, you can travel the world in just a few minutes by surfing the Internet. It’s a lot less painful too than real surfing or at least it is in my case.

(My very brief career as a surfer ended abruptly the first time I paddled out to the waves. Completely unaware of the techniques required I was promptly bashed in the face several times by the surfboard before I turned around and retreated for dry land, face aching and pride badly bruised.)

Searching For and Sharing Files

With such a huge international library available on the Internet, how are we ever going to find anything? Even libraries have indexes and catalogues. Let me introduce to you the search engine. A search engine is an automated program, with a vast database of Internet sites and descriptions of their content. By typing a few key words we can search the database for every web site that even mentions those words. With a bit of knowledge, we can get really specific in searching for things which means for us that we get more accurate results.

Specific searching is practical. One of the major problems with the Internet is information overload; too much junk and not enough jewels. It’s easy to get 500 pages of mostly useless information relating to a topic in less than 30 seconds! Imagine what a search of a few minutes could turn up!

A good search engine will enable very specific searches thus limiting the junk returns. Search engines are always somewhere else, not on your computer. The most well known search engine today would have to be Google. The term is now used ‘to Google it’ which means to search for it on the Google search engine. Search

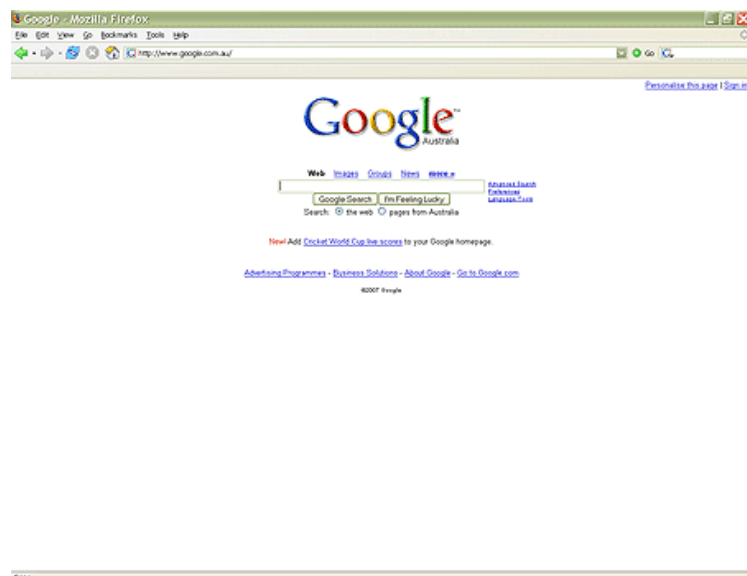


Figure 3. As of 2009, Google is the world's premier search engine.

engines like Google have their own web sites, so ironically then; you need to find the search engine on the Internet before you can search the Internet! Don't despair, browsers usually have the addresses of the larger search sites built into them and you can access them through the program. Many modern browsers like Firefox even have built in search tools which access these sites so there is no need to go looking for them. Incidentally Google has also released a free browser called 'Chrome' which optimizes the searching of the web fantastically.

Search engines must be constantly updated. They make use of special programs known as web crawlers, and spiders. These programs are like robotic scavengers that constantly surf around the Internet looking for new stuff, when finding it they send references of it back to the search engine, thus building on or updating the existing database.

Obviously search sites are maintained by someone somewhere, which raises an interesting question. Who pays for it? Are these people just 'wonder' geeks doing it out of concern for the rest of us? Advertisers are the advocates of search engines. For a fee they can get a search site to feature them on the search page. With the thousands of people using search sites every second what a boon for marketers.

Another function made possible through the Internet is file sharing. Like any network, electronic data can be sent over the wire to someone else. Due to the global nature of the Internet such file sharing can be sent worldwide in seconds! This is great news for businesses and corporations. Even our geek friend Justin benefits. Now he can send his thesis on 'the benefits of chrome verse stainless steel paper clips' to everyone around the world; Help!

Well you've made it past the biggest buzz word of the 20th century. You're now pretty much clued up with regard to the Internet; we might even see you using it one day! Another computer yuppie word you may have heard is multimedia, so what is it?

Multimedia What?

You've probably heard about multimedia before, besides the kids, advertisers proclaim multimedia as a godsend. So what is it? The Columbia Encyclopedia defines multimedia as being; 'software and applications that combine text, high quality sound, graphics, and animation or video.' The American Heritage Dictionary defines it as; 'the combined use of several media, such as movies, slides, music, and lighting, especially for the purpose of education or entertainment.' I would define it as information presented simultaneously in more than one media, for example text with pictures and sound. Like watching a foreign language movie, you see the pictures, hear the sounds and read the subtitles, multimedia is similar only it's all in one language.

We're naturally more responsive to moving talking pictures rather than black type on a page. The computer industry provides heaps of educational stuff in a multimedia format. For instance, the American Heritage Dictionary is on compact disk, no pages! On a multimedia computer; we'll define that shortly, you can hear the correct pronunciation rather than try and work it out. Is it lazy? Maybe, but at least you don't make a fool of yourself!

Today there are also multimedia encyclopedias. No need for a wall to wall bookcase. No need to wonder if your \$4000 encyclopedia set will collapse the shelves with their weight. No more tedious searches from volume to volume. With a multimedia encyclopedia all you have is a little \$50 compact disk (CD) with the whole bookcase bending lot crammed into it. No more index wading, type in a phrase or a subject push enter and voila! It's all there glaring back at you on the computer screen. Read it, print it or even e-mail it. Britannica, World Book, you name it; they're all getting in on the act.

With many multimedia encyclopedias you can view actual historical footage instead of just reading about it. Diagrams come to life with animations making learning more enjoyable. Many multimedia publications today are metamorphosing into hyper-media.

Hyper-media publications include hyperlinks like web pages which activate further material on the subject pictured. Usually most pages in such publications have several hyperlinks. One example of a hyper-media product that my kids used to love is called *Dangerous Creatures* (Produced by Microsoft). In it we can see a Lion, hear it roar, watch short videos of it and even dig down into specific details by selecting the various hyperlinks on the page; what it eats, its habitat etc. The World Wide Web is a good example of hyper-media in use. In fact now there are encyclopedias directly on the internet, with links to libraries and museums the world over; Wikipedia being perhaps the most popular.

What Is A Multimedia PC?

Once you understand what multimedia is, you could be forgiven for expecting multimedia PCs to sing and tap dance. In reality multimedia PCs are like any other PCs but with a few extra bits. Just like the double deluxe ice cream comes with chocolate coating and nuts, multimedia PCs come with CD-ROM or better DVD drives, sound cards and speakers. We'll delve into CD-ROM and DVD drives in chapter 5 "Storage - How a PC Stashes the Goodies You Feed It" and sound cards in chapter 3; we don't get into speakers here as I figured you're well above that. If you hear someone say 'this is a multimedia PC' all it means is that it comes with the following chocolate and nuts; a sound card, speakers and a CD or DVD drive. A further addition to some multimedia PCs is a microphone. In the past one would pay more for such features, now they have become essential standards and are found on all new computers. Computer games require a powerful multimedia computer. This is another of those things the kids rave about; let's take a look then at this diversion.

Computer Games

We all like playing. The main difference comes from what we like to play with. Ever seen the inside of a video parlor? Maybe you had to drag junior out of one after catching him blowing money while wagging school. Inside these entertainment houses both little and big kids are captivated into a fantasy world where they are in control. Someone came up with the idea of putting those computer games on a home computer. The kids have been quick to catch onto this; there is only so much lunch money you have and days you can get away with wagging school.

There are thousands of computer games, from card games to homicidal role-playing. Some are fun, some shocking. You should be weary about computer games for the following reasons; they can be very addictive, and being computer generated, anything is possible and anything goes. It only takes a psychotic nutcase to be a clever computer programmer and before you know you're playing his game, getting into his mind set. Still we have the legislators who have imposed ratings laws on video games just like they have with movies, so for the most part you can avoid the nasty stuff before you buy.

A computer term you've likely heard is 'virtual reality'. With games you might hear terms like 'virtual fighter' or 'virtual landscape' perhaps even 'virtual racing'. As far as computers are concerned, 'virtual' is a geek's way of saying 'look real, sounds and feels real, but its pure computer generated fantasy!'

Here we'll group computer games into four broad categories.

- Adventure,
- Arcade,
- Shoot-em ups
- Simulators.

Some games are a combination of all four. One example is Need for Speed Carbon by EA games. This is a car racing simulator that allows arcade type playing, has an adventure element to it and while not allowing a strict shoot-em-up environment, does allow for smashing stuff up which is similar. Confused? Don't be we'll look at each category a bit closer.

Adventure Games

Adventure games put you in a mystery or an unfamiliar environment or in the case of 'Need for Speed Carbon' you dwell in a shadowy underworld wrongly accused of being a thief. As you progress through the game you understand who is behind your problems and why. In some adventure games you must solve puzzles to move up a level. Each level in turn has its own problems and mysteries to solve.

Another genre of adventure games, often called strategy games or god games put you into the position of 'the big guy in charge' (hence the 'god' label). One example is the popular 'sim-city', 'sim-antcolony', 'sim-this' and 'sim-that' group of games. The central theme of them all is to manage some project and deal with the unforeseen disasters that the computer generates along the way. Other strategy games have you managing colonies on far away worlds, financing research projects, while determining whether to make treaties with the local aliens or attempt to invade and pillage their home worlds.

What always characterizes an adventure game is the plot. Most games and some movies actually have a plot. With adventure games, the plot is decided by the decisions you make. Your decisions directly affect the game outcome. To explain, imagine you're flying a bombing campaign; accidentally you stray off course and drop your payload on an unsuspecting town. In a shoot-em-up or simulator your real target might then pose a threat to you later on or you might get court-marshaled out of the game, but in an adventure game, the accidental bombing of a town by you might cause sympathy



Figure 4. Need for Speed Carbon (by EA games); both an adventure game and a simulator.

game, but in an adventure game, the accidental bombing of a town by you might cause sympathy

from a neighboring country. They then join your enemy and successfully invade your homeland, oops! It could even be worse; your bombing mistake could cause World War III! Try explaining that when you face your superiors. Adventure games require thinking ability, not just skill. They tend to be a lot more time consuming because situations develop along a time frame from things you do.

Arcade Games

Arcade games are the single most prolific kind of all computer games. They are also as diverse as one can imagine. Arcade games derive their name from the coin operated arcade games of the 70's and 80's; remember 'Space Invaders' and 'Pac Man?' or am I just showing my age? Here's a broad definition; a game in which the background scrolls across the screen while the central character or craft remains in the centre, or the character moves over the screen within the boundaries of a maze or similar that is stationary on the screen. Some arcade games are a marriage between both points of view. Arcade games nowadays are most often in a 3 dimensional format. These games can be really addictive. Using our example of 'Need for Speed Carbon' yet again, it's an arcade game because it simulates sitting in a car while the city zooms past at 160 km/ph! Usually the idea is to get to the next level while blasting or in this case out racing and ramming off the road the nasties, avoiding the cops and collecting goodies along the way.

'Blasting Everything That Moves' Games!

Known as 'shoot-em-ups' they have a plot much the same as arcade games. The player 'flies' a craft or 'walks' through a 3 dimensional scene blasting 'baddies' on the way. A popular game of this genre a few years back was 'Doom'. It started an addictive revolution in the 90s where bosses had to ban it in the office so work would get done. In that game the player went through a murky 3 dimensional maze, avoiding and blasting nasty monsters at each turn. After completing the maze, a new harder level was available. The game was not everyone's deal, as it was quite violent, still its popularity ensured a never ending flood of similar even more gruesome games; mazes, monsters and blood everywhere! Most shoot-em-ups follow 'Doom,' putting players through mazes and such while rewarding players with newer harder levels. If you're thinking that shoot-em-ups are all violent, you're right. If this kind of thing doesn't appeal to you then you're best to stay away from this group altogether. The biggest difference between shoot-em-ups and arcade games is most obviously the violence.

Simulators - These are not games but serious diversions

Ever wanted to be a fighter pilot or an astronaut? With computer simulators you can get as close as you're likely to get to flying a 75 million-dollar fighter jet or using the space shuttle. Ever wanted to race at Bathurst? Now you can

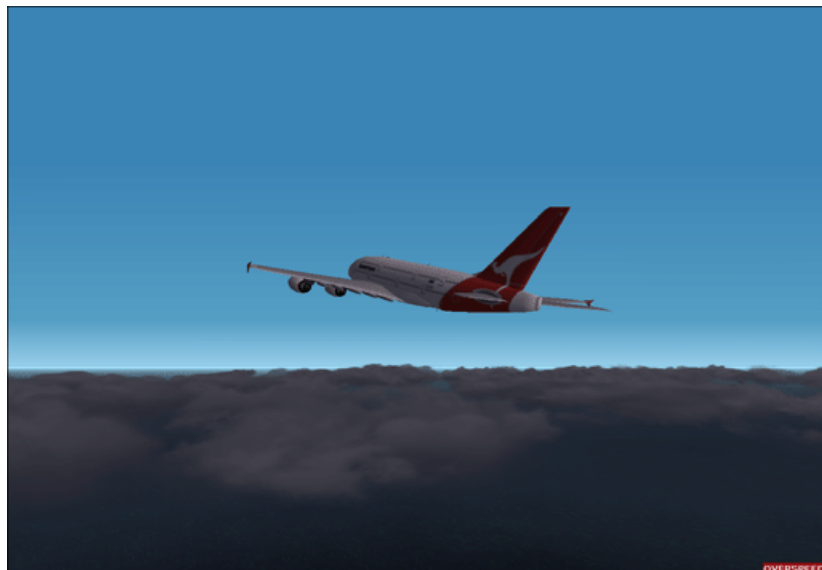


Figure 5. Microsoft Flight Simulator, so real even flight schools have been known to use it in flight training.

on a computer, all in great realism, but for two things missing; no petrol fumes and no chance of killing yourself. I can live with those omissions can you? One very popular simulator is called 'Flight Simulator' by Microsoft. It attempts to authentically capture flight in a small aircraft. It's so realistic that flight schools the world over use it for training. Many simulators now allow you to add 3rd party models to the game from the internet. For example the picture above is of an A380 airbus downloaded from an internet site and installed in 'Flight Simulator'.

Playing Games Together

With a couple of computers networked (see chapter 7) either in the same area or via the internet, computer games can even be a social event. It's not uncommon to find game-heads; a term used to denote someone who lives to play computer games - I told you it was addictive, racing each other in a grand prix simulation, or blasting each other in a fighter plane simulator or a shoot-em-up like. You can join game clubs on the Internet and play others around the world while sitting at home. The potential to waste huge amounts of time is there for all of us. Incidentally all the games I have mentioned by name are for illustrative uses only. I don't endorse any as that's for you to decide.

Well we've looked at the Internet, multimedia and now computer games. Often these three collide with each other. For example two people might play a multimedia game over the Internet. There's something else that collides dramatically with these three and all other areas of computing. It crashes computer systems and even entire networks. It's the subject of our next section; computer viruses.

What Is A Computer Virus

When thinking of viruses, most of us think of the nasty bugs that made us sick, miserable, grumpy and stranded in the little room. Is a computer virus something similar that makes you throw up all over your computer, or is it the computer that gets sick and throws up on you?

Your health won't be directly affected by computer viruses; our bodies are immune to them. Computer viruses are digital and only infect computers. Still we can suffer, how? Despite only infecting computers, most viruses alter or destroy information and this affects us.

Computer viruses are small programs that duplicate themselves and destroy information. They're created by rather bent computer nerds or programming geniuses, usually with an axe to grind or an ego craving stimulation. So how smart are these viruses and the nerds who make them? One group of viruses, the stealth viruses are like deep penetration stealth bombers that secretly infiltrate the system's defenses, unleash a deadly payload and then drop out of sight to return later and cause even more harm. Another group, the polymorphic virus, can mutate inside your computer to avoid detection, while changing and destroying files - Nasty!

Sexually Transmitted Diseases (STD) illustrate the nature and spread of computer viruses very well: As sharing sexual partners, blood or needles spreads STDs; computer viruses are spread by sharing computer files from an infected host, be that through disks, networks or over the phone lines. Just like STDs can range in severity from mildly irritating to life threatening, computer viruses too can range in severity, from the benign or irritating even humorous to the downright destructive. Herein lies the real danger of computer viruses; their ability to alter or destroy information stored on a computer. This book was originally compiled and stored on a computer before being printed, much work had gone into it, and a virus could have destroyed it within milliseconds. That you're reading this now is proof that all is not lost, there are many precautions one can take, which we'll get into shortly.

One caution; check every disk you use for viruses before loading software from it. Viruses spread...

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