

To: Mrs Hawker
From: David Healan
Date: 29th January 2003
Subject: Available Technologies



1.0 Introduction

I am going to find out about available technologies to access and exchange information and carry out transactions such as;

- **Internet Technologies- i.e. World Wide Web, e-mail, multimedia, encryptions**
- **Internet Connection- i.e. modem, ADSL, broadband**
- **Mobile Technologies- i.e. SMS, WAP**
- **Digital Broadcasting**
- **Personal Digital Assistant (PDAs) and organisers**
- **Storage Media- i.e. DVD, floppy disk**
- **Touch Screen Technology**

2.0 Findings

2.1 World wide web

This is where you can browse websites from around the world e.g. banks shopping pictures etc. The Internet runs through a modem, which is either inside your computer or outside. The World Wide Web is www in short or also known as the web. To use the web you need an I.S.P (internet service provider) with the web you can password protect it from your children accessing illegal sites such and XXX. And there are also a lot of viruses on the web that are connected to programs we download.

Advantages- you can find your bank statement shop and much more

Disadvantages- with the Internet people can hack your computer and take your confidential material

2.2 E-mail

Email is short for electronic mail

Documents can be typed on a computer and sent around the world via the Internet at an average speed of 1000miles per second

It is free and a lot more efficient than the postal service

Anything from songs to video clips can be sent as attachments

E-mail is a method of sending messages from one terminal to another via a communications link.

To use e-mail you need access to the Internet

Advantages- using e-mail is like composing or reading a paper message, with several distinct differences:

- It's faster. E-mail is received almost immediately after it is sent, usually within minutes.
- It's more conversational. Because of its immediacy, a whole series of e-mail messages may be exchanged within a very short time. As a result, e-mail messages tend to be less formal and more chatty in style; they are also usually shorter and more to the point.
- It's easier to reference. The text of a previous e-mail message can easily be included as part of a reply to that message. Thus, e-mail correspondents are able to keep the context of replies sent in each message. Including context is not only polite but also makes an e-mail message more immediately understandable.

Disadvantages- the disadvantages of email are, the email you send could take quite sometime. You can also get a lot of junk mail because when you sign up for something with out reading the terms and regulations you could be handing your email address out to everyone on the Internet.

2.2 Multimedia

Multimedia is a mixture of text and graphics with motion
It is interactive, which means that the user can decide on different routes through the software
It is ideal for learning as you can move the program as quickly or slowly as you like
It can make topics into fun games, which can educate without you knowing
It is usually distributed through CD-ROM or DVD

Advantages- The power of multimedia is in engaging a variety of learning modalities (visual, auditory) that can appeal to various learner styles simultaneously.

Multimedia allows development of more engaging, persuasive presentations. Multimedia used in simulations or to enhance practice of skills can support transfer of learning

Disadvantages- Unfortunately, multimedia can be quite expensive for the following reasons:

- Acquisition or rental of equipment to produce multimedia can be costly.

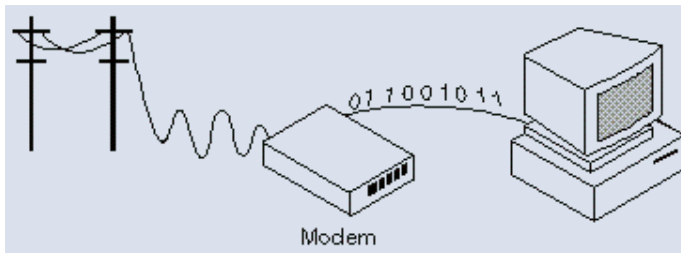
2.3 Encryption

Encryption is about keeping data secret
Codes can range from anything but as long as the sender and the recipient know the code, the message can be decoded
Encryption can be damaging as e.g. the police may want to monitor a suspected drug dealer and may need to find off a drop off point but are unable to decode the message.

Advantages- E-mails - sometimes we want our mail to be private!
People have a right to a degree of privacy in their lives.
Do you want the postman reading your letters??
Online Purchasing (Ebay, Amazon, Victoria's Secret)
Some personal information you want kept private (i.e. credit card numbers)

Disadvantages- Private communication between terrorists
More difficult for National Security Agency
Harder to crack down on terrorists
Hate groups could use encryption for their own ends
Encryption will make cracking down on hate groups more difficult

2.4 Modems



Short for *modulator-demodulator*. A modem is a device or program that enables a computer to transmit data over, for example, telephone or cable lines. Computer information is stored digitally, whereas information transmitted over telephone lines is transmitted in the form of analogue waves. A modem converts between these two forms.

Advantages- 56K modems perform better than their 28.8K and 33.6K cousins.

The half-digital nature of 56K means that your connect rates will be higher than with pure analogue technology.

Most people can expect speeds in vicinity of 40-50K. It's not a huge leap, but its natural progression over today's speeds, and it will be an easy decision for people buying their first modem, and for anyone who's still using a 14.4 modem.

Disadvantages- if you were one of the first people to buy a 28800 modem, you may have discovered that most of the places that you called still used 14400 modems, so you could only connect at 14400. It's always been this way with modems: they can only connect at the highest speed supported by both modems.

2.5 ADSL

ADSL stand for **A**symmetric **D**igital **S**ubscriber **L**ine.

ADSL is a broadband connection technology, which utilises existing copper wired telephone networks. ADSL uses a wide range of frequencies over an existing telephone line to deliver much higher speeds than your standard 56k modem (between 10 and 40 times faster). It is also possible to use your phone while online.

Advantages- Broadband Internet connections like ADSL offer much faster data transfer rates compared to regular modem connections. This means that websites and e-mail will download more quickly.

ADSL is always on. As long as your PC is powered on it's connected to the Internet. This makes getting on-line much easier as you don't have to wait for your computer to dial your ISP and connect to a server. Just open a browser window and your chosen start page will load immediately

ADSL does not tie up your phone line. You can make and receive voice or fax calls normally whether your computer is being used on-line or not.

ADSL is not charged by the minute like dial-up modem connections. A fixed charge is added to your phone bill every month. The charge depends on the ADSL package you buy.

Disadvantages- ADSL offers similar bandwidth to leased lines at a fraction of the cost, however the bandwidth is not guaranteed. ADSL lines are shared with up to 50 other users. This is known as the contention ratio. Most contention ratios are 50:1 for home and SOHO users, and 20:1 for business users. The amount of users using

one line at any one time can make your bandwidth fluctuate. Therefore if you require a fixed, permanent bandwidth, REDNET would advise using a leased line as opposed to ADSL.

2.6 Mobile Phones

2.6.1 SMS

SMS stand for Short Messaging Service

SMS is the transmission of short text messages to and from a mobile phone, fax machine and/or IP address. Messages must be no longer than 160 alphanumeric characters and contain no images or graphics.

Advantages- SMS messaging is not tied down to terminals but are an inherently mobile technology. The widespread adoption of this technology means that even remote or mobile areas of an organization can be given access to physically fixed data.

- The travelling salesman can be given access to the company's inventory data...
- The courier can update a database with delivery schedules the second he actually delivers the package and the customer can be notified the second after...
- Students can check their grades and enrol for courses even during vacations...
- Fleet operators can check the location of vehicles online through GPS (Global Positioning System) enabled mobile devices etc.

SMS is Always On

SMS is available 24 hours a day, seven days a week and people carry around their mobile phones. Hence, customers, business partners and employees readily receive messages sent.

SMS is Low Cost

2.6.2 WAP

WAP stand for Wireless Application Protocol

WAP is a secure specification that allows users to access information instantly via handheld wireless devices such as mobile phones, pagers, two-way radios, smart phones and communicators.

Advantages- Wap is the Internet on your phone and is used wherever u can go and it can be used by: -

- The travelling salesman can be given access to the company's inventory data...
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Disadvantages- these are that it's slow and not efficient, it isn't completely set up and not many people have it at the moment

Sending a message via SMS is low cost to the enterprise and low cost for the customers inquiring information from your company. While WAP (Wireless Access Protocol) and Mobile Internet can offer more information per connection, it requires you to establish pretty long winding access procedures and may easily cost 10 to 100 times more than the quick and specific request of a SMS message.

SMS is Fast

As a communication technology, SMS is fast to adapt, learn, and deploy. The technology is not dependent on large network installations

or fixed landlines that can take weeks or months to deploy. With a deployment using the IC Jacobsen ISMS Server it has now become incredibly easy to integrate SMS to all existing services like Email, Chat, Databases and applications.

2.7 Digital Broadcasting

Digital Broadcasting is a system, which broadcasts digital information to television in people's homes. They're a lot of company's that use digital broadcasting. Digital Broadcasting is also use in digital music players and radios.

Advantages- it is possible to provide high-quality video/audio broadcasting services using a digital broadcasting system that is resistant to noise and ghosting.

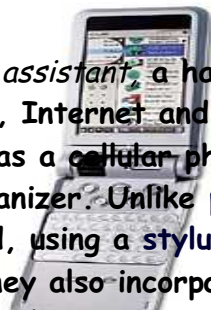
News and daily life information can be made available at any time by storing all necessary information on (characters, still pictures, etc.) in the receiver.

Connection to a communications network allows TV viewers to participate in programs at home.

Disadvantages- the interactive is slow and sometimes digital TV can crash

2.8 Personal digital assistant (PDA)

Short for *personal digital assistant*, a handheld device that combines computing, telephone/fax, Internet and networking features. A typical PDA can function as a cellular phone; fax sender, Web browser and personal organizer. Unlike portable computers, most PDAs began as pen-based, using a stylus rather than a keyboard for input. This means that they also incorporated handwriting recognition features. Some PDAs can also react to voice input by using voice recognition technologies. PDAs of today are available in either a stylus or keyboard version.



Advantages- increasingly technologically connected

Expanded knowledge for faculty and students
Information available at point-of-care

Disadvantages- a P.D.A cost quite a bit like in the range of £350-£500, Hardware requires respect, Confidentiality issues, Ethical and, legal demands, Potential violation, Problems may be overcome with system security

2.9 DVD

Short for *digital versatile disc* or *digital videodisc*, a type of optical disk technology similar to the **CD-ROM**. A DVD holds a minimum of 4.7GB of data, enough for a full-length movie. DVDs are commonly used as a medium for digital representation of movies and other multimedia presentations that combine sound with graphics.

The DVD specification supports disks with capacities of from 4.7GB to 17GB and access rates of 600KBps to 1.3 MBps. One of the best features of DVD drives is that they are backward-compatible with CD-ROMs, meaning they can play old CD-ROMs, CD-I disks, and video CDs, as well as new **DVD-ROMs**. Newer DVD players can also read CD-R disks.

DVD uses **MPEG-2** to compress video data.

Advantages- Videotape typically has a life expectancy of from only 10 to 20 years depending upon many variable factors. Though still the best medium to originate in, conversely, it's the poorest medium to archive in, due to its relatively short life.

Unlike videotape, the DVD disk is never in contact with rotating heads, head drums, capstans, pinch rollers, guide posts, bearings, audio heads or control track heads.... All of which the tape must "grind" over each time it is played. There is no mechanical wear to a DVD disk since solely a laser beam scans it.

The disk is also not susceptible to magnetic fields or serious chemical breakdown as is videotape.

Disadvantages- it will take years for movies and software to become widely available.

It can't record (yet).

It has built-in copy protection and regional lockout.

It uses digital compression. Poorly compressed audio or video may be blocky, fuzzy, and harsh.

2.10 Floppy disk

A soft magnetic disk. It is called *floppy* because it flops if you wave it (at least, the $5\frac{1}{4}$ -inch variety does). Unlike most hard disks, floppy disks are portable, because you can remove them from a disk drive. Disk drives for floppy disks are called *floppy drives*. Floppy disks are slower to access than hard disks and have less storage capacity, but they are much less expensive. And most importantly, they are portable.

Advantages- a floppy disc is small and is took anywhere and is good to store word documents

Disadvantages- there isn't much storage space. And they have to be formatted to be used because they can attract viruses easily

2.11 Touch screen technology

Touch screen technology exists in PDAs more than any thing else.

Touch screens for home PCs cost a bit of money but are worth it.

Touch screen is a type of display screen that has a touch-sensitive transparent panel covering the screen. Instead of using a pointing device such as a mouse or light pen, you can use your finger to point directly to objects on the screen.

Although touch screens provide a natural interface for computer novices, they are unsatisfactory for most applications because the finger is such a relatively large object. It is impossible to point accurately to small areas of the screen. In addition, most users find touch screens tiring to the arms after long use.

Advantages- touch screen technology is much easier to use they a normal screen because you can touch the screen in places that you want to use.

Disadvantages-the touch screen can break easily and can scuff from fingerprints and you will have to keep cleaning it.

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3.0 Conclusion

In the future Internet technology will be in every home and business through out the world. You would be able to see people when u makes a phone call just like they were next to you talking to you. You will also be able to keep in touch with who ever you want whenever you want. There is already enough technology in the world today and there will be more to come in the future.

The oldest piece of technology in this report is the floppy disc, which has been around for decades and will never go because they are small enough to carry round and they are good for storing documents on. Internet sites I used to get my information for my report: -

<http://www.connectedcommunities.co.uk/faqs/#q7> - this is where I found information on broadband Internet connection. The information that I found on this website was very brief and didn't tell me much on what broadband is.

<http://www.red.net/support/resourcecentre/adsl/adsl-faq.php#disadvantages> - on this website I found out about ADSL. The information on this website was also brief on what ADSL is and what it's used for.

<http://www.shiba.tao.go.jp/digital/eng/over/advantages.htm> - on this web site the information was about digital broadcasting and there was quite a lot of information on this website and I checked it with my text book

<http://www.google.com> - this is the web site I used to search for other web sites for the information I used

<http://www.pcworld.co.uk> - on this web site I found help and information on storage media.

<http://www.ntlworld.com> - on this web site I found out about broadband and dial up connections.