New technologies

# E-books / Digital books

The name says it all. E-books are books in digital format. Most have DRM (Digital Rights Management) protection to prevent them from being copied and shared, and many can only be read using the device / software they were created for.

PDF (Portable Document Format) files can be used as e-books (as they cannot be altered and only need the free Adobe Reader program to be opened and read) , but they lack some of the advanced features of true e-books, such as bookmarking, highlighting, annotating, dynamic repagination (i.e. changing pages as the user changes font style and size), etc.

*Advantages of e-books:*

* E-books can be purchased and downloaded within minutes.
* One does not need huge amounts of space to store your books – hundreds of books can be stored on a computer or a portable storage device. They are also very portable – think of travelling on a plane!
* They are more durable and do not suffer from wear and tear like hard copy books. Many universities and libraries are now placing their material and archived works online to be downloaded.
* One can search for text in an electronic book very quickly and easily. Also, links to useful or related sites on the Internet can be provided.
* It is easy to magnify the size of the text for people with poor vision. Many e-book devices and software provide optional narrator facilities, which allow the text to be read aloud.

# E-book reader

E-book readers generally come in the form of specialised hardware devices like the Amazon Kindle, the Sony E-Reader, the Barnes & Noble Nook – they can also come in the form of software that runs on devices.

The iPad has a Kindle app (program) that allows you to read Kindle books. You can also get Kindle software for your PC or Mac and read the books there. The iPad also has software to read Apple’s own iBook books, and Barnes & Noble’s Nook books.

# Netbooks

Netbooks should not be confused with e-books. These are small, low powered laptops meant to be carried around and used for low powered tasks like checking mail and browsing the Internet   
(hence the name Netbook). They usually have 10” / 11” screens and low powered CPUs, small memory and storage, and they struggle to perform more powerful computing tasks. They were very popular for a while but the introduction of consumer tablets like the iPad (latest unveiled in March 2012) has led to a decrease in their popularity and sales.

# Tablet computers

These come in two forms, namely: Consumer Tablets and Tablet PCs.

# Consumer Tablets

These are small portable devices like the iPad, Galaxy Tab, Playbook, Xoom and HP Touchpad.

They are designed to be controlled through touch screen interfaces and usually have WiFi, Bluetooth and 3G communication built in. They are excellent media consumption devices, and allow easy browsing of Internet / e-mail communication on-the-go. They also do well as portable gaming devices, e-book readers, GPS devices and even productivity devices.

# Tablet PCs

These are normal laptop-style computers (with or without keyboards) that have the ability to work with a pen-like stylus for pen-based input.

They are much more expensive than consumer tablets and have a shorter battery life. They are also more expensive than normal laptops and so have not sold well.

# YouTube

YouTube is a video sharing website owned and operated by Google. It is free to use (but like most Google products is funded by advertising). It is a powerful tool for sharing video on the Internet.

# Social networking

Social networking sites provide a place where people can share information, notices, pictures etc about themselves, their activities and even their location. On some sites you have limited control over who gets to access your information (e.g. Facebook) while others, like Twitter, make everything completely public.

All current social networking sites are free.

Sites like Digg allow you to mark web pages you like and to ‘vote’ for them. The Digg home site then lists the sites with the highest number of votes.

*Advantages*

1. Keeping in contact with friends, family, fans, etc.
2. Easily sharing content with multiple friends
3. Discovering new people / interests

*Disadvantages*

* Loss of privacy
* Potential for identity theft (enough information for anyone to be able to pretend to be you)
* Unwanted advertising / spam
* Inappropriate for some audiences – e.g. aspects of your private social life that can have a negative impact on your getting a job – so be careful what pictures and stories you post!

# Convergence

* Convergence is the idea that, instead of using a number of separate devices, each performing only one function, the separate devices will all merge (converge) into a single device that performs multiple functions.
* A smartphone is an example of a convergence device. It combines the functions of multiple devices within a single device. A smartphone like the iPhone performs all of the following functions: Phone, Messaging (SMS, instant messaging, e-mail, etc.), Internet browser, Media player (audio and video), Camera, Video camera, Sound recorder, E-book reader, GPS & navigation device, Pocket computer that can run all types of apps, Portable game player, and more…

**GPS instruments** are devices that contain a radio receiver and a chip for receiving signals from the GPS (Global Positioning System) satellites in orbit around the earth. These signals can be used to calculate the latitude and longitude location of the GPS device on the surface of the earth, with an accuracy of up to 5m.

# Smartphones

The modern smartphone is allowing cellular telephones to do the job of computers (and a whole range of other devices). Smartphones include electronics that allow them to act as a GPS, camera, telephone, portable media player, Internet browser, e-mail client, and miniature computer.

They have their own operating systems (like iOS for Apple products, Android, WebOS and Windows Phone 7) and can have ‘apps’ (programs) installed onto them to increase their usefulness and versatility.

# Operating systems: Android vs. Symbian

* Android is an open source Linux-based operating system managed by Google and designed for use in smartphones and consumer tablets.
* Symbian is an operating system bought by Nokia and recently made open source by them. It was intended for use on smartphones, but Nokia has recently abandoned it and will now create and design phones that use Microsoft’s Windows Phone 7 instead.

# Online auctions

Online auction sites allow people to buy and sell items amongst each other – right across the world. They work by allowing you to create an account and place items up for sale. You usually need to include good descriptions and photos of the item. You specify a minimum amount that you wish to sell the items for, and a date and time when the auction must end.

Buyers also create accounts, look at the items on auction and place bids. At the end of the auction, the person with the highest bid pays for and obtains the item.

*Advantages*

* Bigger range of goods / buyers available
* Not bound by physical location

*Disadvantages*

* Risk of fraud
* Items might not be as described
* Fake bidders who bid only to drive up the price

# VoIP

Voice Over Internet Protocol – VoIP allows people to carry on voice and even video conversations over the Internet without making a (normal) phone call.

The obvious advantage is cost, as an Internet connection usually has a fixed cost – and so a VoIP call costs much less than a normal phone call. VoIP is made available by using any one of a range of programs. The biggest issue is that both people involved in the call must use the same software. Software for VoIP includes:

Skype, Apple’s FaceTime, Google Talk, etc.

Phone companies are obviously not pleased with VoIP and some cellphone companies block VoIP over their data networks to protect the income they receive from their voice networks.

# 3G and 4G technology

3G and 4G technology refers to mobile wireless data connection technology. This is the technology used to make data connections over cellphone networks. 3G is the current standard. 4G is still in development and promises to allow data transfer up to 10 times faster than 3G.

# WIKI

A Wiki is a community created document. Anyone can add to or edit the document. People usually create the document for free, and access to it is also free. Sometimes a Wiki has a central editor or editing committee that checks contributions for accuracy. Often the community nature of the Wiki means that it covers a much larger range of topics – but also that its contents can be inaccurate. Wikipedia is the most well known example of a Wiki.

# Webinar

A webinar is the online (web) version of a conventional seminar. It takes place at a set time and people from all over the world can participate. You might need a special invite, or even have to pay to be able to participate. Usually the screen is divided into multiple parts – a video image of the presenter, a presentation area showing the slides, and a chat area where all participants can communicate with each other and with the presenter.

# Podcasts

Podcasts are video or audio programs that are recorded and made available for download. Some podcasts can be ‘subscribed to’ by using a program like iTunes. Once you have subscribed, iTunes downloads a new ‘episode’ as soon as it becomes available. Once the podcast is downloaded you can view / listen to it on the computer, or on a device like an iPod or consumer tablet.

# iPods

iPods are devices originally designed to store and play back audio, allowing you take your music library with you wherever you go. iPod is a brand name that refers to such a device made by Apple. Other companies make similar devices that may not be called iPods, but that do the same job. These are often simply called MP3 players. Some iPods now have screens and can be used to show video, and devices like the iPod touch can even run many of the same apps created for the iPhone (Apple’s smartphone).

# Digital signatures

In the world of computers it is really difficult for you to tell if a message is really from the person it claims to be from – or if a Website is genuine or not. As a way to combat the potential for fraud, the ‘digital signature’ has been developed. Websites validate themselves using security certificates, and people can obtain a ‘digital signature’ for themselves that works in a similar fashion. Unfortunately, this involves extra cost and work and so most people don’t do this.

The term can also refer to scanned versions of a handwritten signature.

# Newsgroups

Newsgroups are like large bulletin boards where anyone can read and post messages in long conversations on specific topics. They can be maintained by specific sites and companies, but the oldest collection of newsgroups is Usenet, which has a huge collection of newsgroups covering a wide range of topics.

# Portals

Portals are websites that collect information and direct you to other websites that might contain information that you are interested in. They often include a search engine. An example is Yahoo.com.

# Cloud computing

This is a term that refers to computing scenarios where data and software are stored in, and run from, computers somewhere in ‘the cloud’. You don’t know or care where the data is stored or what computer is running the software. You simply connect to the Internet and gain access to it all. The term can also refer to the ability to run programs from the Internet. Google Docs, for example, provides an online set of programs including a spreadsheet and a word processor. These can be used for free and the data can be saved ‘in the cloud’ on the Net.

# Virtual computers

These are more often called ‘Virtual Machines’. It refers to special software (like Parallels Desktop or VMware) that creates a ‘computer’ in software. This ‘computer’ can then have an operating system and software installed on it. In this way you can run a Linux computer inside a virtual machine on your Windows computer – or run Windows on your Apple Macintosh computer.

*The advantage of using virtual machines is that you can:*

* create different types of environments with different configurations for testing hardware and software
* run programs for other operating systems, while still using your main operating system
* create isolated environments to prevent incompatible software packages from conflicting with each other.

# E-scamming / Phishing

Scamming is when someone tries to trick you into giving them money or confidential information that they do not have any right to have. Computers and e-communications have led to people coming up with new and creative ways of ‘scamming’ others out of money – and it has allowed scammers to access people around the globe.

A well-known scam is the Nigerian 411 scam, where you receive a letter from someone who claims to have a large amount of money that they desperately need to get out of a dictatorial country. They ask for your help by allowing them to transfer the money to your account, and promise you a substantial fee in return. Inevitably you have to send them some money to start the process. When you send them the money you never hear from them again.

Another type of scam consists of e-mails telling you that you have won lotteries that you have never entered, or containing invitations for you to participate in business ventures from people you have never met – all of which require you to send some money to access your winnings or to get the process started. If you send the money you will never get it back!

There is also a scam in which a business ‘buys’ something from you and overpays (by cheque). They then contact you and apologise for the mistake, requesting you to refund the difference. You do this, but then lose your money, because their cheque is fake and it bounces!

Phishing is a type of scam that uses e-mails claiming to be from a bank or other business that needs you to update your details. The e-mail contains a link to a fake site that then captures your details and allows the phisher to access your account and steal money from you. Banks NEVER send e-mails with links in them. NEVER click on the link in this type of e-mail. Simply delete the e-mail.

# Sample Logo