

Candidate A Exemplar Work

Part 3 of 3

GCE in Applied ICT

OCR Advanced Subsidiary GCE in Applied ICT: H115/H315

Unit G040: Using ICT to communicate

Applied ICT

G040

Booklet/Handbook

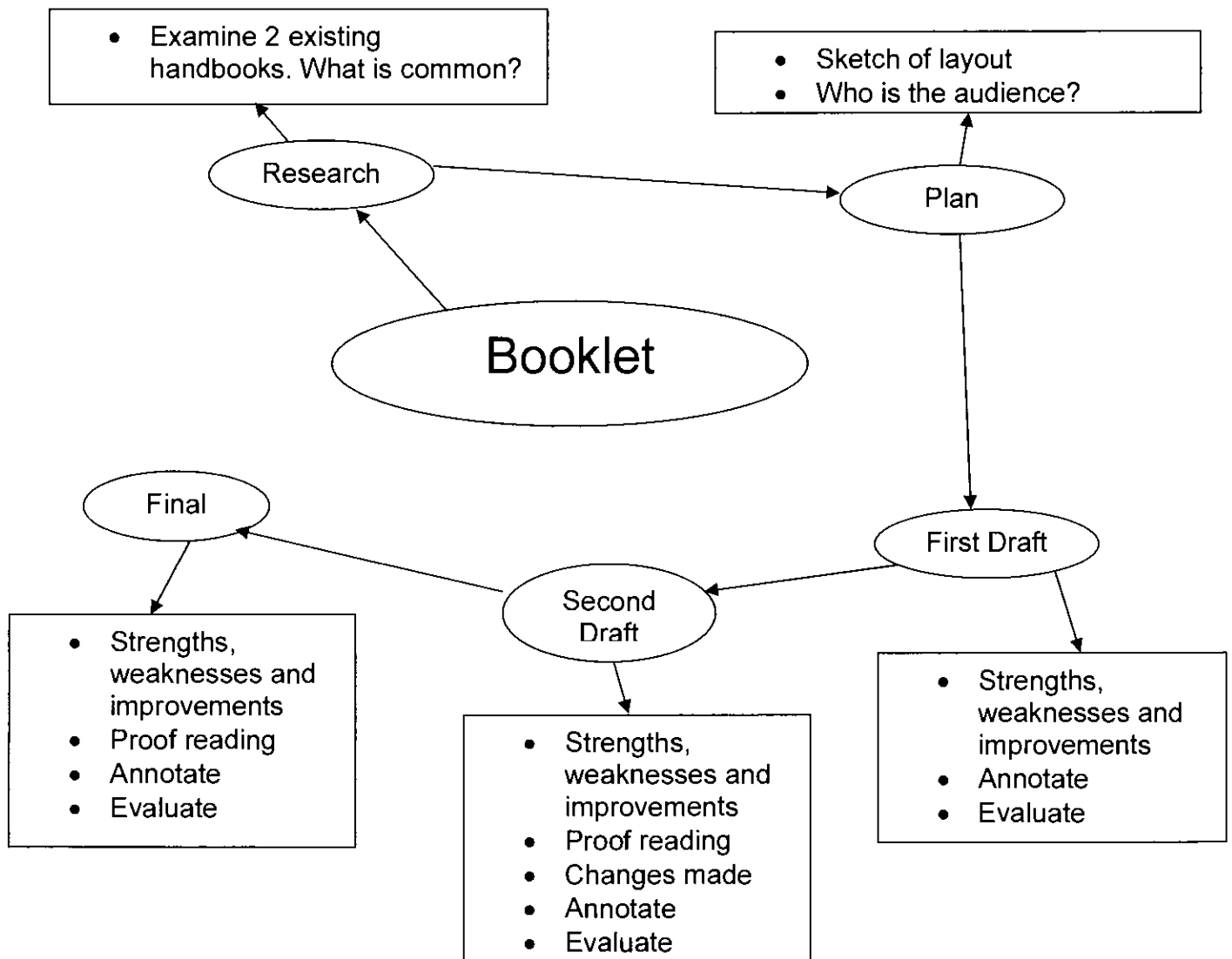
12C

For this unit I will create six business documents, I will:

- Analyse and create letter drafts and a final letter with a house style with logo
- Analyse and create advert drafts and final advert with a house style
- Create and analyse invoice drafts and final invoice
- Create and analyse web page drafts and a final web page
- Create a staff presentation
- Create a handbook/booklet on technologies

For this part of the six documents I will:

- **Create a handbook**



For this part of my unit I will be creating a booklet. This booklet will be about technologies. It will be a booklet for staff members of my company, talking about technologies and what they need to learn.

I will then move on to:

Research existing booklets

- I will examine 2 existing booklets in detail.
- Say which elements are common between them and I will state what elements I like and which ones that I will use.

Plan out my booklet

- I will sketch out the layout of my booklet using boxes to show the placement of each element.
- State who my audience is
- Create a plan and update it regularly
- State any other considerations like costs

First draft

- Create my first draft
- Discuss what I did to create my first draft
- Talk about the good and bad points, and how I can improve my draft
- Annotate the printed copy
- Evaluate

Second draft

- Create my second draft
- Discuss what I improved from my first draft
- Talk about the good and bad points, and how I can improve my draft to create my final
- Annotate the printed copy
- Evaluate

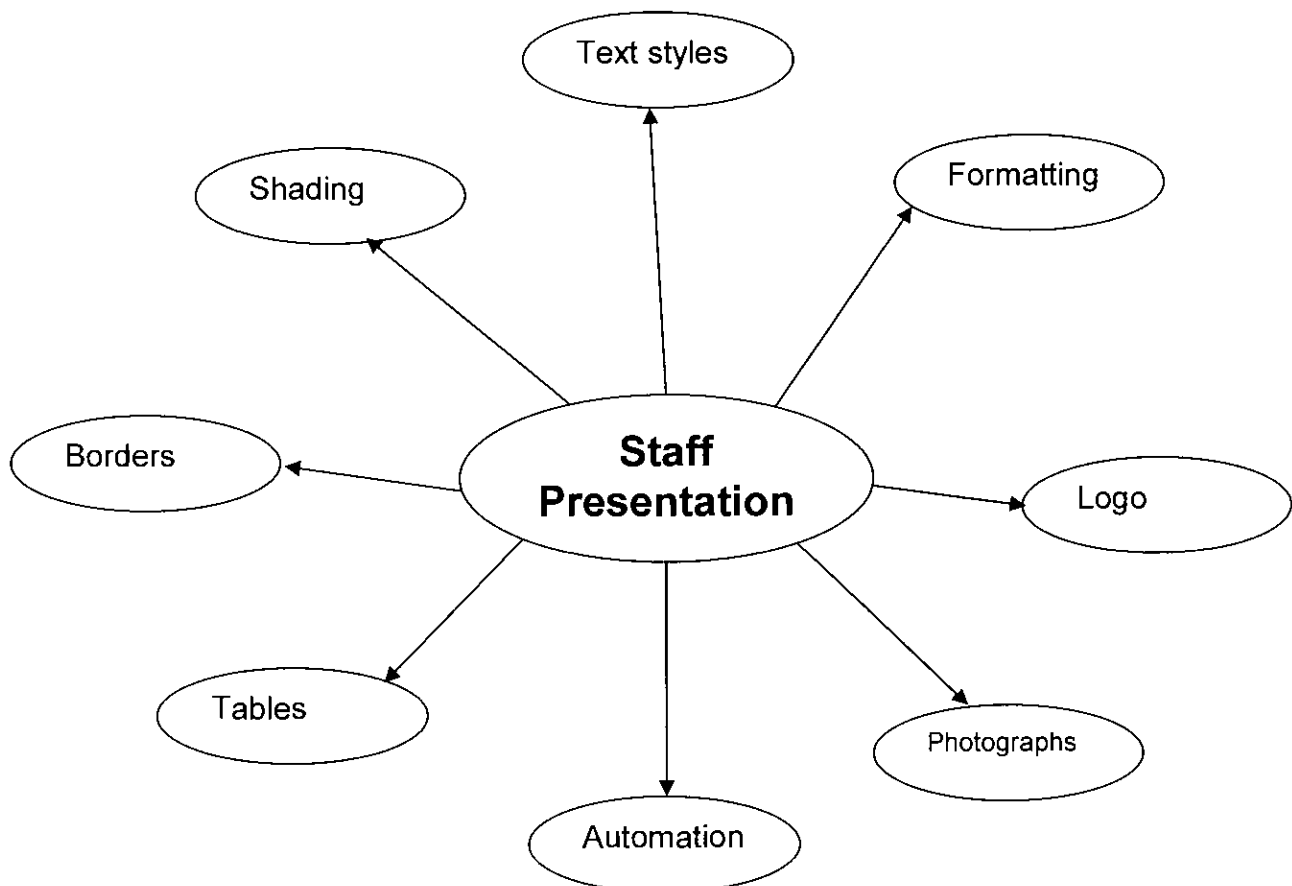
Final

- Create my final draft
- Discuss what I improved from my second draft
- Talk about the good and bad points, and how I can improve my final
- Evaluate

Research

For my research, I listened and took notes to several presentations about all of the technologies from “The Information Age”.

What I intend on using:



Plan

1. Front cover – picture of Canary Wharf and text
2. Contents page
3. Personal computers
4. Touch screens
5. Digital broadcasting
6. DVD
7. High Definition (HD)
8. Mobile phones
9. Video/audio compression
10. The Internet
11. WAP
12. Evaluation of technologies (strengths and weaknesses)

Each subject page:

- Title
- Subtitle
- Cloud Computing logo
- Definition
- Two pictures
- Methods of communication
- Page number

| <u>First draft strengths and weaknesses</u> | |
|----------------------------------------------------------|------------------------------------------------------------|
| <u>Strengths</u> | <u>Weaknesses</u> |
| Good use of corporate colours (blue) | Wrong Text |
| Good use of company image on every page | Not lined up boxes |
| Good use of titles and subtitles | No bold headings for explanation boxes |
| Contents to help find information | Text over some edges |
| Cloud Computing Simple Definition | Underlined words that don't need to be |
| Diagrams with numbers on to identify parts | Some words that should be emphasised aren't |
| Every method of communication for each one | Layout needs improving |
| 2 pictures on each page | |
| Graphs to show statistics | |
| | |
| <u>Improvements</u> | |
| Change of text to "at Cloud Computing" on the front page | Drop text down on page 5 because it is going over the edge |
| Line up boxes on contents page | Take off underline on a word on page 6 |
| Bold headings in explanation boxes | Underline services headings on page 10 |
| Fix out of line box on page 10 | Layout needs improving. More colour is needed |

| <u>Second draft strengths and weaknesses</u> | |
|-----------------------------------------------------|-----------------------------------------------|
| <u>Strengths</u> | <u>Weaknesses</u> |
| Good use of corporate colours (blue) | Spelling error |
| Good use of company image on every page | Box out of line on page 10 |
| Good use of titles and subtitles | |
| Contents to help find information | |
| Cloud Computing Simple Definition | |
| Diagrams with numbers on to identify parts | |
| Every method of communication for each one | |
| 2 pictures on each page | |
| Graphs to show statistics | Layout needs improving. More colour is needed |
| <u>Improvements</u> | |
| "Enail" should be corrected to "Email" | Fix box out of line on page 10 |

| <u>Final strengths and weaknesses</u> | |
|----------------------------------------------|--------------------------|
| <u>Strengths</u> | <u>Weaknesses</u> |
| Good use of corporate colours (blue) | |
| Good use of company image on every page | |
| Good use of titles and subtitles | |
| Contents to help find information | |
| Cloud Computing Simple Definition | |
| Diagrams with numbers on to identify parts | |
| Every method of communication for each one | |
| 2 pictures on each page | |
| Graphs to show statistics | |
| No spelling errors | |
| <u>Improvements</u> | |
| | |

Combining ElementsLocating, adapting and combining information

To create this image:



I used the following source:

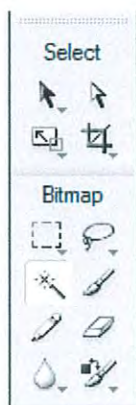
Source:

http://www.techdigest.tv/samsung_r87_lcd_hd_tv-thumb.jpg

First I imported the picture into fireworks:



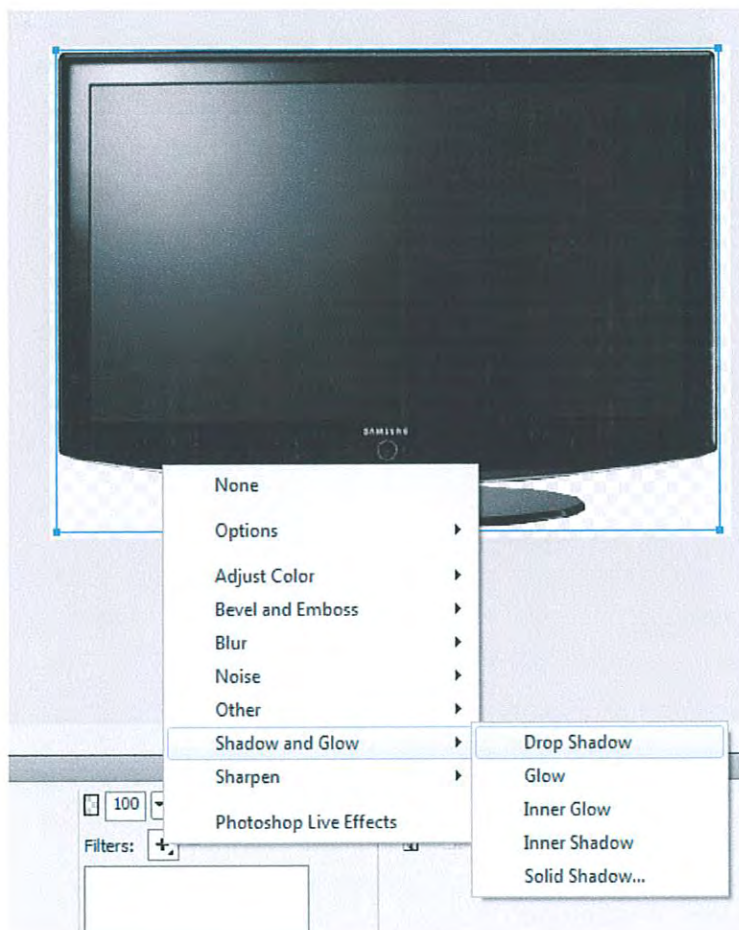
Then I clicked on the magic wand tool:



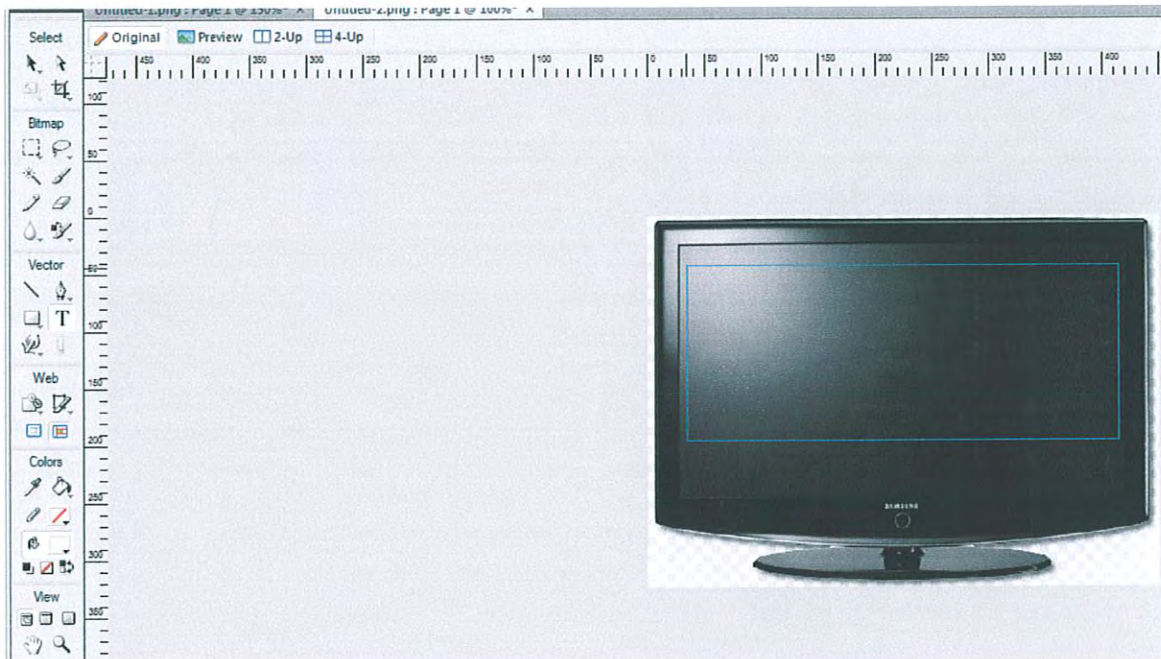
I then selected the white area and took this away from the picture leaving a transparent background:



I then went into the effects for the picture and added a drop shadow:



I then used the text tool and made a text box for my text to go in:



I then typed in "HDTV":



I then went into effects for the text and added a glow:



I then changed the colour of the glow to a grey:



This then gave me my final image:

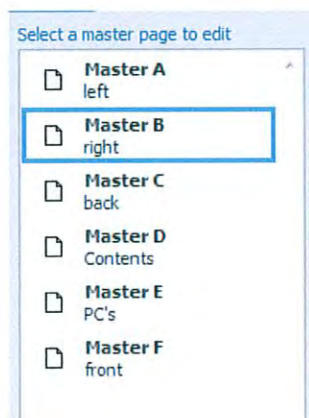


Automation

In order to automate my pages, I used a range of master pages for my booklet.

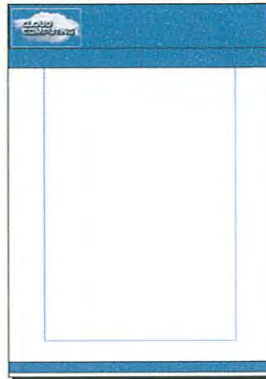
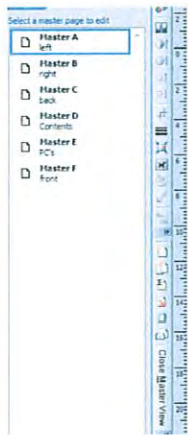
Below shows the “left” and “right” master pages. These were the most used master pages in my booklet.

The master page for the back, front and PC's was used because they all had a similar styles but different looks.

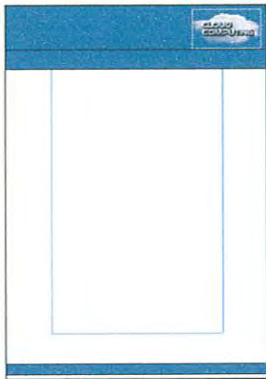
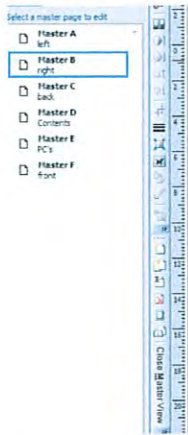


Below is two examples of my master pages

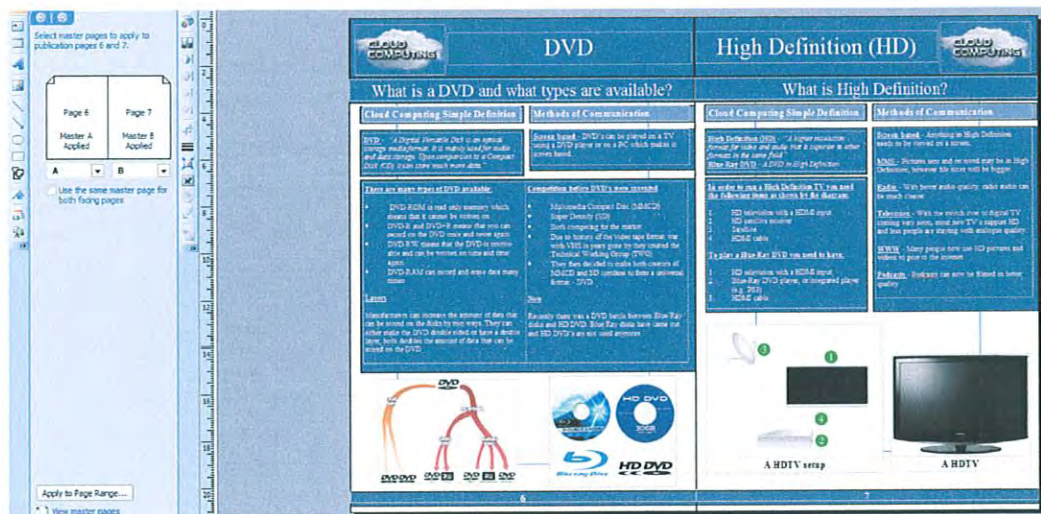
The master page below is "left"



The master page below is "right"



These two pages below demonstrate the use of these two master pages:



Problems

1. When thinking about doing the booklet at the start it got very confusing to work out where each page will go and what will be on it. I then got around this problem by getting several sheets of paper and making it myself with blank sheets and numbering them so I could understand it.
2. The margins on the page kept chopping off some of my work. I solved this problem by going into settings and changing some of the margins for printing and also by stepping my work back a bit from the edges.

Evaluation of software used

Macromedia Fireworks

Fireworks helped me edit the pictures that ended up on my booklet. The tools on here are very good and helped me edit quickly and efficiently.

Microsoft Publisher

Publisher made it easy for me to create a booklet. This was because it allowed you to easily do things like change the amount of columns for a piece of text. I was originally going to create this handbook in Adobe InDesign but I feel more comfortable with Publisher because I knew that I could ask for help if something went wrong with Publisher because it is well know. With InDesign I found that not many people know about it.

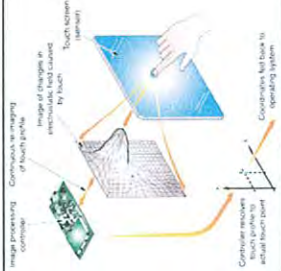
How I would approach this in the future?




1. In the future I would plan out my booklet much better. This is because I got confused at the start of planning as to where each page would be and what would be on it.
2. I would also look to made hand drawn plans in order to be more accurate and having better plans in order to achieve what I want from the start.



Plan

| Date | Where completed | What I did | How long it took | Comments |
|---------|-----------------|------------------------------------|--------------------|----------|
| 2/2/10 | School | Completed planning | 50 mins per lesson | |
| 3/2/10 | School | Completed research | | |
| 9/2/10 | School | Completed Draft 1 | | |
| 10/2/10 | School | Completed Draft 2 and Final | | |
| 12/2/10 | School | Completed Draft 1 & 2 improvements | | |
| 27/2/10 | Home | Completed Final improvements | | |
| 28/2/10 | Home | Completed Evaluation and future | | |
| 1/3/10 | | | | |
| 2/3/10 | | | | |

Sources Used (Bibliography)

| URL | Picture/s | Description | How it was used |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| http://en.wikipedia.org/wiki/Personal_computer http://computer.howstuffworks.com/pc.htm http://communication.howstuffworks.com/email2.htm http://en.wikipedia.org/wiki/Virtual_learning_environment http://news.bbc.co.uk/sport1/hi/help/rss/default.stm http://en.wikipedia.org/wiki/Server_(computing) http://en.wikipedia.org/wiki/Streaming_media | | <p>PC</p> <p>N/A</p> <p>Information about PC's and how they work. This information was used to create the text about PC's and my definition.</p> | |
| http://www.electrotest.com.sg/images/ctdisp_r.gif |  | <p>Touch Screen</p> <p>Picture to do with touch screens. This was used to show how touch screens work.</p> | |
| http://en.wikipedia.org/wiki/Touchscreen | | <p>N/A</p> <p>Information about touch screens and how they work. This information was used to create the text about touch screens and my definition.</p> | |

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| http://gallery.techarena.in/data/516/screenshot_touchscreen.jpg |  | Picture to do with touch screens. This was used to show how touch screens work. |
| Digital Broadcasting | | |
| http://dbnsat.net/images/satellite-tv-5.jpg |  | Picture to do with digital broadcasting. This was used to show how it works. |
| http://en.wikipedia.org/wiki/Digital_Audio_Broadcasting | N/A | Information about digital broadcasting and how it works. This information was used to create the text about digital broadcasting and my definition. |
| http://en.wikipedia.org/wiki/Digital television | | |
| http://electronics.howstuffworks.com/dtv.htm | | |
| DVD | | |
| http://en.wikipedia.org/wiki/DVD | N/A | Information about DVD's and how they work. This information was used to create the text about DVD's and my definition |
| http://www.voodish.co.uk/articles/es/content/uploads/2007/11/blu-ray-hd-dvd-discs.jpg |  | Picture to do with DVD's. This was used to show the different types of DVD available. |

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http://www.ccs.k12.va.us/departments/instructional_tech/images/keyboard_000.jpg |  | <p>These two pictures were used to highlight technologies for the back page. The top one shows a keyboard which would be including screen based and the internet. The second image helps the reader see a logo of a popular blog website.</p> |
| http://www.ionrognerud.com/images-seoworld/wordpress-ion-rognerud.jpg |  | |
| http://www.itechnews.net/wp-content/uploads/2007/06/Dell-2407WFP-HC-LCD.jpg | | <p>Information about the WAP and how it works. This information was used to create the text about WAP and my definition.</p> |

Employee Handbook

What you need to know
before you start

employment

← Change to
'at Cloud
Computing'

Draft 1

Improve layout



CLOUD
COMPUTING

21/11

Contents

Find what you are looking for quickly

Page Contents

| | |
|----|-------------------------|
| 3 | Personal Computers |
| 4 | Touch Screens |
| 5 | Digital Broadcasting |
| 6 | DVD |
| 7 | High Definition (HD) |
| 8 | Mobile Phones |
| 9 | Audio/Video Compression |
| 10 | The Internet |
| 11 | WAP |

Personal Computers

What is a PC and what technologies are used?

Cloud Computing Simple Definition

Personal Computer - "A computer made for use by one person or a household. They require enough capability to allow the user to perform simple operations like going on the internet"

A personal computer is made up of the following parts as seen in diagram:

Memory (3)
PSU (5)
CD drive (6)
Hard disk (7)
On the motherboard (8)
CPU and Heatsink (2)
Memory slots (3)
PCI expansion slots (4)

Input/Outputs include:

Scanner (1)
Speakers (9)
Screen (10)
Keyboard (13)
Mouse (14)
Printer (16)

Make bold

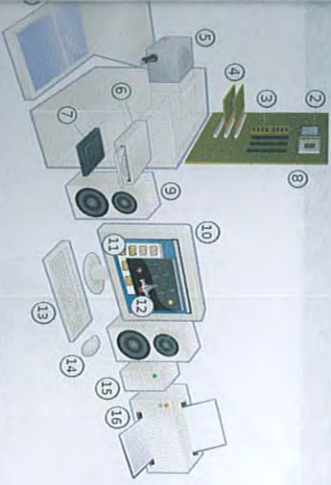


Diagram from Wikipedia that shows you a range of electric items associated with the PC

Methods of Communication

Printer based - Computers can use printers as an I/O in order to print out pages.

Screen based - Computers use a screen to display the information.

SMS - Websites like www.ebisms.com can be used to send text messages to other people by using servers

MMS - This uses the same technology as SMS

Radio - Can be streamed across the internet in packets to your computer from the broadcaster's server or computer

Television - Can be viewed on your computer. With busier lifestyles we can view television again after it has been broadcasted. BBC iPlayer and 4 On

Demand make this possible.

Telephone - Programs such as Skype use VoIP to send your voice/video over the internet to a friend for free as if you were on the phone.

E-mail - E-mail can be used on PC's when the sender uses an email client to send a message to someone. It then gets sent to a server and then is forwarded onto the recipient.

WWW - Computers with a modem and network card can access the internet, a huge source of information.

RSS feeds - This means that the webpage is updated when new content is added without having to reload the page.

Blogs - People who have a connection to the WWW can then use websites such as WordPress to start blogging about anything.

Podcasts - Due to the increase in popularity of iTunes, podcasts are now available on the internet. **Virtual learning environments** - You can use the internet in order to access VLE's and this can help you learn more.

Real time public information systems - Personal computers can be used to go onto websites like the London Stock Exchange to check the real time prices using the internet.

How do Touch Screens work?

Cloud Computing Simple Definition

Touch Screens - "A display that can detect touch and location of touch on the screen. This can be done by either a finger, several fingers or a hand. Some touch screens can also be used with a pen."

A touch screen can be split into layers:

- Top layer of glass with an adhesive layer underneath to mount the other layers onto
- Glass layer with a metallic conductive coating on the bottom
- Adhesive spacer
- Glass layer with a metallic conductive coating on the top
- Electrical flow running through

This means that when the user presses on the screen the two metallic conductive coatings meet and form a circuit. The co-ordinates of where the circuit was created is then calculated by the computer and the "mouse" will move there.



Methods of Communication

Screen based - Touch screen technology is used on screens and is therefore screen based technology.

SMS - With the use of touch screen technology on mobile phones nowadays, we can use touch screens to help send SMS.

MMS - MMS can also be sent using touch screen technology because it is now used on mobile phones, PDA's and tablet PC's.

Telephone - With the release of the iPhone and many other phones, you can now use a mobile with touch screens.

E-mail - Additionally, on PDA's and tablet PC's you can use a wireless connection to send and receive emails.

WWW - You can also access the WWW with a wireless connection on a mobile of tablet.

RSS feeds - Due to being able to connect to the internet on touch screen devices RSS feeds then become available.

Blogs - With the internet connection you can update blogs and there are many other options.

Podcasts - Podcasts can be viewed on a touch screen mobile or tablet pc due to the internet.

Real time public information systems - With access to the internet on such things like the iPad you can then get live updates on real time public information such as all of the latest train times.

What is Digital Broadcasting?

Cloud Computing Simple Definition

Digital Broadcasting - "A radio technology used for broadcasting radio stations often known as DAB digital radio"

Digital Television - "Sending and receiving of video and sound by digital signals"

How does digital broadcasting work?

Camera at the scene takes in light from the subject, it then creates a flow of electrons

The electrical signal is transformed into microwave radiation which is then wirelessly sent to the nearby TV van

The microwave radiation is then transformed back into electrons through wires and is then displayed on a TV in the van

Then the electrons are beamed up to satellites as an electro magnetic wave using a dish. It is then relayed back down to the studios using the same technique

Once edited etc, it is then sent back up to the satellites as an electro magnetic wave

Methods of Communication

Screen based - TV is viewed by the public by a TV screen and this is screen based.

Radio - DAB digital radio is digital and is therefore a part of digital broadcasting.

Television - TV is a part of digital broadcasting because this is what displays the output of digital broadcasting.

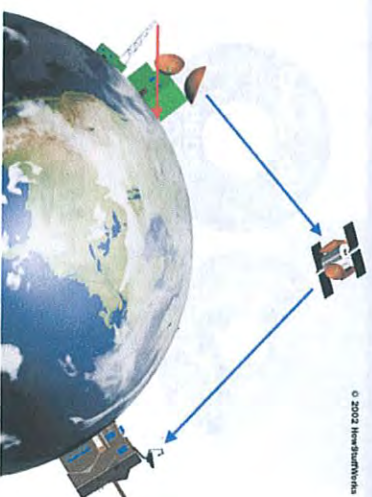
The electro magnetic waves coming back from the satellites are then received by local television stations

At the stations it is then transformed into an electron stream and goes to a nearby transmission tower

In the transmission tower it is converted to a television broadcast signal

This signal is then received by household satellite

The TV then interprets the signal and displays the moving images onto your TV so fast it is unnoticeable to the human eye.



© 2002 New Digital Media

What is a DVD and what types are available

Cloud Computing Simple Definition

DVD - "A Digital Versatile Disk is an optical storage media format. It is mainly used for audio and data storage. Upon comparison to a Compact Disk (CD) it can store much more data."

Methods of Communication

Screen based - DVD's can be played on a TV using a DVD player or on a PC which makes it screen based.

Cloud Computing Simple Definition

High Definition (HD) - "A higher resolution format for video and audio that is superior to other formats in the same field."

Blue-Ray DVD - A DVD in High Definition

What is High Definition?

Methods of Communication

Screen based - Anything in High Definition needs to be viewed on a screen.

MMS - Pictures sent and received may be in High Definition, however file sizes will be bigger.

Radio - With better audio quality, radio audio can be much clearer.

Television - With the switch over to digital TV coming very soon, most new TV's support HD and less people are staying with analogue quality.

WWW - Many people now use HD pictures and videos to post to the internet.

Podcasts - Podcasts can now be filmed in better quality

There are many types of DVD available:

- DVD-ROM is read only memory which means that it cannot be written on
- DVD-R and DVD+R means that you can record on the DVD once and never again
- DVD-RW means that the DVD is rewritable and can be written on time and time again
- DVD-RAM can record and erase data many times

Layers

make bold

Now

Manufacturers can increase the amount of data that can be stored on the disks by two ways. They can either make the DVD double sided or have a double layer, both doubles the amount of data that can be stored on the DVD.

Recently there was a DVD battle between Blue-Ray disks and HD DVD. Blue Ray disks have come on and HD DVD's are not used anymore.

correct

- Multimedia Compact Disc (MMC/D)
- Super Density (SD)
- Both competing for the market
- Due to history of the video tape format war, with VHS in years gone by they created the Technical Working Group (TWG)
- They then decided to make both creators of MMC/D and SD combine to form a universal format - DVD

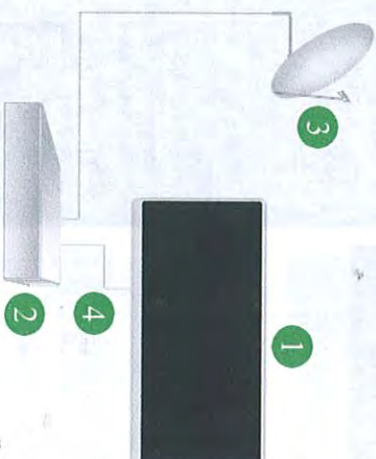
In order to run a High Definition TV you need the following items as shown by the diagram:

1. HD television with a HDMI input
2. HD satellite receiver
3. Satellite
4. HDMI cable

To play a Blue-Ray DVD you need to have:

1. HD television with a HDMI input
2. Blue-Ray DVD player, or integrated player (e.g. PS3)
3. HDMI cable

you need these 4 things



A HDTV setup

What is a mobile phone and how does it work

Cloud Computing Simple Definition

Mobile Phone - "A electronic device use for telecommunications. This is data like text messages being sent over a cellular network. There are base stations known as cell sites."

A brief history of mobile phone technology

- Zero Generation - A single powerful base station that would cover a wide area. Each telephone would take up a channel.
- First Generation - Used analogue signals
- Second Generation - Switched to digital signals
- Third Generation (2001) - Increased data rates and decreased connection times
- Fourth Generation (2010) - Increased data rates and increased range

note bold

Methods of Communication

Screen based - Mobile phones operate by using screen to look at and navigate from.

SMS - Texts can be sent from mobile phones. A phone sends out a signal up to a nearby telephone mast and then this sends the message onto the recipient.

MMS - MMS works in exactly the same way as SMS however, it often requires more data to be sent from the sender to recipient because it includes a picture.

Radio - With internet access on phones it is now easy to get access to radio.

Television - Live television cannot be viewed on a phone because it would not be able to stream data quick enough. However, with the internet websites such as the BBC iPlayer gives you the ability to watch episodes already broadcasted.

Telephone - The main purpose of a mobile phone is to be able to ring another person and have a phone call.

E-mail - With access to the internet you are able to send and receive emails.

WWW - You can get access to the internet on your mobile phone when you are at a free wireless spot or you have paid for internet on your phone.

RSS feeds - RSS feeds are incorporated in web pages that you can view with access to the internet.

Blogs - Internet access gives you the ability to view, edit and add posts to your blogs.

Podcasts - Podcasts can be viewed on mobile phones, however the time taken for it to buffer and stream may take some time.

Real time public information systems - With access to the internet you can follow real time public information such as train times or the stock market.

How does audio/video compression work?

Cloud Computing Simple Definition

Audio / Video Compression - "A way of reducing the quantity of data used to represent video or audio that the bandwidth required to view it is less. This makes viewing of media quicker"

Types of Audio Compression

- Free lossless audio coded (FLAC)
- Apple lossless
- MP3 (smaller file sizes)
- AAC (better quality than MP3)

note bold

Types of Video Compression

- MPEG-1 for Video-CD
- MPEG-2 for DVD and Blue-Ray
- MPEG-4 for Blue-Ray and iPod Video

iTunes

iTunes recognises MPEG-4 formats and almost all of the formats above. This is partially why so many people use it to play songs. They also sell videos in MPEG-4 format and also offer free conversion to the AAC format.



Methods of Communication

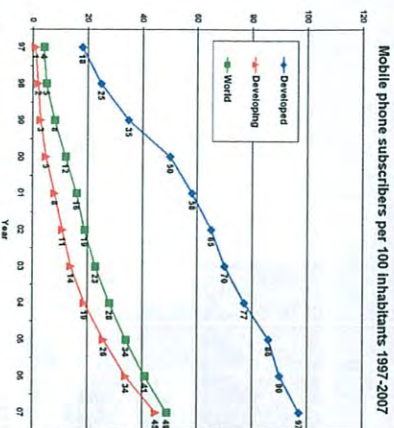
Screen based - When compressed the audio or video is always viewed on a screen or sounds are produced from speakers.

Television - When TV crews record certain TV, the quality of their cameras are high. However if you have a TV which does not support this resolution then the Audio/Video will have to be compressed or scaled down in order for you to view it.

Telephone - A modem (modulator/demodulator) compresses audio so that it can be sent along the phone line.

WWW - Audio and Video compression is commonly used for the internet. This is because video audio has been recorded in a high quality. When it comes to upload to the internet the file size would be large. This means that it would take people on the internet a long time in order to load their audio and video. So, to fix this people compress their audio and video so that the file size is decreased. This then also decreases the time to load the page. However, to decrease the file size, often quality is reduced.

Podcasts - Podcasts used audio/video. It runs along the same ideas as with the WWW.



This graph shows the increased popularity of phones from 1997 to 2007 in developing and developed countries.

What is the Internet and how does it work?

Cloud Computing Simple Definition

The Internet - "Global system of networks that use TCP/IP. It is a system of millions of interconnected networks and makes a wide range of information available."

Services available from the internet:

- Information - You can use search engines like Google to find almost anything nowadays. Also many browsers are available in order to browse the internet quickly.
- Communication - email is now available with the internet. You can also use the internet in order to have a phone call over the internet. This uses VoIP technology.
- Data transfer - There are now many ways in order to transfer data. You can use attachments on emails to send files. This also includes streaming media from a server.
- Social - With the rise of good communication technology, many social networking websites are now available. Facebook, Twitter and MSN are just a few of these and dominate the market. With the ability to talk to your friends using the internet allows you to keep in touch even when you are a long distance apart.

In order to connect to the internet you need to have an Ethernet cable that can be put into your computer. You also need a phone line and a network card. A wireless router can be used if you want to be able to use in anywhere in your house.



Fix → 10

Methods of Communication

Paper based - With the internet, anything that you can view can also be printed if you are on a PC with a printer.

Screen based - The internet is always viewed on an electric device making it a screen based.

SMS - You can use servers to send and receive text messages using the internet.

MMS - You can also send MMS messages using servers to send and receive pictures etc.

Radio - With the ability to stream data to your computer, you can now listen to the radio live on your computer.

Television - By streaming data to your computer from a server from BBC iPlayer you are able to watch the latest episodes of your favourite programmes.

Telephone - You can use programs such as Skype that support VoIP meaning that you can have phone calls using your internet connection.

E-mail - You can send and receive emails using a server. You must have an email client in order to view your emails, either as a program or as a client in the internet window.

RSS feeds - Really Simple Syndication is a way of having an area of the web page where it can be updated without having to refresh the page. This means that readers can be up to date with all kinds of information.

Blogs - Blogs can be used on the internet such as Wordpress.

Podcasts - With iTunes, podcasts have become popular. These videos can be played on your computer by streaming data from a server to your computer.

Virtual learning environments - Pupils can use the internet to connect to the server with the VLE on it. This also means that the pupil and tutor can be connected.

Real time public information systems - Stock prices and bus times can be found on the internet which are bits of real time public information.

What is WAP?

Cloud Computing Simple Definition

Personal Computer - "Wireless Application Protocol is an application that is made for use on handheld devices. It fits on a small screen and is used to access services or information."

Why use a WAP browser on a handheld device?

Using an application means that it can view websites designed to be for WAP use.

This means that pages will often take less time to load (less data).

On phones there may not be any other way to connect to the internet.

It is made to be simpler than a normal browser. This makes it easier to use.

What can you do with WAP?

Email

Go on web pages designed for use with WAP
Check on status's of train times, sport and news

Methods of Communication

Screen based - WAP uses a handheld device so therefore it is screen based.

Telephone - WAP is used on phones because it is a handheld device and can run applications.

E-mail - WAP can be used in order to go onto the internet to view your emails when using the internet.

WWW - WAP allows the user access to the internet providing that there is a wireless connection available.

RSS feeds - With access to the internet you can have RSS feeds. Also you can use RSS feeds to view real time public information such as sports results or train times. (More examples are under real time public information systems)

Blogs - With access to the internet you can blog.

Podcasts - Podcasts can be viewed on the small handheld screen by using WAP.

Real time public information systems - WAP can be used to look up real time public information. This includes a variety of things including:

- Sports results
- Train times
- Flight check in
- Weather conditions

Both of these pictures show mobile phones and the interface when on the internet using WAP.



Employee Handbook

What you need to know
before you start

employment

← Change to
'at Cloud
Computing'
Improve layout

Draft 1



CLOUD
COMPUTING

219

Employee Handbook

What you need to know
before you start at
Cloud Computing

Draft 2

P10/P11
Improve layout



CLOUD
COMPUTING

220

Contents

Personal Computers

Find what you are looking for quickly

Page Contents

| | |
|----|-------------------------|
| 3 | Personal Computers |
| 4 | Touch Screens |
| 5 | Digital Broadcasting |
| 6 | DVD |
| 7 | High Definition (HD) |
| 8 | Mobile Phones |
| 9 | Audio/Video Compression |
| 10 | The Internet |
| 11 | WAP |

What is a PC and what technologies are used?

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Personal Computer - "A computer made for use by one person or a household. They require enough capability to allow the user to perform simple operations like going on the internet"

A personal computer is made up of the following parts as seen in diagram:

- Memory (3)
- PSU (5)
- CD drive (6)
- Hard disk (7)

On the motherboard (8)

- CPU and Heatsink (2)
- Memory slots (3)
- PCI expansion slots (4)

Input/Outputs include:

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- Speakers (9)
- Screen (10)
- Keyboard (13)
- Mouse (14)
- Printer (16)

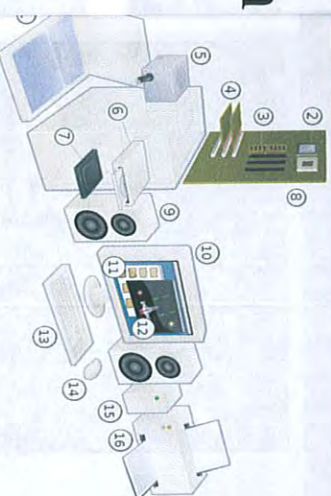


Diagram from Wikipedia that shows you a range of electric items associated with the PC

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MMS - This uses the same technology as SMS **Radio** - Can be streamed across the internet in packets to your computer from the broadcaster's server or computer

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How do Touch Screens work?

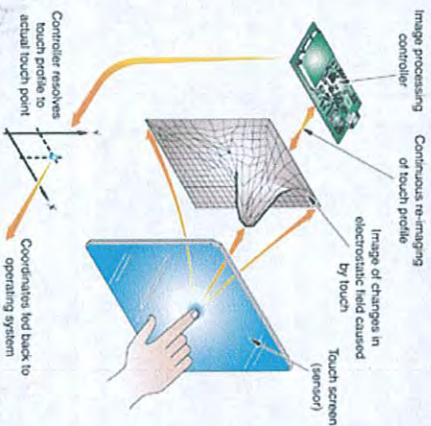
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Touch Screens - "A display that can detect touch and location of touch on the screen. This can be done by either a finger, several fingers or a hand. Some touch screens can also be used with a pen."

A touch screen can be split into layers:

- Top layer of glass with an adhesive layer underneath to mount the other layers onto
- Glass layer with a metallic conductive coating on the bottom
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Blogs - With the internet connection you can update blogs and there are many other options.

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What is Digital Broadcasting?

Cloud Computing Simple Definition

Digital Broadcasting - "A radio technology used for broadcasting radio stations often known as DAB digital radio"

Digital Television - "Sending and receiving of video and sound by digital signals"

Methods of Communication

Screen based - TV is viewed by the public by a TV screen and this is screen based.

Radio - DAB digital radio is digital and is therefore a part of digital broadcasting.

Television - TV is a part of digital broadcasting because this is what displays the output of digital broadcasting.

How does digital broadcasting work?

Camera at the scene takes in light from the subject, it then creates a flow of electrons.

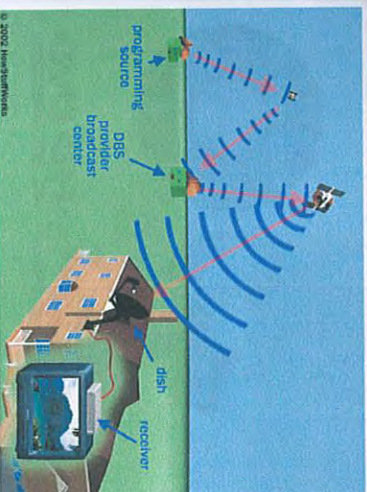
The electrical signal is transformed into microwave radiation which is then wirelessly sent to the nearby TV van

The microwave radiation is then transformed back into electrons through wires and is then displayed on a TV in the van

Then the electrons are beamed up to satellites as an electro magnetic wave using a dish

It is then relayed back down to the studios using the same technique

Once edited etc. it is then sent back up to the satellites as an electro magnetic wave



- The electro magnetic waves coming back from the satellites are then received by local television stations
- At the stations it is then transformed into an electron stream and goes to a nearby transmission tower
- In the transmission tower it is converted to a television broadcast signal
- This signal is then received by household satellite

The TV then interprets the signal and displays the moving images onto your TV so fast it is unnoticeable to the human eye.



What is a DVD and what types are available?

Cloud Computing Simple Definition

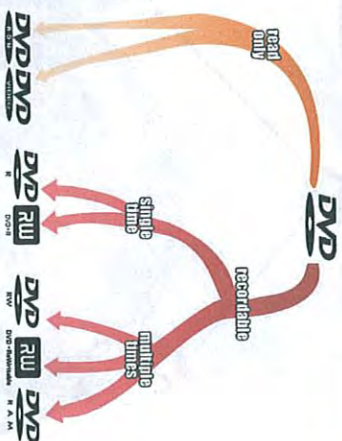
DVD - "A Digital Versatile Disk is an optical storage media format. It is mainly used for audio and data storage. Upon comparison to a Compact Disk (CD) it can store much more data."

There are many types of DVD available:

- DVD-ROM is read only memory which means that it cannot be written on
- DVD-R and DVD+R means that you can record on the DVD once and never again
- DVD-RW means that the DVD is rewritable and can be written on time and time again
- DVD-RAM can record and erase data many times

Layers

Manufacturers can increase the amount of data that can be stored on the disks by two ways. They can either make the DVD double sided or have a double layer: both doubles the amount of data that can be stored on the DVD.



Methods of Communication

Screen based - DVD's can be played on a TV using a DVD player or on a PC which makes it screen based.

Competition before DVD's were invented

- Multimedia Compact Disc (MMCDD)
- Super Density (SD)
- Both competing for the market
- Due to history of the video tape format war with VHS in years gone by they created the Technical Working Group (TWG)
- They then decided to make both creators of MMCDD and SD combine to form a universal format - DVD

Now

Recently there was a DVD battle between Blue-Ray disks and HD DVD. Blue Ray disks have come out and HD DVD's are not used anymore.



Cloud Computing Simple Definition

High Definition (HD) - "A higher resolution format for video and audio that is superior to other formats in the same field."

Blue-Ray DVD - A DVD in High Definition

What is High Definition?

Methods of Communication

Screen based - Anything in High Definition needs to be viewed on a screen.

MMS - Pictures sent and received may be in High Definition, however file sizes will be bigger.

Radio - With better audio quality, radio audio can be much clearer.

Television - With the switch over to digital TV coming very soon, most new TV's support HD, and less people are staying with analogue quality.

WWW - Many people now use HD pictures and videos to post to the internet.

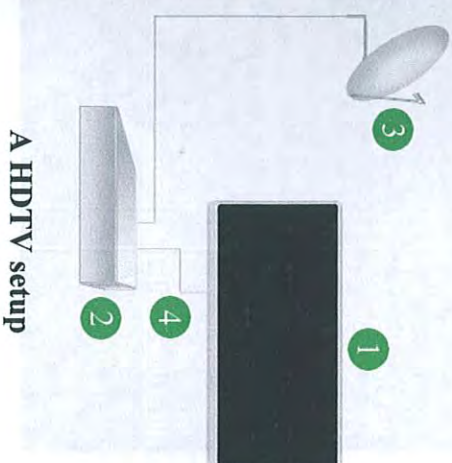
Podcasts - Podcasts can now be filmed in better quality

In order to run a High Definition TV you need the following items as shown by the diagram:

- HD television with a HDMI input
- HD satellite receiver
- Satellite
- HDMI cable

To play a Blue-Ray DVD you need to have:

- HD television with a HDMI input
- Blue-Ray DVD player, or integrated player (e.g. PS3)
- HDMI cable



A HDTV setup



A HDTV

What is a mobile phone and how does it work

Cloud Computing Simple Definition

Mobile Phone - "A electronic device use for telecommunications. This is data like text messages being sent over a cellular network. There are base stations known as cell sites."

A brief history of mobile phone technology

- Zero Generation - A single powerful base station that would cover a wide area. Each telephone would take up a channel.
- First Generation - Used analogue signals
- Second Generation - Switched to digital signals
- Third Generation (2001) - Increased data rates and decreased connection times
- Fourth Generation (2010) - Increased data rates and increased range

Methods of Communication

Screen based - Mobile phones operate by using screen to look at and navigate from.

SMS - Texts can be sent from mobile phones. A phone sends out a signal up to a nearby telephone mast and then this sends the message onto the recipient.

MMS - MMS works in exactly the same way as SMS however, it often requires more data to be sent from the sender to recipient because it includes a picture.

Radio - With internet access on phones it is now easy to get access to radio.

Television - Live television cannot be viewed on a phone because it would not be able to stream data quick enough. However, with the internet websites such as the BBC iPlayer gives you the ability to watch episodes already broadcasted.

Telephone - The main purpose of a mobile phone is to be able to ring another person and have a phone call.

E-mail - With access to the internet you are able to send and receive emails.

WWW - You can get access to the internet on your mobile phone when you are at a free wireless spot or you have paid for internet on your phone. RSS feeds - RSS feeds are incorporated in web pages that you can view with access to the internet.

Blogs - Internet access gives you the ability to view, edit and add posts to your blogs.

Podcasts - Podcasts can be viewed on mobile phones, however the time taken for it to buffer and stream may take some time.

Real time public information systems - With access to the internet you can follow real time public information such as train times or the stock market.

Cloud Computing Simple Definition

Audio / Video Compression - "A way of reducing the quantity of data used to represent video or audio so that the bandwidth required to view it is less. This makes viewing of media quicker"

Types of Audio Compression

- Free lossless audio coded (FLAC)
- Apple lossless
- MPEG-4
- MP3 (smaller file sizes)
- AAC (better quality than MP3)

Types of Video Compression

- MPEG-1 for Video-CD
- MPEG-2 for DVD and Blue-Ray
- MPEG-4 for Blue-Ray and iPod Video

iTunes

iTunes recognises MPEG-4 formats and almost all of the formats above. This is partially why so many people use it to play songs. They also sell videos in MPEG-4 format and also offer free conversion to the AAC format.



How does audio/video compression work?

Methods of Communication

Screen based - When compressed the audio or video is always viewed on a screen or sounds are produced from speakers.

Television - When TV crews record certain TV, the quality of their cameras are high. However if you have a TV which does not support this resolution then the Audio/Video will have to be compressed or scaled down in order for you to view it.

Telephone - A modem (modulator/demodulator) compresses audio so that it can be sent along the phone line.

WWW - Audio and Video compression is commonly used for the internet. This is because video audio has been recorded in a high quality. When it comes to upload to the internet the file size would be large. This means that it would take people on the internet a long time in order to load their audio and video. So, to fix this people compress their audio and video so that the file size is decreased. This then also decreases the time to load the page. However, to decrease the file size, often quality is reduced.

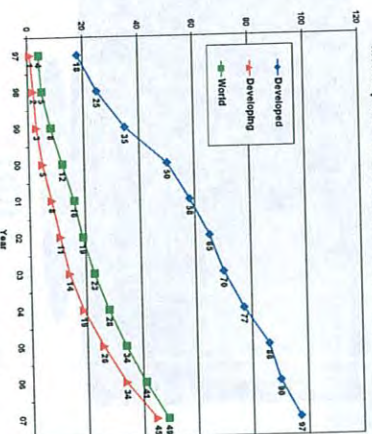
Podcasts - Podcasts used audio/video. It runs along the same ideas as with the WWW.

HD cameras

HD cameras are often used and need to be compressed in order to be viewed on the internet or used for TV broadcasting. This means that the file sizes are decreased largely and often quality is lost.



Mobile phone subscribers per 100 inhabitants 1997-2007



This graph shows the increased popularity of phones from 1997 to 2007 in developing and developed countries.

The Internet

WAP

What is the Internet and how does it work?

Cloud Computing Simple Definition

The Internet - "Global system of networks that use TCP/IP. It is a system of millions of interconnected networks and makes a wide range of information available."

Services available from the internet:

- **Information** - you can use search engines like Google to find almost anything nowadays. Also many browsers are available in order to browse the internet quickly.
- **Communication** - email is now available with the internet. You can also use the internet in order to have a phone call over the internet. This uses VoIP technology.
- **Data transfer** - There are now many ways in order to transfer data. You can use attachments on emails to send files. This also includes streaming media from a server.
- **Social** - With the rise of good communication technology, many social networking websites are now available: Facebook, Twitter and MSN are just a few of these and dominate the market. With the ability to talk to your friends using the internet allows you to keep in touch even when you are a long distance apart.



In order to connect to the internet you need to have an Ethernet cable that can be put into your computer. You also need a phone line and a network card. A wireless router can be used if you want to be able to use in anywhere in your house.

FX 2

10

Methods of Communication

Paper based - With the internet, anything that you can view can also be printed if you are on a PC with a printer.

Screen based - The internet is always viewed on an electric device making it a screen based.

SMS - You can use servers to send and receive text messages using the internet.

MMS - You can also send MMS messages using servers to send and receive pictures etc.

Radio - With the ability to stream data to your computer, you can now listen to the radio live on your computer.

Television - By streaming data to your computer from a server from BBC iPlayer you are able to watch the latest episodes of your favourite programmes.

Telephone - You can use programs such as Skype that support VoIP meaning that you can have phone calls using your internet connection.

E-mail - You can send and receive emails using a server. You must have an email client in order to view your emails, either as a program or as a client in the internet window.

RSS feeds - Really Simple Syndication is a way of having an area of the web page where it can be updated without having to refresh the page. This means that readers can be up to date with all kinds of information.

Blogs - Blogs can be used on the internet such as Wordpress.

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Why use a WAP browser on a handheld device?:

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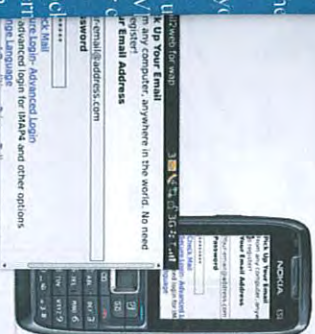
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spelling mistake



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11

Evaluation of Technologies

Paper based

Good

If you can print out information because this is good and allows you to keep hard copies of information.

Bad

Attaching a printer may be costly and may harm the environment due to the ink.

Screen based

Good

Anything that is screen based can often be stored electronically. This means that it is much easier to recover if lost in comparison to that of paper based information.

Bad

Screens can hurt your eyes if you use them too long. Also if there is not sufficient backlighting you can also damage your eyes.

SMS

Good

Using SMS technologies we can contact each other easily and for small fees.

Bad

Texting can lead to arthritis and also it may be distracting, meaning less productivity.

MMS

Good

MMS allows you to send larger files such as pictures to each other. This makes good communication.

Bad

You can get easily distracted and this costs more than texts.

Radio

Good

Easy to keep up to date with the latest information and news.

Bad

Can distract people from work and may decrease productivity.

Television

Good

Documentaries can educate people and the ability to have news on the TV allows people to find out more about what is going on in the world.

Bad

Too much TV can be bad for you due to the use of a screen. Also TV can influence children and show bad role models.

Telephone

Good

Allows fluent communication in anywhere that has a signal. For voIP - a free way in order to communicate.

Bad - Programs such as Skype use voIP to send your voice/video over the internet to a friend for free as if you were on the phone.

E-mail

Good

Easy and quick way to communicate.

Bad

Time consuming and spam is now sent around as well as viruses.

WWW

Good

Very good source for information and just about anything.

Bad

Trojans and disturbing content can be found on the internet.

RSS feeds

Good

Constant updates without a page reload allows you to be up to date.

Bad

Takes time to keep posting updates.

Blogs

Good

Allows you to document something or express your opinions.

Bad

Susceptible to identity theft, if you have information on show.

Podcasts

Good

Easy to download and quick to play.

Bad

iTunes dominate podcasts and take 30% of the revenue from iTunes.

Virtual learning environments

Good

Easy and quick way to learn things from long distance.

Bad

Susceptible to hackers and people trying to find out information.

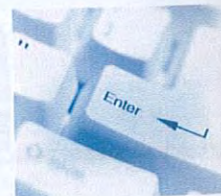
Real time public information systems

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Up to date information and available at all times.

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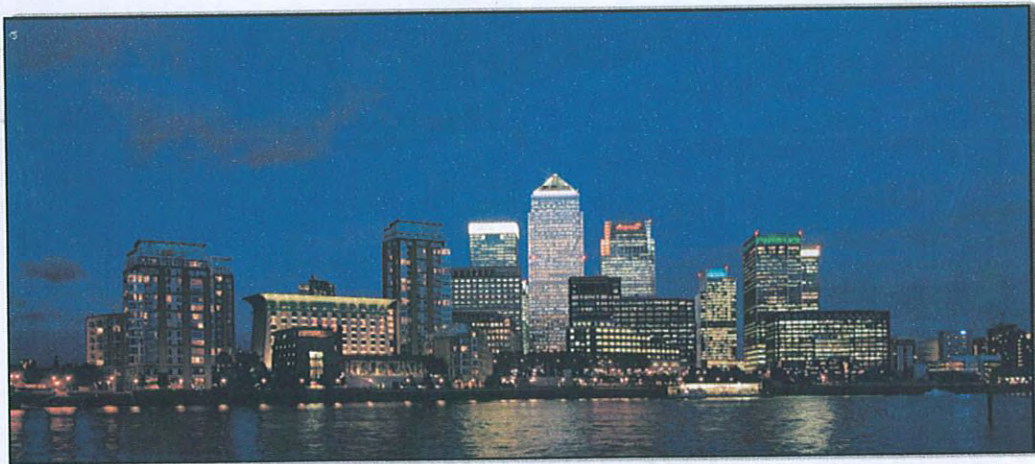
When they break down, it creates chaos and panic.



CLOUD
COMPUTING

Employee Handbook

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CLOUD
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121

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| | |
|----|-------------------------|
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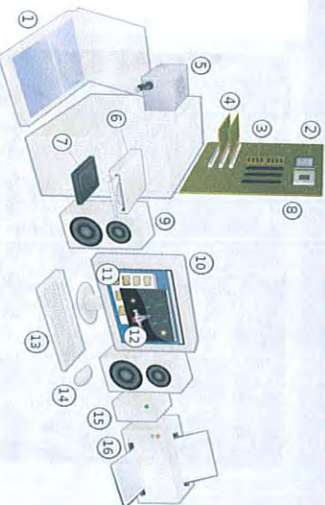


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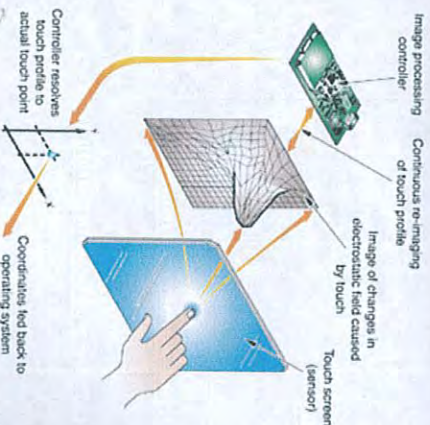
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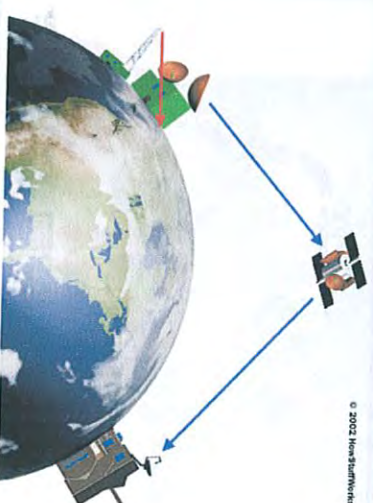
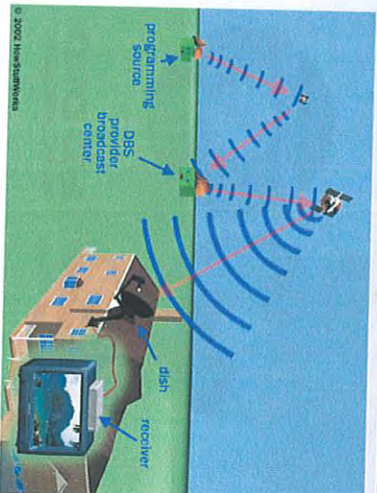
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What is a DVD and what types are available?

Cloud Computing Simple Definition

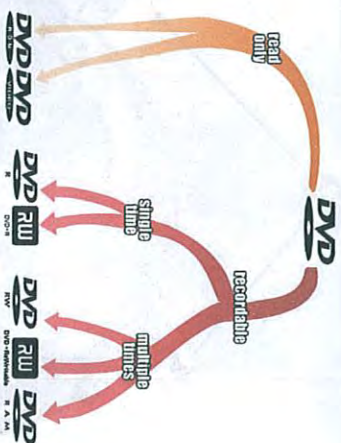
DVD - "A Digital Versatile Disk is an optical storage media format. It is mainly used for audio and data storage. Upon comparison to a Compact Disk (CD) it can store much more data."

There are many types of DVD available:

- DVD-ROM is read only memory which means that it cannot be written on
- DVD-R and DVD+R means that you can record on the DVD once and never again
- DVD-RW means that the DVD is rewritable and can be written on time and time again
- DVD-RAM can record and erase data many times

Layers

Manufacturers can increase the amount of data that can be stored on the disks by two ways. They can either make the DVD double sided or have a double layer, both doubles the amount of data that can be stored on the DVD.



Methods of Communication

Screen based - DVD's can be played on a TV using a DVD player or on a PC which makes it screen based.

Competition before DVD's were invented

- Multimedia Compact Disc (MMC/D)
- Super Density (SD)
- Both competing for the market
- Due to history of the video tape format war with VHS in years gone by they created the Technical Working Group (TWG)
- They then decided to make both creators of MMC/D and SD combine to form a universal format - DVD

Now

Recently there was a DVD battle between Blue-Ray disks and HD DVD. Blue Ray disks have came out and HD DVD's are not used any more.



Cloud Computing Simple Definition

High Definition (HD) - "A higher resolution format for video and audio that is superior to other formats in the same field."

Blue-Ray DVD - A DVD in High Definition

In order to run a High Definition TV you need the following items as shown by the diagram:

1. HD television with a HDMI input
2. HD satellite receiver
3. Satellite
4. HDMI cable

To play a Blue-Ray DVD you need to have:

1. HD television with a HDMI input
2. Blue-Ray DVD player, or integrated player (e.g. PS3)
3. HDMI cable

Methods of Communication

Screen based - Anything in High Definition needs to be viewed on a screen.

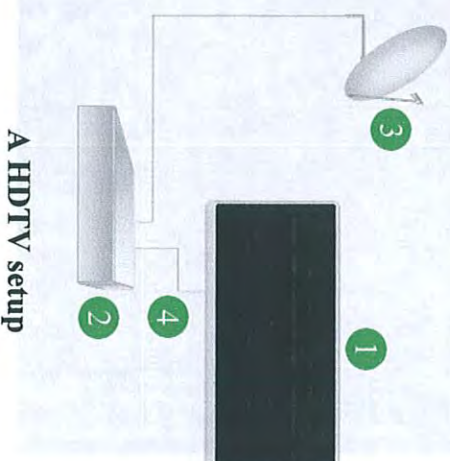
MMS - Pictures sent and received may be in High Definition, however file sizes will be bigger.

Radio - With better audio quality, radio audio can be much clearer.

Television - With the switch over to digital TV coming very soon, most new TV's support HD and less people are staying with analogue quality.

WWW - Many people now use HD pictures and videos to post to the internet.

Podcasts - Podcasts can now be filmed in better quality.



What is a mobile phone and how does it work?

Cloud Computing Simple Definition

Mobile Phone - "A electronic device use for telecommunications. This is data like text messages being sent over a cellular network. There are base stations known as cell sites."

A brief history of mobile phone technology

- Zero Generation - A single powerful base station that would cover a wide area. Each telephone would take up a channel.
- First Generation - Used analogue signals
- Second Generation - Switched to digital signals
- Third Generation (2001) - Increased data rates and decreased connection times
- Fourth Generation (2010) - Increased data rates and increased range

Methods of Communication

Screen based - Mobile phones operate by using a screen to look at and navigate from.

SMS - Texts can be sent from mobile phones. The phone sends out a signal up to a nearby telephone mast and then this sends the message onto the recipient.

MMS - MMS works in exactly the same way as SMS however, it often requires more data to be sent from the sender to recipient because it includes a picture.

Radio - With internet access on phones it is now easy to get access to radio.

Television - Live television cannot be viewed on a phone because it would not be able to stream the data quick enough. However, with the internet websites such as the BBC iPlayer gives you the ability to watch episodes already broadcasted.

Telephone - The main purpose of a mobile phone is to be able to ring another person and have a phone call.

E-mail - With access to the internet you are able to send and receive emails.

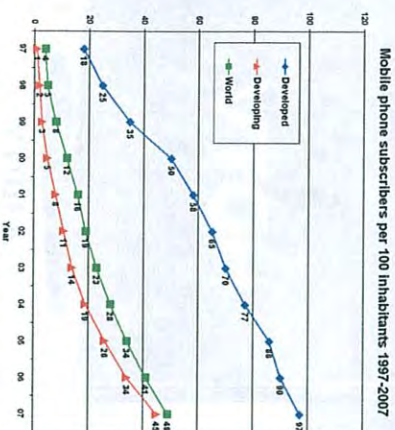
WWW - You can get access to the internet on your mobile phone when you are at a free wireless spot or you have paid for internet on your phone.

RSS feeds - RSS feeds are incorporated in web pages that you can view with access to the internet.

Blogs - Internet access gives you the ability to view, edit and add posts to your blogs.

Podcasts - Podcasts can be viewed on mobile phones, however the time taken for it to buffer and stream may take some time.

Real time public information systems - With access to the internet you can follow real time public information such as train times or the stock market.



This graph shows the increased popularity of phones from 1997 to 2007 in developing and developed countries.

How does audio/video compression work?

Cloud Computing Simple Definition

Audio / Video Compression - "A way of reducing the quantity of data used to represent video or audio so that the bandwidth required to view it is less. This makes viewing of media quicker"

Types of Audio Compression

- Free lossless audio coded (FLAC)
- Apple lossless
- MPEG-4
- MP3 (smaller file sizes)
- AAC (better quality than MP3)

Types of Video Compression

- MPEG-1 for Video-CD
- MPEG-2 for DVD and Blue-Ray
- MPEG-4 for Blue-Ray and iPod Video

Methods of Communication

Screen based - When compressed the audio or video is always viewed on a screen or sounds are produced from speakers.

Television - When TV crews record certain TV, the quality of their cameras are high. However if you have a TV which does not support this resolution then the Audio/Video will have to be compressed or scaled down in order for you to view it.

Telephone - A modem (modulator/demodulator) compresses audio so that it can be sent along the phone line.

WWW - Audio and Video compression is commonly used for the internet. This is because video audio has been recorded in a high quality. When it comes to upload to the internet the file size would be large. This means that it would take people on the internet a long time in order to load their audio and video. So, to fix this people compress their audio and video so that the file size is decreased. This then also decreases the time to load the page. However, to decrease the file size, often quality is reduced.

Podcasts - Podcasts used audio/video. It runs along the same ideas as with the WWW.

HD cameras

HD cameras are often used and need to be compressed in order to be viewed on the internet or used for TV broadcasting. This means that the file sizes are decreased largely and often quality is lost.



iTunes

iTunes recognises MPEG-4 formats and almost all of the formats above. This is partially why so many people use it to play songs. They also sell videos in MPEG-4 format and also offer free conversion to the AAC format.



The Internet

What is the Internet and how does it work?

Cloud Computing Simple Definition

The Internet - "Global system of networks that use TCP/IP. It is a system of millions of interconnected networks and makes a wide range of information available."

Services available from the internet:

- **Information** - you can use search engines like Google to find almost anything nowadays. Also many browsers are available in order to browse the internet quickly.
- **Communication** - email is now available with the internet. You can also use the internet in order to have a phone call over the internet. This uses VoIP technology.
- **Data transfer** - There are now many ways in order to transfer data. You can use attachments on emails to send files. This also includes streaming media from a server.
- **Social** - With the rise of good communication technology, many social networking websites are now available. Facebook, Twitter and MSN are just a few of these and dominate the market. With the ability to talk to your friends using the internet allows you to keep in touch even when you are a long distance apart.



In order to connect to the internet you need to have an Ethernet cable that can be put into your computer. You also need a phone line and a network card. A wireless router can be used if you want to be able to use it anywhere in your house.

Methods of Communication

Paper based - With the internet, anything that you can view can also be printed if you are on a PC with a printer.

Screen based - The internet is always viewed on an electric device making it a screen based.

SMS - You can use servers to send and receive text messages using the internet.

MMS - You can also send MMS messages using servers to send and receive pictures etc.

Radio - With the ability to stream data to your computer, you can now listen to the radio live on your computer.

Television - By streaming data to your computer from a server from BBC iPlayer you are able to watch the latest episodes of your favourite programmes.

Telephone - You can use programs such as Skype that support VoIP meaning that you can have phone calls using your internet connection.

E-mail - You can send and receive emails using a server. You must have an email client in order to view your emails, either as a program or as a client in the internet window.

RSS feeds - Really Simple Syndication is a way of having an area of the web page where it can be updated without having to refresh the page. This means that readers can be up to date with all kinds of information.

Blogs - Blogs can be used on the internet such as Wordpress.

Podcasts - With iTunes, podcasts have become popular. These videos can be played on your computer by streaming data from a server to your computer.

Virtual learning environments - Pupils can use the internet to connect to the server with the VLE on it. This also means that the pupil and tutor can be connected.

Real time public information systems - Stock prices and bus times can be found on the internet which are bits of real time public information.

WAP

What is WAP?

Cloud Computing Simple Definition

Personal Computer - "Wireless Application Protocol is a application that is made for use on handheld devices. It fits on a small screen and is used to access services or information."

Why use a WAP browser on a handheld device?:

- Using an application means that it can view websites designed to be for WAP use
- This means that pages will often take less time to load (less data)
- On phones there may not be any other way to connect to the internet
- It is made to be simpler than a normal browser. This makes it easier to use

What can you do with WAP?:

- Email
- Go on web pages designed for use with WAP
- Check on status's of train times, sport and news

Methods of Communication

Screen based - WAP uses a handheld device so therefore it is screen based.

Telephone - WAP is used on phones because it is a handheld device and can run applications.

E-mail - WAP can be used in order to go onto the internet to view your emails when using the internet.

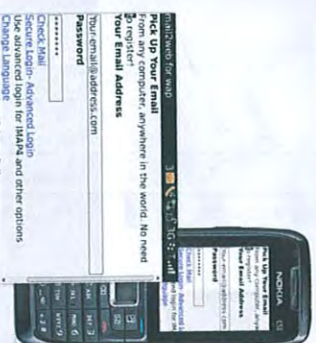
WWW - WAP allows the user access to the internet providing that there is a wireless connection available.

RSS feeds - With access to the internet you can have RSS feeds. Also you can use RSS feeds to view real time public information such as sports results or train times. (More examples are under real time public information systems)

Blogs - With access to the internet you can blog. **Podcasts** - Podcasts can be viewed on the small handheld screen by using WAP.

Real time public information systems - WAP can be used to look up real time public information. This includes a variety of things including:

- Sports results
- Train times
- Flight check in
- Weather conditions



Both of these pictures show mobile phones and the interface when on the internet using WAP.



Evaluation of Technologies

Paper based

Good

If you can print out information because this is good and allows you to keep hard copies of information.

Bad

Attaching a printer may be costly and may harm the environment due to the ink.

Screen based

Good

Anything that is screen based can often be stored electronically. This means that it is much easier to recover if lost in comparison to that of paper based information.

Bad

Screens can hurt your eyes if you use them too long. Also if there is not sufficient backlighting you can also damage your eyes.

SMS

Good

Using SMS technologies we can contact each other easily and for small fees.

Bad

Texting can lead to arthritis and also it may be distracting, meaning less productivity.

MMS

Good

MMS allows you to send larger files such as pictures to each other. This makes good communication.

Bad

You can get easily distracted and this costs more than texts.

Radio

Good

Easy to keep up to date with the latest information and news.

Bad

Can distract people from work and may decrease productivity.

Television

Good

Documentaries can educate people and the ability to have news on the TV allows people to find out more about what is going on in the world.

Bad

Too much TV can be bad for you due to the use of a screen. Also TV can influence children and show bad role models.

Telephone

Good

Allows fluent communication in anywhere that has a signal. For voIP - a free way in order to communicate.

Bad - Programs such as Skype use voIP to send your voice/video over the internet to a friend for free as if you were on the phone.

E-mail

Good

Easy and quick way to communicate.

Bad

Time consuming and spam is now sent around as well as viruses.

WWW

Good

Very good source for information and just about anything.

Bad

Trojans and disturbing content can be found on the internet.

RSS feeds

Good

Constant updates without a page reload allows you to be up to date.

Bad

Takes time to keep posting updates.

Blogs

Good

Allows you to document something or express your opinions.

Bad

Susceptible to identity theft, if you have information on show.

Podcasts

Good

Easy to download and quick to play.

Bad

iTunes dominate podcasts and take 30% of the revenue from iTunes.

Virtual learning environments

Good

Easy and quick way to learn things from long distance.

Bad

Susceptible to hackers and people trying to find out information.

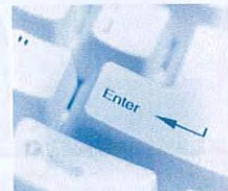
Real time public information systems

Good

Up to date information and available at all times.

Bad

When they break down, it creates chaos and panic.



CLOUD
COMPUTING