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## Guide to Buying Your Laptop or PC



## **Introduction.**

There are many complicated terms to get your head around when it comes to looking for a new laptop, for instance Memory in RAM, HDD Capacity, Processor Type or Speed etc. Hopefully this booklet will clear a few of them up for you.

As most people know there are a variety of computer types such as Notebooks (also known as Laptops), Netbooks, Tablets, All in One PC's and Desktop PC's, which doesn't help you in your search for a new computer, unless you know exactly what you are looking for.

## **Notebooks.**

Notebooks, more commonly known as Laptops, are the most popular type of computer, that we come across anyway. Depending upon the specification they can do all the same as a desktop PC however you can carry it around with you where ever you go, so whether that is just going sitting in your front room or taking it round to a friends house, you don't have to stay sat in the same room staring at the same 4 walls for hours on end. Near enough all laptops now-a-days have Wifi built in to them to be able to connect to the internet from anywhere in your home, dependant on your router signal strength. The screen size of a Laptop tends to be around the 15.6" mark, give or take a few inch. Newer models of laptops now also come with HD Ready LCD or LED screens which allow for a better resolution and so a clearer display, so wether you are just searching the web or gaming, images come through crystal clear.



## **Netbooks.**

Netbooks are basically mini-laptops. They often have a lower specification than a laptop, for example, their processor speeds are lower and they have less memory (RAM). Netbooks are alot more convenient for people who are on the move a lot. They are small and compact, usually with a good few hours battery life in them, dependant on the usage and power settings. Netbooks have all the same connections as Laptops i.e, USB drives, LAN ports etc however as they are designed to be compact they do not have an optical drive, however if you needed one you can connect an external one through a USB Port.



## **Tablets.**

Tablets are modern touch screen devices such as the iPad. You can do all the same things as on a normal laptop or PC. Tablets are alot more compact than a Netbook as they are flat and slim so alot easier to carry around when you are on the move. Because Tablets are designed to be compact and easy to carry around you get limited input options and they don't have optical drives.



## **Desktop PC's.**

Desktop PC's are a combination of a PC Tower, Monitor, Keyboard, Mouse and usually a seperate speaker system, unless you have built in speakers on the monitor. Desktop PC's are usually the main computer in a home and are more commonly used in the work place were you are sat at your desk to work and so do not need to carry your work round with you. One major benefit to a desktop PC is that the disc drives and other connections are easy to upgrade.



## **All In One PC's.**

All in One PC's are similar to a desktop PC however you do not require a tower as every thing is built in to the monitor. Keyboard and mouse are seperate and a lot of All In One PC's are also touch screen, so you can type on the screen or select the icon you want rather than playing around with the mouse. The novelty does wear off after a while though.



## Operating System.

All computers have an Operating System. The most common on a home computer like a PC or Laptop is Windows. There are hundreds of other operating systems available for special-purpose applications. The operating system manages computer hardware resources and is a vital component of the system software in a computer. Application programs require an Operating System which are usually separate programs. The main Windows operating Systems at the moment are Windows XP, Windows Vista and Windows 7. Windows 7 is the most recent Operating System developed by Microsoft which I'm sure you will all have seen the adverts for on TV. Each operating System, like Windows 7, will have a few variations i.e. Starter, Home Basic, Home Premium, Professional, Enterprise and Ultimate. Each of these will be tailored for specific needs. Windows Vista was released in 2007, it did improve some features of Windows XP such as fewer system crashes and Windows Vista offered better built-in support options.

Windows 7 is the current Operating System used on the majority of new computers. It was released in 2009 and had many significant improvements on Windows Vista. Windows 7 is advertised as being Microsoft's most advanced Operating System to date. There are 4 versions of Windows 7 available all tailored to specific needs. These are Windows 7 Starter, Home Premium, Professional and Ultimate. Windows 7 was released to replace Windows Vista, it plays on Vista's strengths while improving on its downfalls, it has a modern look and is a lot more user friendly and easy to operate. For in depth detail on any operating system and the different editions available you are better looking on the official Microsoft Website where it will outline what each one can and can't do.

You can get 2 versions of each operating system, a 32-bit or a 64-bit operating system. The terms 32-bit and 64-bit refer to the way a computer's processor handles information. A 64-bit version of Windows handles larger amounts of RAM (Random Access Memory) more effectively than a 32-bit operating system. A 32-bit Operating System can only access a maximum of 3GB RAM whereas a 64-bit Operating System can access more RAM when it is built in to your computer.



Windows Vista™



Windows® 7

## Processor Type.

The processor on a Laptop, PC, Tablet or Netbook in its simplest form is the brain of the unit. It tells your computer what to do and when to do it. It decides which tasks are more important and prioritise them to the computer's needs. There are many different processors available all running at many different speeds. The speed of the processor is measured in MHz (Megahertz). A single MHz is a calculation of 1 million cycles per second, so if your processor is running at 2000MHz, then your computer is running at 2,000,000,000 cycles per second, which in more basic terms is the amount of instructions your computer can carry out. Another abbreviation, which is more commonly used to show the processor speed is GHz (Gigahertz). A single GHz or 1GHz is the same as 1000MHz.



When buying a new computer always look for the fastest Processor you can afford, however you need to also consider your needs, do you really need a top of the range processor. Especially when you consider the difference, for example between a 2.5GHz and 2.8GHz processor, will barely be noticed, while the price difference could be over £100.

There are 2 main competitors of processor types at the moment, the AMD and Intel which both have different sizes and speeds of processor, but in short the more Cores they have and the higher the speed means better and faster for you. Processors now come as Dual Core, Triple Core and Quad Core.

A Dual Core processor is equivalent of running two computers, three computers for a Triple Core and four computers for a Quad Core processor.



Intel Pentium have been known as the best and most expensive of all processors and still remains one of the most popular available. AMD have some very good processors available and can be as high priced as the Intel Pentium processors, it is difficult to say which is the best of the two. Intel Celeron is basically a budget version of the Intel Pentium 4 which is the processor you



will find in most budget computers and so if you don't want to be spending a lot on your computer but need a new computer then this is the processor type you will be looking at getting.

## **HDD.**

The Hard Disk Drive of a computer is the main storage device that permanently stores all the data on the computer and is measured in GB (Gigabytez). If you are going to be saving alot of documents, music, photos etc then you will require a computer with a higher HDD capacity. If you will only be using your laptop for browsing the web, facebook etc you will not require a huge HDD. If you were to run out of storage space on your computer you can purchase external HDD to connect to your computer, usually through a USB port, which makes it easier to transfer your work over to another computer if it was needed.

## **Memory Card Slots.**

A memory card slot is used to connect memory cards such as SD Cards to a computer. This makes it easier to transfer over files or images, for instance if you have taken pictures on your digital camera, rather than connecting the camera through a USB cable, you can simply take the memory card out of your camera and insert it in to your computer to copy the files over, this also works the same for a memory card from a mobile phone. Dependant on the memory card you want to connect you may need an adaptor. For instance many phones use Micro SD cards and to insert them in to your computer you would need a Micro SD to SD adaptor, as pictured above.



## **USB Ports.**

A USB port is used to connect external devices such as a keyboard, mouse, external hard drive etc. There are currently 3 types of USB, 1.0, 2.0 and 3.0. USB 3.0 has just been released. USB 2.0 increased the speed at which data could be transferred however USB 3.0 has a transmission speed which is more than 10 times faster than USB 2.0 meaning that you will begin to see more and more computer with USB 3.0 on them.

## **Optical Drive.**

The optical driver is the disc drive that uses laser light to read or write data to CD, DVD or Blu-ray discs.

## **RAM.**

The RAM (Random Access Memory) of a computer is also measured in GB (Gigabytez). RAM provides space for your computer to read and write data to be accessed by the CPU (Central Processing Unit). Most computers have room to add additional RAM to them. Having more RAM reduces the number of times the CPU has to read data from the Hard Disk which allows your computer to run faster. There are several types of RAM used in computers. Older units used SDR (Single Date Rate) RAM. Most modern day computers use DDR (Double Data Rate), DDR2 or DDR3 RAM. DDR2 is able to achieve faster transfer rates to prevent limitations of your CPU's performance and DDR3 takes this even further. These types of RAM technologies are not interchangeable i.e. One type of RAM will not function if installed with another type and physical differences in the RAM modules prevent them from even being inserted in the same computer. The amount of useable RAM may depend on your operating system. For instance a 32bit Operating System can only access 3GB RAM whereas a 64bit Operating System can access more RAM if it is built in to your computer.

## **Graphics Cards.**

A Graphics Card is responsible for delivering the image you see on your computer display. Its GPU (Graphics Processing Unit) processes the data and changes it into a signal to send to the monitor or display. Graphics Cards come in many varieties with varying features.



## **Screen Types.**

There are a few different screen types on a laptop and computer. First of all you can get different screen resolutions, the majority of monitors or laptop displays now-a-days can display a variety of resolutions which can be changed within the control panel on your computer.

At the moment there are basically 2 types of screen 'finish' on laptop screens and flat panel monitors, Matte or Glossy. Glossy screens have a coating applied to the screen beneath them that is reflective. It helps reduce the black spaces between pixels and improves the contrast and brightness of the image. The only downside of a glossy screen is the reflectiveness which often gets a glare or reflects something in the surrounding environment, as shown in the image below, you can see a clear reflection in the screen on the left. Matte screens are the screens of old however for some people they are more preferable. Newer Matte Screens still offer an excellent contrast ratio, however they still won't display bright images quite like a Glossy screen can do.

You can also get 2 different screen types at the moment, LCD or LED. LED screens still have LCD panels however use LED lighting giving your screen a higher contrast ratio and sharper image. LED screens also use less power which can increase your battery life.



## **HDMI Output.**

A HDMI port on a computer can be used to connect the unit to an external monitor or to your TV and can give the Highest resolution 1920 x 1080p as well as other resolutions, dependant on your monitor and the graphics card in your computer, as some graphics cards can only output a maximum of 720p or 1080i. The resolution of the screen can be changed within the control panel on you computer.



## **VGA Output.**



A VGA output is also used to connect a computer to an external monitor and is more commonly used to connect a PC tower to a monitor. VGA can also transfer a range of screen resolutions however it can not transfer a High Definition Resolution like a HDMI output can. A VGA cable cannot transfer sound like a HDMI cable is capable of doing and so if you have speakers in your monitor you would need an extra cable, usually a 3.5mm jack plug, to get sound.

## **Wireless Compatibility.**

You would struggle to find any modern Laptops, Netbooks or Tablets that don't have Wi-Fi built in. Wi-Fi allows you to connect to a wireless receiver (Router) at home or when in a wireless area such as a Internet Cafe. Once connected you can surf the web and be able to move around freely, so long as you stay in range of the router, rather than having a wired connection keeping you fixed in one place. There are currently two Wi-Fi types available. 802.11G and 802.11N. 802.11N is the newer version and had tweaked current technology to give Wi-Fi more speed and range. 802.11g supports a maximum speed of 56Mbps (mega-bits per second) whereas 802.11n claims speeds of 130-160Mbps, with a maximum of 300Mbps. This is reliant on your router transmitting in full 802.11n mode.



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