

CONSIDERATION TO BE MADE BEFORE BUYING A NEW MICROCOMPUTER OR UPGRADING ONE CURRENTLY IN USE

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Abstract

The personal computer market place is a crowded one. There are many products to choose from. The challenge of selecting a system ideal for each individual's needs could be a confusing one. This confusion sometimes results in people making snap judgment and impulsive decision about what products to buy. The computer technology is still in a very dynamic state, with more powerful, versatile, and compact systems constantly hitting the market place. This article attempts to explore the general considerations and guidelines involved in selecting a personal computer. In a situation in which reselling a product after purchase or even trading-in an undesirable product for a better one is not quite easy, it becomes very crucial to make well informed decision before buying a personal computer so as to get the best possible from the product and ultimately an enhanced utility from it.

Buying a computer can be a confusing experience. With different types of computers, and so much jargon to understand, it's hard to know which computer is right for you. On the personal computer range designed to cater for computer needs of individuals, major product classifications include: desktop, laptop, netbook, notebooks, palmtop (PDA), and tablet PC. The E- reader is also a special purpose device that has an immense application for individual use.

Personal Computer (PC) is a small but powerful computer primarily used in an office or home without the need to connect it to a larger computer. Vicas (2007) cronicled that PCs evolved after the development of the microprocessor in the late 1970s when some computers were built from components or kits. In the early 1980s, the first low-cost, fully assembled units were mass- marketed. A typical PC configuration consists of a video display, keyboard, mouse, logic unit and memory storage device. Most current PCs have more computing power, memory and storage than the large mainframe computers of the 1950s and early 60s. PCs equipped with networking and communications hardware are often used as computer terminals.

General Considerations in Buying a PC

Various schools of taught have put forward different considerations that could assist in making a good decision in buying personal computer. O'Leary and O'Leary (2005) propound the following simple steps:

- What do I need a computer system to do for me at the moment and in another year or two?

Academic Scholarship

- How much money do I have to spend on a computer system?
- What kind of software will best serve my needs

The above questions are informed by several considerations that will help in the final decision of what to go for such as:

- Should one buy an inexpensive system now that can't be upgraded, then sell it later and buy a better one?
- Should one buy at least some of the components of a good system now and upgrade it over the next year or so?
- Should one buy a more expensive state-of-the-art system with the most current versions of hardware and software or can one get along with something simple and cheaper (perhaps second hand) but equally serviceable.

In view of these and some other considerations, one should be guided by knowing just what one needs the PC for and go for a system that is well suited to achieve that. On account of cost and effective system utility, it is not cost and utility effective to go for the most advanced cutting-edge system, powerful enough to hold every conceivable program fast enough to process them at the speed of light but yet system capabilities is very highly mismatched with the needs of the user and as such highly underutilized.

Pros and Cons of Various Classification and Configurations

Laptop, Netbook or Desktop

Probably the first decision you will have to make when buying a computer is whether to get a notebook, a netbook or a desktop machine, all offer their own benefits and drawbacks.

Notebooks

Otherwise known as laptop, a Notebook is a small portable computer that can run on batteries for typically two to three hours. Notebooks are now a serious consideration over desktop PCs.

Pros: Usually lightweight, portable and can run on battery power charged by electricity.

Cons: Hard to upgrade internal hardware, less powerful compared to similarly priced desktops, less hard drive space and generally more expensive.

Netbook

The netbook is a recently invented name for small lightweight, but good value notebooks. They typically have a screen size of around 10 inches or less, relatively low power processors, smaller hard drives than laptops and have no optical disk drive. Some have "solid state" hard drives (like flash memory) that are more robust than traditional

hard drives with lots of moving parts. Other features, such as the ability to connect to a 3G mobile may always be available.

Pros: Lightweight, small and can run on battery power, often for quite a long time.

Cons: Hard to upgrade internal hardware, less powerful than a fully featured laptop/notebook, less hardware space. They sometimes come with older Windows XP operating system to keep things simpler and costs lower. Although with Windows 7 now available on Netbooks it is not an issue anymore, as Windows 7 was engineered with Netbooks in mind.

Desktops

As the name suggests, a desktop is a personal computer that is small enough to fit on or under a desk. They are not usually portable and often consist of a separate desktop monitor and case to house the processor, hard drive and other components. These are usually used for more intensive programs such as the latest games, or serious photo or film editing and you can use them with a big screen or projector.

Pros: Upgradeable, typically more powerful than similarly priced notebooks, better hard drive storage space.

Cons: Not portable and takes up more space than notebooks and netbooks.

Using Your Computer

The next question to consider is what you want your computer to do. Computers vary in price according to power and functionality. What you need the system for will help you decide the one to buy. For example, there is no point spending thousands on a state-of-the-art gaming computer if you only use it for Internet and word processing.

Computer Classification into Different Usage Types

For easier decision on what type of computer to buy, the under listed usage classification are presented. This will guide a potential buyer in the market place in making a choice.

- General light use system for simple tasks, connecting to the Internet and occasional e-mail, basic word processing, etc.
- Entertainment systems used for regular multi-purpose use and for storing music and playing video.
- High performance systems for high-end performance, game playing and other multimedia applications such as graphics design and video editing.
- Ultra mobile system for Internet and e-mail on the go.

Computer Terminology Explained

In any computer environment, there are so many jargons used to communicate ideas more professionally. Whether you choose to buy a laptop or desktop, you will probably encounter the same type of jargons. Here is a guide to some of the key terms:

Processors

The processor or (CPU) is the brain of the machine, controlling all aspects of the computer. Processors are made up of tiny transistors that can process huge number of instructions per second. The speed of a processor is measured in Gigahertz (GHz).

There are two manufacturers of processors- Intel and AMD. Each manufacturer has different processors for laptops and desktops. Basic processors are found in most inexpensive computers and are fine for simple tasks such as word processing and spreadsheets. For more complicated tasks, such as simpler gaming and running multiple applications, intermediate processors offer extra power. For high-end performance, like graphics design and complex video editing, the most powerful processor becomes desirable.

These are “dual core”- basically two processors running together and handling different tasks- or even “quad core” with four processors. Both Pentium and AMD make dual core processors in their power range.

Memory

Memory is temporary storage used by programs and files currently running on computer system. Memory is known as RAM or Random Access Memory, and needs power to be able to store information. So, when a computer is switched off, the information is forgotten about. The hard disk is a storage device that provides permanent storage for programs and files. Memory is measured in megabytes (MB) and Gigabytes (GB). More memory is usually the easiest way of improving performance on a computer without changing the processor. Typically, 2GB is suitable for Vista Premium though better performance is experienced with 3GB or more.

Hard Drive

The hard drive is where you store all your data. It keeps hold of the data when the computer is switched off. Desktop computers generally offer more hard drive space than laptops. The size of your hard drive is important if you want to save lots of music and videos. Laptops typically come with 250GB or more of storage capacity. If you have a desktop with lots of music or media to be stored, then look for 500MG or even 1TB (a Terabyte is 1000MG). It should be remembered that the more data you store on your computer, the more important it is to back it up.

Optical Drives

Optical drives are the tray drives in the front or side of a computer, similar to those found on stereo or DVD player. Drives allow you to load and install software and write to DVD and CDs. They come in many formats:

- CD-ROM - Only reads CDs
- CD-RW - Record and play CDs
- DVD-ROM - Reads CDs and DVDs
- DVD-RW - Records and plays CDs and DVDs
- DVD Dual Layer - Loads double DVD

- BD - Reads Blu-ray disks
- BD-RE - Records and plays Blu-ray disks.

Operating System

An operating system is what allows you to use applications and generally access all the information you have on your computer. By far the most popular operating system is Microsoft Windows, the most recent version being Microsoft Windows 7.

Graphic Cards

Graphic cards enable computer to display graphic information. They can either be integrated or dedicated. Integrated graphics cards share memory with your computer, whereas dedicated graphics cards have their own memory and operate faster and at higher quality. If you are looking for game-play and video playback, look for a computer with a dedicated graphics card.

Security and Safety

It is vital that you take steps to ensure your computer is protected from viruses and other attacks from the Internet. Every computer comes with the 'Windows standard firewall' which should be used in addition to an active antivirus software.

Printers, Monitors and other System Peripherals

There are lots of different pieces of hardware that can be bought. Some of these are very important part of a home computer set-up. A printer allows you to print anything you are working on. A wireless keyboard and mouse can make things a little less clustered on the desk. Scanners make copies of other documents and photos. A new speaker system can boost the sound from your computer.

Monitors

A monitor is a very crucial component needed to set up a desktop system. Flat screen or TFT (Thin-Film Transistor) displays have not completely replaced older CRT (Cathode Ray Tube) displays. The biggest advantage is that flat screens save space and energy. Screens come in different sizes- 15, 17, 19, 21 and bigger, with wide screen versions now becoming more common. Specifications to look out for include refresh rates. These are measured in milliseconds (ms) and determine how quickly a pixel can change from black to white. Another thing to consider is resolution. The higher the resolution, the better the image quality. Finally, consider contrast ratio. A higher contrast ratio means a screen can better differentiate fine colour details. For example, a 500:1 contrast ratio is better than a 150:1 contrast ratio.

Wireless Internet

A wireless network enables a PC to share a broadband Internet connection around the computers within an area. This Internet connection is done without cables. Wireless is also referred to as Wi-Fi.

Conclusion

If all you are interested in today are the basic general purpose application software like word processing, spreadsheet and communication programs, these are available in nearly all micro computers. The main caution is that some more recent versions of application software won't run on older hardware. Sometimes adjustments in the system settings need to be made for older hardware and current software versions to work together. For instance, some versions of processors (eg. Pentium 4) may not display on 15 inch CRT which worked very well with older version system software and processor (eg. Windows 98, etc.) unless there is an adjustment in the systems resolution settings often to the lowest range of 800 by 600 pixels. There is nothing wrong with getting a fairly used system if one can have it thoroughly checked out with the assistance of an experienced professional. Generally it is recommendable to go for recognized and popular brands such as IBM and its compatibles, HP, Compaq, Dell, etc. These brands offer after sales technical service and online system support if needed. They maintain a vast array of accessories needed for possible system upgrading if one desires to do so. Finally, computer hard disks don't last forever, as such it is strongly suggested that one uses an external hard drive to back up vital and irreplaceable data such as private collections of pictures, music, videos, etc. Making a well informed choice of system to buy before committing money is important so as to buy a PC that has features (hard and soft) that are well suited to the needs of the end user.

References

- Ciupta, V.(2007). *Secret guide to computers 360°*. New Delhi: Dreamtech Press Company.
- O'Leary, T.J. & O'Leary, L.I. (2005). *Computing essentials*, complete edition. New York: McGraw-Hill/ Technology Education Publishing Company.
- Wiley, J. (1984). *Computer annuals*. New York: John Willey and Sons Publishers Inc.
- <http://www.direct.tesco.co/buyersguide/computing.aspx>.
- [http://www.google.com/m?client=ms-opera-mini&channel=new&q=Buyers+ guide+for micro computer](http://www.google.com/m?client=ms-opera-mini&channel=new&q=Buyers+guide+for+micro+computer).