Buying a new Computer

Monday, May 19, 2014

PRESENTED BY
Syed A. Rasool
Head of Systems
srasool@nysoclib.org

Overview:

Today computer systems are consumer commodities much like appliances and automobiles. And as with these consumer products, the potential purchaser is faced with a daunting assortment of brands, models, features, etc. Today the computers are faster, smaller, and more powerful than ever before, and they don't cost you an arm and a leg. The price, size, and internal/external specifications are important considerations and many of these choices may have a significant impact on the bottom line. Computer purchase decisions should be based on careful consideration of how both hardware and software will be used to meet your needs. Faced with so many choices, what should you do?

Should you get a Mac or a PC? Laptop or desktop? Specs-wise, what's the difference between an AMD and Intel processor? In this workshop I will suggest a simple strategy to use when planning for the purchase of a computer system.

Physical Specs to consider before buying a computer

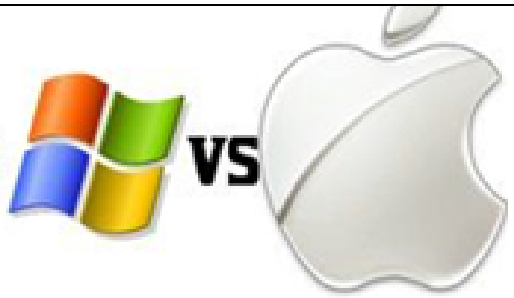
1. Usability:

	It is important that you first consider the tasks that you will be performing on your computer. If you wish to buy a computer for simply browsing the internet and using some online services then it might be better to buy a single-core computer that satisfies your minimum requirements. On the contrary that will be using it for heavy video editing and professional work, then it might be better to buy a system with enhanced multimedia options.

2. Price

	This brings us to our next consideration; price. There might be some very fancy features that you want in your new PC. However, if you don't have the cash for a graphic card with 2GB memory, than you might be better off choosing suitable alternatives. Apple computers are lot more expensive than PCs. The price of your computer goes up as you choose fancy peripheral for your computer.

3. Operating System:

	Users with minimum requirements may be better off buying a Windows Starter or Home Premium version of Windows 7 or Windows 8. For users who wish to take advantage of more enhanced features and require more effective tools such as connecting their PC to a domain are better off buying a Professional or Ultimate Edition. Having said that as the cost of a Windows 7 Ultimate Edition can be as much as $219. A Mac OS is high-quality but relatively expensive. If you are buying a computer for graphics, editing, and music, then I would recommend buying an Apple computer.

4. Size:

	Some people prefer buying larger laptops for a better display screen, whereas other prefers smaller and more portable sizes. If you are working from a fixed place, then size considerations will not matter. For people with weak eye sights a laptop with a larger display screen might be worth the price. Laptops are divided into four general size categories: ultra-portable, thin-and-light, mainstream, and desktop replacement, each with its own pros and cons. If you are getting a desktop computer, size makes less of a difference. Desktops are divided into three categories: Small form factor (SFF) computers, all-in-ones, and standard mid-size towers. If you are looking to buy a desktop, I would recommend a mid-size tower.

5. Brand:

At left are some common computer brands. Some of them offer better warranties, whereas others offer software packages that come with the system. For example, a Dell laptop with the same specifications may be cheaper than a Sony VAIO. Sony provides many of its own software with their laptops saving the users software cost for DVD burning. However, if you already have licensed or freeware software available, then it might be better to go for a cheaper brand. Acer for instance is known for its low cost laptops that provide more enhanced specs like hard disk space and RAM as compared to its competitors.

6. Warranty:

Warranty is another important consideration for people when buying a system. An unconditional hardware warranty is essential. Consider getting an extended warranty with your computer as a hedge against future hardware or operating system issues.

Technical Specs to consider before buying a computer

RAM (Read and Write memory) or Main Memory:

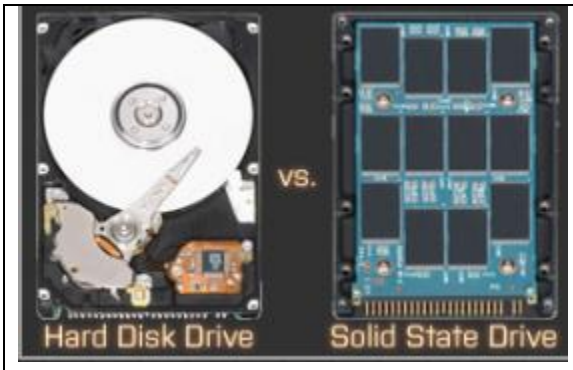
	The absolute minimum amount of RAM that I recommend is equal to ½ of the total RAM capacity. If a computer will hold a maximum of 16GB of RAM, the minimum you should consider 8GB of RAM. If this computer is going to be used for a lot of data processing, more RAM is always better. Moreover, the RAM type may matter more than many people might consider. For example, I would recommend DDR3 RAM types over DDR2 and DDR.

Processor (CPU) Speed:

The Processor (CPU) is one of the most important parts of a computer and can mean the difference between a computer that frequently hangs up and one that runs smoothly. Two processor manufacturers, Intel and AMD dominate the market. AMD is cheaper but Intel is much more reliable. The differences are not significant to most users.

Intel 	**AMD** 
Intel Core i7---up to 3.9GHz	AMD FX---up to 3.8GHz
Intel Core i5---up to 3.8GHz	AMD Athlon---up to 3.2GHz
Intel Core i3---up to 3.6Ghz	AMD Phenom---up to 3GHz
Intel Pentium---up to 2.67GHz	AMD A Series---up to 2.3 GHz

Hard drive Capacity and Speed:



Traditional Hard drive:

Hard drives are divided in to two categories, traditional hard drives and Solid state hard drives. Hard drive considerations might not mean much to a lay user; but the right amount of disk space and disk types are necessary for a professional. A common user may merely have to decide between buying a 500GB or 1TB SATA/SCSI hard drive with an appropriate RPM. The common available RPMs are 5400, 7200, and 10,000. As a rule of thumb, performance is directly proportional to RPM. I always recommend the largest hard drive with the highest RPM available. Traditional hard drives consist of various moving parts making them susceptible to shock and damage.

Solid State Drives (SSD):
Solid State Drives provide substantial benefits over traditional hard drives. SSDs are shock resistance, 100 times faster than traditional hard drives, and consume significantly low power. Apple computer uses SSD.

Conclusion:

Processor:

- The processor should be the fastest available or something within 10% of the fastest processor. For instance, if the fastest processor available is 3.0GHz, you should purchase between 2.7GHz and 3.0GHz.

Memory:

- The absolute minimum amount of RAM that I recommend is equal to ½ of the total RAM an average computer will hold. If a computer will hold a maximum of 16GB of RAM, the minimum you should consider is 8GB of RAM

Hard Disk:

- I recommend the largest hard drive available, with the amount of disk space required to hold the OS, programs and your data. Hard disk clock speed is also very important to manipulate your request faster.
  It is available in 5,400 RPM, 7,200 RPM, and 10,000 RPM.

  If money is not a concern, buy a computer with Solid State drives.