Apple Vs. The World: A Comparison Of Pc?S And Apple Computers Essay, Research Paper

INTRODUCTION

This article will evaluate the practicality of several PCs vs. Apple Macs for an incoming college freshman. The ever-changing computer world is a maze of options and capabilities. Within this ever-changing world lie to very different elements; the PC and the Mac are two very different computers. Both computers have their own unique qualities, but also have their own flaws too. Hardware, operating systems, and affordability will be compared.

CONCLUSIONS

1. For a college freshman entering his first term, the more affordable and obvious choice would be a PC.

2. Apple is not as compatible with as much hardware or software.

3. PC?s offer more choices in operating systems as well as choices in hardware, software, game controllers and other peripherals.

4. Unless you are working on video or picture editing and need really fast results, the PC is by far a better choice.

RECOMENDATIONS

1. Consult a person that has owned an Mac or other Apple computers to determine if they are happy with their decision.

2. Try an Apple and a PC on your own to determine which is right for you.

3. Determine what exactly you will be using your computer for and what types of software you will be using.

4. Do your own calculations on prices and features before going to a vendor.

FINDINGS

Hardware

Taking a look at the external features of a computer you see a plastic or steel box with a plastic faceplate housing the CD-ROM, disk drives, expansion slots and the inside circuitry. The inside of a computer consists of a motherboard, with different slots to plug different types of ?cards,? a processor, that runs all the calculations, the different ports that connect other hardware, such as the mouse and keyboard, and the many other circuits and objects that appear on the board it?s self. The ?cards? each have their own distinct function such as sound, video, network, modem and RAM. Every computer needs each one of the stated to run correctly.

The motherboard is the base of any system whether it is an Apple or PC. The motherboard is the base with the connections to all the necessary components. All motherboards are relatively the same when it comes down to an average PC in a home or small business environment. Motherboards begin to get distinctive when one wants to create a mainframe or server. Motherboards normally come standard with 5 PCI slots, possibly 1 or 2 ISA slots, and between 3 and 4 memory slots. The motherboard also has a spot for the processor and a way to attach it to a casing. A motherboard is pictured below.

The Processor is probably the most talked about piece of hardware within the computer industry. The processor runs all the calculations and processes all the entered data by the user. The most common types of processors out for a PC are the Pentium series distributed by Intel, and the K and Atholon line processors distributed by KMD. Both companies have released processors that are very similar in speed and performance but, for the purpose of this article, it is not necessary to compare the two companies products. Apple computers use a different type of processor called the G4. The G4 is said to run extremely fast and when put up against the Pentium 3 is said to be much faster in its calculations and data processing. The G4 runs faster than the Pentium 3 by being able to process data at a higher rate; the G4 can process data in 128 bit chunks compared to 32 or 64 bit chunks that the Pentium 3 and other processors handle data at. A Pentium 3 processor is pictured below with the G4 processor next to it.

RAM, or random access memory, acts as a holding pen for files and programs that are currently running on your desktop . It is common within the industry to say ?more is better? when it comes to RAM, this is because the more RAM you have the more able you will be to access larger programs and files. On top of accessing capabilities, the more Ram your computer has, the faster it will complete the tasks you are running. There are several different types of RAM including EDO RAM, SDRAM, DRAM, BEDO RAM, and SRAM. Each type has its own specific purposes, pros and cons, but this report will not go into each individually. RAM as a whole is a very important part of any PC. Three different types, RAM, EDO RAM and SDRAM, of RAM are pictured below.

Sound is considered a very important aspect to a computer. Both PCs and iMacs offer extremely good sound options. Hardware by numerous companies is offered to PC users world wide while only Apple products are supported by iMacs?.

When it comes to top of the line visuals, it is race to a virtual finish line of infinity. In the world of video both PCs and iMacs have their pros and cons. In the ever-changing world of PCs video cards are a must! The visual environment is ever changing and has unlimited possibilities. For instance, the computer I bought has a very high-end video card, the Nvidia Geforce 256. This card has great graphics as well a decent price tag, approximately $150. This may seem like a large sum for a video cards but personal research at a local best buy shows price ranges from just under $100 all the way up to the brand new Prophet 2 Geforce 2 video card at a whopping $450.

The CD-ROM and disk drive are two other very popular, and usually standard, pieces of hardware. The CD-ROM is a unit used to read data CD?s and/or play music CD?s. They range in speeds from dual speed to 56x; this is how fast they read a CD. Many manufacturers make CD-ROMs. CD-ROMs also range in price; this normally depends on the manufacturer and speed of the unit. The disk drive is normally a three and one-half inch bay at the front of a computer. The other style, that has become obsolete, is a five and one-half inch bay. These bays are used to transfer information on to floppy disks, the industry standard name. The three and one-half inch disks only hold about 1.5 MB of information. There are also specialty drives such as the Zip Drive, Jaz Drive, or Super Disk that can hold up to five-hundred times more information on one disk. Though they hold more, the specialty drives are a little bit bigger in size but will fit into the same space as the floppy disk drive would.

The last pieces of hard ware are the peripherals. These are your mouse, keyboard, game controllers such as joysticks and joypads, speakers and monitors, printers, microphones and all other products that plug into the CPU it self. These range in a variety of styles, colors, shapes, sizes and designs. The mouse and keyboard are almost always standard, and the monitor is usually standard but all products can be upgraded or downgraded to the consumers liking.

Comparison

Both PC?s and iMacs have the same basic components (motherboard, sound and video cards, Ram, CD-ROM, Floppy, etc.). The iMac, as well as all other Apple computers does not have compatibility with video cards made by all manufacturers; Apple computers only have a limited selection of video cards. Most specialty disk drives are also not compatible with Apple computers. Just about all other components are compatible otherwise.

One last, but very disputed, difference separating Apple and PC hard ware is the processor. Apple has a super advanced processor that is far superior to any AMD or Pentium processor. Though hard to believe, Apple has developed a technology that surpasses that of their PC cousins. You are probably wondering what exactly is so advanced about the G4 processor. What the G4 processor does is compute information faster and more efficiently than a Pentium does. A visual example below demonstrates.

The G4, or Velocity Engine, processes information in 128 bit ?chunks,? while the Pentium processes information in 32 or 64 bit ?chunks?, thus the G4 is faster in it?s calculations than the Pentium. The G4 is still in its early years and the fastest processor right now is only 500 MHz , a shadow of the supreme power of the AMD and Pentium 1.1 GHz processors. Though the G4 may lack the total speed of the AMD or Pentium, it is far superior in its calculation rate. Eventually Pentium, and AMD, should be able to match the superiority of its Apple cousin and compete for fastest processor. (The Power Mac G4, 2000)

Operating Systems

The operating system is the software a person uses to access programs and other pieces of software within a computer. Generally, there are six major operating systems that are used throughout the home computing world. The Microsoft Corp. currently produces four of the five operating systems, or OS?s. The other two operating systems, OS and Linux, are quite different in a few different ways. The operating system is the core software to any computer. With out an operating system, the computer itself would be, in terms of everyday usage, useless.

Windows 95, 98, Windows ME 2000 or Millennium Edition, and Windows NT are all distributed for different purposes. Windows 95, 98 and ME are used both in the workplace and at home for personal use; the edition of Windows really just depends if the consumer has upgraded to the next available product or not. Windows NT is used for running a network with one or several main servers and a numerous amount of client computers that connect through special network cables and network cards (See Hardware). Generally speaking, there is not a lot that separates the different Windows operating systems. Built off the Windows NT, operating system core, Windows ME is said to be more reliable, manageable, and performs better than that of its predecessors. Windows 95, 98 and 2000 all have the same recognizable user interface, or desktop, and all run very similar. Windows NT on the other hand runs different because NT?s main purpose is to be used over a network. The inner specs of the Windows operating systems are not available and are beyond the understanding of myself.

Linux is an operating system that is not like any other. Linux is an operating system that was derived from a more advanced business operating system called UNIX. A man named Linus Torvalds, a Finish student who was doing personal research on operating systems, created Linux and something that is called Open Source code distribution. Open Source means that the source code or code used in a software-coding program to create Linux is readily available and legal for you to add on to and submit. Another oddity of Linux is that it does not have just one manufacturer. Numerous companies including Red Hat, Mandrake, Suse, Corel Linux, Slackware, and Storm have distributed Linux. According to www.Linux.com there are just fewer than twenty different releases of Linux by just as many companies.

Linux has a very similar look to Windows but is more advanced with a system command window and a desktop that is fully customizable with many different looks. Unfortunately, Linux does not have the support of software developers just yet. The lack of software is one of the main reasons Linux hasn?t exploded onto the OS market. Linux is capable of many different functions including being used in place of a Windows NT server with the appropriate software, used as a high end computer programming tool, and/or can be scaled up to handle heavy computing loads of many scientific and engineering programs.

The last operating system that will be discussed is the Apple operating system known as OS. OS has the same type of source code of that of Linux; Apple has made the OS source code available through Open Source code distribution. OS is similar to that of its PC cousin?s operating systems by having a similar user interface as that of Windows and Linux, but with some noticeable differences. OS has a similar programs tray like that of windows only it is more colorful and bright. OS is said to be very user friendly and does not belittle even the most advanced users. OS was created to be a user a strong operating system that can second as a graphical design and editing tool.

OS is constructed in a building block type manor. The base of the building block is the core of the operating system, which is called Darwin. Apple decided to call it Darwin because they describe Darwin as being the next evolution in operation systems. Darwin?s main function is to run the computer and manage the memory and programs efficiently. The next step up from Darwin is the graphical standards for Mac; Quartz, two dimensional rendering software, OpenGL , an industry standard in three dimensional solid or line modeling, and QuickTime, Apple?s own digital video rendering software. The next step up in the tower is Classic, Carbon and Cocoa. To put it quite simply, Classic is for the original Mac users who are not ready to move on, Carbon is a simpler but more crash resistant environment than that of Classic, and Cocoa is a high end computer programming interface for those interested in writing programs.

Comparison

The lines of operating system superiority are very blurry. Each operating system has it?s own distinct advantages and disadvantages. OS for example is a beautifully crafted system that does not support a great deal of popular software and hardware. Linux is the same way, but runs on a PC and does support the hardware. Windows on the other hand tends to crash quite a bit while running most anything without hardware or software conflictions. OS does, however, have a very advanced memory allocation system, something Windows has not fully mastered, although Linux has. Windows and Linux, on the other hand, supports 3D hardware support in advanced gaming and CAD called Direct3D, OS does not. Linux is constantly being updated and changed because of its Open Source code distribution, something Apple is trying, but Microsoft is still skeptical to do.

Affordability and Cost

When purchasing a computer, the first thing the consumer usually looks for is a brand name. For reference, Dell Computer Corporation provided all prices and products for the PCs. Apple, of course, provided all their own product prices and options. Because Apple has two models for there computers, we started with the smaller, low-end fanless, computer called the G4 Cube. Going to the Apple site I built a G4 Cube with these components.

? 450MHz G4 Processor

? 20 Gigabyte Hard Drive

? RAGE 128 Pro card ? 16MB SDRAM (video card)

? DVD-ROM

? 128MB SDRAM (RAM)

? 56k Modem

? Ethernet card

? 17? Monitor (extra)

? 3yr Warranty (extra)

The price of the little eight-inch G4 Cube is $2697.00.

A comparable Dell computer, the Dell Dimension L was created as a comparison.

? 566MHz Pentium Celeron Processor

? 20 Gigabyte Hard Drive

? Intel AGP Graphics card

? 12x DVD-ROM

? 128MB SDRAM

? 56k Modem

? Ethernet card

? 15?monitor (standard)

? 3yr Warranty

The price of the Dell Dimension L was only $1498.00.

Next I created a mid-grade Apple Power Mac G4.

? 400MHz G4 Processor

? 20 Gigabyte Hard Drive

? RAGE 128 Pro card ? 16 MB SDRAM

? DVD-ROM

? 256MB SDRAM (RAM)

? 56k Modem

? Ethernet card

? 17? Monitor (extra)

? 3yr Warranty (extra)

The price of the Power Mac was $2947.00.

To compare I created another Dell Dimension L.

? 566MHz Pentium Celeron Processor

? 20 Gigabyte Hard Drive

? Intel AGP Graphics card

? 12x DVD-ROM

? 256MB SDRAM

? 56k Modem

? Ethernet card

? 15?monitor (standard)

? 3yr Warranty

The price of the Dimension L was $1698.00.

For the high-end model I choose another Power Mac, this time with dual 500MHz processors.

? Dual 500MHz G4 Processor

? 30 Gigabyte Hard Drive

? RAGE 128 Pro card ? 16 MB SDRAM

? DVD-ROM

? 256MB SDRAM (RAM)

? 56k Modem

? Ethernet card

? 17? Monitor (extra)

? 3yr Warranty (extra)

The price jumped quite a bit to $3997.00.

In comparison I choose the Dell Dimension XPS B Series.

? 1 Giga Hertz Pentium III Processor

? 45 Gigabyte Hard Drive

? New 64MB Nvidia GeForce 2 GTS with MDK 2 Action Game

? 12x DVD-ROM

? 8x/4x/32x CD-RW

? 256MB SDRAM

? 56k Modem

? Ethernet card

? 19?monitor (standard)

? 3yr Warranty

The price of the Dimension also rose significantly to $3548.00.

Comparison

Over all the Dell PC?s were, by far, less expensive than that of the Apple computers. The Apple computers lacked the addition of the monitor and the warranty, which significantly raised the prices of the computers. When taking into account the speed of the processors, Apple did not lag far behind. When it came to included extras, Dell also exceeded far beyond Apple offering a monitor and warranty. Apple?s overall value is not very evident.

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