**Computer and
Information Technology Paper 3**

Computer Upgrade

C1

Content

INTRODUCTION

The development of Information Technology in recent decades is made in a magical speed. With the new production technology and equipment, the hardware of the computer is now more stable, speedy and cheaper. There is a number of new hardware being introduced to the market each day.

However, it is impossible for us to catch this speed. The constraints are mainly concerned on the capacity of the original computer, skills and, more importantly, money. In order to assure our computer not being outdated from the newly technology so much, we have to upgrade our computer when it is needed. Especially when the existing software cannot support the old system, upgrading must be required.

Therefore, we have to make a good plan in upgrading the computer. We have to make special concern on what to upgrade, how to upgrade, cost-benefit analysis. All of these will be discussed on the later chapters.

The original system
Packard Bell C733TXW

CPU	Intel Pentium III 733MHz
Main Memory	128 MB SDRAM
HardDisk	20 GB IDE ATA-66
ROM Drive	Pioneer DVD ROM DVD-115 (12X)
CD Read Write Drive	GoldStar CD-RW CED-8080B (8x4x32x)
Sound Card	Sigmatel 3D
Fax Modem	56K V.90 w/Voice FaxModem Card
3D Graphics	Intel 3D Direct AGP
I/O Connectivity	1 serial port
	1 printer port
	1 game port
	2 USB port
Network Card	3Com Fast EtherLink XL 10/100Mb TX Ethernet NIC (3C905B-TX) Lan Card
Expansion Slots	2 PCI, 1 ISA
Accessories	NEC 1.44 MB Floppy Drive
	Multimedia Keyboard
	Logitech Optical Mouse (PS/2)
Dimensions	Hitachi CML155X 15' LCD Monitor
Printer	Xerox C8 Color Printer
Scanner	HP C3400 Scanner
Operating System	Windows 98 Second Edition

What and Why to upgrade

As the computer set was bought 2.5 years ago, most of the hardware was outdated. In order to meet the requirement of the newest software, some of the hardware has to be upgraded. For example, American Army (Game) cannot be run as the display requirement cannot be meet. Here are the hardware and the reasons for upgrade:

1. CPU

   The original CPU speed is 733MHz, it is quite slow, when compared with the newest Pentium 4 3.06 GHz. Moreover, the new software and operating system also require a higher speed, e.g. the recommended speed of Battlefield 1942 is 1 GHz.

2. RAM

   The existing RAM is 128 Mb, it is not enough for using some software, e.g. Windows XP, Photoshop, some 3D games. Besides, the number of program that can run simultaneously is limit. The system is quite busy and easily to hanged to cope with the high requirement.

3. Harddisk

   The space of the harddisk is not enough also, it is only 20 GB. However, the newest software, especially game, usually require more than 1 GB, plus other basic software and files, only 7 GB left. Therefore, the capacity of the harddisk have to increase.

4. Display Card

   The display capacity of the system is very low, or it can be regarded as no capacity. The display capacity is only Intel AGP chipset, many new 3D game cannot be run, e.g. Medal of Honor, Battlefield 1942, American Army. Even for the game that can be run, e.g. Grand Theft Auto 3, the graphic is awful. It is a must to install a good quality display card.

5. CD-RW

   For the CD-RW, the speed of writing is quite slow when compared with the newest device, e.g. 40x. It require more than a half hour for writing, it is some kind of wasting of time. So it is better for me to upgrade this also, in order to save time.

Possibility of Upgrade

Due to the outdated of the computer, we have to upgrade some of the hardware. But not all the hardware can be upgraded as I like, because of the capacity of other hardware and software. One can buy the whole set of the system, but it is upgrade, not buy a new one. Therefore, I have to upgrade the hardware which other can cope with, or upgrade some other hardware in order to meet the new requirement.

1. CPU

It is not possible to upgrade the CPU to the newest one due to the motherboard's capacity. Besides, the dual CPU or co-processor is also not possible as the motherboard and operating system did not offer these upgrade function.

In order to upgrade, we can upgrade the CPU to the maximum of the Pentium III. Or we can buy another motherboard.

2. RAM

For the RAM, it is possible for increasing the number of RAM to maximum 512 MB. However, it is only SDRAM, which is going to be outdated. However, it is not possible for the install of Rambus or DDR-RAM.

In order to upgrade, we can only increase the number of RAM or buy another motherboard.

3. Harddisk

For the harddisk, there are two of ways for upgrade. First, I can install a new harddisk, e.g. 80 GB. Second, I can add a plug-in mobile USB harddisk, e.g. 20 GB.

4. Display Card

As I have said before, it is a must to upgrade the display card, i.e. buy a new display card!

The Ideal Configuration

As there are certain types of hardware require a newer motherboard for support, it is better for me to upgrade the motherboard also.

CPU	Intel Pentium 4 Processor 2.4 GHz
Motherboard	2theMax 4PEAE i845PE (4x USB 2.0)
Main Memory	512MB Kingston PC-2700 DDR333 Ram
HardDisk	60GB IBM IC35L060AVV207
CD Read Write Drive	NEC NR9200A 40w12rw40r (40x24x48x)
3D Graphics	64M Creative GeForce 4 MX440-SE DDR
Operating System	Windows XP (Home Edition)

The alternative

For the devices choices for upgrade, there are a numbers of alternative, i.e. use other hardware to replace them.

1. CPU

There are AMD and Intel which produce CPU for home users. In comparing these, AMD is cheaper and more stable. However, I still choose Intel, because most of the hardware and software are ideal for Intel CPU, which will have a better performance.

Although I choose Intel, there are still Intel Pentium and Celeron for me to choose. Celeron is being discarded as its speed is slower.

Therefore, Intel Pentium 4 is my choice. For those above 2.4 GHz, it seems they are too fast which other devices may not support. Besides, the real speed increased is limit. Moreover, they are too expensive. Thus, 2.4GHz is enough.

2. Motherboard

For the motherboard, there are not many alternative for me to choose. As it is a Pentium 4 CPU, the best one is the i845 motherboard, which is recommended by Intel.

3. Main Memory

For the main memory, there are DDR and SDRAM, as said before. However, SDRAM is going to be outdated, so I do not choose to add any more SDRAM.

For the quantity, in fact, there is no need to use up the total 512 Mb, 256 Mb is usually enough. But in order to assure the performance is stable and smooth, 512 Mb is better.

4. HardDisk

For the hard disk, there are 40 GB, 60 GB, 80 GB and 120 GB for me to choose. Although 40 GB is cheaper, but from the trends of the development of software, it is obvious that the memory required is going to be larger, e.g. NBA 2003 requires 1.1 GB. In order to avoid further upgrade later, 60 GB is better.

5. CD Read Write Drive

CD-RW is an essential part of computer now. The writing speed is going to be faster and faster now. 40x can write the disc within 2 minutes, thus, it is a good choice when compared with others.

6. 3D Graphics

Although nVidia Geforce 4 - MX 440 is not the highest-class in the 3D Graphics Card, but it is better than Geforce 2 and cheaper than others.

7. Operating System

For the operating system, Windows XP is the most updated Windows. The stability of it is much better than Windows 98 and ME. When compared to Linux, the GUI is more beautiful and the number to software which support XP is more than Linux. Thus, I choose Windows XP.

Cost Estimation

Here is the cost estimation for the upgrade:

Hardware	Price
Intel Pentium 4 Processor 2.4 GHz	1473
2theMax 4PEAE i845PE	720
512MB Kingston PC-2700 DDR333 Ram	880
60GB IBM IC35L060AVV207	650
NEC NR9200A 40w12rw40r	395
64M Creative GeForce 4 MX440-SE DDR	460
Windows XP (Home Edition)	770 (upgrade version)

Total: $5348

BENEFIT estimation

All the upgrade is aim for raising the performance of the computer. The benefit of this upgrade is also for this.

For the CPU, Motherboard and RAM, their aims is to rise the speed of the computer, the estimated speed is 2 times of the old system.

For the harddisk, it is obvious that the space for storing information is 3 times of the old system and the speed to retrieving and writing information is increased.

For the CD-RW, the speed of writing will be much faster than the old one. The writing time is saved by 12 minutes per disc. It is a great advantage, especially when a number of copies have to produce.

After installing the 3D Graphical Card, all the 3D game can be played. The graphic produced will be much better and faster. The display function will be enhanced.

Lastly, for the operation system, the computer will be more stable and faster after installing Windows XP. Compared with Windows 98 of the old system, the new system's integration will be enhanced by Windows XP and the possibility of errors will be reduced.

Conclusion

After the estimation of the cost and benefit, this ideal upgraded system is a good choice. It is a valued solution to upgrade as the performance will have a great improvement.

I believe the $5348 will be a well-spent and the performance of my computer will give me a nice result.

<u>Log Book</u>

Time	Action
20-12-2002	Start Planning the Project
21-12-2002	Discuss the draft project with my teacher through ICQ
22-12-2002	Set the list of hardware for upgrade Set the ideal configuration Determine the possibility of upgrade
23-12-2002	Discuss the what and why to upgrade and possibility of upgrade with my teacher in school
24-12-2002	Going to the Golden Computer Centre to quote the price of the hardware required by the new system
25-12-2002	Estimate the benefit
26-12-2002	Discuss the cost and benefit with my teacher through ICQ
27-12-2002	Start working on the writing process of the project
28-12-2002	Discuss the whole project with my teacher through e-mail and ICQ
29-12-2002	Writing the Conclusion Printing out the hardcopy of the project Finished the project

QUOTATION

No.:

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To: Attn:
ADD:

Tel: From:
Fax:

Thank you for your enquiry, we are please to quote you as follow:

Item	Description	Qty	Unit Price	Amount
1	Intel Pentium 4 2.4B GHz(S478,512K,533)CPU[w]	1	1,473	1,473.00
2	512MB Kingston PC-2700 DDR333 Ram (W)****	1	880	880.00
3	60GB IBM IC35L060AVV207 單碟60G HD (W)	1	650	650.00
4	NEC NR9200A 40w12rw40r w/JustLink Box(W)	1	395	395.00
5	64M Creative G.F.4 MX440-SE DDR w/TVo (W)	1	460	460.00
6	2theMax 4PEAE i845PE 5p2r333/6A/4x/u2.0 [w]	1	720	720.00
			Total Amount:	4,578.00

Payment Terms:

Your personal BTO notebook is in town,come,check and buy.
歡迎使用匯豐,恒生,中銀,東亞或永隆信用卡作分期付款，即時批核。
REMARK : (W)=H.K.Dealer's Warranty Card attached(隨附香港代理商保養証)
All quoted prices are valid for same day only(except others specified)
以上價格 以落訂時為準

Confirmed by

_____
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Shop ▓▓▓▓ ▓▓▓ Golden Computer Centre, 146-152 Fuk Wa Street, ShamShuiPo, Kowloon, Hong Kong.