

# Technology Purchasing Standards

(revised July 2005)

Computer and other technology purchased by the district should conform to the following standard configurations. As new models of equipment are announced and you would like for it to be reviewed by the Office of Technology, please send an email to Gary Allen, Jerry Steen, or Jeff Roller. We will evaluate the requested equipment and make the appropriate changes to the purchasing standards.

Equipment not on the approved list should not be purchased without approval by the Office of Technology.

## **New Desktop computers should have the following minimum configuration.**

- Dell Pentium 4 or Celeron 2.8ghz with \*512MB RAM (1 dimm). 40GB hard drive, 17" color monitor with built-in Speakers, Soundblaster compatible sound card, 48xCD or 48xCDRW drive or 48x32CDRW/DVD. Optical mouse (no roller) with scroll, Windows XP sp2, NTFS format. **1 year parts and labor warranty.** (Floppy Drive optional)

*Note: DO NOT order a wireless network option for any Desktop Computer. All Desktop computers should be purchased with 3 year parts and labor warranty.*

*Note2: Software replacement considerations need to be made for Windows XP. Compatibility problems are issues using older software.*

*Note3: There should be NO Macintosh Desktops purchased.*

## **Laptop computers are to be one of the following, *minimum* configurations:**

- 1) Dell Pentium 3 or Celeron 1.3ghz or Pentium M (Centrino) 1.6ghz. \*512MB (1 dimm), 30GB hard drive. 14.1" color display. Modular 24xCD. Windows XP sp2, NTFS Format. Internal TrueMobile 1150 Mini-PCI Wireless Ethernet, Internal Modem. (Floppy Drive optional) An extra modular type battery should be purchased when available.
- 2) There should be NO Macintosh Laptops purchased.

*Note: Each laptop computer should be purchased with a 10/100 base-T Ethernet card. XIRCOM PCI combo cards for any Windows/Dell Laptop that does not have Ethernet built in. All laptops should have Wireless Ethernet capabilities.*

The minimum software configuration should be Microsoft Office XP Professional.

*\*Memory has been bumped from the standard 128 mg ram to 512 mg for Windows XP machines. While 128 mg is the suggested minimum, every technician has indicated that the machines run better and faster with 256 mg ram. (\$53 cost of upgrade). Almost without exception, Memory has been purchased within 3 years to further upgrade the machines (typically an additional \$53 or more to upgrade). To purchase the memory at the time the machine is ordered will save many man hours later. Most Desktops and all laptops only have 2 slots for memory upgrades. **Memory should always initially be purchased in a single DIMM, regardless of the size.** This enables the memory to be upgraded without throwing away any existing memory or trying to recycle the memory and roll it out into other machines.*

## **Printers**

All Printers should be purchased with Network options unless they are truly stand alone printers attached to a single computer. *Printer sharing through a PC sharing its attached printer should be avoided.*

## **Laser Printers**

Networked Hewlett-Packard, Dell, or Okidata laser printers may be purchased based upon quality, speed and volume requirements. Color laser printers by the same vendors may also be purchased. Printouts from Tektronix Solid toner/Wax Printers cannot be laminated and cannot be used to prepare (slug-it) Scantron Sheets at this time. Tektronix/Xerox printers are NOT recommended due to their history of expensive repair outside of warranty and lack of longevity.

**InkJet Printers** should be Hewlett Packard and have at least a 1 year warranty.

**Dot matrix or impact printers** may be considered for applications requiring continuous feed and/or multi-part forms (very rare situation).

**Combo scanner/fax/printers** should not be purchased for classroom or individual office placements.

**Scanners** are to be Hewlett Packard or Epson. Color scanning with 2400 dpi resolution.

*Note: Any inkjet printer or scanner out of warranty will not be repaired. If it cannot be cleaned and returned to service it will be discarded.*

### **Digital Cameras**

Only digital cameras should be bought that use CDRW, Compact Flash or Smart Media memory. (These types of memory can be re-used many times and recycled to new cameras) Digital cameras should be purchased with extended warranties and when they break, out of warranty, they will be discarded due to the prohibitive cost of repair. Digital Cameras should also be purchased with an external card reader that allows the memory to be read without plugging in the camera to the computer. We also recommend only buying cameras that use rechargeable batteries or their own proprietary power cells to save on the expense of buying batteries as well.

### **Projectors**

Projectors should be a minimum of 1200 lumens or greater and be purchased with 1 additional light bulb. Thought should also be given to purchasing carrying cases as well as remote mice and laser pointers.

### **Wireless Access Points:**

**ALL** Wireless Access Points will be Cisco Aironet 1200 series with support for in-line power, 802.11b or g freq. Depending upon the installation, either two 2.2db gain rubber duck antennas or Dipole diversity ceiling mount antenna is also required. (Prior approval from the Office of Technology is required for 802.11a support.) *Apple AirPorts are NOT to be purchased by the campus for any reason. No other brand or type of wireless access points are acceptable.*

### **Servers:**

Campus based servers need to have the following specifications: DELL PowerEdge Series with at least 1GB RAM, 2 10/100/1000MB Ethernet controllers (internal), Dual Power supplies, 2 18GB+ Hard Drives configured in a RAID 1 array, used for operating systems and at least 3 36GB+ Hard Drives configured in a RAID 5 array, used for data storage (These arrays are to be hosted by a PERC controller either internal or on a riser card.), Internal Tape Backup unit either DDS4 or greater, Windows 2000 Server, 48x CDrom, UPS (Uninterruptible power supply – should be purchased for each server that is not going to be in a existing Equipment Room). It is best to get the Office of Technology to create a quote and specifications depending upon the scope of the applications to be used. **3 year warranties should be purchased.**

**Network hubs and switches** are NOT to be purchased by the campus for any reason without the prior knowledge and approval by the Office of Technology. The Office of Technology will remove ALL hubs and switches that are not documented and authorized.

**Macintosh Desktop Computers should only be purchased for special situations such as multi-media labs or other very high end graphical uses. They should not be purchased for administrative computers, general student use, or general teacher use. Macintosh purchases should be approved by the Office of Technology prior to ordering.**

*MAC OS X does not currently have a Telnet package for Mainframe connectivity, and in addition Microsoft is not going to upgrade or offer Internet Explorer (internet browser) for the Mac environment beyond the version currently offered. There are internet applications (TEA and others) that require Internet Explorer to be used.*

The minimum configuration purchased should be a Macintosh Power PC G4 Processor, 800mhz with 256MB RAM (1 dimm), 40GB hard drive, 15" color monitor, 48xCD drive. Ethernet port and modem is built in. All Macintosh come with OS 9.x and OS X (Jaguar). All Macintosh Computers should be purchased with the extended 3 year warranty.

**SOFTWARE CONSIDERATIONS** - As you are buying new equipment, either Dell or Mac, make sure that your current version of your software will run under the operating system that will come on the computer, either Windows XP or Mac OS X. The manufacturer's web site may be a good place to start or ask your technician to help as well. Do not take for granted that old programs will run in the "compatibility mode" of the operating system. The older the program, the less likely that this will be the case.

### **Why the changes to the standards and in particular why exclude Macintosh**

The standards are revised periodically to account for the advances in technology and also to bring to bear knowledge developed as we work with the equipment being purchased.

These "minimum" configuration standards are not the least expensive options. By not buying the "low end" or cheapest available model, we extend the useable life of our investment by 1 – 2 years without any further upgrades. However, a decision to buy the biggest and fastest is not a good fiscal decision because of the high cost of the latest and greatest technology. We expect the life of our minimum configuration machine to be 4 years without a need for upgrades.

We recommend Celeron processors for most of our users application needs. Pentium processors are required for a very few graphics packages such as Adobe Photoshop. However, all of our regular application software will run on Celeron processors and are less expensive than Pentium.

The Dell Pentium processors will adequately fill the needs of all graphics applications but Macintosh is the preferred choice for most graphics arts teachers. Macintosh computer purchases are allowable for Graphics Arts, video editing applications, and other graphics intensive applications for the classroom or specialized departments such as the audio-visual department.

The reasons for moving away from Macintosh are:

- The cost of original purchase is considerably higher (\$200 and up depending on options);

- the cost of spare parts is higher;
- the cost of software licenses is higher;
- Software incompatibilities.

Specifically, Internet Explorer( IE) 5.2.3 is the last version of IE for the Mac OS X. IE is no longer going to be updated for any Mac OS. The Mac Browser, Safari will have to be used and there may very well be problems that arise with our new highly browser dependent Student Services software, Financial software, and Help Desk Software.

Telnet (AQUANTA connectivity) does not run in native Mac OS X. It must be run in OS 9.x environment.

Currently there is no MS Outlook for OS X. Microsoft has developed Office:2004 which does have an email program called Entourage. The mail package, Entourage has trouble with emailing outside the district domain. MS Outlook 2002 will run in the OS 9.x environment, however we have also seen problems with the machine locking up during the switch. Also there are some feature compatibility problems with Outlook on the MAC versus Outlook on the Intel PC's.

Macintosh laptops should not be purchased because of the cost of repair after they are out of warranty, hence the necessity of also buying the additional warranty. The cost of an iBook display is \$369.00 after the warranty expires at one year. The cost of this repair is greater than 1/3 the current value of the machine and so would not be repaired by the Office of Technology. The cost of the additional 2 year warranty is dependent on the cost of the machine and is anywhere from \$169.00 - \$369.00

The ongoing maintenance cost of Mac's versus Dell's in repairs as well as initial outlay. The cost for a Dell replacement CDrom is \$39.00. An iMac CDrom is \$89.00. A Dell Laptop CDrom is \$89 - an iBook CDrom is \$169.00. A Dell Laptop Display is \$169.00 after 3 years. An iBook display after 1 year is \$369.00. Technology would continue to repair a Dell laptop far longer than a Mac Laptop simply from a cost standpoint. Same situation applies to desktop PC's.

Labor Time savings is also an issue in comparing Macintosh to the Dell systems.. To change a Dell desktop CDrom, it takes 10 minutes and 2 screws. To change a CDrom in an iMac, it takes about 1 hour and 17 screws. To change a Dell Laptop CDrom, 30 seconds and no screws. An iBook CDrom, 3 hours and 37+screws (we stopped counting at 37). A titanium laptop is an even more severe scenario.

We have moved to a 1 year warranty as opposed to a 3 year warranty because a study done shows that the failure rate is about 6 % – 7 % in the 2<sup>nd</sup> and 3<sup>rd</sup> year. At that rate of failure, it is not cost effective to pay \$140 per machine for a 2<sup>nd</sup> and 3<sup>rd</sup> year warranty. We hope to save over \$250,000 per year by not buying the extended warranty.