

Computers

Upgrades That Make Sense

by Joe Stoddard

If your pickup truck started sputtering or pulling to the right, you wouldn't automatically trade it for a new one, would you? You wouldn't be in business long if you did. Instead, you'd tune it up, do a little maintenance, and maybe add some after-market accessories so it stayed reliable and ready to roll when you were. Take your cue from the big "corporate" home builders who have real "IT" (information technology) budgets and trained staff. They only buy new equipment every three to four years, and they focus on squeezing every bit of value they can out of their existing computer inventory.

Most of us are tool junkies, so that dual-processor 3.0 GHz Pentium IV with a gigabyte of RAM and mirrored 120GB hard drives sure looks like fun, but the fact is, you probably don't need anything even close to that for everyday use. While it's definitely time to put your Windows 95 computers out to pasture, the majority of contractor-related computer programs on the market today, including general purpose software like Microsoft Office, ACT!, and QuickBooks Pro — as well as more specialized applications like schedulers, estimators, PDA hot-sync applications, and even most CAD — will do just fine on any properly configured three-year-old computer running Windows 98 or 2000. In fact, there are still plenty of software and hardware products for the construction industry that require those older operating systems and won't run reliably on a new Windows XP computer, another reason not to give up on your older hardware just yet.

Making Sense of Upgrades

With a couple of important exceptions, I think hardware upgrades that involve opening the computer case are a waste of money. It doesn't make sense

to jam a \$500 high-end video card into a \$200 used computer, and motherboard or processor upgrades or installing other specialized internal components almost never make sense financially — unless you're a hobbyist and just enjoy rolling your own computers from scratch. Nothing wrong with that — everyone needs a hobby — but don't confuse it with a good investment for your business.

More RAM Pays

But one upgrade that will almost always earn its keep is adding more RAM. Memory is dirt cheap right now, and it's the one thing that every program you run can't get enough of. Windows 98 computers should have a minimum of 128MB, Windows 2000 and XP require 256MB, and any kind of network server needs even more. A typical memory upgrade should cost well under \$100 and take only minutes to install. It's the best money you'll spend on an aging computer. It's important to get exactly the right memory chips for your make and model of computer. For determining that, it's hard to beat Crucial.com, which has a very accurate online configuration utility at www.crucial.com (see Figure 1).

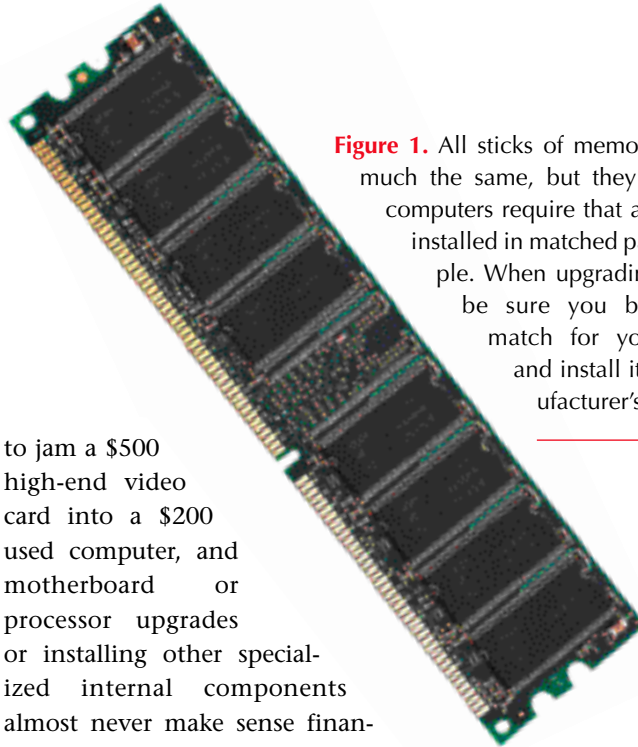


Figure 1. All sticks of memory look pretty much the same, but they aren't. Some computers require that all memory be installed in matched pairs, for example. When upgrading your RAM, be sure you buy an exact match for your computer and install it per the manufacturer's instructions.

Take the Bus

USB (universal serial bus) has turned out to be a godsend for adding components to older computers without cracking the case. Everything from extra hard drive space to removable storage like zip drives and CD-Rs, network adapters, scanners and printers, and even many digital cameras and camcorders can now be connected via a simple USB cable — if you have the right jacks in your computer. Unfortunately, some early Windows 98 computers shipped without any USB at all, and on those that do have it, it's a good bet that it's the painfully slow 12-mbps (mega bits per second) USB 1.1 standard.

With that in mind, my other favorite internal upgrade to an aging machine is the addition of some high-speed (480-mbps) USB 2.0 ports. Logear (www.iogear.com) makes a great internal USB 2.0 card for around \$30 that gives you a five-port USB hub (one port is internal). Even if you need your local computer guy to do the

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installation for you, it's a cost-effective upgrade (Figure 2).

Note that if you're using the original version of Windows 98 and want to use USB 2.0, you'll probably have to spring for a Windows 98SE (second edition) upgrade. If you're patient, however, a visit to eBay (www.ebay.com) and around \$20 will score you a legal upgrade copy of Windows.

What About the Hard Drive?

I'd rather sit through a root canal than try to move an operating system, programs, and data from one hard drive to another, which is why I'm not a big fan of hard drive "upgrades" in older machines. For one thing, it's hard to get

today's massive hard drives to work in older computers, and unless you're using huge multimedia files, you probably don't need the space anyway. Don't believe me? A full installation of Windows 98 (or 2000), plus a full installation of Microsoft Office 2000, plus half a dozen other construction-specific programs, will use roughly 2 to 3GB of storage space. The typical hard drive that shipped three years ago was 6 to 10GB, plenty big enough for most users.

Even if you do need lots of storage space, there are easier ways to get it than installing a new hard drive. If you're getting into video editing or managing other large files, you're better off leaving the original drive as is

and installing a second physical drive just for data. You could add a USB 2.0 external drive (see below) or better yet, start centralizing your data on a network attached storage (NAS) file server like the \$500 Linksys unit (www.linksys.com) I mentioned in my May column.

Think Outside the Box

Once your computer is equipped with USB 2.0 ports, you can add just about any kind of accessory you can think of without ever cracking open the case again. What's more, you'll need to buy fewer things, because USB devices can be unplugged and easily moved from computer to computer. If it's high-speed, high-volume storage you need, you could add an Iogear external model for only a few dollars more than the cost of a plain-jane internal hard drive (Figure 3). Zip drives, CD-Rs, and tape back-up units are just a few of the other types

of external USB drives that are available from a variety of manufacturers. Want to add your computer to either a wired or a wireless network? Forget complicated internal connections: Netgear, Linksys, and others produce a wide variety of USB network adapters that install in minutes (Figure 4).

Don't Feel Your Pain

In order to keep costs down, manufacturers often shipped older computers with crummy keyboards, cheap mice, and worst of all, blurry CRT (tube-type) monitors. I'm always surprised by contractors who will pour money into a computer to

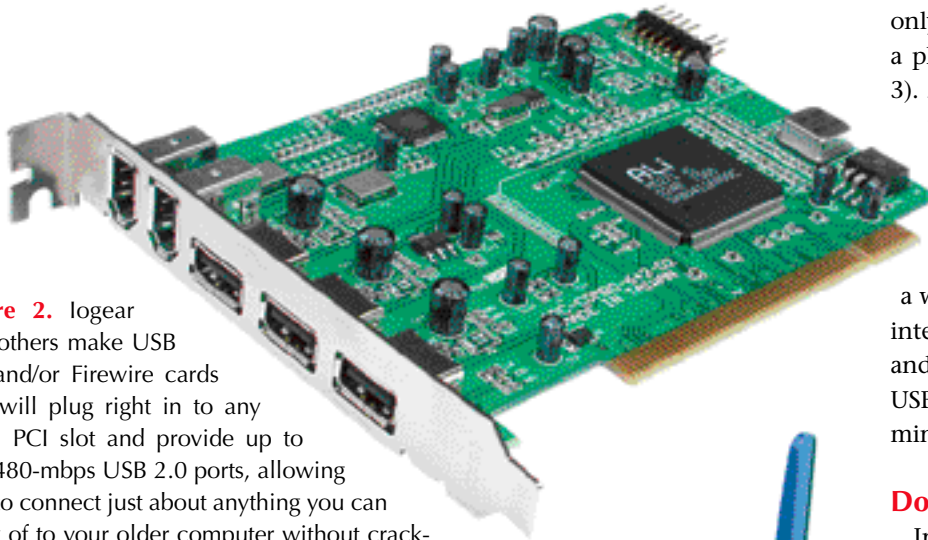


Figure 2. Iogear and others make USB 2.0 and/or Firewire cards that will plug right in to any open PCI slot and provide up to five 480-mbps USB 2.0 ports, allowing you to connect just about anything you can think of to your older computer without cracking the case.

Figure 3. Don't waste a weekend installing new internal hard drives: If you have a USB 2.0 connection, you can use an external hard drive like this 80GB ION model from Iogear. Performance will be nearly as good as that of an internal drive, and you can easily move the drive from PC to PC if necessary.



Figure 4. Network adapters, like this wireless model from Linksys, are another easy upgrade if you have USB 2.0 installed.

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try to make it run a little faster but neglect the pieces they have to interact with — the most important parts. No matter how fast and capable the computer is, if the monitor gives you a headache and the keyboard and mouse make your wrists ache, you're not going to want to spend much time with it. Now that prices have plummeted on good-quality, ergonomic components, it doesn't make sense to keep hurting yourself.

Figure 5. The components you interact with — keyboard, mouse, and video display — are the most important things you can upgrade. High-quality 15-inch LCD monitors like the Samsung SyncMaster are starting to dip toward the \$300 mark — even less if you shop for a factory refurb or open-box special.

If you've never used a flat LCD monitor, you don't know what you're missing. A great display will completely change your computing experience for the better. For example, the clarity and brightness of the Samsung SyncMaster 15-inch LCD monitor (www.samsung.com) will knock your socks off,



and it works great with just about any computer (Figure 5). If you shop around, you should be able to find an open-box special or factory refurb for as little as \$200. Add \$30 for a comfortable Microsoft optical mouse (no ball to clog up) and \$50 for a Unicomp IBM-style keyboard, considered by many to be the finest computer keyboard ever produced, and you'll be working with pro-quality equipment. Unicomp (www.pckeyboard.com) also makes a variety of other high-quality specialty keyboards, some with pointing devices built in, eliminating the need for a mouse altogether. 

Joe Stoddard is a technology consultant to the building industry and a contributing editor at The Journal of Light Construction. You can reach him at jstoddard@mountainconsulting.com.