

Smart Upgrades

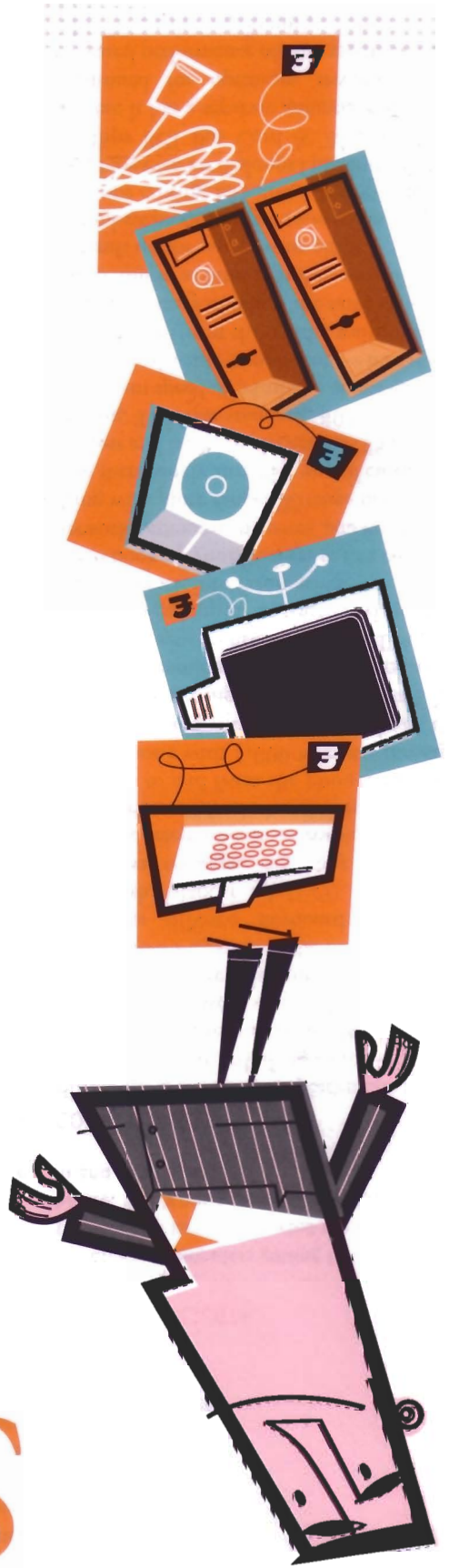
Hardware is expensive, and no sooner have you shelled out than the software is obsolete. Help is at hand, however. Here, **Matthew Stibbe** shows you ways to make your kit work better, cheap sources of new and second-hand kit, and a whole load of cheap, productive new products.

Memory

At the end of January, NASA's Martian rover - Spirit - ran into difficulty. It had run out of memory, and it started behaving oddly, and crashing a lot. Sound familiar? A lot of Britain's PCs suffer from the same problem, but luckily you don't need a team of crack rocket scientists to make your computer systems all shiny and new again. There's a lot you can do cheaply to make your PCs faster, easier to use and more productive.

First, consider upgrading the memory on your computers. It's not brain surgery but you do need to get the right kinds of memory chips (called SIMMs) for your machine. Go to Crucial's website and they have an online wizard that will pick the right chips according to make and model. Installation takes about ten minutes per machine.

As a general rule, doubling the memory on a computer will give a much greater performance improvement than doubling the processor speed. This is because Windows uses slow hard disks as temporary memory when you are running lots of programs. The amount of memory you need depends largely on what you do, but don't expect to run Windows with less than 256mb - 512mb should be plenty for most business applications. Upgrades should generally cost about £30-£50 per machine. Digital cameras and PDAs also benefit from having extra memory.



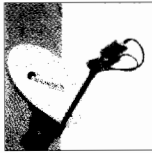
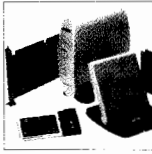


wise from left: wireless networking with Buffalo 54Mbps PCI Bus card and its wiggly antenna; Microsoft's optical mouse does away with track balls; Logitech's cordless diNovo Media Desktop saves on batteries; security devices for your laptops include the Kensington LockSaver (64038); and an Aramiska satellite dish - a good ADSL alternative.



HARD DISKS AND CD BURNERS

Another bottleneck in computer performance is the hard disk. If disks get full, it can be a pain to manage them and can affect computer performance. Also, disk speeds have increased substantially over the past few years. Upgrading to a faster, larger disk drive is a bit more involved than adding memory, but most computers have an empty drive bay that means you can add a new disk without removing the old one. One option is a Seagate Barracuda 80gb drive (£43) or its 120gb drive (£62). Alternatively, an external drive is easy to attach if you have a computer with a fast USB2 or FireWire connector. I use a LaCie 80gb PocketDrive (£235) for back-up.



As with hard drives, so with CD-ROM drives. Ten years ago they could manage a lethargic 150kb/s data transfer rates, now they are 52 times faster. Not only that, but you can create CDs and DVDs as well as read them. The first CD burner I saw cost over £4,000, but now I use an external Iomega CD-RW drive which costs just £51, while the DVD equivalent costs just £119. Internal drives are cheaper but more work to install.

OF MICE AND MEN

A couple of other suggestions. Replace mechanical mice (ones with rolling balls underneath) with optical mice, such as Microsoft's basic optical mouse from just £11 (excluding VAT) each, which have no moving parts. These will make them much easier to use and reduce the risk of repetitive strain injury. Expect to pay more for fancier mice with extra buttons.

Cordless mice and keyboards can declutter a desktop but often consume batteries at an alarming rate. However, Logitech's top-of-the-line diNovo Media Desktop, which includes a very stylish black wireless keyboard and mouse using the new Bluetooth standard, for about £130, is surprisingly frugal thanks to a rechargeable battery in the mouse. It is also the first system for PCs that really competes with Apple kit in the style stakes.

The constant hum of computer fans is growing in volume as computers get faster and hotter. Apple computers are well-known for being quieter to begin with, but PC owners can add quieter fans, acoustic case lining and other upgrades to cut out excess noise. An all-in-one "hushkit" from QuietPC.com can silence your PC for £109, but parts can be bought separately.

Where next?

- www.microsoft.com/uk
- www.logitech.com
- www.crucial.com/uk
- www.lacie.com
- www.quietpc.com
- www.iomega.com

Connections

Not only are computers getting faster, they are also better connected than ever before. Here's our guide to wiring up, plugging in and logging on.

GOING WIRELESS

Bluetooth is a wireless replacement for the short cables that link things such as mobile phone PDAs, computers and headsets. The most common use is wireless headsets, but it can do a lot more. Plugging in a Bluetooth adaptor to a PC, such as the one that comes with the diNovo keyboard or TDK's Bluetooth Adaptor 1.1 (£25), will let you send text messages via your Bluetooth-equipped telephone, from your computer.

The Bluetooth wireless link transmits the messages to and from the phone. So, buy a cheap phone with 1,000 free text messages each month and you've got a very cheap, efficient way of getting information to staff. You can also download phone numbers to the phone and synchronise with your PDA (if it's Bluetooth-equipped, of course) without the need to attach it to fiddly wires.

To hook up your PC/laptop to a company network without using wires, you need something with more range. Wireless networking is an increasingly attractive way of cutting out the cost and hassle of physical CAT5 network cabling. The new standard, 802.11G, has a maximum speed of 54mb/s - about half that of a typical cable connection - but range, interference (from things like walls) and the number of users online at the same time may reduce this to as little as 5mb/s, so it all rather depends on the size of your office.

Linksys products offer a good-value card for desktops costing £35 and a laptop card just £43. However, for desktops I prefer the Buffalo 54Mbps PCI Bus Card & Antenna (£58) because it has a separate antenna that can be positioned for optimum reception. This increased performance on my system dramatically. To get the maximum performance you



INTERNET CONNECTIONS

Connecting to the internet is getting a lot cheaper. For home and small business use, consumer ADSL is available from £20 per month and offers connection speeds up to ten times faster than a modem. ADSLGuide has a good list of the best offers. Faster, business-quality connections over ADSL cost about £100 a month – a fraction of the £2,000 a month it used to cost to get a 2mb/s leased line connection just five years ago.

For the 19 per cent of the population outside the catchment area for ADSL, there is an alternative. Aramiska charge a £500 installation fee and £199 per month for 512kb/s ADSL-like performance and £349 a month for 2mb/s running over a satellite link. However you connect to the internet, reviewing your connection costs annually can result in real savings and increasing bandwidth improves the productivity of everyone who uses the internet for work.

Where next?

- www.adsguide.org.uk
- www.aramiska.co.uk
- www.duraflo-technology.com
- www.linksys.com
- www.omega.com
- www.tdksystems.com
- www.rentstore.co.uk

Security

Threat and disaster is something that happens to other people, right? Wrong! Here are a few tips to reduce the risk.

BAGS AND LOCKS

Seventy-seven per cent of companies have had a laptop stolen, according to a recent survey by the National Hi-Tech Crime Unit. And five per cent of all laptops get damaged. Besides the hassle and cost of replacement, there is the risk that a stolen laptop will contain irreplaceable or confidential information.

So, besides everyday caution and the use of nondescript, but padded, laptop bags (from the Computer Luggage Company; for example), always secure a laptop with a security cable – I use a Kensington MicroSaver (£29). It's also easy to lock a laptop to a radiator or other immovable object if you leave it in a hotel room. For secure access to a corporate network, you can use a digital fingerprint

need a wired connection and so-called gigabit network cards. These cost about £45 and up, and require high-quality cable and more expensive switches, but the performance is ten times better than a typical 100mb/s network connection. However, this kind of performance, while useful for linking servers to networks, is probably overkill for desktop PCs.

STORAGE

With an office network, it's easy to assume that adding more storage means adding a whole new server. Not so. With network attached storage (NAS), it's possible to hook up a box stuffed with hard disks but without all the paraphernalia – and cost – of a server. A Linksys Etherfast GigADrive can add 120gb of storage to a network for £549. A more sophisticated solution is the Iomega NAS200M/160 for about £750. This delivers RAID protection for the data on the drives, meaning that if one disk fails the data isn't lost. It is also driven by Windows server software that gives it better security and management facilities. Moving up the range, it is possible to get hot-swappable drives, terabytes of storage and gigabit network ports – but at a price. It is also possible to rent additional storage from RentStore. For instance, a 1,500gb Iomega NAS server costs £220 per month.

Buying Secondhand

Did you ever wonder where computers go when retailers can't hog them and manufacturers replace them with newer models? They end up with Morgan Computer Company (www.morgan-computers.co.uk). Morgan sell end-of-line and almost-new products. Warranties and bundles vary from product to product and its stock varies almost weekly, but it is a good source of cheap high-spec kit. For instance, at the time of writing, they have Toshiba 3500 Tablet PCs for £899, excluding VAT (versus a RRP of £1,700) and ex-lease, refurbished HP Omnibook laptops for £349. Buy online or visit one of its retail stores. A second source of good deals online is Dell's online outlet store (www.dell.co.uk/outlet). Its laptops are typically £200-£400 less than the regular price and some are up to £700 cheaper. Lastly, eBay (www.ebay.co.uk), the online auction site, can be a good source for equipment and software. The usual caveats about auctions apply: don't get emotionally attached to a bid; don't bid above your own pre-agreed limit; be aware that most of the bidding action takes place in the last hours of an auction; and start small and experiment. Also, be wary of security risks: protect your password, use a reputable escrow service for payment and try to make sure that the seller is genuine by checking their online references. eBay is also a good way of getting rid of surplus equipment. There is a market for almost everything. I sold a ten-year-old, broken radio – I made it clear that it didn't work in my description – for £28.



reader. Digital Persona's U.are.U Pro works well and plugs into a USB port. The UK distributors are Sire Technology. Using strong passwords and upgrading your security are important first steps – biometrics is not a complete answer.

BACK-UP

A survey by Dell found that 43 per cent of medium-sized firms had no back-up plans at all. Among smaller firms, the figures are worse. You need to ensure that all your critical data is backed up at least weekly and that copies are kept offsite. Burning data to CDs or DVDs works well for small volumes. Removable, external hard disks are another alternative – buying two or three and then rotating them allows one to be kept offsite at all times.

The more common back-up system involves magnetic tapes that look like pocket-sized video cassettes. DAT and DLT tapes are generally used and they can store tens of gigabytes per tape. For many small businesses a StorageWorks DAT40x6e 120/240GB Ext Autoloader tape drive from HP (£1,878) would be a good choice. For single machines or small networks, a single drive without an autoloader is fine, such as HP's SureStore 24i internal DAT drive (£450). Think of back-up

systems as an insurance policy. It's a small, annoying cost upfront, but when you need it, it will save you big money.

Where next?

Computer Luggage Company: www.coluco.com
<http://uk.kensington-europe.com>
www.digitalpersona.com
www.sire.co.uk/networksecurity/biometric.shtml
www.hp.co.uk
For more security advice, visit
www.bcentral.co.uk/security

Printing

Printers can do more than print out black and white memos. Colour documents, digital photography, scanning, faxing, even address labels and digital stamps are possible. And they're cheaper than ever.

ENVELOPES AND POSTAGE

Writing out envelopes is a chore that nobody particularly enjoys. Now there are two options that can make things easier. The first is the Dymo LabelWriter. This teeny-weeny printer does nothing else. For about £105 it saves having to have a printer dedicated to

printing envelopes. The second option, if you can spare a printer exclusively for envelopes, is a neat bit of software from the Post Office called SmartStamp. This will print out an address, a return address and your own logo or message, plus – and this is the cool bit – a digital stamp. You download the software from the internet (£4.99 a month or £49 a year) and pay for postage online. If all you need to do is print glossy labels, for example, to go on box files, then the Brother PT2420PC (£69) is ideal.

DIGITAL PHOTOGRAPHY

Photo printers and high-end scanners go with digital cameras like geeks and pocket protectors. A photo printer is like a regular inkjet most of the time but, like a superhero, it can transform itself into a super high-resolution printer capable of producing pictures that are indistinguishable from Boots' finest. Typically, they also have slots for most of the different kinds of memory cards used by digital cameras so you can print straight from the camera's memory.

The HP PSC 2410 Photosmart takes this a step further with a neat little LCD (liquid crystal display) that lets you see the pictures before you print them. It also has a high-quality flat-bed scanner and a built-in fax modem so you can scan images into your computer or fax them. It's a very nice all-round package for about £211. The Epson Stylus CX6400 cuts out the LCD and fax modem, but costs just £140.

MULTI-FUNCTION

At the very top end of the multi-function printers is the HP Officejet 7140xi (£418). This prints, faxes, copy and scans like the others but it does so quicker and smarter. For instance, it has a sheet feeder that means you can use it as a photocopier. It can print double-sided and it has two paper trays so you can use one for envelopes or headed notepaper and the other for plain paper.

Where next?

www.dymo.com
www.royalmail.com
www.brother.co.uk
www.hp.co.uk
www.epson.co.uk

Matthew Stibbe (www.stibbe.net) is a business and technology writer.



Clockwise from left: HP's DVD writer costs just £120; HP StorageWorks DAT40x6E 120/240GB Ext Autoloader is good for storage; Kensington's MicroSaver cablelock protects your laptop; nifty digital printing with the HP PSC 2410 Photosmart; and easy labels with the Dymo LabelWriter 330.

