

Great upgrades under £100

As regular *PC Advisor* readers will know, it's neither tricky nor expensive to upgrade your PC and make it work the way you want. Rosemary Haworth and Ben Worcester have sourced heaps of low-cost kit and tell you how to use it to give your system a custom makeover

Your PC may be working fine, but now and again you get the sneaking feeling it's starting to show its age. Perhaps it is, or maybe it's simply peripheral envy on your part. After all, if your neighbour has just bought a new PC with tons of features you probably can't help but be jealous.

Either way, there's no need to splash out on a brand-new system just yet. There are plenty of ways to expand your computer's possibilities while spending your money intelligently.

With just a few simple hardware and software additions, *PC Advisor* will show you how to delve into the areas of digital photography, web conferencing, audio editing and home networking.

Though we have concentrated on these four areas with the aim of showing you how to easily create a PC fit for a specific hobby or use, we haven't simply stuck to these applications – a PC can be customised in all manner of ways, from changing to a better designed keyboard to swapping the CPU's case for one that's more aesthetically pleasing in a home environment.

Over the following pages you'll find a host of pointers for ways you can simply and inexpensively upgrade your PC and some idea of quite how many tasks your humble desktop system can be turned to. Most of the products we recommend here cost £100 or less, keeping a minimal strain on your finances.

This feature is about giving your PC as much byte for your budget as possible, but we've also included a few higher-end alternatives should you be struck with the urge to splurge. So read on: you'll find plenty of pointers on how to make your PC indubitably your own.

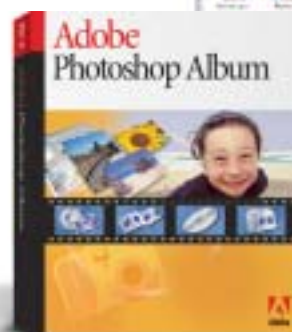
Upgrading your PC sounds daunting, but many of the most immediately useful improvements you can make to your system simply require you to attach a piece of kit using a standard connection – and that's it. Admittedly, other types of upgrade are more advanced and involve opening your PC's case to swap a card or insert more memory, but most of the ways we suggest here are of the former, simpler variety.



Set up a digital darkroom

With decent storage capacities and more than sufficient juice to edit high-resolution images, there's no excuse not to make use of your PC's potential as a digital processing plant and photo gallery. Camera aside, you've probably got most of the necessary kit already: inkjet printer, scanner, photo-editing software and, ideally, a memory card (see *Gimme some space*, page 92). Camera-to-PC connections are invariably USB, which means simply plugging in and transferring images between the two.

Little wonder, then, that everyday shutterbugs are fast making the transition to digital cameras. On the face of it, these are more expensive than 35mm film cameras, but many double as video cameras and over the years you'll save plenty by not paying for development, reprints or replacement film.



Handy hardware

If you've yet to experiment with taking photos this way, you may be surprised to find that a basic camera can be had for as little as £40. The resulting images won't be much better than those taken on a fancy mobile phone but if all you want to do is capture the moment and email a memento to friends, a low-cost snapper like the £39.95 Sipix Snap or the £49.95 L'Espion Xtra is fine.

If you want to capture more detail, look for a model offering in excess of 2Mp (megapixels). Visit an electronics or gadget shop and you'll find a huge range of both digital still and digital video cameras costing well under £100 such as the £79.95 gSmart 2.1Mp model or Aiptek's dinky Pocket DV camcorders (from £39.99 at Firebox.com).

If you fancy yourself a digital Ansel Adams, you could opt for the £1,500 Nikon D100. More realistically, if you're in the market for a decent quality digital camera and don't mind spending a couple of hundred pounds, take a look at our Top 10 charts on page 209.

You probably want to store your photo collection in one place, in which case you'll need a scanner to create digital copies of your film-based snaps. The Canon CanoScan D1250U2 has dominated our scanner chart since the August 02 issue and, at £69, is your best bet. With its ultra-fast USB 2.0 interface, the D1250U2 can transfer data at a rate of 480Mbps (megabits per second). Quality is outstanding with up to 1,200x2,400dpi (dots per inch) resolution and up to 48bit depth that delivers stunning colour reproduction.

Enhance your snaps

An image-editing program will be very useful too. Basic tools such as Paint are included with Windows, but far better features are provided in dedicated packages such as Adobe's budget version of Photoshop, the £68 Elements 2.0 or Jasc's Paint Shop Pro 7.0.

Gimp (GNU image-manipulation program), a popular open-source image editor, is often lauded as the 'free Photoshop' as it has similar features and interface. Because it's volunteer-developed beta software, the stability and frequency of updates could be an issue and it doesn't support GIF format. You can find it by visiting www.gimp.org.

Other products, such as iView Media and Adobe Photoshop Album, which you can find at any retailer for £39.99, allow you manage your photo collection, while packages from software resellers such as Greenstreet offer fun programs like the £29.99 Foto Fusion Platinum which lets you morph images. Many such packages come with templates with which to create a range of stationery and even mugs, mouse mats and T-shirts customised with your favourite images.

For this, as well as printing out unsullied versions of your digital images, you'll want a decent inkjet printer plus specialist paper to ensure you get good results. With the necessary high-quality paper to print on, the Epson Stylus C62 (second place in our Top 10 chart on page 232) is an excellent purchase for only £67 plus VAT. Other good options are Epson's £82 Stylus Photo 830 or Lexmark's Z65.

Conduct an online conference

Staying in touch today is remarkably easy. Email and instant messaging allow you to maintain daily contact with business associates, friends and family all over the world. Web conferencing provides yet another method of doing this and is a useful alternative to text-based communication. Armed with a fast internet connection and webcams on both host PCs, you can even conduct your business meetings this way.

A few years ago, video conferencing using a webcam resulted in little more than a choppy slideshow; broadband ensures you get far smoother pictures. The £39.49 Creative WebCam Pro has a good range of onboard features and you can use the bundled software to capture and view both still images and video.

Setting up is a matter of installing the camera's software driver and plugging it in to your PC's USB port.

Onscreen tools let you balance the file size and quality by manually setting the frame rate to achieve different resolutions between 160x120 and 352x288dpi (dots per inch). Creative also bundles WebCam Monitor

software which turns the camera into a motion sensor alerting you to the possible presence of an intruder.

Using Windows Messenger you can video conference with your friends for free, provided you are all using computers running Windows XP. Connections over broadband should be smooth, but to make sure you hear every word you should invest in a proper headset.

At £16.99 Labtec's Axis 502 headset offers good stereo sound and has a noise-cancelling microphone for clear audio input. The Axis plugs directly into your sound card, so you won't need to load any drivers. Plantronics' £54.99 DSP-400 headset is a far sturdier option and sits comfortably on the head. The audio coming through these headphones is significantly better than that offered by the Axis headset, making it ideal for gaming and speech recognition applications as well as online chat.



↑ Creative's WebCam Pro offers easy USB connectivity as well as control over quality and file size

Key comforts

If you haven't done so already, our first suggestion is to get a decent keyboard. The one supplied with your standard PC may be adequate, but it's probably a cheap-and-cheerful model thrown in to keep down the overall cost of the system. There's definitely something to be said for

a keyboard whose keys offer the right level of response (not too spongy, not too stiff). Configurable hotkeys are another bonus: you can use them to instantly access your email client, web browser or other commonly used application. Imagine being able to hit one button in order to launch Internet Explorer and go straight to your favourite shopping site...

Debate continues to rage over whether a thoughtfully designed keyboard – those most often described, incorrectly, as 'ergonomic' – can prevent injuries caused by repetitive typing actions. Nevertheless, it's definitely worth looking at offerings from the likes of Logitech, Kensington and Microsoft.

All three produce good-looking keyboards in a range of configurations that should make your limbs less tired and cramped and reduce the amount of travelling your fingers need to do to input text (see www.logitech.co.uk, www.kensington.com or www.microsoft.co.uk).



↑ Wacom's wireless £34 Volito graphics tablet offers a paper-and-pen input alternative to a traditional mouse



← It's worth investing in a quality pointing device such as Logitech's wireless £34.99 MX Performance Mouse

Voice recognition is also worth a look. Okay, so even the cleverest package of this sort needs some training to make sure it knows exactly who to take commands from, but we can definitely appreciate the idea of being able to pace round the living room or office barking orders while our PC diligently transcribes our every word. Packages from ScanSoft (www.scansoft.com) and IBM (www.mediagold.co.uk for desktop versions of ViaVoice) start at £46.99

Create your own digital jukebox

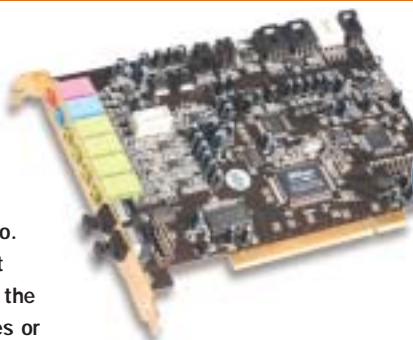
For a true aural experience you need spend very little to get your machine screaming with some serious audio. If you want to edit music, appreciate the full sound of games or turn your PC into an entertainment system for watching movies, some fairly priced software and components will let you do just that.

Sound it out

The first thing you need is a decent sound card. If you still have the factory default in your machine, it's time to scrap the silicon and upgrade to something a little meatier. One way to gauge whether or not you need an upgrade is if your card (factory default or not) doesn't support Dolby Digital 5.1. If not, you should definitely get your hands on something tasty from Creative.

We recommend the £43 Creative SoundBlaster Live 5.1 Digital which brings look-over-your-shoulder, true-life audio to movies, music and gaming. An even cheaper option is Terratec's Aureon 5.1 Fun card which costs just £25 and reproduces sounds to CD quality and even comes with audio-recording software.

If you are not comfortable with opening up your PC or would just like a simpler solution, try Creative's SoundBlaster Extigy or the Griffin Technology iMic for the PC.



Both are external audio solutions that are designed to install quickly and easily via USB.

Speaking right

The next step to getting high-quality sound out of your PC is speakers. You could have the most expensive sound card in the world, but if you are pumping

your audio through a pair of Thompson ASK125s the quality will suffer severely. For only £90 you can snap up the Creative Labs Inspire 6.1 6700. It's a mammoth six-point sound system with a subwoofer that will convert 5.1 content to 6.1 when used with cards such as Live 5.1.

Now you're ready to start having fun with your top-notch audio setup. You can try editing and remixing tracks, record some of your own material or even dust down your vinyl records and save them as digital audio files.

A good place to start is with Sonic Foundry's remix package Acid Music 3.0, which you can purchase for £54 plus VAT online at www.pugh.co.uk. You can also download a demo from www.sonicfoundry.com. If dance music is more your thing, try Dance eJay 5.0 (£29.99 from www.ejay.com), while audiophiles can create and mix their own tracks to their heart's content using the £60 Cubasis VST 4.0.

You can't be a respectable digital DJ without a sparkly pair of headphones. The Philips SBC HP890 or JVC HA-SU700 both provide an adequate and comfortable substitute for your Inspire setup, especially when others don't want to hear you trying to mix Robbie Williams with Supergrass.



for Dragon NaturallySpeaking Essentials 6.0 and £39.99 respectively. HP iPaq users can get a mobile version of ViaVoice from www.ibm.com for \$29.99.

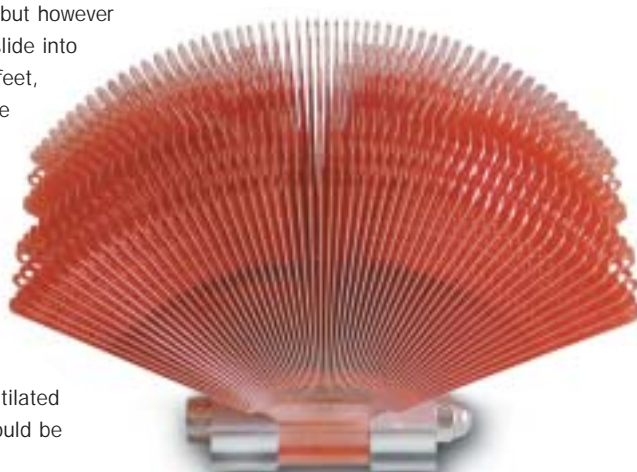
Wireless peripherals are also worth looking into, if only to reduce the number of cabled items on your desk that you're likely to ensnare yourself on. Rollerballs and other types of optical mice that let you scroll across your screen without chasing a mouse around your desk to do so can be a real godsend.

And if you're a bit of a doodler, why not get one of Wacom's wireless graphics tablets? They start at £39.99 and with a digital stylus you actually have a hope in hell of drawing something that bears a passing resemblance to your original idea.

A light dusting

Now your input implements pass muster, it's time to check out what your PC spits out in return. It sounds daft, but however snugly the CPU tower might slide into that slim space next to your feet, what it really requires is some space. With room to breathe – or at least somewhere for stale air to disperse – the fan will work more efficiently, keeping the processor cooler and working its hardest. For this reason (and to stop you getting headaches) a well-ventilated room is the only sort you should be slaving away in.

↓ Help your PC keep its cool – and quiet – with a fan such as the surreal looking Zalman Flower Cooler



If you're brave enough to power down your PC and take a look inside, grab a duster or tiny vacuum cleaner and gently clean the fan and the PC's interior after installing any new hardware and replacing the case. It's hardly an upgrade but it's mighty handy for keeping your PC in good nick.

If noise, rather than heat, is getting to you, QuietPC can supply a number of products to reduce the noise your hard drive makes during operation. Try the £22 SilentDrive Acoustic Enclosure which muffles the drive at source. It's available via Lindy's website (www.lindy.com), among other sources. QuietPC also produces fans that look other-worldly but are as good as their word and ensure you can hear yourself think.

Gimme some space

Next up, it's time to check your system is up to scratch. Processor and hard drive upgrades are beyond the scope (and budget) of this feature, but you can easily add more memory and, if you don't already have one, a CD writer so you can record discs full of music and back up essential documents.

Companies such as Kingston (www.kingston.com) and Crucial (www.crucial.com) specialise in memory and their websites provide specific advice on the type of RAM chip that's compatible with your PC. A 128MB module costs around £14 and simply clips into place alongside your existing RAM chip. Notches on the memory module ensure you can only fit it the correct way round.

At Dabs.com you'll find a huge selection of CD-RW drives for less than £50. An internal AOpen 52-speed CD writer with 24-speed rewriting capabilities will set you back just £30 plus VAT while an external rewriter (meaning you don't need to delve inside the PC at all) costs around twice that.

There's another sort of memory worth investing in too: smartcards. These are the small rectangular cards that slot into devices such as digital cameras and enable you take far more pictures than you would normally. You'll also find CompactFlash or SmartMedia slots on many notebooks.



↑ PNY's 6-in-1 card reader allows you to read any size of smartcard

Memory cards are available in almost any high street electronics store. Prices range from around £8 for a 16MB SmartMedia card and £12 for a 16MB CompactFlash card to several hundred pounds for 512MB and 1GB versions.

If you don't want to go the smartcard route, notebook users in particular will find a keyring-sized USB flash drive a real boon. These plug straight in to any available USB port and are produced by a number of manufacturers. For example, Belkin sells a 64MB version for around £33 and a 128MB version for £51 plus VAT respectively.

Quicker connections

You'll find most PC add-ons such as printers, scanners, wireless mice and the like connect to your system's USB ports. Older PCs may not have more than a couple of these but it's a simple matter to add more – and to ensure they're somewhat more conveniently located than round the back of your PC tower out of reach. At Lindy, Maplin, Dabs or even a high street outlet such as PC World you'll find a range of useful USB hubs with varying numbers of additional and such convenience will set you back less than £12.

If you're prepared to tinker with your PC's interior, you can consign scrabbling around on your hands and knees

to history (at least in the course of plugging and unplugging PC devices) by giving your system a facelift.

Choose a new case for your PC tower with USB ports at the front and swapping between devices will no longer be such a fiddly chore.

A shiny new case will also make your system look instantly more modern and less out of place in the living room than a functional grey box. Almost any independent PC retailer will stock a range of good-looking cases or you can order one online from Morgan, Dabs.com or a specialist company such as Overclockers.co.uk.

Sound and vision

If you listen to the hype you'd be forgiven for thinking that the only sound card worth having is one that costs around £300. Not so. Companies such as Creative pander to the pampered gaming community, producing ever more impressive audio products that have a cachet, status and extortionate price tag worthy of the bling bling generation, but they haven't actually forgotten that the rest of us want decent sound effects from our PCs too.

They may not make PC industry headlines, but cheaper versions of their products based on the same audio processors can be snapped up for the price of a well-cut pair of jeans (as opposed to a pair sporting a fancy designer label).

↓ Silence the beast with an AcoustiCase from QuietPC



Get together and share the spoils

More and more PC owners are creating networks within their homes or small businesses. As well as being a great way to put an ageing PC back into service, a network allows you to share printers and other devices, use a single internet connection and play games against each other.

Of course, you can also transfer documents between PCs linked in this way or use one of the machines like a server and back up important work to it.

Making arrangements

There are several ways to arrange a network. The cheapest method to connect two PCs is with a crossover ethernet cable, which you can purchase for under £10. All you have to do is connect the two machines together via the cable and you're fixed. But this setup is limited and if you want to create a connection with more than one computer you're out of luck.

To link more PCs, each of them will need a PCI card (if it's less than two years old, chances are it already has one). Cards shouldn't cost more than £15 apiece. You will also need a gateway or router such as D-Link's £60 DI-704 P. Some appropriate drilling in well-placed areas will allow you to spread the network.



← If you're setting up a network you'll need a gateway or router such as D-Link's £60 DI-704 P

The clutter-free way to connect several PCs is to go wireless, though this is a slightly more expensive option. You'll need a wireless router such as D-Link's £90 Wireless DI-614+ Broadband plus individual wireless cards costing around £30 each. Any specialist PC retailer or online store will be able to provide specific product advice as well as the necessary hardware.

Once your router is plugged in and everything is connected, it's then a simple matter of configuring each PC to recognise the network and ensuring each computer has the same workgroup name. If all systems are running Windows XP the built-in wizard should ensure the process is very smooth.



For more information on setting up a network download the step-by-step tutorial from www.pcadvisor.co.uk/printplus

We've outlined some of the better specialist audio-production and remixing packages in *Create your own digital jukebox* on page 90 but you can manage your MP3 collection and use your hard drive like a jukebox with free products such as Windows Media Player 9.0. Unlike earlier versions of WMP, you can store audio files wherever you like on your system, not just in My Music.

Album covers as well as artist information can be automatically acquired from an ever-expanding online database and you can rate tracks as you listen to them so that WMP can seek stuff that matches your taste or select a random selection from your own collection to match your mood.

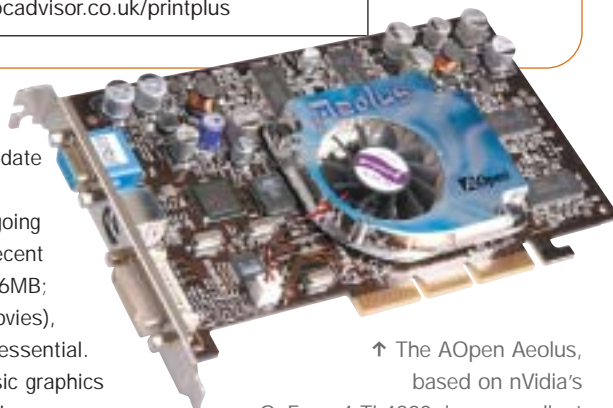
Windows XP users who like the sound of that should get their hands on a copy of Microsoft Plus Digital Media Edition, which costs about £15 and provides a range of features with which to edit photos, music and video clips and will even make a

decent fist of turning your vinyl records into bang-up-to-date windows Media Audio files.

With all this processing going on, you'll not only need a decent amount of RAM (at least 256MB; more if you fancy making movies), a decent video card is also essential.

If you're stuck with a basic graphics card, you won't be able to play some of the latest games either, but a small budget needn't stop you upgrading. Gainward's GeForce 3Ti/450 Golden Sample, Sapphire's Radeon 9000 Atlantis Pro, ECS's EliteGroup AG4000T8-64 or Chaintech's GeForce4 MX A-G441 all fit the bill.

Right now, a DVD writer will set you back far more than the £100 we're restricting ourselves to here, but for just £30 or so you can get your hands on an DVD-ROM drive. So even if you can't burn your own DVD movies, you can at least play them. Note that if installing a DVD



↑ The AOpen Aeolus, based on nVidia's GeForce4 Ti 4200, is an excellent choice if your budget is tight

drive alongside a CD-ROM or CD-R/RW drive you'll need to change its jumpers to set it as Slave (instructions should be provided by the manufacturer).

Finally, don't forget protecting your PC is important. As well as antivirus and firewall software to prevent viruses and ward off hacking attempts, it's wise to safeguard against fluctuations in power and sudden system shutdowns with an uninterruptible power supply or, at the least, a surge protector. ■