Wise choices

Before you scan the *What PC?* tables for your new computer system, take a look at this buyer's guide compiled by Paul Wardley

The most difficult part of the purchasing experience – apart from finding the cash – is deciding what type of machine and level of specification to go for.

Hitting upon a one-size-fits-all computer for every occasion is as improbable an event as finding a standard car that will meet the needs of every driver. If your aim is to get from A to B as quickly as possible, then you need a Ferrari but, if you want to take the family and dog with you, a Volvo estate would be better.

Similarly, your choice of computer will be determined by what you want to do with it. The minimum specification worth considering is now a 133MHz Pentium with 16Mb of RAM, a 1Gb hard disk and a 14in SVGA monitor with a 1Mb accelerated SVGA graphics card. Some manufacturers may be selling off their slower machines with smaller hard disks at bargain prices, but it's hard to find a supplier selling current models with lower specifications than these.

Memory requirements are determined by the demands of the Windows operating system and the programs you want to run. You need at least 8Mb to run Windows 95 and 16Mb is preferable. The older Windows 3.1 will run on less memory but is not recommended for new systems. The 14in monitor/SVGA accelerator combination is sold in such numbers that it is attractively priced and reliable.

To a large extent, software designers are now setting the base specification by producing programs that demand powerful hardware. Computer vendors are simply playing a game of catching up.

Six steps to successful buying

1. Decide which items you need to buy. Look at the ***Shopping list***, which lists all the essential items if you are starting from scratch. Add to this if you have any special requirements, such as a CD-ROM drive or a modem.

2. Specify the computer itself. (See ***Assessing your needs***.)

3. Set a price. This will probably have to be adjusted in the light of your research. Initially, it will simply be what you feel you can afford.

4. Choose where to buy. This will probably be from a high street retailer/computer superstore or 'off the page' by mail order. Buying off the page is probably the cheapest option, but there are distinct advantages in using a retail supplier. (See ***Pros and cons of retail outlets***.)

5. Check prices by studying advertisements or visiting shops and, if necessary, adjust your budget. Use the ***Buyer's checklist*** to record your choices (you can photocopy the blank chart).

6. Make your purchase. (If you decide to buy off the page see ***Off-the-page suppliers*** and ***Safe buying off the page***.)

Assessing your needs

To help you decide what level of PC to buy we have compiled a special planning chart (see the following page). According to your answers, you circle possible enhancements (marked by dark blobs) in each of five areas in which system performance can be improved – CPU, RAM, disk, display card and monitor.

There are three main columns. Column 1 poses a question you should ask yourself before deciding what sort of computer to buy, column 2 provides background information to help you answer the question, and column 3 suggests areas ▶

Question	Background information	System enhancements to consider	RAM	Disk	Monitor	Display	CPU
Will you spend most of your computing time running programs that use Windows?	Almost all recent PC programs are written for Microsoft Windows. If you wish to use older programs or programs written specially for you, they might use DOS, which is an older, character-based interface. If in doubt, contact your software supplier or read the side of the software box. This nearly always states the minimum specification needed to run the program.	*Windows and other graphical interfaces require more powerful machines because they make greater demands on the hardware. The current version of Windows is Windows 95. To run this, we recommend at least a 133MHz Pentium with 16Mb of RAM.*	●	○	○	○	○
Will you be installing more than three major Windows programs?	Programs are stored on the hard disk of the computer. Windows programs in particular are very large compared to their DOS equivalents and simply storing them on your hard disk will soon fill it up, leaving no room for the data you produce yourself.	*The more applications you intend to use, the bigger your disk will need to be. Historically, computer programs have always got bigger as they have been improved and re-released. It's almost impossible to have too much disk space – 1Gb is fine but 1.6Gb is more future-proof.*	○	●	○	○	○
Instead of doing most of your work with one program loaded, will you want to switch between two or more programs running at the same time?	Windows users are able to run several programs at the same time and switch between them at will. This can also be done with DOS programs if you have bought an additional piece of software such as Desqview. The advantages of task switching are that a program can work in the background while you get on with another task. This is especially useful for things like fax programs. You can also 'cut' information from one program and 'paste' it into another – spreadsheet figures into a word processor, for example.	*Task switching, especially using Windows, makes demands on several areas of the system. It is important to have more RAM so that the programs can co-exist in memory instead of loading back and forth from disk.* *The display system should also be improved. Task switching involves constantly redrawing the screen, so a Windows accelerator is useful.* *If you plan to run applications side by side on the same screen a bigger monitor is a must.*	●	○	●	●	○
Will you be using any programs that are computationally intensive or make other special demands on the processor chip?	The most obvious task requiring a lot of processing power is calculating large spreadsheets, which may involve thousands of separate operations. Less obviously, design and image manipulation programs need to make sophisticated calculations in order to redraw the screen. The same goes for the latest crop of graphcially-intensive games.	*As a rule of thumb, buy the fastest processor you can afford. Most programs will work with any Pentium processor but performance may be disappointingly lethargic with a slower processor.* *Read the system requirements for your software, but aim to have a processor at least one notch above the recommended minimum.*	○	○	○	○	●
Will you need to store large amounts of data in files on the hard disk?	Certain types of program create exceptionally large files: scanned pictures and other full-colour bitmap images are particular offenders. Databases can also use large amounts of disk space if they contain thousands of records. You should also bear in mind that Windows programs tend to create larger data files than their DOS equivalents.	*If your disk starts to fill up with programs and/or data you have three options: (1) buy a second hard disk, (2) swap the existing disk for a bigger one, or (3) use a compression utility to squeeze more data onto the existing disk.* *These options are expensive or inconvenient so, when buying a new computer it's best to overestimate your requirements to allow for future expansion. Buy at least a 1Gb hard disk.*	○	●	○	○	○
Will you be using your computer primarily for CAD, DTP or the production of professional graphics?	Most people use the graphics capabilities of modern software to enhance the appearance of their work, but this question is aimed at those users who concentrate on one application, such as computer-aided design (CAD), that places particular strains on the system.	*CAD and professional graphics software require more powerful processors. A large high-contrast monitor is essential for CAD and DTP work; professional graphics and imaging applications demand speed and lots of colours from the graphics card, monitor size being less significant. All these applications will produce large data files requiring more disk space.*	○	●	●	●	●
Will you be spending most of your working day at the computer or is speed very important to you?	The less time users spend waiting for things to happen the more work gets done. The price paid for speed gains can be recouped from increased productivity. For the sake of your eyesight, you should also consider a larger monitor.	*Fast Pentium processors have upped the basic configuration of a new computer so that anything slower than a 133MHz Pentium is now regarded as obsolete. It's a certainty that new releases of software will require greater processing power.*	●	○	●	●	●

●=Yes ○=No

of the computer that might need enhancement if you answer 'yes'. Consider each question and, if you think you can answer yes, circle the suggested enhancements (as said, marked by the dark blobs) in the boxes to the right of each question.

Interpreting the results

No method so basic could possibly analyse everybody's needs accurately and if you need a more detailed systems analysis you willl have to talk over your needs with an expert. However, if you don't know how to begin choosing a computer, we hope the questions we provide will set you thinking in the right direction.

When you have completed the chart, add up the enhancements you have circled. You can score a maximum of three points in each of the five enhancement categories. Then refer to the points grid to see what specification we suggest.

Pros and cons of retail outlets

Pros

- You can try before you buy; this is especially important when assessing screens, keyboard quality and the output from printers.
- You are able to take your purchases home with you, without delay.
- There is somewhere local to return your equipment to in case of faults.
- Credit schemes may be available.

Cons

- Prices at high street suppliers can be higher than at computer superstores or from direct suppliers.
- Non-specialist shops selling a wide range of other consumer goods may not be able to offer you specialist advice.
- Most shops do not have their own repair facilities so, although you can easily get your computer to the shop if it goes wrong, you will have to wait for them to send it away.

Off-the-page suppliers

Most direct suppliers are geared up to satisfying needs quickly and many of them can promise next-day courier delivery. But beware of firms which advertise goods they do not keep in stock who simply forward your order to a third party. Never order off the page without calling the supplier and asking the following questions:

- ○ Are the items in stock?
- ○ When can they deliver?
- ○ Is the price as advertised?
- ○ How much do delivery and insurance cost?
- ○ Are the master disks provided for any software pre-installed on the machine?
- ○ Are the manuals for any pre-installed software included in the price?
- ○ How long is the warranty?
- ○ Is it an on-site warranty? If so, what is the response time?
- ○ How much does it cost to extend the warranty?
- ○ Has the firm got an engineer in your area?
- ○ Will the firm guarantee to lend you a machine if they can't fix yours on site?
- ○ Does the company provide pre- and post-sales support?
- ○ Is there a telephone helpline? Is it free? When can you use it?
- ○ Will the firm agree not to debit a credit card payment until the goods are despatched?

Buyer's checklist

Shortlist	Example	Your first choice	Second choice
Computer	Techno SuperPro		
Processor	Pentium 133MHz		
Disk	1Gb		
Display system	SVGA 1Mb with 14in monitor		
Memory	16Mb		
Options	CD-ROM and sound card £190		
Case type	Mini tower		
DOS, Windows and mouse	Yes (Windows 95)		
On site?	Yes		
Warranty period	6 months		
Also included	Loborsoft office suite		
Price	£985		
Carriage	£15		
VAT	£175		
Total	£1,175		
Supplier	Marlborough Systems		
Phone	011 123 4567		
Price confirmed	Yes, 12/12/96		
Reviewed in	*What PC?* December 96 page 123		
Notes	£150 to extend on-site warranty for two more years. Manuals and disks supplied.		

Points grid

	No points	1 point	2 points	3 points
RAM	16Mb	16Mb	16Mb	32Mb or more
Disk	1Gb	1Gb	1.6Gb or more	2Gb or more
CPU	133MHz Pentium	133MHz Pentium	133/166MHz Pentium	166MHz Pentium or higher
Display	1Mb accelerator	1Mb accelerator	2Mb accelerator	64-bit PCI graphics card
Monitor	14in SVGA non-interlaced	14/15in SVGA non-interlaced	15in SVGA non-interlaced	17in or bigger

Shopping list

- **Complete computer system including monitor, mouse, DOS and Windows.**
- **Printer (inkjet, dot-matrix or laser).**
- **Printer accessories: a connecting cable (not included in the price of either printer or computer), paper, spare ink, ribbon or toner.**
- **Software (apart from DOS and Windows).**
- **PC accessories: disks, disk boxes, manuals, mouse mat.**

Safe buying off the page

- The safest way to pay is by credit card.
- If you can bear to wait an extra couple of days, it is much better to send a written order stating any conditions of sale you want to impose. These form part of your contract with the supplier and will make it much easier to get your money back from the credit card company if things go wrong.
- Ask for a written confirmation of your order and do not give your credit card number until you receive this confirmation.
- If you must order by phone, ask the name of the salesperson taking your order.
- Record the date and time of your conversation.
- Keep a copy of your order.
- Do not cancel the order, even if it doesn't arrive as promised. The best grounds for getting money back from a credit card company, even in cases where the supplier goes bust, are 'non-delivery of the goods ordered'. You cannot claim non-delivery if you have cancelled the order. ●