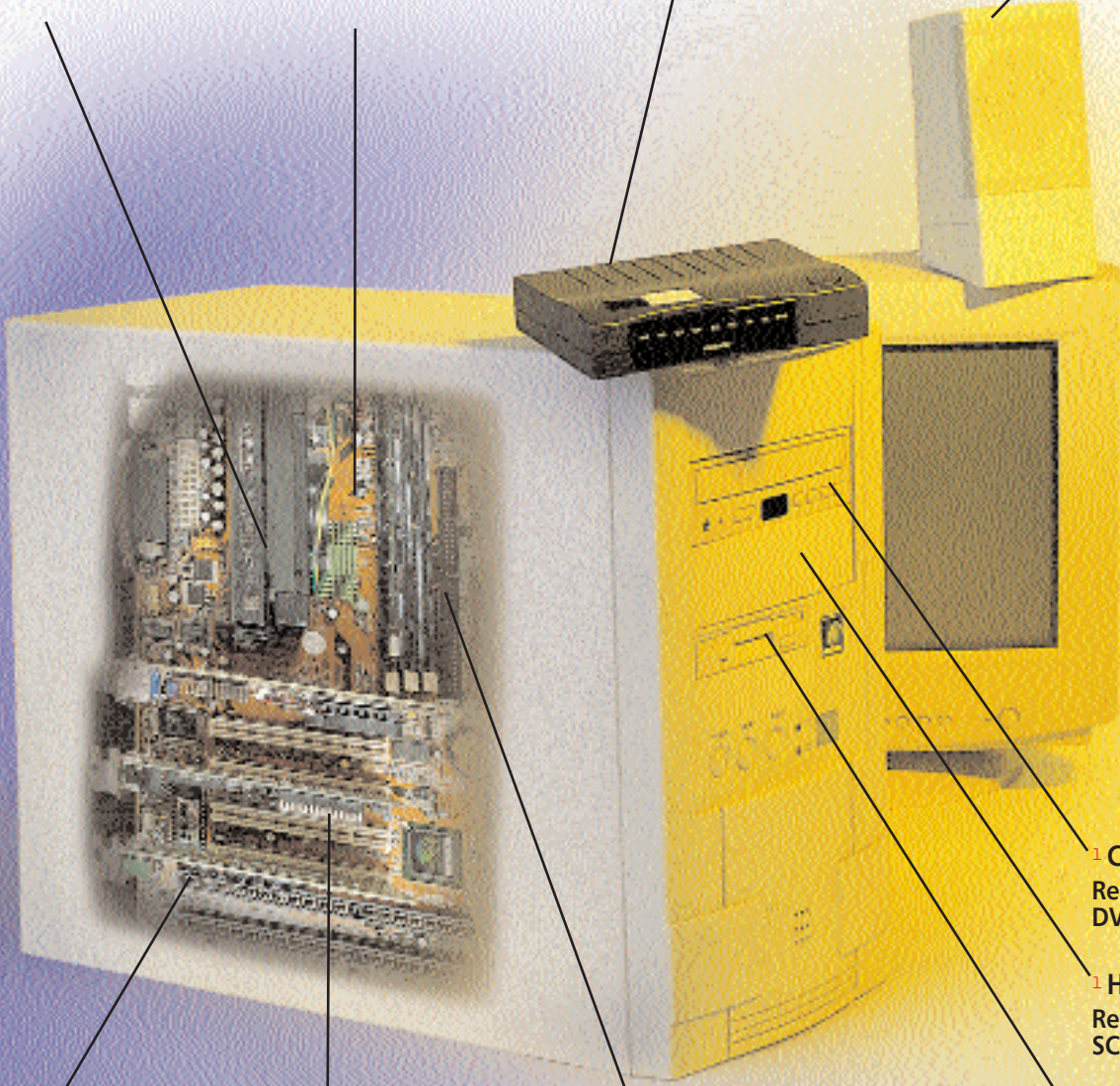# bazaar

Best Buys

THE DEVIL S

[1] **Processor**
A Slot-1 type is the minimum you need

[1] **Motherboard**
The first component you need to upgrade

[1] **Modem**
Get a voice-compatible modem

[1] **Speakers**
Opt for Dolby Digital and Surround Sound

[1] **CD-ROM Drive**
Replace this with a DVD player

[1] **Hard Disk**
Replace the IDE with a SCSI drive

[1] **Floppy Drive**
Store 100 times more data in the same space

[1] **Graphics Card**
PCI is out, AGP is in

[1] **Soundcard**
Junk the 16-bit, upgrade to 64-voice soundcard

[1] **RAM**
Prefer SDRAM to the EDO RAM

ALTERNATIVE

Rip out those scrawny pieces of plastic and other metal components from your PC and upgrade to hardcore power.
Here are 10 essential upgrades your computer needs

Don't you wish you could get your hands on a faster, more powerful and techno-savvy mac-hine? Does *Need for Speed III* on your Pentium 133 with 32 MB of EDO RAM remind you of a PowerPoint slide show that goes frame-by-frame-by-frame...

If yes, your computer is ready for an upgrade.

Hardware technology is progressing by leaps and bounds. And by the time you can decide upon the kind of graphics card you want to buy, the manufacturers will be ready to launch a better and faster model. The fact that change is the only constant factor in technology, should not hold you from upgrading your present 'snail-paced' machine into something that moves like an F-14 Twin Turbine Tomcat.

With 3D realism, graphics and sound content being incorporated into almost every software application and enhanced use of Virtual Reality Markup Language (VRML) and 3D modelling tools, you need to have the right hardware to get the real taste of what is being portrayed. Speed is another important criterion. When you buy a new piece of hardware, you are not only ensured of faster speed but also of superior features like a better display with better resolution, a higher refresh rate, or enhanced realism.

So, if you want to ride the technological wave and not sit on the beach watching the rest of the world go by—upgrade NOW!

1 Score a 100 (MHz)

If you are still using a Socket-7 motherboard, you are already in trouble. Ever since the launch of Pentium II 233 MHz, Intel moved from Socket-7 to the Slot-1 architecture.

The entry-level processor today are the Pentium II 350 MHz or the Celeron 333 Mhz processors which do not support the Socket-7 architecture, so if you are looking at upgrading your processor, you will necessarily need to upgrade the motherboard.

Many newer motherboards are now being converted into something called Logic boards—the sound and graphics cards are integrated with the board to decrease the cost one would incur had one added separate components.
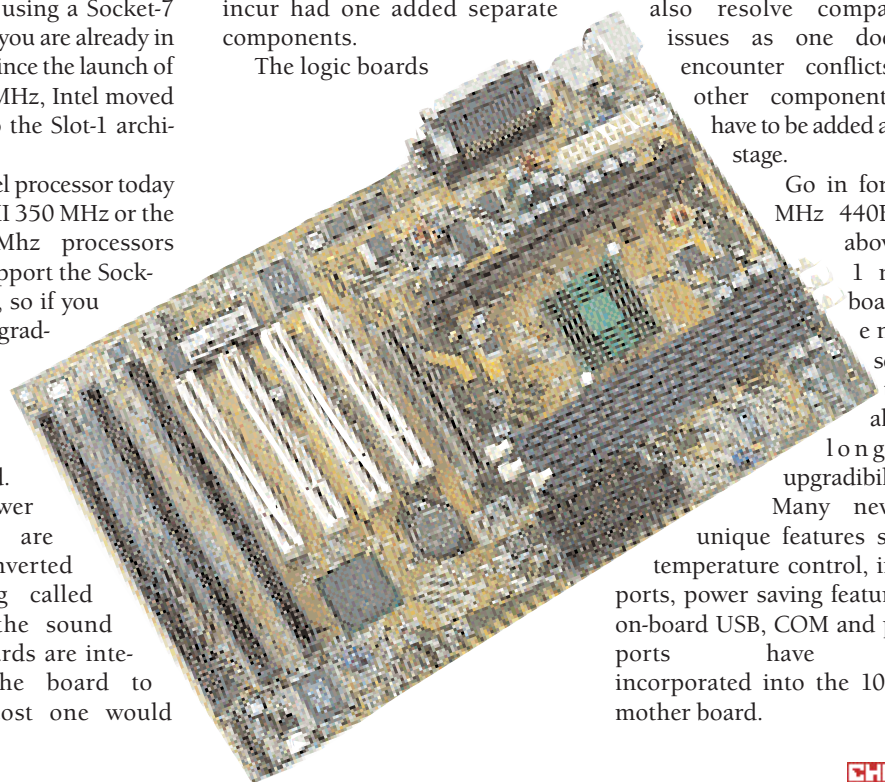
The logic boards also resolve compatibility issues as one does not encounter conflicts with other components that have to be added at a later stage.

Go in for a 100 MHz 440Bx and above Slot-1 motherboard to ensure scalability and allow for long-term upgradibility.

Many new and unique features such as temperature control, infrared ports, power saving features and on-board USB, COM and parallel ports have been incorporated into the 100 MHz mother board.
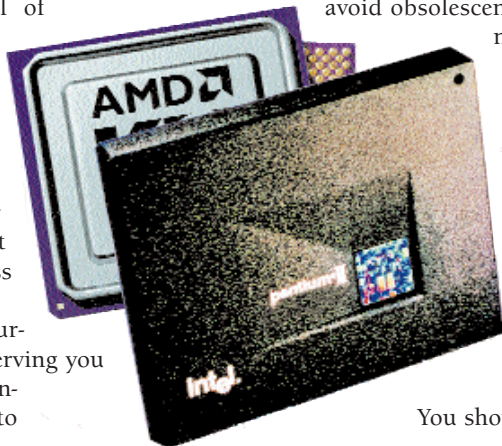

Photographs:
IRA AW ASTHI
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NEETA WADIKER

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2 Heart of the matter

The entry level of processors has changed radically—you will have to search the market with a fine-toothed comb if you are looking for a processor that pumps anything less than 350 MHz.

Even if your current processor is serving you fine, you should consider upgrading to avoid obsolescence and if you do not want your service engineer (whom you contacted for support) to give you a 'what-are-you-talking-about?' look when you tell him which processor you are using. You should also consider upgrading if you want to make adequate use of all the new applications being developed today.

Software companies are now getting more and more processor-focussed and are designing applications suited to a specific line of processors.

Processors that are supported on a Slot-1 board are a good choice as the entire processor industry seems to be backing that technology and will continue to do so for quite a while. All new processors, such as Intel's Pentium III or AMD's K6-3, now pack enhanced multimedia handling capabilities.
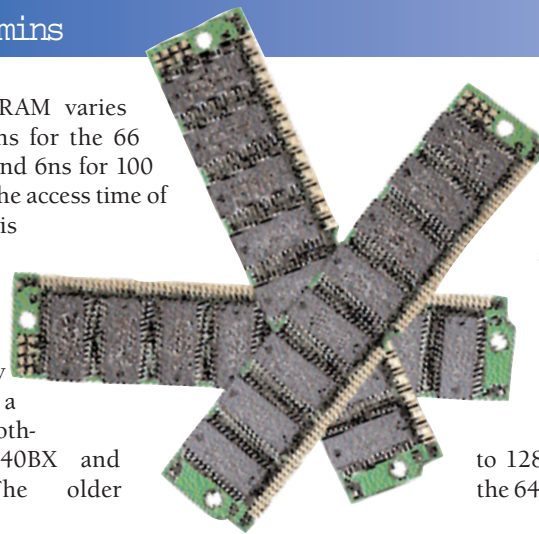
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3 A shot of Vitamins

It is time you said goodbye to EDO RAM. The motherboards that featured support for EDO RAM are slowly being phased out and SDRAM is the latest must-have. You might feel that SDRAM is going to be more expensive but, in fact, SDRAM is almost 40 percent cheaper than EDO RAM. It also performs seven times faster and consumes lesser power.

Also in case you have SDRAM on your motherboard and decide to upgrade, you will be able to transfer the same RAM chips to the new board as all new boards support only SDRAM. The RAM access time of SDRAM varies between 10ns for the 66 MHz RAM and 6ns for 100 MHz while the access time of EDO RAM is close to 70ns. Go for 100 MHz SDRAM only if you have a 100 MHz motherboard (440BX and above). The older 66 MHz SDRAM could function on your newer board but will not give optimum performance. The bank-wise storage capacity of SDRAM is much higher as each Dual Inline Memory Module (DIMM) of SDRAM can hold up to 128 MB as compared to the 64 MB of the EDO RAM.
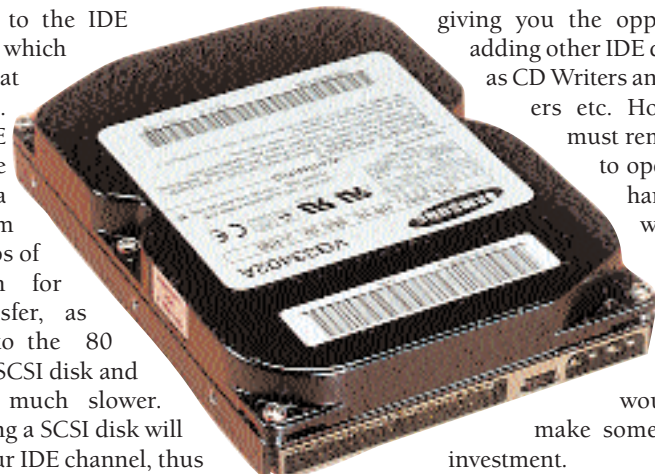
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4 Information Repository

Improvements in seek time due to advancements in disk head technology and storage media, coupled with the fall in prices, have made high capacity hard disks a viable option. Till about a year ago, 1 MB of storage space cost Rs 3.40; today the same is available for as low as Rs 1.70.

As the capacity of the hard disk increases, the cost per MB decreases. However, do not only consider upgrading to a higher capacity hard disk, instead contemplate upgrading to a higher capacity SCSI hard disk. A SCSI hard disk is almost 1.3 times faster than an IDE hard disk. It revolves at 7200 rotations per minute (rpm) compared to the IDE hard disk, which revolves at 5400 rpm. The IDE interface supports a maximum of 30 Mbps of bandwidth for data transfer, as opposed to the 80 Kbps of a SCSI disk and hence is much slower. 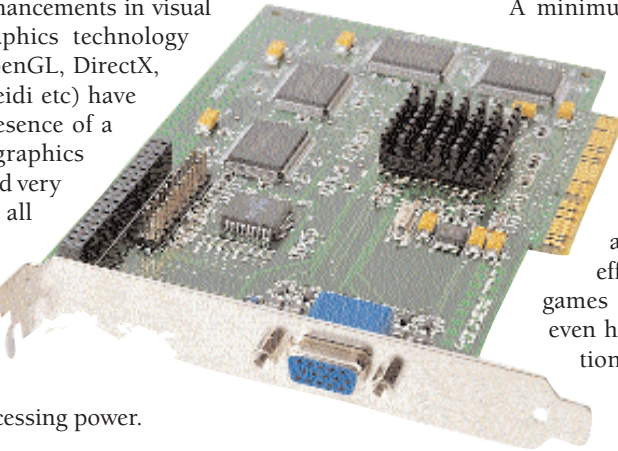Also, having a SCSI disk will free up your IDE channel, thus giving you the opportunity of adding other IDE devices such as CD Writers and DVD Players etc. However, you must remember that to operate a SCSI hard disk, you would need a SCSI card and appropriate cables for which you would need to make some additional investment.

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5 Simulating Stimulators

Rapid enhancements in visual and graphics technology (3D, OpenGL, DirectX, Glide and Heidi etc) have made the presence of a high-end graphics processor card very essential in all systems. In addition, they are also required to have certain minimum graphics processing power.

A minimum of 800 x 600 resolution is a must for the optimal display performance, while effects in many games re-quire an even higher resolution of almost 1024 x 768 for optimal

refresh rates and superior display of special effects. The 3D processor can handle many special effects such as anti-aliasing, bi/tri-linear filtering, MIP mapping and implementation of other effects such as transparency, fog etc. A 3D graphics accelerator card with 8 MB of SDRAM onboard is the best choice for any standard PC user today.

A card with a RAMDAC of 180 MHz performs tremendously well. Higher the RAMDAC, the better will be the performance of the card.

Look for an AGP card (which has speedy buses) rather than a PCI card.

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6 Dial 3 to leave a message...

Call it sheer laziness or pushing technology to its limits, nothing can beat the day when you have a PC that can answer phone calls, send/receive faxes, and even download data from the Internet at lightening speeds. Interested?

Then get a 56 Kbps voice compatible modem. This modem generally comes with software (you can also download, for free from the Internet) to configure your PC to send as well as receive faxes. You can even schedule faxes that have to be sent. Or even request Star TV to fax you

the latest programme schedules: your PC will automatically dial the company and request

the necessary information for you on a regular interval. You can use the voice compatibility function of the modem to set up different voice mailboxes on your PC with their own personalised greetings. The caller can then decide whom the message is for and accordingly record the message in that particular mailbox.

These can later be accessed by different users using a password known only to them.

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7 Lights...Camera...Action!

Thanks to the incorporation of Digital Dolby Sound and conversion of movie formats into digital formats, you can now make your own home videos and watch the latest movies right on your desktop.

But first you will need to trash your CD-ROM drive and go for something that serves a dual purpose of movie playback as well as read data and audio CDs. Anything lower than a 5x DVD-ROM drive will not be able to provide you with the clarity you are looking for.

Also, look for one that comes with a dedicated accelerator card (like Creative's DXR2 that comes with Creative's DVD-

ROM drive).

Keep two things in mind before choosing a DVD-ROM drive: Each DVD is meant only for a specific region. Check for the zones or regions the drive can support before buying it. The more the number of regions supported by the DVD drive, the better it is for you. This will ensure that you can watch DVDs from more than one

'zone'. Second, check the compatibility of

the DVD-ROM drive with the 17-GB DVD format which will soon be launched in the market.

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8 Let there be sound...

Imagine the blood curdling screams of the monsters in *Half-Life* as if they were right there in your room terrorising your soul or, if that is too bizarre for you then, imagine you are sitting in the VIP lounge in the Acropolis with Yanni playing live.

You definitely need to replace your current two-point stereo speaker system with the 5-point surround sound system that offers you a dedicated Bass amplifier and

Dolby Surround Sound—the de facto standard with all DVD and VCDs. The 'Environmental Audio' technology being promoted by Creative is being shaped to give music effects like echo, decay and reverberation.

Microsoft and other companies are using this extension for optimisation of sound and

video in their DirectX API (Applications Programming Interface).

Now that your stereo system is taken care of, you should even consider replacing your CD system with the 5-point surround system. The sound is better not only in comparison to the standard stereo, surround system also supports 'Quad' sound to give you an enhanced sound quality. For such a 5-point speaker system, the front and rear speaker support on the soundcard is essential. The Desktop Theater 5.1 from Creative is one such ideal upgrade.

9 Need more space? Get more space

How much longer are you going to lug around that bulky box of 10-floppy-disks that can store just 1.44 MB worth of data each? Add to that the exasperating exercise of splitting large files over multiple disks which upon reaching your destination present you with a delimma of non-recoverable disk error.
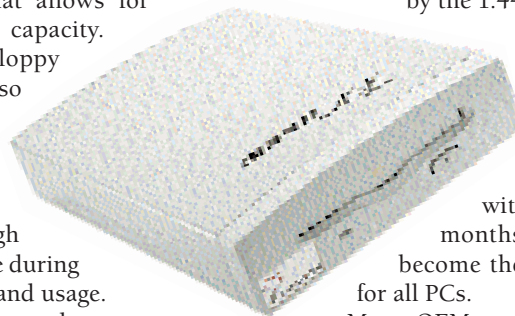
It is time to think big, think more and to move up in life.

Go in for the LS-120 super disk drive that will support your standard 1.44-MB floppy disks as well as the new 120-MB

floppy disk that allows for greater storage capacity. The 120-MB floppy disks are also much more handy than the 1.44 MB ones as they are tough enough to resist damage during transportation and usage.

Data transfer rate between your PC and the 120-MB disk is as expected much faster than transfer rate supported
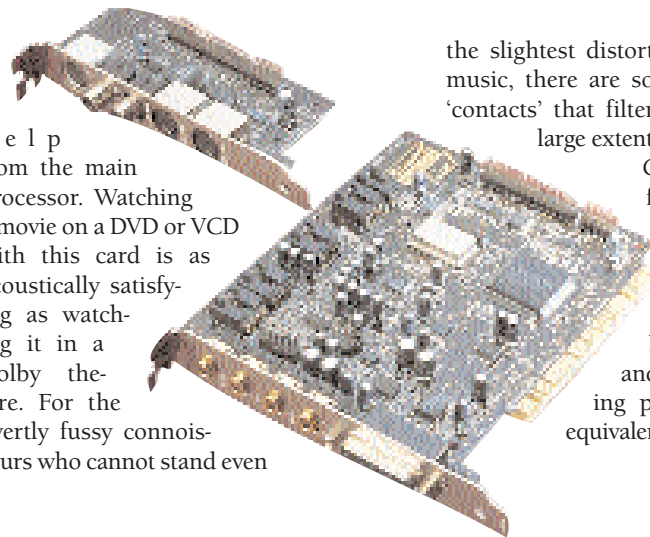
by the 1.44 MB disks.

You probably will not easily find 120 MB disks in every second shop around the corner today, but within a couple of months they are likely to become the de facto standard for all PCs.

Many OEM vendors such as Compaq have already begun selling these super disk drives.

10 If music be the soul of love!

New technologies such as 3D Surround Sound, Dolby Digital, Environmental Audio form the core of the sound world today. To support these, you need to replace your diminutive 16-bit PCI soundcard with a 64-voice soundcard. By allowing the playback of 64 voices of data at a time, these soundcards allow more number of simultaneous sounds or voices to be supported, thus giving a more natural and pure sound. Some of the high-end 64-voice soundcards come with powerful sound processors on-board and support Dolby Digital, 3D positional audio and process the Dolby information of the application with little

help from the main processor. Watching a movie on a DVD or VCD with this card is as acoustically satisfying as watching it in a Dolby theatre. For the overtly fussy connoisseurs who cannot stand even

the slightest distortion or hiss in their music, there are soundcards with gold 'contacts' that filter out the noise to a large extent.

Currently all these features can be found in the Creative SoundBlaster Live! soundcard which houses the EMU10K1 processor and boasts of a processing power that is nearly equivalent to a P133 processor.

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