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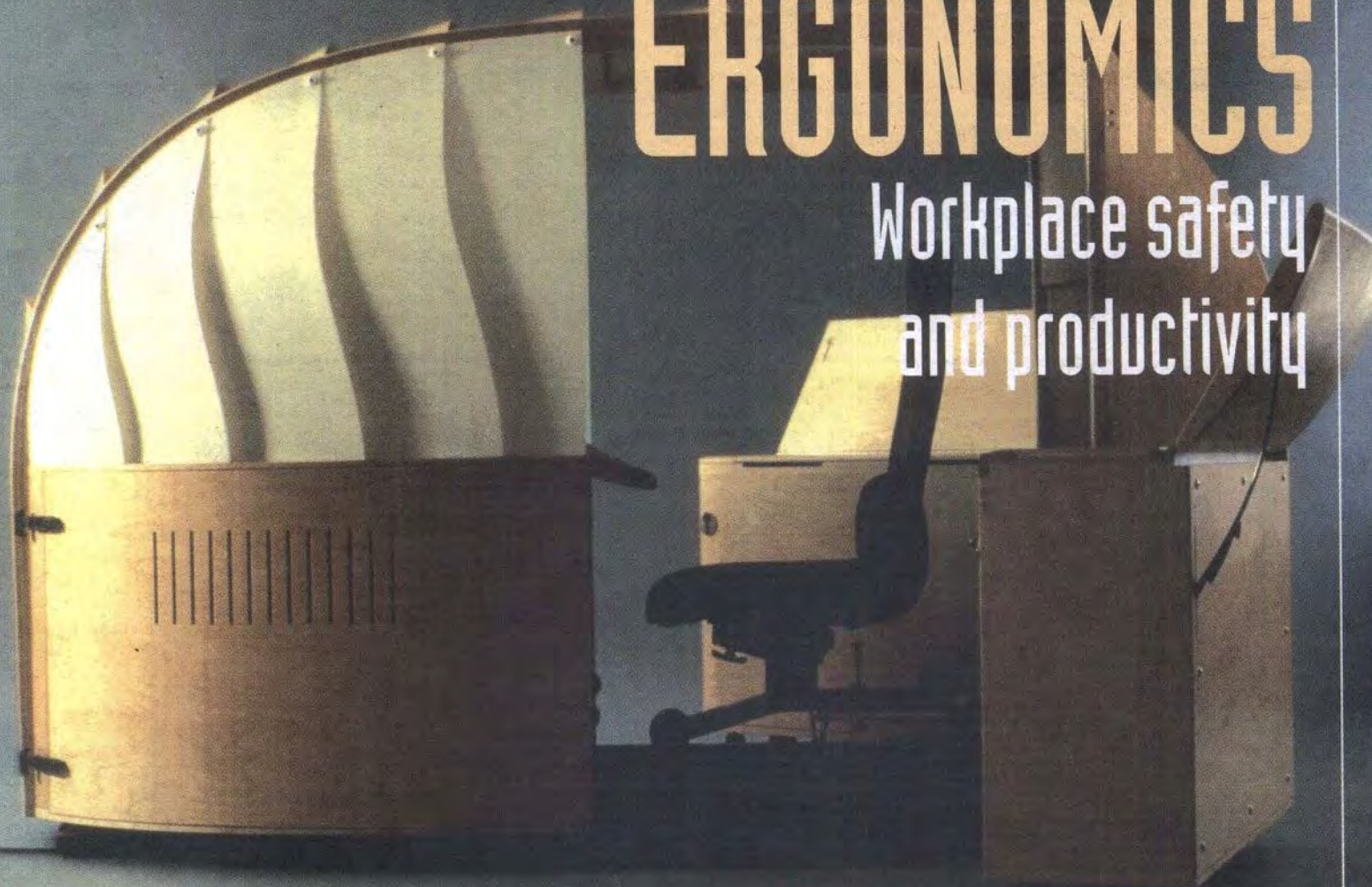
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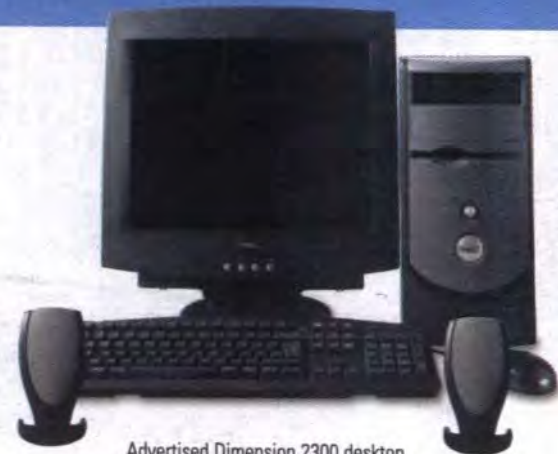
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Standards in the making



David Tanaka

FROM THE EDITOR

Two specifications have emerged that may define digital products in the future. But their potential for success couldn't be more different. First is the shoe-in: Banias, which is the codename for Intel's next-generation mobile PC platform, announced at the Intel Developer Forum in September. Intel Canada spokesman, Doug Cooper, explains: "We are taking a platform approach with Banias. It will include the CPU, chipset and wireless communications silicon. Bottom line is there are several chips that intelligently work together to get breakthrough performance and battery life."

For wireless connectivity, Intel is betting on both the 11 Mbps "b" and 54 Mbps "a" flavours of 802.11 by including support for them in Banias. Plus, says Intel, it will have "a solution" to allow simultaneous Bluetooth operation.

To deal with power and performance issues, Banias has four solutions: Advanced Branch Prediction, Micro-Op Fusion, a Power Optimized Processor System Bus and Dedicated Stack Manager. The first two work together by first predicting what operations a program will execute next depending on its past behaviour, and then combining them into a single operation. The advanced power management has more precise control over supplying power to the components that need it. The dedicated stack manager frees the processor to execute program instructions.

All of these enhance performance without a penalty on battery life, says Intel. And what mobile computer user wouldn't like that?

Several conceptual steps away from mobile processor

design, a different kind of standard is being introduced. At the end of September, Olympus America spokesperson, Sally Smith Clemens, talked with TCP about a proposed design specification for digital single-lens reflex (SLR) cameras that had just been announced by Olympus and Kodak (with buy-in from Fujifilm). It's called the Four Thirds System, taking its name from the size (measured diagonally) of the image sensor—4/3-in., or one and one-third inches—around which the new digital camera design specification is created.

Whereas the monolithic Intel can design a new notebook technology and have the rest of the industry more or less fall in line, power and influence in the camera industry is more diffuse. Need, common sense, and vested interests are all waiting to enter the Four Thirds debate. The need arises from the somewhat immature state of the digital SLR industry. Look at the 35 mm industry as a contrast. Once everyone agreed on the physical dimensions of the 35 mm frame, the industry could evolve and prosper, with film manufacturers, camera makers, photofinishers, and accessory makers all confident their products would be interoperable.

Another benefit of everyone agreeing to the basic film dimension was a common language for optics. Three 24 mm lenses from three separate manufacturers would give roughly the same field of view, making it easier for the industry and consumers to relate to various wide angle and telephoto lens specifications.

With digital SLRs, that common language hasn't been achieved because manufacturers use sensors of different sizes, plus many are using bodies and lenses originally designed for 35

mm film. Anyone who's contemplated a digital SLR has probably discovered that the "normal" 50 mm lens suddenly becomes a 70-something mm lens because the image sensor on the digital SLR is smaller than a 35 mm film frame, so a multiplier factor of 1.5 or 1.6 has to be applied when determining the focal length. Adopting a standard like the Four Thirds System seems like a common sense solution to a potentially confusing situation.

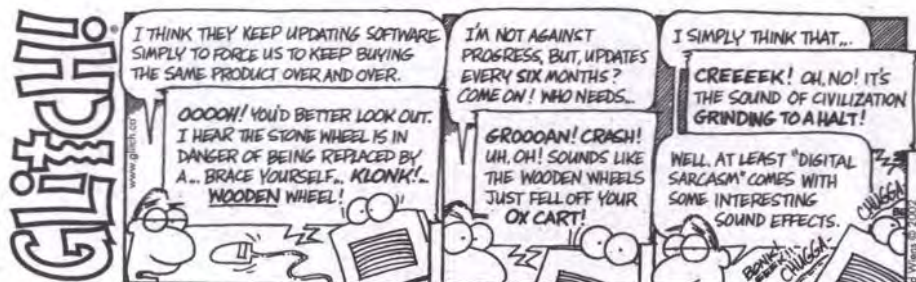
But then the vested interests come in. The fact is that camera makers have a sizable investment in the 35 mm system, plus Nikon and Canon in particular, have a huge and influential installed base of professional or semi-pro 35 mm users. These customers already have thousands and perhaps tens of thousands of dollars invested in lenses flash systems and other accessories, plus years invested in learning to use these tools. Asking them to throw that all aside just to go digital seems like market share suicide.

Moreover, some camera makers have already announced digital SLR models that use a sensor which is the same size as 35 mm film. This preserves the legacy of the 35 mm format while bringing it into the digital era.

Conclusion? Expect Banias everywhere. You may have to look harder for Four Thirds.

Enjoy the issue!

David Tanaka, Editor



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A small detail missing in Red Hat review

Gene Wilburn has left one small item out of his review of Red Hat Linux 7.3 (see *TCP* Sept). In the Linux community, Red Hat



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has lost the support it used to have and with its newer distributions after 6.1 it has been regarded as not worth getting.

I am not going to get into naming the distribution that is the "best" as that really depends on what your use is going to be. Debian and Free BSD are closer to a true Unix kernel than most (great for commercial servers). The rest have various points going for them.

Jaqui Greenlees

Yeah, what about the high cost of ink?

In the Lab Report sidebar "Why Ink Costs So Much" (see *TCP* September) there was no mention of the costs of developing or producing the inks. Nor any mention of the secondary market for ink supplies.

I used to have a Canon colour printer with four separate ink cartridges. After a couple of years of buying expensive cartridges, I tried out refilling my own car-

tridges. This worked for about three refills, and then my print head nozzles started to clog and I could not unclog them.

I replaced the Canon with an Epson 600 that I got at Superstore. I have bought Epson ink cartridges for several years and they have worked fine. Recently Superstore switched to another cartridge supplier with ink cartridges that are half the price. I am in my first cartridge from this supplier. I am only about a third of the way through the cartridge but have noticed that I have to clean my heads more often.

The Computer Paper could review inks and get to the bottom of the quality versus price, OEM versus third-party supplier issue. I am not sure whether my experience is a coincidence or an example of you get what you pay for.

Glenn P. Davies

Another take on ink cartridges

The box text "Why ink costs so much" as part of the September Lab Report says printers have improved noticeably in the past two years while "cartridge prices have remained relatively stable".

I have two nearly identical Hewlett-Packard colour printers: an 812c bought about two years ago for \$250, and an 845c bought this summer for \$100. The

colour ink cartridges for both printers cost \$45. However, the 812's cartridge comes with 30 mL of ink, while the 845's cartridge comes with only 15 mL. Both have been refilled successfully more than once, and can hold a lot more than 30 mL.

Besides cosmetic changes (case colour) and the elimination of the parallel port from the 845, the main difference between these two printers is in quality control. The fit and finish of the 812's parts is average; the 845 feels rough, and arrived with a crack where two parts of the paper tray are joined at the factory. Even the 845's nameplate—reduced from the 812's 3D plastic molding to just a piece of sticky paper—was crooked.

Alan Chattaway

TCP replies: your commentary notwithstanding, what the sidebar text should have said is that printer pricing had improved in the past two years.

You left out FreeHand

In your review of Illustrator versus CorelDraw, there was no mention of Macromedia's Freehand which was always fighting with Illustrator for supremacy on Mac's side of the track and where CorelDraw never had a chance. Both are available on either Mac or PC platform. We have to remember that Freehand was

developed by Aldus, the same company that brought us PageMaker.

Later on Adobe bought all Aldus products, kept PageMaker, pushed it to Version 6.5 then 7, left FreeHand standing still (after examining its code no doubt), having Illustrator to promote, then sold it to Macromedia, which then updated it to Version 9 and then to Version 10, in early 2001.

FreeHand was and is still ahead of Illustrator in terms of integrating text to vector graphics, integrated blends earlier on and I always felt that its learning curve was less steep than Illustrator's. And the legal hassle between Adobe and Macromedia stems in part for what I understand from technology inherited from Aldus.

Louis Martin

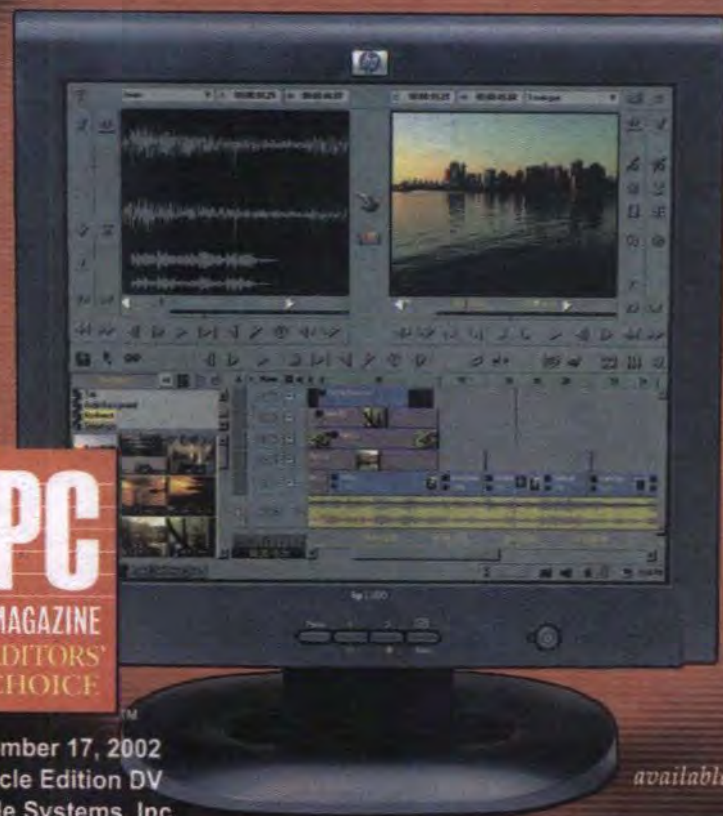
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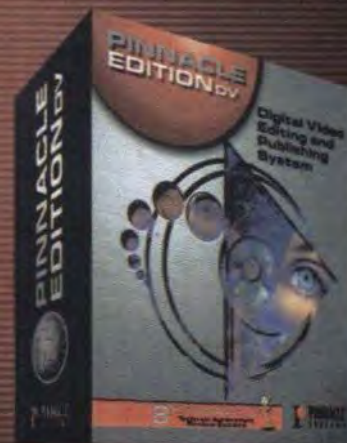
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WHAT'S NEW

Vancouver-based **Destiny Media Technologies** (www.dsny.com) has released a prototype of its latest version of Clipstream, which will allow users to watch live streaming video through a Web site without plug-ins or third-party player software.

Clipstream TV is Java-based, and can be used to rebroadcast a live television signal or video signal to the desktop. According to Destiny Media, the stream will reach users behind firewalls or proxies that are compatible with HTML 1.1. A demo of the prototype is available at: www.clipstream.com/demo/live/index.shtml.

Canon (www.canon.ca) has introduced two compact projectors to its lineup that will allow users to project a 2.54 m wide (100 in.) image from 2.8 m (9.2 ft.), which is about 1.2 m (4 ft.) closer than Canon's previous model. The **LV-7355** and **LV-7350** LCD projectors, which weigh in at 4.2 kg, also feature native XGA resolution, a 1.5X motorized zoom lens, and the ability to connect wirelessly to a PC or to run a presentation directly from a media card.



Canon says the brightness of the LV-7355 can be boosted from 1,900 ANSI lumens to 2,200 ANSI lumens using its Turbo Bright System, which was designed for spaces where lighting can't be dimmed. The LV-7350 has a range of 1,500 to 1,800 ANSI lumens.

The projectors have a suggested list prices of US\$4,499 (LV-7355) and US\$3,499 (LV-7350).

Colligo Networks Inc. (www.colligo.com) has released Colligo Personal Edition, an application that allows users to exchange files and communicate with each other over ad hoc, peer-to-peer, wireless networks in real time. The software uses short-range wireless capabilities such as Bluetooth or 802.11 to establish direct connections with other equipped devices, without the need to

access a server or Internet connection. Users can communicate through chat or instant messaging programs and transfer files between devices over the connection, according to the company.

The software supports Windows-based laptops, desktops, and Tablet PCs, as well as both Palm and Pocket PC handhelds. It can be purchased from Colligo's Web site for US\$19.95.

IBM (www.ibm.com) and **Honda** (www.honda.com) are working on a voice recognition technology for a new navigation system that will be featured in select 2003 model Honda Accords. The new Touch by Voice navigation system is powered by IBM's ViaVoice technology and software developed jointly by IBM and Honda Research and Development.



Drivers will be able to activate the system through a "talk" button on the steering wheel, and then ask for directions and hear the responses over the car's audio system. In addition, IBM says drivers will be able to use the technology to operate the car's climate controls. The navigation system will be available on top-end Accord models sold in the U.S.

Intel (www.intel.com) and **SonicBlue** (www.sonicblue.com) have announced a joint plan to develop a mobile device that will play back recorded TV programs. The **ReplayTV Portable Video Player (PVP)** device, which is expected to be released in 2003, will play files transferred from SonicBlue's ReplayTV Digital Video Recorder, as well as other audio and video files transferred from a PC.

Intel is contributing its XScale technology-based processors and advanced video codecs developed by its Emerging Platform Labs, according to the announcement, which was made at the

Spotlight



Tiny camera captures video

Sony has unveiled a new class of ultra-small digital cameras, beginning with the Cyber-shot U DSC-U20 and DSC-U10. The tiny cameras capture both digital still images and record MPEG movie clips.

The Cyber-shot Us weigh in at 121 g (4.3 oz.) each with battery and media installed. Being a Sony product, that media is its proprietary Memory Stick. Both models come with an 8 MB Memory Stick, as well as a pair of AAA NiMH rechargeable batteries, a battery charger, USB cable, and a neck strap.

They feature a user-friendly interface, built-in flash, and can be operated with one hand, according to Sony. They also have a 1-inch backlit, reflective LCD for composing and reviewing shots.

In addition to standard still image capture, the new cameras feature a burst mode for shooting up to five consecutive frames (three per second), while pressing the shutter button, and video mode for capturing 15 second MPEG 1 clips (without audio).

The Cyber-shot U DSC-U20 is priced at US\$270, and the DSC-U10 at US\$200. Both models sport a silver finish case, but Sony sales a wider range of case colours will be available in early 2003.

Intel Developer's Forum (IDF) in San Jose in early September.

The announcement ties in with the general theme of connectivity Intel emphasized at the forum, which included a keynote presentation about the "digital home," in which computers and consumer electronic devices connect and communicate seamlessly.

Spotlight

LP to CD or DVD

Those with a collection of vinyl LPs gathering dust in the basement may be interested in the **XP201**—a hardware and software solution for transferring music from old record and tape cassettes to a PC hard drive, CDs, and DVDs. The phono/mic pre-amp has a built-in RIAA equalizer and comes bundled with Wave Purity software for editing the resulting audio files to remove unwanted noise, for example.

The product is made by **Xpsound** (www.xpsound.com), located in Melbourne, Australia. It is housed in a shielded chassis to prevent from distortion or interference from the PC, and is powered by either a 9 Volt battery, a joystick connector cable, or a 9 Volt power adapter. While the hardware is compatible with Mac or Windows PCs, the software is Windows only (95, 98, Me, or XP).

The XP201 has a suggested retail price of US\$149.





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Still hurting after all these years

Pain on the job didn't start with the Computer Age

By Jeff Evans

I know three people who have developed repetitive strain injuries (RSI), associated with long-term computer keyboard and mouse use. Their symptoms appeared years ago, when proper ergonomic methods of preventing RSIs were not widely known or practiced. They still suffer from symptoms, even though they now practice safer computing use.

Although accurate figures on the total numbers of RSI sufferers are hard to pin down, my three friends have lots of company. In researching this article, I came across wildly varying statistics and estimates of the scale of the RSI problem, with the claimed numbers of sufferers of this condition ranging from hundreds of

thousands to many millions, in North America alone. Estimates of the economic costs of RSIs in North America also vary wildly, from \$2 billion to \$100 billion per year.

Work has always had its dangers: the skeleton of a first century AD slave from the Roman city of Herculaneum had several vertebrae fused from the literally back-crushing labour he performed on the docks and ships of that seaport. Inuit women used to wear out their front teeth in the course of a lifetime of chewing hides to soften them, a necessary step in making certain items of arctic clothing. Some of my coal mining ancestors had "buttons down the back," circles of scar tissue over the bumps of their vertebrae, created by years of scraping through tiny

mine tunnels, their backs torn by the rough, low, rock ceilings.

The Computer Age poses hazards to today's information workers, just as the Stone Age, the Iron Age, and the Industrial Age challenged our ancestors. Sadly, many of today's technology-related problems are unnecessary, the result of new technologies not originally developed with human users' needs sufficiently in mind. A lot of remedial research and work has been done in the last decade, trying to undo the deficiencies of our too-hastily created information tools.

Today, we call the scientific study of the tools and environments that we use and live within, "ergonomics." The term comes from the Greek *ergon*, (work) and *nomos* (laws), or "laws of work." According to Donald Norman, an Apple

Continued on page 14



On our cover: the ultimate in workspace ergonomics



Lucy chair

No, you can't buy the workstation that we selected to illustrate this month's cover. Called the Clipper CS-1, it was designed in 1994 by Douglas Ball and manufactured by Newspace Inc. of Texas, but is no longer in production.

We first saw the Clipper being exhibited at the Design Exchange in Toronto, and have since learned that it was selected to be part of the permanent collection of the Design Museum in London.

The design can be likened to an airplane cockpit, where controls are readily accessible, and the space is private and personal. The white pan-

els diffuse light, helping to eliminate glare and reflections on a computer monitor and the relationships between seating and desk can be customized.

Douglas Ball, born in Peterborough Ont. presently runs his own studio, Douglas Ball Inc. (www.douglasball.com), based in Senneville, Que. He worked for Sunar, a well-known name in Canadian office furniture, where he designed systems (e.g., Uniwall lateral filing) that became standards for office furnishing.

His latest creation is the Lucy chair, designed in 2000 and manufactured by Vecta



Clipper CS-1

whose parent company is Steelcase.

—TCP Staff



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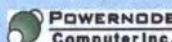
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Still hurting after all these years

Continued from page 12

Fellow and the writer of *Things That Make Us Smart: Defending Human Attributes in the Age of the Machine*, technology tends to dehumanize, and it requires a conscious effort to re-humanize it. In conversation with this writer, Norman expressed his love for the human ingenuity that has created modern technology, but warns that technology becomes so pervasive, and effects us so subtly, that it can seduce or transform our beliefs without us knowing. The cure, according to Norman, is to always question technology, and to agitate and work to make it serve us, rather than us serve it. Perhaps the most powerful tool for this examination and control of our tools and environments is ergonomics.

Another term for ergonomics is human engineering, that is, engineering the spaces, information and tools that humans use for work, education, and play so they provide the greatest benefit. Ergonomics really started to become a scientific discipline in the first half of the 20th century, initially as part of industrial design and manufacturing process improvement, and later flourishing with the hyper-accelerated military-industrial design boom of World War II.

Early research into ergonomics and human factors relating to computer technology occurred at the RAND Corporation think tank in the 1960s, and the MIT Media Lab, the Xerox PARC research lab, Stanford University, and Bell Labs, in the 1970s.

Work could hurt ya

Why care about ergonomics? Because the next victim of bad design might be you. Even before the computer revolution started, RSIs from badly designed factory work or other labouring jobs were a major problem.

Repetitive actions such as lifting or twisting created unhealthy strain on the body's joints, muscles and nerves, causing initial pain, numbness, and weakness, and eventually resulting in permanent damage and disabilities to thousands of workers.

However, as office workers' use of electric typewriters, and data input workers' use of computer keyboards increased with the computerization of the late 1970s, the rates of reported RSI skyrocketed.

U.S. Bureau of Labour Statistics
Continued on page 18



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- 40 GB 7200 RPM ATA100 WD hard drive
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- 40 GB 7200 RPM ATA100 WD hard drive
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- Mouse & Speakers
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- 40 GB 7200RPM ATA100 WD hard drive
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- 3.5 Floppy
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- 256 megabytes of PC2100 DDR RAM
- 80 GB 7200 RPM ATA100 Seagate hard drive
- DLink 10/100 LAN, 3.5" Floppy
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- DLink 10/100 LAN, Creative Inspire 2.1 Speakers
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- 3 Year Labour and 1 Year Parts Limited Warranty

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Microsoft OS software sold with system purchase only.

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Still hurting after all these years

Continued from page 14

showed a growing RSI trend, with a huge spike in the late 1980s, as computer use exploded:

Year	RSI cases	Portion of all illnesses
1978	20,200	14 percent
1979	21,900	15 percent
1980	23,200	18 percent
1981	23,000	18 percent
1982	22,600	21 percent
1983	26,700	25 percent

1984	37,700	28 percent
1985	37,000	30 percent
1986	45,500	33 percent
1987	72,900	38 percent
1988	15,300	48 percent
1989	46,900	52 percent
1990	85,400	56 percent

Source: The Carpal Tunnel Syndrome Book, Mark A. Pinsky, Warner Books.

Corporations had looked to computers for vast increases in efficiency and profitability. They looked on computer users as components of the new techno-

logical solutions, not as human beings with physical limits and vulnerabilities. In the early days of computing, the emphasis was on keystrokes entered, and work norms ignored the damage that millions of repeated actions could cause to sensitive human nerve, muscle, and connective tissues.

Computing was created by engineers, and implemented to increase profits. It sprang from a combination of engineering and accounting perspectives: increased efficiency and profit were top

of mind, without much awareness of human factors.

The first personal computers were crude and poorly thought out from an ergonomic perspective: they had a flat typewriter keyboard, and low-resolution monochrome screens that displayed text-only command line interfaces.

Productivity goals required that data entry workers sit for long periods on badly designed chairs, in front of badly designed desks, day after day. Employers

Continued on page 20

infonec

Computers

Office 211
ECS K7S5A ATX MB
SIS645 Chipset
Onboard Sound & Lan
128MB PC2100 DDR
SEAGATE 40G U100 7200rpm HD
ATI Rage128 Pro 32M AGP
LG 52X Cd-Rom
PANASONIC 1.44M Floppy
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Windows 104 Keys PS/2 KB
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XP1600+ 1.40Ghz -----\$565
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XP1800+ 1.53Ghz -----\$599

Supreme 311
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VIA KT333 Chipset
Onboard Sound
256MB PC2700 DDR SDRAM
MAXTOR 40G U133 7200rpm HD
ATI Radeon 9000 64MB DDR AGP
TOSHIBA 16X Int. DVD Rom
ALTEC LANSING AVS300W Subwoofer
PANASONIC 1.44M Floppy
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MITSUMI Internet KB
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MICROSOFT Windows XP Home

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Pentium4 1.7Ghz -----\$695

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ASUS P4B533-VL/VML \$239/155
ASUS P4T333-C-L \$255/245
ASUS P4B533-PAT-E \$149/215
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ASUS AT7M266-D \$319
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RAM / Compact Flash / SmartMedia Check on web
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PC400/PC333/PC266 DDR Check on web
PC-133/PC-100 SDRAM Check on web

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Cheetah X15 36G/18G U160 \$579/355
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Barracuda 181G U160 \$1795
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DC380U K2 \$75
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Still hurting after all these years*Continued from page 18*

used keystroke-counting software to objectively measure worker productivity. The notion of "time theft" was applied to any non-productive worker activities, like going to the washroom or walking around the office. The result? Over a period of 20 years, as computing became ubiquitous, chronic damage to workers' health also became very common.

The resulting health problems cannot be blamed on worker ignorance; they were a natural result of a poorly thought out computer equipment, work environments, and work processes; in short, a gross failure to think ergonomically, and to design work for the benefit of human beings.

Ergonomists to the rescue!

The rising tide of health problems from poor computer ergonomics attracted the attention of government ministries of health throughout the industrial world, and stimulated action from occupational health and safety bodies. Together, ergonomics experts and government agencies devised and publicized ergonomic strategies for safer computing, and worked to have them adopted as workplace health

and safety standards in industry, education, and government employment.

What really got the computer industry's attention, however, was a wave of litigation in the 1990s against employers and PC makers by workers with RSIs. Both employers and PC makers were initially slow to recognize and admit prob-

lems, especially where an admission of guilt might help ravenous lawyers win big settlements.

There was also a cultural problem related to industry's blindness about poor computing ergonomics. In the first generation of the Computer Age, senior execs didn't use PCs, and there was a

gender split in the user population: men did information technology and engineering work with computers, while women were more likely to be doing the endlessly repetitive data processing and secretarial work—and suffered disproportionately from the ill effects of such work. □

Rogue's gallery of ergonomic malfeasance**Display systems**

- **Monitor placement:** Wrong distance, angle, or height can make it too close to comfortably view the entire screen, or too far to easily read text.
- **Image quality:** Fuzzy display, inadequate screen size for task, flicker from inadequate or badly configured graphics card can be problematic.
- **Reflections on screen:** Leads to eye-strain and headaches.
- **Emissions:** Most modern monitors meet stringent requirements on electromagnetic and radio frequency emissions, but there is still debate.

Indoor environmental quality

- Among the indoor air contaminants found in a modern office or home office are acetic acid (from some types of caulking

compounds), carbon monoxide (improperly vented equipment), formaldehyde (building materials, furniture, carpeting), ozone (copiers) and volatile organic compounds (glues, cleaning fluids). Exposure to these can lead to a number of problems including dizziness, eye or respiratory irritation, headaches, and fatigue.

- Noise pollution from printers and other office equipment, fans, and disk drives.

Furniture and workstations

- Tables and chairs at the wrong height and not adjustable.
- Chairs not ergonomically designed for lower back support, leading to muscle and joint strain, back pain, circulatory problems, fatigue, and depression.

Keyboards and mice

- Poor placement requiring unnatural

angle between forearms and hands, leading to constant strain on joints, leading to repetitive strain injuries.

- Poor or no training in keyboarding, leading users to hit keys too hard, leading to damage to hands and wrists.
- Cramped workspaces can mean mice are badly positioned, causing cramping and strain to mousing hand and arm.

Employment policies and practices

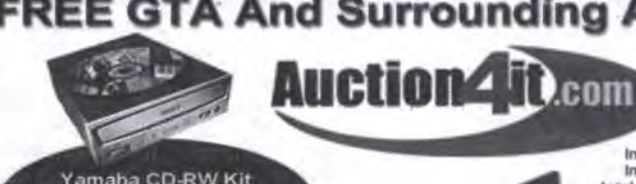
- Failure to allow/encourage regular breaks and variety of non-computer tasks, to permit rest to eyes, relief from constant repetition.
- Lack of health-promoting policies and work norms, lack of training of supervisors and workers in healthy computing and work habits.

—Jeff Evans

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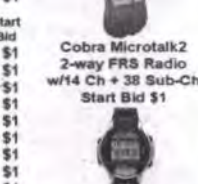
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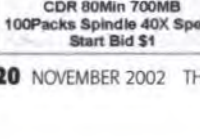
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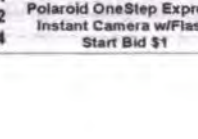
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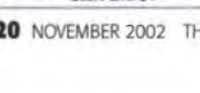
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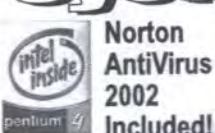
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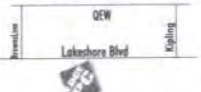
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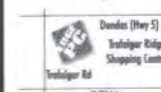
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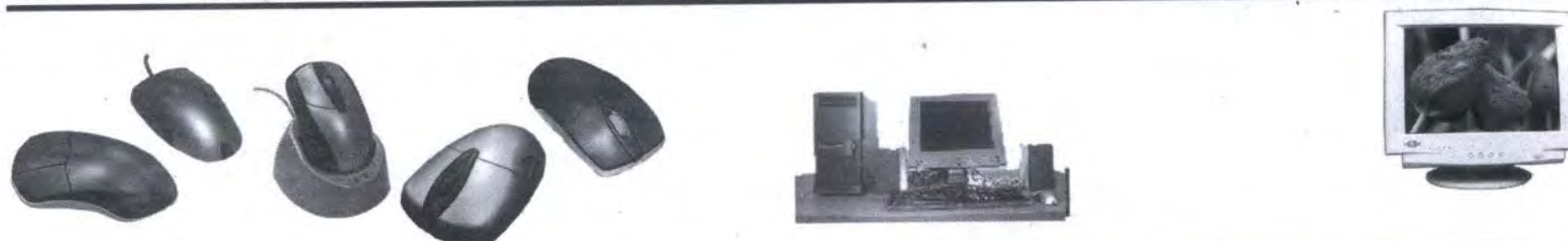
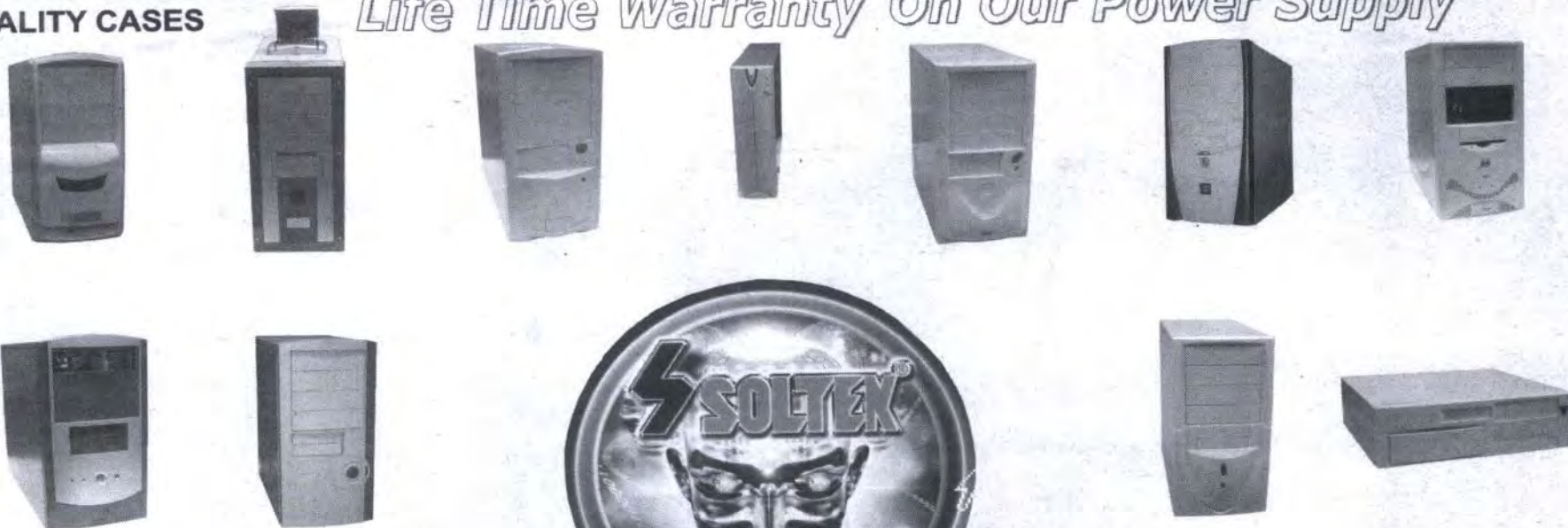
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A healthy computing checklist

If you want to take control of your computing environment to maximize your productivity and minimize the potential for the injuries associated with poor computing practices, you should re-examine your workspace setup, comparing your office, computing equipment, and work practices with the ergonomic ideal.

- **Monitor and graphics card:** Ideally, a monitor should be 17 inches or larger, with crisp, sharp, high-contrast text

display, flat-screen, non-reflective surface, and easily adjusted for tilt. Setting the display properties to a sufficiently high refresh rate (85 Hz, for example) will eliminate most flicker, but your graphics card has to be able to deliver and the monitor has to be able to accept these higher frequencies. A good quality LCD monitor can be even better, as it doesn't have the flicker of a CRT, which tends to result in less eye-

strain. LCDs, however, are still significantly more expensive. Our testing has shown that digital flat panels are crisper than analogue models, but if you go digital, you might need to replace your graphics card if it doesn't support digital output.

- **Mouse and keyboard:** Try out keyboards until you find one that fits (women and men with smaller hands may want a

Continued on page 26

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A healthy computing checklist

Continued from page 24

smaller keyboard). A tilted, ergonomic keyboard may be more comfortable and cause less strain, and a built-in or add-on palm rest often helps, too. The mouse is best located close to and slightly in front of one side of the keyboard, and a forearm rest for the mousing hand can be helpful. Some people find trackballs easier to use, which you may want to consider if you just can't seem to find a mouse that works for

you. Some users with RSIs opt to try voice input to reduce hand movement, but this software is still imperfect, and can require a lot of manual correction.

- **Desk:** An adjustable computer desk, with a separate, adjustable keyboard tray and mousing area, and plenty of room for monitor, computer, printers, and other peripherals will make for more comfortable use.
- **Chair:** An ergonomic office chair, padded and adjustable, stable and with good lower back support, can help reduce back problems and allows for easier movement

of the entire body to avoid circulation problems and cramping.

- **Lighting:** Natural spectrum lighting (daylight or natural spectrum bulbs), and avoiding light sources that cause reflection on the screen will reduce fatigue and eye strain.
- **Work routine:** Structure a variety of work, to avoid long, uninterrupted periods seated at the keyboard: walk around; look at things other than the screen at regular intervals; and do stretching exercises.

- **Rethinking your setup, work practices:** Invest time and resources in learning about health and safety issues, using applications software for maximum benefit, and re-examining the ergonomic quality of your home office setup regularly. You might even consider training and/or using a consulting service to help with the initial assessment. As you learn more about your working style, you'll be able to consciously improve your productivity and well-being.

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I used to be one of those digitally challenged people who had to hunt and peck with two fingers around my computer keyboard. I never learned to type back in high school, because in those days the girls took typing and boys didn't. Typing isn't one of those intuitive skills that we just pick up, such as riding a bicycle or even using a mouse. When I first tried those activities, the movement

seemed totally unnatural, but in a matter of a few hours, they were part of me.

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Ten years ago, I decided it was time to learn how to type. I bought Mavis Beacon's typing tutorial, which was the premier program at the time, but I never got anywhere. I recently decided to make another attempt. This time, I went to AllTheWeb and entered "typing tutor." The first of some 100,000 references brought me to Nail It Now in Australia, where

Georgie (the system's developer) offers a Web-based typing tutor for \$26.

This one looked worth a try as there was nothing to load on my system. Your payment gets you a password that lets you access the full manual. I printed the manual and as I went through it, I kept thinking to myself that it was just too simple to be real. Nevertheless, I had

Continued on page 28

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NailItNow tutorial succeeds

Continued from page 27

made a firm decision to stick with it for a while and set a weekend aside with the intent of increasing my skills from two to perhaps half a dozen fingers and a start at

WWW.

TCP—Planning to step off the beaten path on your next vacation? If so, check out the Pilot Guides and Lonely Planet Web sites. Both are also offshoots of successful TV series (and the latter of a line of guidebooks) for the curious traveller. The sites each flog a range of books, videos and other travel planning products, but they also provide plenty of free information, ideas, and advice, and host chat forums in which you can ask questions of those who have travelled before you.

www.pilotguides.com/
www.lonelyplanet.com/

getting away from my need to keep looking at the keyboard.

The first step was to assign simple expressions to the keys to make you remember them. Say it out loud. Animals in the Snow Dig for Food Greedily—asdfg. Now type it 10 times. Where do you find Animals? In the Queensland Zoo of course... your left pinkie goes up and down from the a to get the q and z. Type aqz 10 times. I went through each instruction and the follow-up exercises.

Suddenly, I realized I had passed my objective in just 55 minutes. I may have made loads of mistakes and still have had plenty of practice ahead of me, but I was typing with 10 fingers and not looking at the keys.

It was time to make the big decision. If I really want to succeed, everything from now on—and that means all my real work—must be done with 10 fingers and no looking at the keyboard, except maybe for numbers and passwords.

Georgie's mission was to teach you how to type text. The numbers will follow as you get more proficient. Passwords are always a problem. With all those security schemes blocking the display, you can never be sure what you enter unless you look at the keys.

Having made the decision to quit all my two-finger activities and switch to my newly acquired skill, I was preparing myself for at least one month of absolute hell. I work with two desktops and a notebook and each keyboard has a different feel from the others. Things didn't go as badly as anticipated, though. I didn't give up and revert to my two-finger standard. I'm still using all 10, but faster and with fewer mistakes. While I certainly consider that to be a major accomplishment, I get my ultimate satisfaction when I tell real typists about teaching myself to type, then watch their reaction when they hear I was able to use all 10 fingers within the first hour.

Why did Nail-it-Now succeed where Mavis Beacon failed? Many courses go through a series of exercises to get you to use each finger and hand correctly. You may spend half an hour each day, then go back to work. That means you are going right back to your old ways with your two fingers and are almost guaranteed to forget everything you just learned.

Nail-it-Now sends you through a set of quick exercises and that's all. There was no intent to make you perfect, just capable enough to apply what you learned to your real work by the end of the first session. There was no second session. All I needed at this stage was practice and I could use my real work for that practice. This reduced the likelihood that I would go back to my old ways.

Do I have any objections? You bet I do. I learned to type the same month I qualified for the Canada Pension. I needed Georgie half a century ago.

—Marvin D. Silbert

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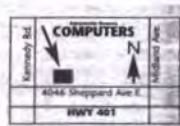
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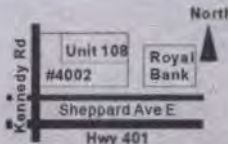
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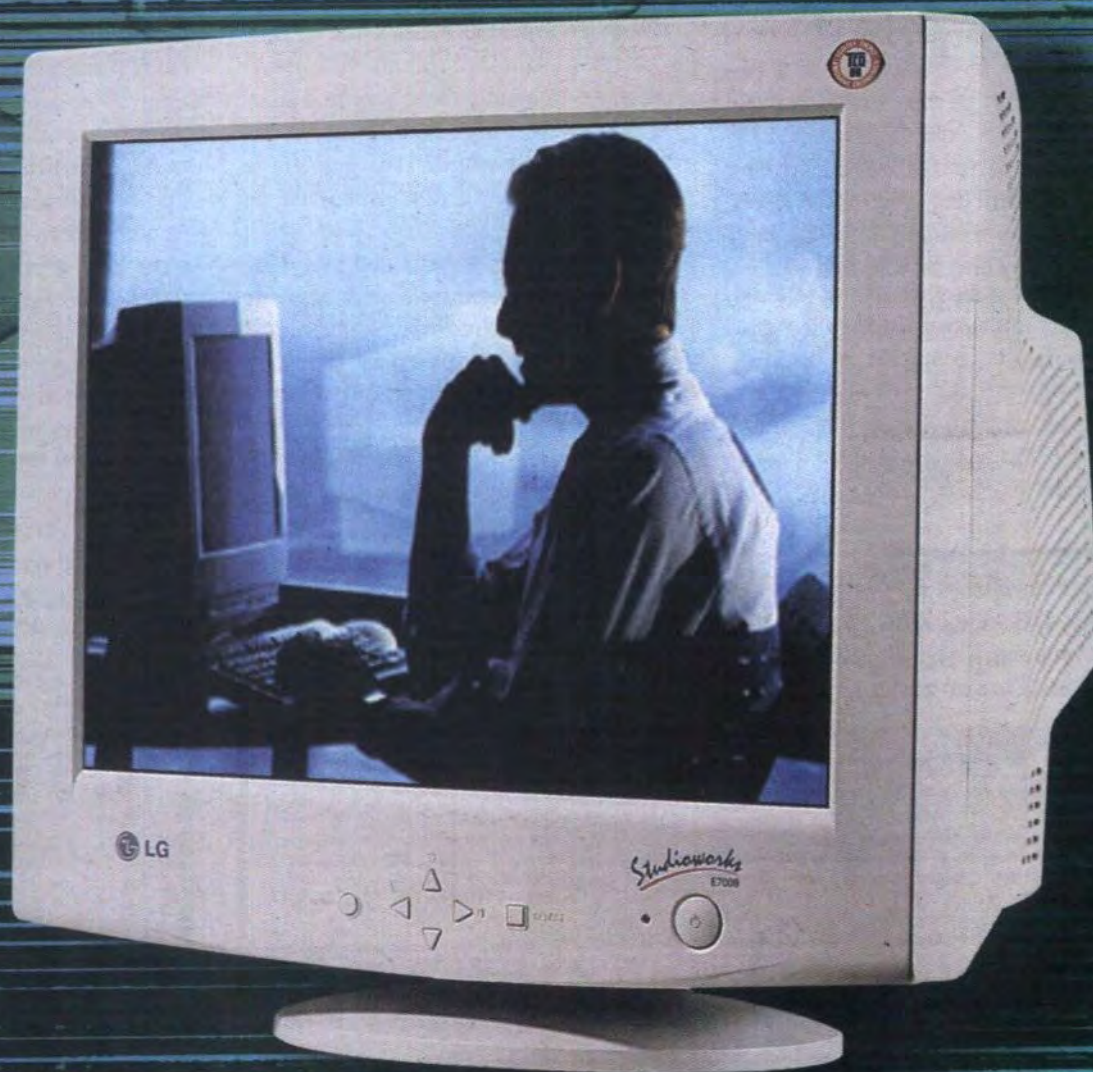
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Mastering the Canadian keyboard

There is an alternative to the US-101, eh!

By Marvin D. Silbert

Until the computer came on the scene, typing was a job for the ladies. In the early days of the typewriter, those ladies became so adept at their job that their speed frequently resulted in the keys jamming. The men who designed those machines were a bit too arrogant and instead of being pleased with the ability of the ladies to develop these skills, they set out to develop a keyboard that would make typing more difficult. If the ladies could be forced to type more slowly, the keys would not jam so often. The resulting QWERTY layout has now evolved into the US Standard keyboard.

The Canadian keyboard/ le clavier canadien

What do Canadians do with computers that Americans don't? We put the

accents into French words. Unfortunately, most computers sold in Canada come with US Standard keyboards and this has become the *de facto* Canadian standard. As it was never designed to handle those accented characters, we have been forced to use software-based methods to get those accents. Most word processors have an insert mode to add them. With other programs, they can be added by typing ALT plus a numeric code or by copying them from Windows CHARMAP. Wouldn't it be nice to have Canadian keyboards with keys for those accented characters?

Good news. We do, but few people outside Québec know they exist. Windows has definitions for three Canadian keyboards, the Canadian Multilingual, Canadian French (CF), and Canadian French Legacy. All use the QWERTY layout for the letters, but differ

in the way they add accented and special characters.

Several years ago, I reluctantly ended up with a CF keyboard when I purchased a notebook in Richmond Hill, Ont. This was an end-of-line model from the company's Montréal store and came with such a good price because of its CF keyboard. Within a few days, I wanted another for my desktop and went into several Toronto stores where they had never heard of a Canadian keyboard and thought I was crazy. So far, I have found only one store where I could find one on the shelf.

When you buy a new keyboard, you will find it doesn't come with any instructions. Windows will see it as a Standard 101/102-Key or Microsoft Natural Keyboard. You have to go to the keyboard language settings and tell Windows it is one of the Canadian keyboards. As with many national key-

boards, the right ALT key takes on the role of an alternate-character key that gives a third function to the numeric row plus a few other keys. Canadian keyboards have 102 instead of 101 keys. To get that extra key, the big left SHIFT is split into a smaller shift and the extra key goes in between the SHIFT and the Z keys.

There's more to these keyboards than being able to type a few French words. I do technical writing. My CF also gives me ± and degrees for temperature. I've always been annoyed that we don't have a key for cents, as in ¢, and this keyboard has one, along with £, the symbol for the British Pound. There are also keys for the fractions 1/4, 1/2 and 3/4, and symbols for section and paragraph that become useful when I wear my editor's hat.

By accident, I discovered that Word
Continued on page 32

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Mastering the Canadian keyboard*Continued from page 30*

XP also adds Euro, copyright, and trademark symbols with the alternate-character key and the E, C, and T keys. The accented characters are entered in two steps. First press the accent key and then the character to be accented. Windows won't let you put accents on characters that shouldn't have them. The French dieresis will also function as a German umlaut. Because the e acute (é) occurs so frequently, the CF keyboard has a special key for it.

The other two keyboards have additional keys for other accented characters. It should be noted that the Canadian

keyboards have different layouts (QWERTY) than those in France (AZERTY). The latter would be very difficult for a North American touch typist.

You could prepare a letter with your greeting in Greek, a few paragraphs in English, a Russian poem and a quote from the Bible in the original Hebrew.

Tell Windows that a Standard US keyboard is a CF keyboard and it will behave as though it was, except for the 102nd key. You can also tell it that it is Greek,

Cyrillic, Hebrew, or any of the other defined keyboards. Enable the keyboard language task-bar icon and you can switch back and forth at will among these languages. Providing you have the appropriate fonts installed, you could prepare a letter with your greeting in Greek, a few paragraphs in English, a Russian poem and a quote from the Bible in the original Hebrew. For the Hebrew, Word automatically switches to right-to-left operation.

Multilingual work obviously requires that you know which keys do what in the language you have selected. You need either diagrams of the various keyboards or the on-screen keyboard that is one of the Windows accessibility tools. If you use either Office 2000 or XP, you can also download Visual Keyboard from Microsoft. Whichever of the on-screen keyboards you use, you can either use it as a guide and type with the keyboard or enter the characters by clicking the keys of the on-screen keyboard. This worked reasonably well with my XP system and

any Microsoft software installed on it. Things became confusing with my Windows Me system or any pre-XP software.

The difference is likely due to the ability of the UNICODE character sets that come with XP to include Greek, Hebrew, Cyrillic, and more. It may take a bit of playing around to get some languages running, unless you also happen to be a touch typist in those languages.

Although I don't work in French, I found the CF keyboard to be a real convenience both for the extra technical and currency symbols as well as its ability to handle those French words, names or places that come up from time to time. Having looked over the layouts for the other two keyboards, I prefer the CF and was glad to have hit upon it the first time around. I have now tossed out all my US Standard keyboards.

The CF is labelled in French, which some people might not like, but it doesn't bother me. Whether the button says ...CHAP or ESC, it does the same thing. □

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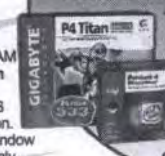
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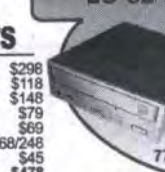
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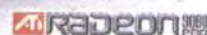
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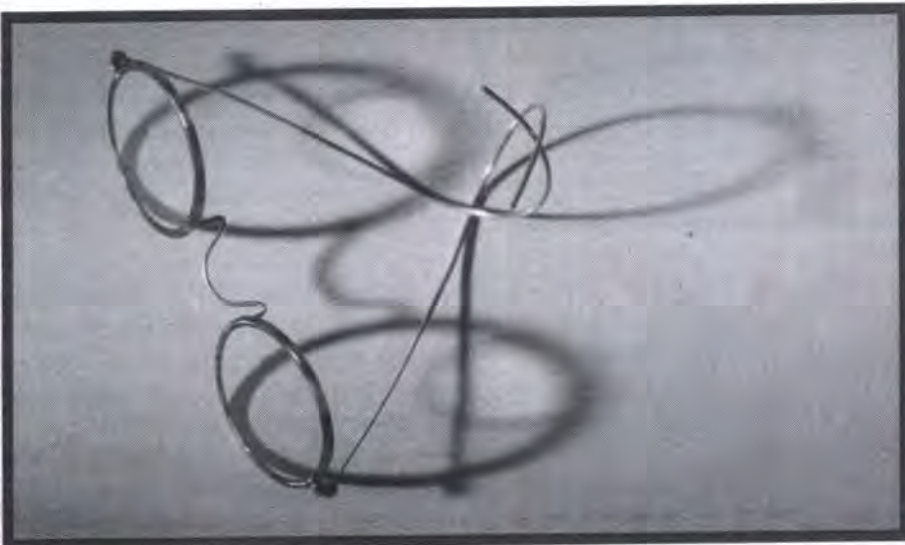
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I can see! I can see!

One man's search for computer glasses



By Marvin D. Silbert

Most older computer users will tell you what an ordeal it is to use a computer while wearing bifocals or trifocals. That's one of the reasons many older people avoid using computers. If your head isn't in exactly the right position, you can't see parts of the screen, and the problem gets worse if you are trying to type something from a page. Before long, you develop one of those super headaches they describe in Aspirin commercials. When I bought my first PC I was already wearing bifocals and it became very obvious that I would survive if, and only if, I got a pair of single-vision glasses. Getting those glasses turned out to be anything but simple.

A prescription for a pair of glasses contains three sets of numbers. In most cases there will be a separate prescription for each eye. The first number gives the magnification or reduction needed to make your eyes focus correctly on distant objects. The next two compensate for the eye lens being less than perfectly shaped. The first of that pair is the strength of the correction and the second is the angle at which it is applied. If both eyes don't quite point the same direction, an additional prismatic correction may be applied.

Young eyes can easily adjust their focus to cover the entire range of near and far objects you might normally view. As we age, the eyes lose their ability to focus over such a wide range and a

correction may be needed to compensate for this deficiency. Reading glasses use that same distance prescription, but have an increased magnification to let you read or perform other up-close tasks. Those who have separate distance and reading glasses find it very annoying to switch back and forth between them. With bifocals and trifocals, that correction is ground into the lower section of the distance glasses. The good news is the elimination of the need to switch back and forth. The bad news is a severely restricted field of view. If you are going to do long periods of close-up work, you really need single vision glasses and these can be made for any specific working distance, e.g., for reading or for use with your computer monitor.

I expected that all I would have to do is go back to the store where I bought my glasses (a well known North American chain) and tell them the distance I work from my screen. I sat in front of my screen and asked my wife to measure the distance between my eyes and the screen. There is no single size that fits all. Measure it the way you sit in front of your computer. I then went to the store and asked them to make a pair of single vision lenses to work at that distance.

"No. We can't do that. We don't write prescriptions; we just fill them," they said. I spoke with the optician on duty to appeal to her professional pride and got the same story. In the end, I went back to the ophthalmologist who wrote the orig-

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Logitech, Microsoft unleash new mice, keyboards

By Megan Johnston

The latest crop of computer mice and keyboards from Logitech (www.logitech.com) and Microsoft (www.microsoft.com) show that peripheral manufacturers realize that one size does not fit all—both in respect to style and ergonomics.

Cordless combos

First up is Logitech, which has cut the cord on a range of mouse and keyboard combinations. All of its cordless peripherals use a proprietary digital radio technology, which operates within a 1.82 m (6 ft.) radius of the receiver with no line-of-sight requirement. They also use a 12-bit digital secure ID code so multiple cordless devices can be used in close proximity without interference, according to Logitech. They are compatible with Windows 98, 2000, Me, and XP. Only the Logitech Cordless Comfort Duo is also compatible with Mac OS X or later. Following are highlights of the new lineup:

- The Cordless Comfort Duo includes a contoured keyboard with split-key layout and a Cordless MouseMan Optical for US\$99.95. Both are black with silver. The keyboard includes multimedia controls and programmable Internet keys that launch email, Web browsers, and more. Sorry south-paws, the mouse in this combo is contoured for the right hand only.
- The gray and black keyboard in the Cordless Elite Duo features enhanced F-key functions, multimedia controls, and a zero-degree tilt low-profile design. It comes with the black and silver Cordless MouseMan Optical and sells for US\$99.95.
- The Cordless Navigator Duo's keyboard features the same low-profile design of the Cordless Elite combo, and is white with silver. It includes enhanced F-key functions and a multimedia push-button control centre. It is bundled with the Cordless Optical Mouse and has a suggested price of US\$79.95.
- Also white and silver, the Cordless Access Duo incorporates the zero-degree tilt and multimedia and Internet controls. It comes with the Cordless Wheel Mouse, and has a sug-



Logitech's new line includes (from top): Cordless Access Duo, MX700 Performance Mouse, Cordless Elite Duo, and MX300 Performance Mouse.

gested price point of US\$59.95.

Performance mice

Logitech has also unveiled a trio of mice powered by its MX Optical Engine, which it claims captures up to 4.7 megapixels of surface tracking information every second. The company says this allows the MX mice to respond to even



Microsoft's new line includes (from top): Natural MultiMedia Keyboard, Notebook Optical Mouse, Wireless Optical Desktop, and Optical Mouse Blue.

the fastest hand movement and offers superior tracking on more surfaces than ever. Following are highlights of the trio:

- The MX700 Cordless Optical Mouse is powered by rechargeable nickel metal-hydride (NiMH) batteries. The receiver for the mouse also acts as a charging station, and according to Logitech, 10 minutes in the cradle

provides a day's worth of power. The blue-black and silver MX700 is contoured for the right hand, has eight programmable buttons, and a suggested price of US\$79.95.

- The black and gray MX500 Optical Mouse has same shape, design, and programmable buttons as the MX700, but is not cordless. It has a suggested price of US\$49.95.
- The black and gray MX300 Optical Mouse is also corded, but is not contoured, so can be used in either hand. It includes a Quick Switch Program Selector button and scroll wheel, and has a suggested price of US\$39.95.

Microsoft

Microsoft has unveiled its largest collection of new mice and keyboards this fall, with seven new products. The company says the new lines are organized according to the users' computer style and activities: fun, sophisticated, and serious. Following are highlights of the new lines:

- The peripherals for "fun" users include the Optical Mouse Blue, Wireless Optical Mouse Blue, MultiMedia Keyboard, and Natural MultiMedia Keyboard. All feature a blue finish, and multimedia controls. The new mice have a wider scroll wheel, while the new keyboards in this line have a multimedia centre with Stop, Forward, Play, and Pause hot keys. Estimated retail prices are: US\$34.95 (Optical Mouse Blue), US\$44.95 (Wireless Optical Mouse Blue), US\$34.95 (MultiMedia Keyboard), and US\$54.95 (Natural MultiMedia Keyboard).
- For "sophisticated" users, Microsoft offers the Wireless Optical Desktop, Wireless Optical Desktop Pro, and Notebook Optical Mouse. At the top of this line, the black and gray Wireless Optical Desktop Pro includes a wireless optical mouse and wireless keyboard, which share the same receiver. The compact, red and gray Notebook Optical Mouse, is designed for notebook computers. Estimated retail prices are US\$84.95 (Wireless Optical Desktop), US\$104.95 (Wireless Optical Desktop Pro), and US\$34.95 (Notebook Optical Mouse).

Microsoft says new products scheduled for later this year will include the first commercially available desktop that is compatible with Bluetooth wireless technology. □

WHAT'S NEW

Continued from page 10

Logitech (www.logitech.com) has added three new models with instant video messaging features to its Web camera lineup. The QuickCam Pro 4000, the QuickCam for Notebooks Pro, and the QuickCam Zoom all ship with the Logitech IM Video Companion, for sharing live video with MSN Messenger and AOL Instant Messenger.



All three models also feature software-enabled digital zoom and have built-in microphones. They include the Logitech ImageStudio software, with applications including video email, animation, broadcasting, and Web album creation. They capture video at 640x480 resolution.

The QuickCam Pro 4000 and the QuickCam for Notebooks Pro both feature a built-in snapshot button for 1.3-megapixel still photos. They work with Windows 98 or higher as well as Mac OS 9, and come bundled with MGI VideoWave and PhotoSuite editing software. Both are priced at US\$99.95. The QuickCam Zoom captures still photos at 640x480 pixels, requires Windows 98 or higher, and is priced at US\$79.95.

The Congress of Neurological Surgeons has held what it claims to be the "first ever digital medical education conference." All attendees to the September in Philadelphia event received Palm i705 handhelds loaded with a complete meeting program, scientific abstracts, graphs and radiology images, a convention centre guide with an exhibit floor map, hyperlinks to exhibitor information, a Philadelphia city guide, and a complete membership directory.

The devices also came with software that included ePocrates, a clinical drug interaction database, and BluefishRx, an

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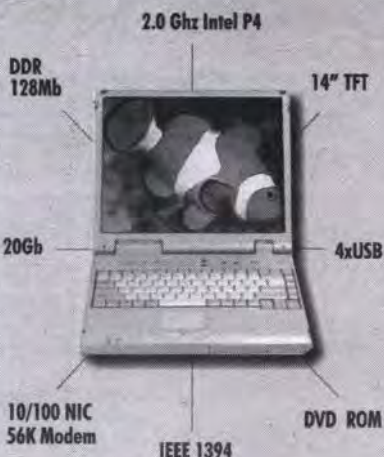
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WHAT'S NEW

Continued from page 37

electronic prescription application that lets doctors write and sign prescriptions and send them to a patient or pharmacy wirelessly.

Bluefish Wireless access points were located throughout the facility to allow attendees to download updated information during the event.

The initiative was meant to be more than a perk. Richard G. Ellenbogen, M.D., chairman of the CNS meeting, said "A wireless handheld gives us a cost-effective and safe way to streamline processes, organize and access patient records, write accurate prescriptions and monitor critical information such as vital signs and medication at the point of patient care or from outside the hospital or our offices. It can monumentally change the way we work."

Fujifilm (www.fujifilm.com) has released a digital camera that it says is one of the smallest and lightest in its class.

The FinePix F402 weighs in at 125 g (4.4 oz.) without batteries and measures 7.6x6.9x2.3 cm (3x2.7x0.9 in.). It offers 2.1-megapixel resolution, which produce 4-megapixel output when combined with its Super CCD technology, according to the company.

The camera has 3.6X digital zoom, and can capture AVI format video clips with sound, and can be used for video conferencing. It connects to the PC via USB.

Photos are stored on an xD-Picture

Card—a penny-sized storage format is available in capacities up to 128 MB (a 16 MB card is included with the camera).



The F402 will be available in November for a suggested retail price of US\$349.95.

IBM (www.ibm.ca) has added the lightweight, power-savvy X30 to its ThinkPad notebook. The X30 weighs 1.6 kg (3.6 lb.) with internal battery, and is designed to run for up to eight hours on battery power. It can use two batteries at simultaneously—one internal and one optional external extended life battery

that attaches to the bottom of the system. The optional X3 UltraBase dock, which weighs 0.7 kg (1.6 lb.), provides the extra battery bay and media drive bays.

The X30 also offers options such as built-in 802.11b networking technology, Bluetooth capability, TCPA-compliant IBM Embedded Security Subsystem 2.0, and IBM Rapid Restore disaster recovery software.

Prices for the ThinkPad X30 start at \$3,549, and the X3 UltraBase is \$299.

Aladdin Systems Inc. (www.aladdin-sys.com) has released a new Mac version of its popular compression software. **StuffIt Deluxe 7.0** features a new file format, called StuffIt X, which integrates compression with security and safety options, according to Aladdin.



The company says the new .sitx file format incorporates 512-bit encryption, stronger than the 40-bit encryption used in previous versions of the software. Other features include improved compression, error correction, larger archive size, and integration with the Stuff and Mail option in Microsoft Word.

StuffIt Deluxe 7.0 is US\$79.99 for the full version, or US\$29.99 for the upgrade. It supports Mac OS 8.6 and higher, including OS X 10.1 and up.

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- ☐ 1/2 Cabinet
- ☐ Full Cabinet
- ☐ 6x9 Cage
- ☐ Custom Space

Select Location

- ☐ Toronto
- ☐ Ottawa

2

**SELECT
YOUR
INTERNET**

Option A: Data Transfer

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- ☐ 20 GB
- ☐ 50 GB
- ☐ 100+ GB

**Option B:
Sustained Bandwidth**

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- ☐ 10+ Mbps

3

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MANAGED
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I can see! I can see!*Continued from page 35*

inal prescription and asked for another for computer glasses. I got the glasses and they were fine for viewing the screen, but not very good for reading a printed page or newspaper. I was always going back and forth between my computer glasses and my bifocals.

A few years later when I had my next check up, I went to a different ophthalmologist and described the problem. He

promised that this prescription would be better. It was, but not enough. I went through four ophthalmologists and while I always ended up with something that helped me see the screen, I still had to switch back to the trifocals (which I had now grown into) to read printed text. I was beginning to think that was the way it had to be.

I had just booked my next checkup and reluctantly accepted the next available date being six months hence. Within

a few minutes of that call, the telephone rang and it was the office of the optometrist my wife used. They had a cancellation for the next day, and wanted to know if she would like to move her appointment up half an hour. Seizing the moment, I said I'd take it.

I immediately liked this guy and was pleased to see that he understood optics and considered my dilemma a challenge. I gave him the working distance of 43 cm that my wife had measured. Dividing 1.00 by 0.43 metres gives 2.32 dioptres. Rounding that off to the nearest 0.25, would suggest adding a 2.25 dioptre correction to my long-range prescription. He jury-rigged a set of lenses and I sat down at his receptionist's desk to read the newspaper, a few magazines, check the time on my watch and view her computer screen. That list should cover just about everything I would want to read with those glasses. In less than 10 minutes, we repeated the test with 1.75, 2.00, 2.25 and 2.50 corrections and found the 2.00 to be the best.

I have now been wearing these glasses for more than a year. I can wear them all day and jump back and forth from screen to newspaper to the pages coming out from my printer without strain. Why

didn't I come out with the 2.25 dioptres that I measured? My eyes still have some focusing range left in them and this gives me a bit of freedom to move my head. Although the 2.00 is a bit weaker than the near reading segment of my trifocals, I prefer to use them for all my reading as I get that wide field of view that's lost with bifocals. I often take them with me when I go downtown on the subway or fly across the continent on an airplane and want to catch up with some reading. I can keep my trifocals for driving or watching the birds.

Obviously, the four ophthalmologists were not dummies. Why then were their prescriptions inadequate and this one so successful? You can apply logic to calculate the required correction, but it should be considered as the starting point—which is what the fifth one did.

The human body has its own ways of doing things and the next stage is to tune up that correction to match those ways. Most of the people who prescribe lenses have the wherewithal to jury-rig a temporary set of glasses with that prescription. Do not leave that office with a prescription for computer glasses unless you have tested it. □

WWW.

TCP—If you worry that your PC may be playing host to some type of spyware (any software that covertly gathers information through a user's Internet connection without his or her knowledge, usually for advertising purposes), you can check out a utility from Lavasoft. The company says Ad-aware is a free multi-spyware utility that scans your PC's memory, registry, and hard drives for known spyware components and lets you remove them safely. The software is compatible with Windows 98, 2000, NT 4.0, XP, and Me operating systems.

www.lavasoftusa.com/

TCP—In addition to advertising its services, Saskatoon-based Northern Lights Internet Solutions' Web site includes a database of links for freenets and community networks across Canada and around the world. So, if you need to know how to get online cheaply in Kyrgyzstan, for example, bookmark this site.

www.lights.com/freenet/



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Richard Peters, President of Canada Computer Paper, Inc., the largest publisher of end-user IT information in Canada, is pleased to announce the appointment of Robert Crawford as Associate Publisher of Canada Computer Paper.

Based in Toronto, Mr. Crawford will be responsible for all of Canada Computer Paper's print and online publishing activities. He will also be responsible for business development including new product initiatives.

With more than eight years of experience with Canada Computer Paper Inc., Mr. Crawford has a successful record of achievement in sales, marketing, and business development, making him uniquely qualified to help lead Canada Computer Paper's growing product line. Prior to this promotion, Mr. Crawford was the Ontario Regional Sales Manager for Canada Computer Paper, responsible for the sales activities in the province.

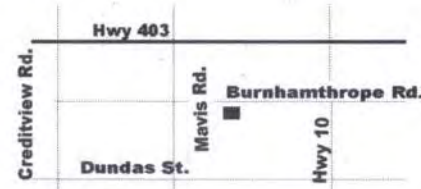
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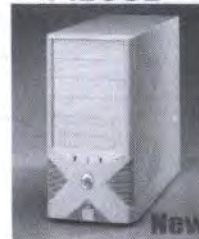
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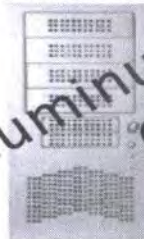
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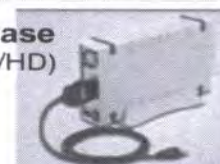


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Get wireless

TCP Lab looks at 802.11b and 802.11a networking

By Sean Carruthers

For this lab report, we are looking at wireless local area networking (WLAN), where two protocols have emerged: IEEE 802.11a and IEEE 802.11b, both finalized by the Institute of Electrical and Electronics Engineers, Inc. Products based on these standards will be of interest to anyone who wants to set up a local area network without going to the expense of installing network cabling or where cabling isn't desired (heritage building retrofits, for example).

802.11b

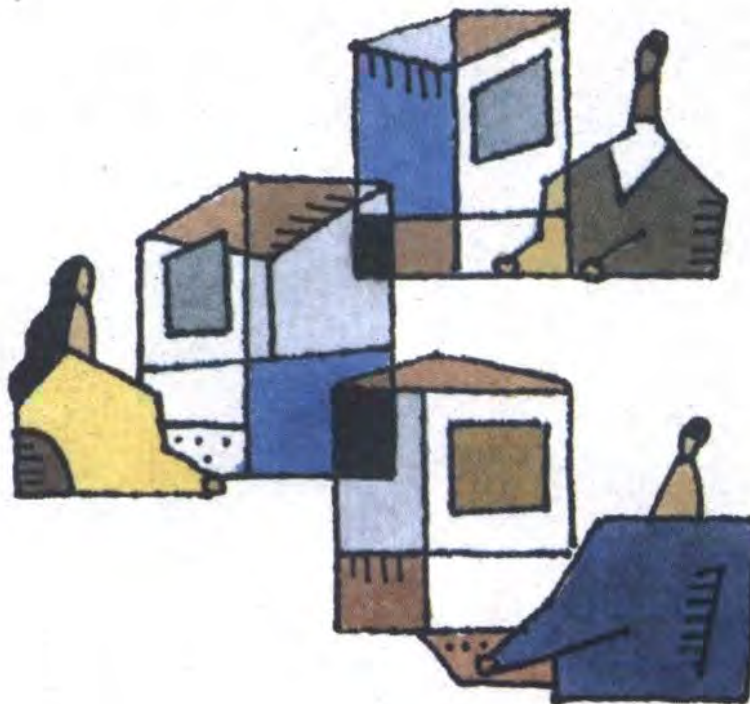
The first wireless networking technology to really make inroads into the office and the home is undoubtedly 802.11b. It has pretty much become the wireless networking technology of choice for a few reasons: despite a slightly creaky start, it's now quite easy to install and configure; it's reasonably cheap; and its range is good enough for most small workgroups or home environments. On top of that, there's a new version of 802.11b, which ups the data transfer rate to 22 Mbps (double the original speed of 11 Mbps) on the same frequency, allowing backwards compatibility with older versions of the specification.

There are a few things to keep in mind if you're thinking of implementing 802.11b into your workspace, either at home or at the office. First up, it's important to note that the functional range of these products, as listed on the boxes, is usually derived under "ideal" conditions: ideal meaning no walls, doors, ceilings, floors, or other objects in the way. Secondly, the further away you go from

the base station/access point, the slower your connection gets. As a rough guideline for real world installations, you can expect decent performance within a range of about 90 m (295 ft.).

Another issue to keep in mind is interference from other wireless technologies using the same radio band (2.4 GHz). Though 802.11b is designed to coexist

Continued on page 44



Bluetooth inches forward

By Sean Carruthers

In the drive to reduce the nest of wires that seem to grow around any personal computer, product developers have long looked to wireless solutions. One of the original ways to connect computers and peripherals wirelessly was infrared technology. IR ports continue to appear on notebooks, handhelds and even cell phones to this day. IR technology requires a line-of-sight connection, however, which is not always convenient.

Products with RF (or radio frequency) capability don't force you to line up ports, and the most common use of RF these days is in wireless keyboards and mice.

The latest generation of wireless protocols for personal area networking is Bluetooth. Bluetooth, like RF and IR, is a cable replacement technology for shorter-range peripherals, like printers and cell phones.

Bluetooth is the latest great blue hope for wireless connectivity. The concept is simple: if you have a Bluetooth-enabled handheld or notebook, it should be able

Continued on page 52

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< HANDS ON >

Get wireless

Continued from page 42

with cordless phones and competing wireless technologies like Bluetooth, there's always the possibility of interference when you have multiple transceivers pumping out data in a fairly small area (sometimes even when the bandwidths are totally different). If you already have some wireless system in place in your home or office, a bit of research into conflicts would certainly be prudent—especially if it's an essential component of your business (like wireless headsets on a warehouse floor, for example).

We've covered wireless technologies in previous issues, so check out our Web site (www.canadacomputes.com) for our review archive.

AirPort card

From: Apple Canada, www.apple.ca

Estimated price: \$99

AirPort is the name Apple gives to its 802.11b products. The latest iBooks, for example, are "AirPort ready" with an integrated antenna. For an extra \$100 Apple will install an AirPort card (which looks like a PC Card and fits in a slot under the keyboard). The iBook unit we received from Apple Canada had the AirPort device already installed.

The configuration program under OS X makes it very easy to get hooked up to a wireless network, automatically showing you which networks are available in your area and asking you which one you'd like to connect to. We had the iBook up and running on our wireless network within seconds, both on a standard 802.11b network and the 22 Mbps network we set up using GVC products (reviewed below).

The iBook line is stylish, powerful, and incredibly easy to use. The fact that they work so well with your 802.11b networks, right out of the box, is just icing on the cake.

Belkin Wireless PDA Card

From: Belkin Corp., www.belkin.com

Estimated price: \$215 (converted from US\$135)



Belkin has a fairly extensive wireless net-

Continued on page 48



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 (Retail version, 3 years warranty by Intel)
 ECS P4VMM2 All-in-One Board
 256MB SDRAM PC133 Memory
 Maxtor 30GB 5400rpm hard drive
 17" 1280 .27 monitor
 Integrated Savage 3D Video
 Mini Tower Case with Pentium® 4 Power Supply
 LG IDE 52X CD Drive, 1.44M Floppy drive
 Build-in 10/100BT LAN, 2 USB Ports
 AC97 Audio with Amplifier Speaker
 AOpen 104 keys keyboard,
 Logitech Wheel mouse

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\$1129

Value Station 2B04

Intel® Pentium® 4 Processor 1.7 Ghz
 ECS P4VMM2 All-in-One Board
 256MB DDR PC266 Memory
 Seagate 40GB 7200rpm hard drive
 NEC AS75F 17" .25 monitor
 Integrated Savage 3D Video
 Mini Tower Case with Pentium® 4 Power Supply
 LG IDE 40X12X40 CD-Rewriter, 1.44M Floppy drive
 Build-in 10/100BT LAN, 2 USB Ports
 AC97 Audio with Amplifier Speaker
 Keytronic 104 keys keyboard
 Logitech Wheel mouse
 MS®Windows XP Home

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e-Station 2B03

Intel® Pentium® 4 Processor 1.8 Ghz
 Intel® D845GLADL Desktop Board
 256MB DDR PC266 Memory
 Seagate 40GB 7200rpm hard drive
 NEC AS75F 17" .25 monitor
 Intel® Extreme Graphics Video
 Med. Tower Case with Front USB & 300W Power Supply
 LG IDE 40X12X40 CD-Rewriter, 1.44M Floppy drive
 Build-in 10/100BT LAN, Maximum 4 USB2.0 Ports
 SoundMax 2.0 with Altec Lansing AVS200W Speaker
 Keytronic 104 keys keyboard
 Logitech Wheel mouse
 MS®Windows XP Home

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AOpen Monthly Specials:

AOpen 56K Int V.90 w/voice PCI modem	\$ 39
AOpen USB 10/100 BT Adapter	\$ 39
AOpen OP330 10/100 BT PCMCIA card	\$ 39
AOpen 52X CD-Drive	\$ 37
AOpen int. IDE 40 x 12 x 48 CD-Rewriter	\$ 90
AOpen KB-855, PS/2 keyboard	\$ 12
AOpen QF-50A P4 Chassis with 300W power	\$ 85
AOpen HX-08 P4 Chassis with 300W power	\$129
AOpen F50LS LCD, 15" 1024 .30, Silver color	\$ 559
AOpen F70LS LCD, 17" 1280 .26, Silver color	\$ 909

Serious Station 2B02

Intel® Pentium® 4 Processor 2.0 GHz
 Intel® D845EPT2L Desktop Board
 256MB DDR PC266 Memory
 Seagate 40GB 7200rpm hard drive
 NEC AS75F 17" .25 Flat Screen monitor
 Geforce4 MX440 64M DDR Video Card
 Med. Tower Case with Front USB & 300W Power Supply
 LG 40X12X40 CD-Rewriter, 1.44M Floppy drive
 Build-in 10/100BT LAN, Maximum 4 USB2.0 Ports
 SB Live 5.1 sound with Altec Lansing AVS500W Speaker
 Microsoft Multimedia keyboard & Optical mouse
 MS®Windows XP Home

\$1609



Real-Server 2B09

Dual (2) Intel® Xeon® Processor 2.0 GHz
 With Intel® Hyper-Threading Technology supports
 Efficiency Multithreading and Multitasking
 Intel® SE7500CW2 Server Board
 512MB DDR266 ECC with Register Memory
 Intel® SC5200 Server Chassis with 450W Power Supply
 WD 120GB 7200rpm ATA/100 8MB cache Hard Drive
 Build-in Promise® RAID Controller
 Dual (2) Intel® 10/100+ Server Ethernet Controller
 Integrated ATI® Graphic video with 8MB
 LG 52X CD-ROM, 1.44M Fl. drive, Keyboard & Mouse
 O/S and Monitor are not included

\$3049 One Ultra 160 SCSI channel Add \$208
 RAID 1, mirroring 120GB drives Add \$285



Real-Server 2B08

Intel® Pentium® 4 Processor 2.4 GHz
 With 533Mhz system bus and 512KB L2 cache
 Intel® S845WD1 Server Board at 533Mhz System Bus
 256MB DDR266 ECC Memory
 Intel® SC5100 Server Chassis with 300W Power Supply
 WD 80GB 7200rpm ATA/100 8MB cache Hard Drive
 Build-in Promise® RAID Controller
 Dual (2) Intel® 10/100+ Server Ethernet Controller
 Integrated ATI® Graphic video with 8MB
 LG 52X CD-ROM, 1.44M Floppy drive
 Keyboard & Mouse
 O/S and Monitor are not included

\$1729 Total 512MB ECC Memory Add \$170
 RAID 1, mirroring 80GB drives Add \$185



DRIVES & CONTROLLERS

IDE 7200 RPM, ATA/100:	
Maxtor (Quantum) 40 GB	\$ 119
Maxtor (Quantum) 60 GB	\$ 152
Maxtor (Quantum) 80 GB	\$ 175
Seagate 40GB Barracuda Super Quiet!	\$ 123
Seagate 60GB Barracuda Super Quiet!	\$ 155
Seagate 80GB Barracuda Super Quiet!	\$ 177
WD 40 GB (400BB)	\$ 119
WD 80 GB (800BB)	\$ 175
WD 80 GB, 8M cache (800JB)	\$ 185
WD 100 GB, 8M cache (1000JB)	\$ 225
WD 120 GB, 8M cache (1200JB)	\$ 285
WD 180 GB, 8M cache (1800JB)	\$ 555
WD 200 GB, 8M cache (2000JB)	\$ 666
LAVA Firewire IDE Enclosure	\$ 124
LAVA USB 2.0 IDE Enclosure	\$ 124

SCSI 10000 RPM:

Seagate ST-318406LW U160 18G	\$ 270
Seagate ST-336607LW U320 36G	\$ 395
Seagate ST-373307LW U320 73G	\$ 867
Int IDE HD ATA/100 Removable Kit	\$ 29
Panasonic 1.44M floppy drive	\$ 16
Adaptec 5100 USB 2.0 5 ports	\$ 88
Adaptec 2906 kit	Retail \$ 82
Adaptec 2930U kit	Retail \$ 136
Adaptec Fireconnect 4300 kit	Retail \$ 78
LAVA ISA / PCI printer card	\$ 28 / 49
Promise Ultra AT/133 controller	Retail \$ 69
Promise Fasttrak100 TX2 Raid	Retail \$ 142
Promise Fasttrak TX2000 Raid	Retail \$ 167

Uninterruptible Power Supply

APC Backup-UPS 350	\$ 122
APC Backup-UPS 500	\$ 183
APC Backup-UPS Pro 500UC	\$ 229
APC Smart-UPS 700Net w/ Software	\$ 518

PROCESSORS (Please call for the current price, or refer to our WEB site. All retail boxes include heat sink fan & 3 yr. warranty)

Intel® Celeron® Processor 1.7 Ghz	\$ 124
Intel® Celeron® Processor 1.8 Ghz	\$ 149
Intel® Celeron® Processor 2.0 Ghz	\$ 195
Intel® Pentium® 4 Processor 1.7 Ghz	\$ 219
Intel® Pentium® 4 Processor 1.8 Ghz	\$ 249
Intel® Pentium® 4 Processor 2A Ghz	\$ 289
Intel® Pentium® 4 Processor 2.4 Ghz	\$ 339
Intel® Pentium® 4 Processor 2.53 Ghz	\$ 419
Intel® Pentium® 4 Processor 2.66 Ghz	\$ 709
Intel® Pentium® 4 Processor 2.8 Ghz	\$ 879
Intel® Xeon® Processor 2.0 Ghz	\$ 445
Intel® Xeon® Processor 2.2 Ghz	\$ 505
Intel® Xeon® Processor 2.4 Ghz	\$ 625
Intel® Xeon® Processor 2.6 Ghz	\$ 935

CASES with Power Supply

Med Tower 6 bays ATX 250W	\$ 55
P4 Mini Tower 4 bays ATX 200W	\$ 57
P4 Med Tower 6 bays ATX 300W	\$ 69
P4 Med Tower ATX 300W with USB	\$ 75
AOpen Full Tower 10 bays 300W	\$ 129
Int Win P4 Case 300W	\$ 99
Rackmounts Chasis 4U P4 300W	\$ 280
ATX Power 250W / 300W / 400W	\$ 35 / 46 / 95

SOUND CARD / SPEAKERS

SB Live Dolby Digital 5.1	Bulk \$ 46
SB Audigy w/1394	Bulk \$ 89
SB Audigy MP3+ w/1394	Retail \$ 137
SB Audigy Platinum	Retail \$ 262
SB Audigy Platinum External	Retail \$ 339
Altec Lansing AVS200W	\$ 26
Altec Lansing AVS300W 3pcs	\$ 49
Altec Lansing AVS500W 5pcs	\$ 68
Altec Lansing ATP3W 3pcs	\$ 99

MOTHERBOARDS

Intel® Server Boards
 SAI2, support ATA
 SDS2, support SCSI U160
 S845WD1, support ATA RAID 0,1
 SE7500CW2, support ATA RAID 0,1
 SE7500CW2SCSI, ATA RAID 0, 1 & SCSI
 SHG2, support Dual SCSI U160 channels
 \$ 630
 \$ 1000
 \$ 375
 \$ 750
 \$ 950
 \$ 1290

All Desktop Boards has built-in audio:

D845WNL 5PCI AGP LAN	SDRAM \$ 185
D845GLLY 4PCI Video	SDRAM \$ 154
D845GLLY 4PCI Video LAN	SDRAM \$ 169
D845EPT2L 3PCI AGP LAN	DDR \$ 189
D845EGB2L 6PCI AGP LAN	DDR \$ 195
D845GLAD 4PCI Video	DDR \$ 159
D845GLADL 4PCI Video LAN	DDR \$ 174
D845GRGL 3PCI Video AGP LAN	DDR \$ 195
D845GBVL 6PCI Video AGP LAN	DDR \$ 205
D850EMV2 5PCI AGP	Rambus \$ 250
D850EMV2L 5PCI AGP LAN	Rambus \$ 265

ASUS® / ECS® Desktop Boards

ECS P4VMM2, 2PCI Video LAN DDR \$ 99
 ASUS P4B533EL, 6PCI, AGP, LAN, Firewire 1394, Game port DDR \$ 260

CD / DVD / REWRITER

LG Int IDE 52X CD-Drive	Bulk \$ 33
LG Int IDE 16X DVD Drive	Bulk \$ 72
LG Int IDE 40 x 12 x 40 w/ software	Bulk \$ 85
LG Int IDE 32 x 10 x 40 + 16X DVD	Bulk \$ 159
Pioneer Int IDE DVD-R/RW writer	Retail \$ 488
Roxio EZ-CD Creator V5.0	Bulk \$ 15
PowerDVD / WinDVD software	\$ 25
Blank CD-R 80 min. 100cps (Spindle)	\$ 38
Blank CD-R / CD-RW Sony	Retail \$1.3 / 2.9
Blank DVD-R / DVD-RW Sony	Retail \$ 20 / 33

MEMORY (Please call for the current price, or refer to our WEB site)

Good for most boards except Intel®:
 SDRAM 128M, 133MHz \$ 29
 SDRAM 256M, 133MHz \$ 43
 SDRAM 512M, 133MHz \$ 87
 DDR 256M, PC266 \$ 87
 DDR 512M, PC266 \$ 183

Good for most boards include Intel®:

SDRAM 128M, 133MHz	\$ 32
SDRAM 256M, 133MHz	\$ 50
SDRAM 512M, 133MHz	\$ 95
DDR 128M, PC266	\$ 53
DDR 256M, PC266	\$ 96
DDR 512M, PC266	\$ 190
RAMBUS 128M 800MHz-40	\$ 95
RAMBUS 256M 800MHz-40	\$ 170
RAMBUS 512M 800MHz-40	\$ 405

INPUT DEVICES

AOpen 104 keys Keyboard PS2	\$ 12
Keytronic 104 keys Keyboard PS2	\$ 15
Keytronic PS2 Keyboard + Mouse (Black)	\$ 45
Logitech Wheel Mouse PS2	\$ 13
Logitech Wireless USB Mouse	\$ 30
Logitech Cordless Freedom Opt.(KB+Mouse)	\$133
MS Wheel Optical Mouse OEM	\$ 25
MS Multimedia Bundle(KB+Opt.Mouse)OEM	\$ 55
MS Wireless Desktop (KB+Mouse) OEM	\$ 85

FAX MODEMS

AOpen 56K Int V.90 w/voice PCI	\$ 39
USR 56K Int V.90 PCI HW	bulk \$ 69
56K Ext V.92	\$ 138

PRINTERS

HP LaserJet 1000 10 ppm 1M	\$ 355
HP LaserJet 1200 15 ppm 8M	\$ 589
HP LaserJet 2200 19 ppm 8M	\$1035
HP LaserJet 4100 25 ppm 16M	\$1699

VIDEO CARDS

D-Link DSC-C300 Webcam 30 fps	\$ 69
ATI TV Wonder (add-on PCI)	Retail \$ 99
ASUS V8170 MX440	64M \$ 137
ASUS V8420 T4200	128M \$ 266
ASUS V8440 T4400	128M \$ 342

ATI Radeon 7000 SDRAM	32M \$ 53
ATI Radeon 7000 SDRAM v/o	64M \$ 63
ATI Radeon 7500LE DDR v/o	64M \$ 88
ATI Radeon 9000 DDR v/o	128M \$ 148
ATI Radeon 9000PRO DDR v/o	64M \$ 149
ATI Radeon 9700PRO DDR	128M Retail \$ 575
ATI All-in-Wonder 7500	64M Retail \$ 215
ATI All-in-Wonder 8500DV	64M Retail \$ 305

MONITORS

Acer V551	15" 1024 .27	\$ 175
AOpen F50LS LCD, silver	15" 1024 .30	\$ 559
AOpen F70LS LCD, silver	17" 1280 .26	\$ 909
LG 700S	17" 1280 .27	\$ 194
LG F700B	17" 1280 .24	\$ 279
LG 995FT	19" 1600 .24	\$ 430
LG 915FT+	19" 1600 .24	\$ 480
NEC AS70	17" 1280 .27	\$ 205
NEC AS75F	17" 1280 .25	\$ 235
NEC AS95F	19" 1600 .25	\$ 355
NEC AS125F	22" 1600 .24	\$ 695
NEC LCD 1550V	15" 1024 .30	\$ 529
NEC LCD 1700V	17" 1280 .26	\$ 939
NEC LCD 1850E	18" 1280 .28	\$1189
NEC LCD 2010X	20" 1280 .31	\$2185

NETWORKS

3Com 3C905 10/100BT	Bulk \$ 53
3Com 3C996B-T 1000BT Server Adapter	\$ 229
3Com 3C16464 12 ports Switch	\$ 539

AOpen USB 10/100BT Adapter	\$ 39
AOpen OP330 10/100BT PCMCIA card	\$ 45
D-Link PCI 10/100BT Adapter	\$ 20
Intel® Pro/100+ SEC Adapter	Bulk \$ 55
Intel® Pro/1000T Desktop Adapter	\$ 155
Intel® PCMCIA 10/100BT RealPort	\$ 119

Linksys BEFSR41 4 ports Switch	\$ 110
Linksys BEFSX41 4 ports VPN	\$ 135
Linksys Wireless BEFW11S4	\$ 220
Linksys Wireless 10/100BT PCI Adapter	\$ 120
Linksys Wireless 10/100BT USB Adapter	\$ 125

Netgear FS108 8 ports Switch	\$ 99
Netgear FS116 16 ports Switch	\$ 219
Netgear 10BT Mini Print Server	\$ 128
Netgear 10/100BT 2 ports Print Server	\$ 169
USR 4 ports Router + Print Server	\$ 99

10/100 BaseT (RJ45, 8 wire) Connector	\$ 1.5
RJ45 key jack module for wall plate	\$ 4.5
Wall plate (12/4/6 holes)	\$ 2.0
Ethernet Cable 10/100BT FT4	\$ 0.22 / foot
Ethernet Cable 100BT FT4:	
4 / 10 / 25 / 50 feet pack	\$ 6 / 8 / 12 / 18

Software (Microsoft OEM must be purchased with major hardware)

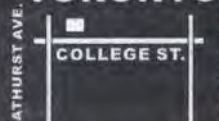
MS Office XP Small Business Full Ver. OEM	\$ 300
MS Office XP Professional Full Ver. OEM	\$ 505
MS Office XP Professional Full Ver. Retail	\$ 779
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Windows XP Professional Full Version OEM	\$ 265
Windows XP Professional Full Version Retail	\$ 425

* All computer systems (Momentum Series, e-Station series) come with 1 year parts and 2 years labour depot warranty by Throne, include the systems unit, keyboard, mouse and speaker. All monitors and add-on items come with manufacturer's warranty. All upgrade package come with 9 months parts & labour depot warranty. 3 years limited warranty on all Intel® processors and motherboards by Intel®. All items below may be used as upgrade for the systems above. Intel, the Intel Inside Logo, Xeon, Pentium and Celeron are registered trademarks of Intel Corporation.

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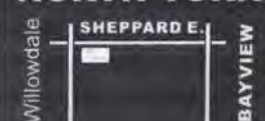
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AC'97 SOUND & 10/100 NIC
17 FLAT SCREEN MONITOR
K/B & SCROLL MOUSE & 600W SPK W/SUB

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512MB DDR-266 & 60GB HDD ATA133
ABIT GF4 MX 64MB DDR
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10/100 PCI NIC
15 LCD MONITOR
16BIT PCI S/C (ON BOARD)
K/B & OPTICAL MOUSE & 600W SPK W/SUB

***LG Cordless K/B&MOUSE \$59**
***25 PCS BLANK CD-R \$9**
***50PCS BLANK CD-R \$18**
***100PCS BLANK CD-R \$29**
***P4 350W USB-FRONT CASE \$49**
***P4 LONGBODY 300W CASE \$39**
***32X10X40 CD-RW \$59**
***LOGITECH OPTICAL MOUSE \$17**
***WHEEL SCROLL MOUSE \$4.5**

***Altec Lansing Versatile 221 SPK \$53**
***S.B. LIVE 256 \$39**
***LOGITECH Web Cam Express \$35**
***LITEON 40X12X48 CD-RW \$85**
***MS Internet K/B & MOUSE \$39**
***MSI KT3 ULTRA DDR 333 \$120**
***ARTEC 32X10X40 CD-RW \$59**
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128MB DDR & 52X CD-ROM
3D GRAPHIC CONTROLLER
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ATX MID TOWER FRONT USB
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INTEL Celeron 1.7GHz (\$478)
ASUS P4BGL-VM-L M/B
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ARTEC 32X10X40 CD-RW
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Outlook of the system may not be the same as the picture shown.

HARD DRIVES

DESKTOP 5400RPM 2MB	
20GB MAXTOR ATA-100	\$85
40GB MAXTOR ATA-100	\$100
61GB MAXTOR ATA-100	\$119
81GB MAXTOR ATA-100	\$136
120GB MAXTOR ATA133	\$216
160GB MAXTOR ATA133	\$354
20GB SEAGATE ATA-100	\$89
40GB SEAGATE ATA-100	\$111
60GB SEAGATE ATA-100	\$121
80GB SEAGATE ATA-100	\$159
20GB SAMSUNG ATA-100	\$92
40GB SAMSUNG ATA-100	\$105
40GB WESTERN DIGITAL ATA-100	\$103
60GB WESTERN DIGITAL ATA-100	\$148
120GB WESTERN DIGITAL ATA-100	\$239
DESKTOP 7200RPM 2MB	
20GB MAXTOR ATA133	\$99
40GB MAXTOR ATA133	\$118
60GB MAXTOR ATA133	\$142
80GB MAXTOR ATA133	\$173
40GB SAMSUNG ATA-100	\$109
80GB SAMSUNG ATA-100	\$149
20GB SEAGATE ATA-100	\$99
40GB SEAGATE ATA-100	\$111
60GB SEAGATE ATA-100	\$138
80GB SEAGATE ATA-100	\$159
20GB WESTERN DIGITAL ATA-100	\$101
40GB WESTERN DIGITAL ATA-100	\$110
60GB WESTERN DIGITAL ATA-100	\$145
80GB WESTERN DIGITAL ATA-100	\$151
100GB WESTERN DIGITAL ATA-100	\$228
120GB WESTERN DIGITAL ATA-100	\$251
DESKTOP 7200RPM 8MB	
80GB WESTERN DIGITAL ATA-100	\$166
100GB WESTERN DIGITAL ATA-100	\$259
120GB WESTERN DIGITAL ATA-100	\$267
LABTOP	
10GB IBM 4200RPM	\$123
30GB IBM 4200RPM	\$179
40GB IBM 4200RPM	\$249
30GB TOSHIBA 4200RPM	\$182
40GB TOSHIBA 4200RPM	\$215

MONITORS

17 KDS XF-7P	\$223
17 VIEWSONIC E70F 0.25	\$232
17 VIEWSONIC E75F 0.25	\$270
17 VIEWSONIC G75F 0.25 1600X1200	\$283
17 SONY G220R	\$418
19 VIEWSONIC PF790-2 0.25	\$485
19 VIEWSONIC G90F 0.25	\$405
19 VIEWSONIC E90F 0.23	\$357
19 VIEWSONIC P95F	\$420
21 VIEWSONIC P225FB 0.25	\$1023
19 SONY G410R	\$560
19 SONY G420S	\$582
15 SONY SDMS51B	\$665
15 SAMSUNG 151S Silver / BLACK	\$509
17 SAMSUNG 171S Silver	\$872
17 SAMSUNG 171P	\$1269
18 SAMSUNG 181T	\$1329
19 SAMSUNG 191T	\$1479
15 VIEWSONIC VE 150M TFT LCD	\$643
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**Get wireless**

Continued from page 44

working product line, including this Wireless PDA Card, which adds 802.11b networking to any Windows Pocket PC or CE 3.0 or later handheld with a Type II CompactFlash slot.

The software installation for the card is simple: click on the install button in the setup program and it copies the relevant files to your computer, and even synchronizes with your PDA, if it's hooked up. We literally had our PDA ready to go within two minutes of starting the install process. After that, you drop the card into the CF slot on your PDA, adjust your network settings to match your wireless network, and away you go.

GVC Gnet 22 Mbps Wireless series

From: GVC Canada/Gentek, www.gvc.ca

Estimated price: \$159 (PC Card), \$189 (PCI adapter), \$289 (access point)



Though a number of companies are now starting to offer 22 Mbps 802.11b products, GVC was the first to get some of these products into our hands for review. We looked at a 22 Mbps Access Point, PCI adapter, and PC Card. As we had hoped, the PC Card worked beautifully with our existing 11 Mbps 802.11b network, after we adjusted the network ID settings to match.

The access point was a different story, as the one we received didn't come with all of the default settings listed in the manual; the access point is capable of retrieving an IP address from a DHCP server or acting as its own server, and ours shipped with these flipped the other way. A quick bit of troubleshooting using the fairly detailed user manual found on the CD, and we were on our way.



We quickly had both 22 Mbps and 11 Mbps connections happening at the

same time with a couple of our test machines, but an older machine was a bit trickier—if you're using an older wireless card you may need to update the driver before it will work smoothly with the 22 Mbps access point.

Despite the tweaking, overall we were quite pleased with the performance of the 22 Mbps wireless products from Gnet. If you're looking to boost your speed but don't want to enter the slightly thornier and more expensive world of 802.11a, this is a nice alternative.

Toshiba e740 Pocket PC

From: Toshiba Canada, www.toshiba.ca
Estimated price: \$949



We had the chance to look at Toshiba's e740 Pocket PC device a few months back, and we were pretty impressed with it: it has a wonderful colour TFT screen, slim design, and slots onboard for both SecureDigital and CompactFlash cards.

What really caught our attention, however, was the fact that despite being one of the smallest devices we'd seen and despite all its functionality and expandability, it also managed to cram an 802.11b component into the case. We had no problems getting it hooked up to our local 802.11b network, though we have to admit that a 240x320-pixel screen isn't ideal for surfing the Web. If you're looking for basic online functionality that doesn't require a lot of screen real estate, it's great.

Oh, and did we mention how compact it is? Again, thumbs way up with this one.

802.11a

Oddly enough, the 'a' version of the 802.11 protocol came out of the chute after the 'b' version, and judging from our experience with early samples of this implementation, it is experiencing some growing pains.

While the original 802.11b sported a top speed of 11 Mbps, 802.11a products offer a much more robust 54 Mbps (72 Mbps in some cases, using compression). These products use the less-crowded 5 GHz bandwidth, and offer a range of up

to 500 m (545 yd.) under ideal conditions—the transfer rate would drop to 1 Mbps at that distance, however, and it would have to be out in the middle of the countryside because, as with 802.11b, anything like a concrete wall cuts the range and speed.

Despite its promise, setup of 802.11a products is typically tortuous, requiring a lot of manual configuration and tweaking to get the products up and running.

The implementation of 802.11a has been so haphazard it's no surprise that there's been very little buzz about the products, despite the fact that they've been available for about six months.

Another thing we've noticed about 802.11a products is that performance seems more susceptible to physical interference. We've found that even with one wooden wall in the way, transmission speeds can sometimes plunge, a problem that we rarely saw with 802.11b products unless the wall was exceptionally thick or made of heavier materials. To be fair, though, even with that speed dip, 802.11a is still faster than 802.11b at its top speed.

Some 802.11a products support a Turbo mode, which allows a theoretical bandwidth of 72 Mbps. Of course, the downside of this is that it means you will only be able to use 72 Mbps-capable cards on your network, as the access point will not be able to communicate with those running at 54 Mbps—something to keep in mind if you have a mix of products.

D-Link AirPro series

From: D-Link Systems Inc., www.dlink.ca
Estimated price: \$229 (PC Card), \$303 (PCI adapter), \$582 (access point)



D-Link has maintained a very high profile in almost all aspects of networking, so it's no surprise that it would be prominent in the new 802.11a sphere. The PC Card 802.11a adapter (model DWL-A650) is a pretty standard design, with a double-height antenna module (you'll want to use it in the upper PC Card slot of your notebook, as it will block access to the top slot if inserted

into the lower slot). The DWL-5000AP access point features an oversize design molded from two different shades of silver plastic, as well as two adjustable antennae sticking out of the rear, giving it a fairly futuristic look.

Because we were using a DSL-sharing router with a different IP range than the D-Link Access Point, we had to manually adjust our computer's IP settings to get a connection to the access point for configuration purposes. Thankfully, the quick installation guide that comes with the access point details this process fully, even giving full-colour screen captures of what you have to change. We were quickly up and running after we made these changes.

The biggest problem we have with the access point is that it can't be configured to retrieve its address from your DHCP server, forcing you to manually adjust your PC's IP settings every time you want to access the configuration settings, if you're in a different IP range. The good news here is that this makes it more difficult for unauthorized users on your network to get to the access point.



Out of the box, the AirPro products work at 802.11a-standard 54 Mbps, but can be boosted to 72 Mbps Turbo mode with a couple of tweaks. To do so, you'll have to be on the same IP range as the access point, which requires going into the configuration page for the access point itself, switching to Turbo mode and rebooting the access point—the card will then cease to function. There is a setting on your computer for your wireless card that will allow you to switch into Turbo mode. Once you make the change, you should be up and running again at the new speed.

Even if it requires a bit of tweaking, the D-Link products are still relatively easy to set up, and come in at one of the more affordable price points. All in all, the D-Link AirPro series looks like a pretty solid choice if you want to head down the 802.11a highway.

Intel PRO/Wireless 5000 series

From: Intel Corp., www.intel.com
Estimated price: \$285 (converted from US\$179, PC

Card), \$365 (US\$229, PCI), \$709 (US\$449, access point)



As soon as you open the box, you know Intel's PRO/Wireless 5000 access point is not like the other 802.11a solutions, most obviously because of its design; instead of the usual boxy shape, it resembles a flying saucer, thick in the middle and tapering off at the ends. This design means it'll wobble around on the desktop if you don't use the included wall-mounting bracket or stand it up vertically.

Once you get past its aesthetics, a couple of other differences become apparent. First, the Intel products top out at 54 Mbps, which is 802.11a standard, so they won't be compatible with any of the other manufacturers' cards or access points running in Turbo mode. Secondly, the access point is upgradeable to accommodate 802.11b connections as well—perfect for any environment in which you need to run both protocols. That option is available separately, though there is an Intel PRO/Wireless 5000 LAN Dual Access Point available with both protocols already onboard.



When you plug in the access point and PC Card products, they work fine with each other without additional configuration, but as with the others, to access to the access point's configuration page you need to manually configure your PC so it has an IP address within the same range as that of the access point. You can configure the access point to get its IP address via DHCP, but as soon as you do so you have to re-determine the IP of the access point using one of the bundled software utilities. With a bit of hunting around, it's pretty easy to figure out.

About the only real problem we have with the Intel line of 802.11a products is the pricing. Because they're oriented more toward the corporate environment, they have a more corporate-ori-

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Get wireless*Continued from page 49*

ented price. The best deal of the bunch is the Starter Kit, which comes with an access point and two PC Card adapters for around \$1,199 (from US\$749)—still on the high side, but not quite so bad.

IBM 11a Wireless LAN CardBus AdapterFrom: IBM Canada Ltd., www.ibm.ca

Estimated price: \$279

Usually we'd put IBM before Intel to follow alphabetical order. In this case we've dropped this product down below the Intel products, because IBM's 802.11a cards are, in fact, manufactured by Intel and are virtually identical apart from the markings on the outside. IBM does not offer an IBM-branded 802.11a Access Point at this time.

Netgear HR314 Wireless RouterFrom: Netgear Inc., www.netgear.com

Estimated price: \$879 (converted from US\$553)

After 802.11b hit the market, it wasn't long before someone combined the wireless technology with an Internet router—if you have a wireless network, chances are you're also going to need a router to

access your broadband connection. That particular combination hasn't been so quick in appearing on the 802.11a side, however. Netgear's HR314 is the first 802.11a wireless router we've had a chance to see. While it seems expensive, purchasing a router and a separate access point would be in that ballpark.



The HR314 is a pretty straightforward piece of hardware, essentially a squared-off box with an adjustable antenna on either side. It has four 10/100 ports built in, so you can hook up a desktop PC, a network printer, or other wired devices. The 802.11a wireless component will work at both 54 Mbps and 72 Mbps Turbo mode.

If we had any problem with this device, it would be with its size—like Netgear's 802.11b router, it's a bit larger than other similar devices. The good

news is its box-like shape makes it easier to set other things on top of it (your DSL/cable modem, for example) to save space.

Though we didn't get a chance for a hands-on review, Netgear also makes a PC Card 802.11a adapter for US\$158.

SMC EZ Connect seriesFrom: SMC Networks, www.smc.com

Estimated price: \$230 (converted from US\$145, PC Card), \$290 (US\$180, PCI adapter), \$580 (US\$365, access point)



We looked at SMC's 802.11a products several months ago. Since then they've received a spiffy packaging upgrade but inside the box, they're mostly the same. The access point is a fairly compact box with two adjustable antennae for maximum reception. The PC Card is a standard design, with an antenna section that

sticks up a bit, meaning it can only be used in the top slot.

How does it all work? Well, when we plugged both of them in (the Access Point into the network and the card into our test notebook, of course), we immediately had a fast connection to the outside world, which is pretty much the majority of the battle.



As with other 802.11a products, this setup wouldn't allow access to its configuration page from an IP address outside the same range. After a manual configuration of the notebook's IP address to put it within the same range, we could get to the Access Point via the Web interface, reconfigure it for DHCP, and get it into the proper range. It was a fairly frustrating interlude, and troubleshooting the problem wasn't mentioned in the manual or Web page for the product, so

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Bluetooth inches forward*Continued from page 42*

to automatically recognize and use any other Bluetooth-enabled devices in a room as soon as you enter it. No longer would you have to spend a lot of time configuring a bunch of wireless networks to access the devices around you.

The reality of Bluetooth implementation hasn't been nearly so slick. While we have been able to set up Bluetooth devices fairly easily in some cases, in others the process has been among the most complicated hardware/networking setups we've had to deal with.

Get wireless*Continued from page 50*

be prepared. It's worth mentioning that after we fixed that little problem, the products worked fairly smoothly.

Out of the box, the EZ Connect products communicate at 54 Mbps, but you can boost that to 72 Mbps Turbo mode in the configuration settings of both the card and access point. Again, you'll lose communication between the two when you switch one or the other, so switch the access point first, then reconfigure the card at the PC end. We ended up having

And we don't think we're alone: we once attended a press conference by one of Bluetooth's biggest boosters, during which the presenters tried to demonstrate how to get a notebook to use a Bluetooth cell phone as a modem. The connection failed almost immediately, and a few minutes were spent trying to renegotiate a connection between the notebook and the phone. Not exactly a compelling way to kickstart a new technology, to be sure.

The situation is improving, but Bluetooth hasn't yet achieved the ease-of-use levels the industry was predicting.

to tweak the speed and frequency on the access point in order to get the products to talk to each other again. It didn't take too long, however, to fix it up and get the products running at the faster speed.

While the SMC products are competitively priced, we had a problem with the sparseness of the manual, especially with the IP range troubleshooting issue. If you're well-versed with networking then the SMC is certainly a great choice, but if you're going to need a lot of handholding during the initial setup, this may not be the best choice for you. □

Because of security concerns, Bluetooth devices still need a password in many cases, and often you need to spend quite a bit of time configuring your connections to hook up to a printer or cellular phone from a Bluetooth-capable machine. This makes it debatable that a Bluetooth configuration saves any time, especially if you have to keep rediscovering devices every time you want to use one of them.

Then there's the issue of actually accomplishing a task. For example, we're still trying to figure out why we were unable to receive a fax sent out through our Bluetooth phone. There's nothing in the manual indicating that it shouldn't work fine for sending out faxes, and we've used two different machines, Bluetooth adapters, and fax programs with no success.

The bottom line for Bluetooth at this point: it's still a fight to get the devices to work well with each other quickly and easily, which goes completely against the original intentions for the protocol. Before we're ready to unequivocally recommend Bluetooth, a lot of work will need to be done on user interfaces, across the board.

There's a smattering of Bluetooth products available, but as yet they still haven't captured the attention of the people who ultimately will matter the most: those with the cash who want to buy cool new wireless products. At this point, possibly the most useful application of the technology has been the incorporation of Bluetooth into wireless headsets for cellular phones. Obviously that's not all that's out there though. Here are a few products that use Bluetooth.

3Com Bluetooth seriesFrom: 3Com Corp., www.3com.com

Estimated price: \$225 (USB or PC Card)



When it comes to communications technology, 3Com is often at the forefront in

Continued on page 60

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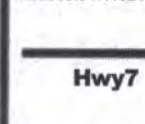
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Some new flat panels from Samsung

By Sean Carruthers

How do you go from zero to 60 in milliseconds, without leaving your desk? Take a look at the SyncMaster 151P, the latest in a growing line of computer-related products designed by FA Porsche (the company that also recently designed the look of a new Fujifilm digital camera).

By this point we don't have any real concerns about the quality of Samsung's screens—we're almost always impressed. The 151MP is no exception: both bright and clear, with a 15-inch display and maximum resolution of 1,024x768, it's ready to handle typical desktop applications. The monitor is a hybrid, which means it comes with both VGA and DVI cables for hooking up to the video card.

Despite a great set of technical specs, the real wow factor here is the design. The cables are all tucked into the base, exiting at one small point at the rear, instead of hanging off the back of the screen itself. That base is very configurable, too: the screen tilts, pivots between portrait and landscape mode, can be raised 5 cm (2 in.), and swivels through a full 360 degrees despite having a hole in the base that would seem to preclude any swivel. The front panel is also very streamlined, with only one obvious button for backlit power. All



SyncMaster 151MP

From: Samsung Electronics Canada,
www.samsung.com
Estimated price: \$949



SyncMaster 241MP

From: Samsung Electronics USA,
www.samsungusa.com
Estimated price: US\$4,000

other controls are behind a touch-sensitive panel that doubles as the status indicator panel.

It's a beautifully designed from the base up, and will make a wonderfully sporty addition to any desktop—whether you're a racing fan or not.

Top of the line

We recently gave our VIP award to Samsung's 17-inch multimedia monitor, but that one isn't even the top of the line. That distinction goes to this model, the 24-inch SyncMaster 241MP, which isn't even officially available in Canada yet. If you're looking for a flat-panel monitor that can double as a fairly good-sized TV, though, you may be tempted to make a run for the border. Even at this fairly hefty price and the exchange rate, it's competitive with other 24-inch flat panel displays.

The SyncMaster 241MP is not just large, it's one of the largest TFT panels currently available—to go larger you'd have to move to a plasma display. It has a hardwired resolution of 1,920x1,200 and a pixel pitch of .27mm, providing an exceptionally large and high-quality image.

As with other monitors in the MP multimedia-enabled line, the rear of the 241MP features connectors for a number of inputs, including one for a VGA monitor, S-Video, RCA connectors for both video and audio, DTV, and a cable TV connector to hook directly to a wall

outlet or through a VCR. With these connections, the 241MP is not only compatible with your older video equipment (VCR and DVD player), it's ready for HDTV.

The overall design of the monitor is very nice. While previous models in the multimedia series sported a fairly angular design, the 241MP rounds off all the edges, and splits the speakers off from the monitor, so you can move them away from the screen for better stereo separation.

The monitor component has a special base that clamps onto the sides of the screen, near the bottom, allowing you tilt it forward or backward slightly. The speakers each have their own similarly designed bases, but can also be attached to the side of the monitor panel with special screws.

Because it is so much larger than a typical TFT display, it has some specs worth mentioning: it weighs about 13.5 kg (30 lb.), and has a power consumption rating of 120 Watts—a lot heavier and hungrier than your average flat panel. However, compare these numbers to a 20-inch or larger CRT display—which can weigh 27 to 45 kg (60 to 100 lb.) and have a power consumption of 150 watts or more—and you're still doing better, and saving space on the desktop to boot. □

Bungee DVD offers fee-free timeshift TV

By Emru Townsend

VRs, DVRs, whatever you want to call them—they're a great idea. How could they not be? Those of us who prefer to tape *Buffy the Vampire Slayer* and watch it at our convenience, rather than clearing our schedules at the same time every week, already depend on our VCRs. So how could we not love the idea of a personal (or digital) video recorder, which does the same thing without having to deal with stacks of videocassettes?

Here's a quick primer on DVRs, in case you didn't know: Rather than recording onto a physical, removable medium, a DVR records to a built-in hard disk.

While it's great that you don't have to worry about Junior sticking kielbasa into the tape slot anymore, there are other advantages as well. The most highly touted is timeshifting, the ability to pause live television: you press the pause button, the image freezes, and the DVR automatically starts recording from that point. When you restart your TV viewing, the DVR keeps recording until you catch up. An extension of this is the ability to watch the first part of a program while it's recording the remainder.

As Steven (the dude from those Dell ads) might say, "Sweet!"

(Speaking of ads, the 30-second skip-ahead function is a thing of beauty. The same feature has been available on VCRs

for years, but on a VCR it uses the fast forward function. There's something to be said for instantly blipping out, say, those annoying Subway ads featuring Jared. No wonder ad and TV execs are not-so-quietly freaking out.)

The Canadian problem

The most glaring problem with DVRs for us Canucks is that they're not available north of the border, except as part of a Bell ExpressVu satellite-dish package. Unless, that is, you have the Bungee DVD.

The Bungee DVD is Pinnacle Systems' DVR—a tiny, lightweight purple box that forgoes the built-in hard disk and uses the one you already have on your PC. It's fiendishly simple, really: the



Bungee DVD

From: Pinnacle Systems, www.pinnaclesys.com
Minimum system requirements: 500 MHz Pentium II, Windows Me/XP
Estimated street price: \$275

Bungee DVD plugs into your PC's USB port and the television coaxial cable plugs into the Bungee DVD. Presto, you're all set for television on your PC.

Continued on page 58

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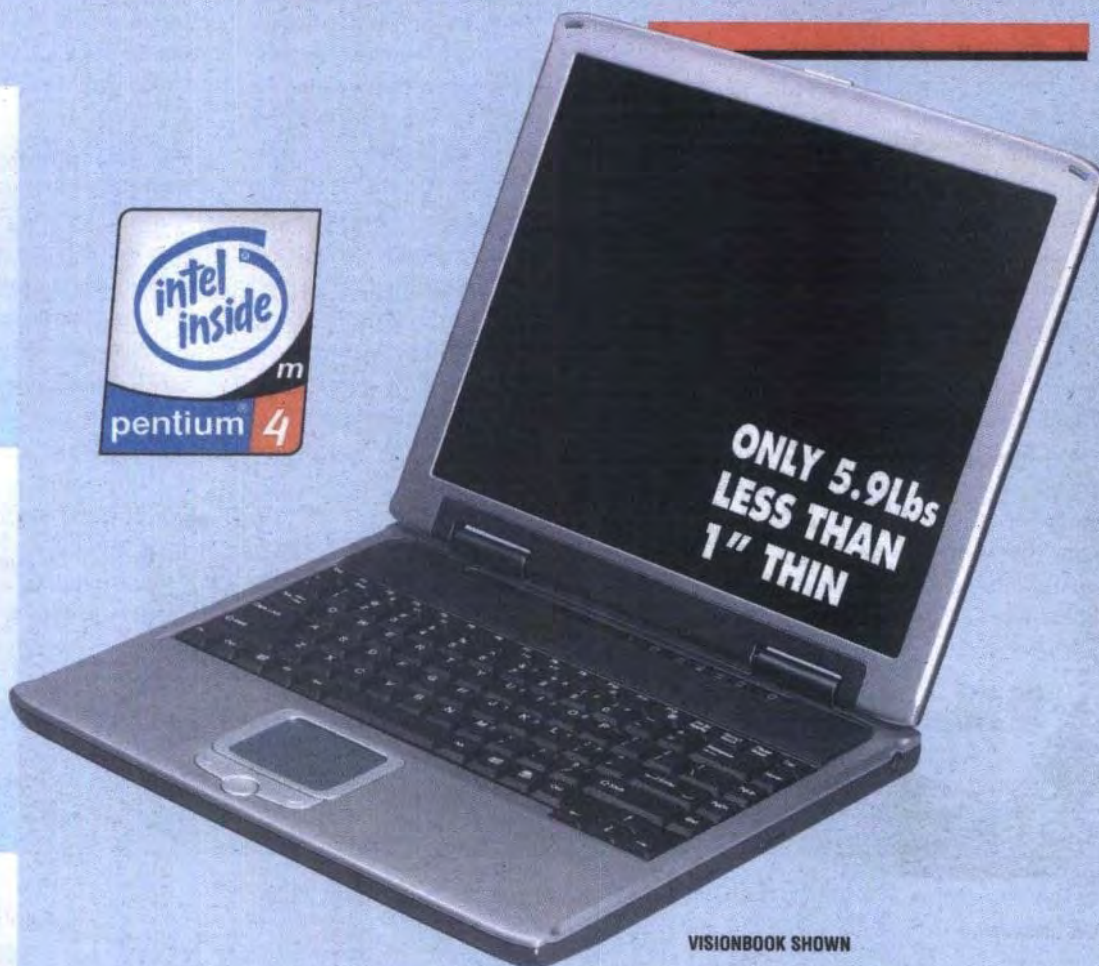
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Bungee DVD offers free time-shift TV*Continued from page 54*

(You can also connect composite and/or S-Video cables, if you want to watch or record from your VCR.)

Well, OK, I kind of glossed over the installation process. The thing is, I should be able to gloss over it; it's not terribly complicated, and under ideal circumstances should only take a few minutes. However, I came across two minor problems that can make it take a little longer. First was the time I wasted flipping through the documentation to see if I should install the software or the hardware first. Faced with ambiguous instructions (and uncomfortably small type), I decided to wing it. (Just so you know: you run the setup program first and plug in the hardware when you're asked to.)

Second was the diagnostic procedure, which makes sure your system is up to par before it installs the software. I discovered that the video card in my test computer had some DirectX function disabled, which prompted me to go through the diagnostic program with a fine-toothed comb. It's quite a simple program, and very clear. That is, unless

something goes wrong and you click the "Details" button to find out more about your particular problem. In almost all cases, I found that the supposedly detailed messages were merely reshapes of the original problem descriptions, with a few more words thrown in.

Moving over to my alternate computer—a 733 MHz Pentium III with a working video card—installation was a breeze, getting an image was automatic, and changing settings was trivial; right-clicking in the television display gave me almost everything I needed, including a 16:9 window option for letterbox formatted movies and programs.

The images themselves were colourful and clear, with a negligible amount of artifacts. When hard disk space became low or if I started working on the computer at the same time, the image would stutter every once in a while. The stuttering never interfered with any recordings in my tests, though.

Cue Steven: "Sweet!"

From TV to DVD and back

Recording video is a snap; you can use one of the two presets, or choose a custom configuration. You can record in

one of three resolutions (352x480, 480x480, or 720x480) at varying quality levels (2 to 9 Mbps for the first two, 4 to 9 Mbps for the last). You can schedule a program to be recorded or manually click the record button while watching TV, and then of course, there are the timeshift functions.

Aside from its small and lightweight form and comparatively low cost, the Bungee DVD has a few advantages over regular DVRs. Unlike closed-box DVRs, it records to standard MPEG-2 files, so you can do anything you want with them after they're recorded: edit them, back them up, whatever you have in mind (of course, a regular DVR doesn't double as a video capture device—at least, not without some hacking).

You also have as much or as little storage space as you need, since it records to any installed hard disk. Need more room to squeeze in this week's *Powerpuff Girls*? Either clear off some files or install a new hard disk. And perhaps best of all, the Bungee DVD constitutes a one-time purchase; stand-alone DVRs require a monthly subscription fee or a hefty lump sum.

One nice little bonus is that you aren't necessarily tied to your computer screen

to watch your recordings. Bungee DVD earns its name by providing a simple way to burn collected video clips onto a CD or DVD so you can watch them on your DVD player. It's a good idea, but I was actually a little disappointed with the options here. Mostly, I was irked because Bungee DVD only burns SVCD (Super Video CD) or DVD discs; many DVD players can handle Video CDs, but not many can work with the SVCD format.

Furthermore, the program will only let you burn the files that conform to the medium to which you're recording. So if you recorded something in 480x480, you can't put it on a DVD unless you go through the trouble of converting it first. There is a bundled conversion program, but it's not integrated into the television application; why not make the conversion transparent, rather than forcing users to take this extra, annoying step?

Quibbles aside, the Bungee DVD makes for a nice option for desktop TV viewing. The lack of lossless AVI capture may not make it ideal for everyone, but overall, Pinnacle has packed quite a few features into a small purple package. □

Emru Townsend (emru@pobox.com) freely admits he watches too much television.

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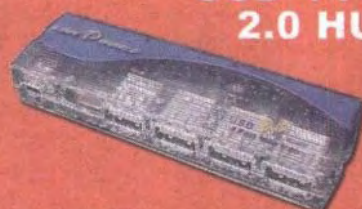
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Bluetooth inches forward*Continued from page 52*

the world of desktop and small office computers, so it's no surprise that the company was one of the first out of the gate with a Bluetooth solution for the desktop.

We had the chance to look at two different products available from 3Com; the Bluetooth USB adapter and the Bluetooth PC Card. Both are quite easy to physically install: just stick them into the appropriate slot and flip up the antennae. The USB version sticks straight out from your PC's USB slot, between 13 and 18 cm (5 and 7 in.) depending on antenna position. Though it can be rotated to point the antenna in the right direction, it can't be folded in a way that minimizes its presence behind/beside the PC. The PC Card version is a bit less demanding, with only about 2.5 cm (1 in.) of space required beside the notebook. The antenna can be pointed up about 2.5 cm, too.

The software setup for each of the items seems a bit complicated, as the installer has to set up a number of communications ports, including fax and serial, among others. With both of our test computers, the installer program hiccupped the first time through, but the second time it worked fine. As soon as we got all of the software installed, 3Com's Bluetooth Connection Manager found all of the other local Bluetooth devices.

Getting access to the printers was pretty easy, and we were able to find the phone, but sending files or achieving a fax link using the phone was far more difficult than it should be—a bit of work on the user interface will be needed before this one is particularly easy to use. If you're willing to put in the configuration time, you can certainly make the 3Com Bluetooth products do what they're supposed to, though.

Epson Stylus C80 + Bluetooth

From: Epson America, www.epson.com

Estimated price: \$249 (C80), \$249 (Bluetooth module)



Epson's Stylus C80 is a very capable printer, with excellent photographic output and a fairly quick print speed (up to 20 pages per minute in black, draft mode). It has a maximum print resolution of 2,880x720 dots per inch, and because it uses pigment-based ink, prints should last a long time (up to 70 years under normal lighting conditions before fading is noticeable, according to Epson). Pigment inks are also water resistant.

Something that makes the C80 even more special is its ability to handle external networking and wireless connections. In addition to a network attachment, an 802.11b module is available (it comes bundled with the printer as the C80WN, at a higher price) as is a Bluetooth dongle (sold separately for \$249). As soon as we plugged the C80 in and connected the dongle, our Bluetooth-enabled PCs were able to spot it. A quick driver install later, and we were printing to it. One thing to note: the dongle does not receive its power from the printer. It has its own brick-style AC adapter, so requires an extra power outlet.

If you already have Bluetooth set up in your workspace, this pair of products is a nice way to get high-quality photo printing wirelessly.

HP DeskJet 995c

From: Hewlett-Packard Co., www.hp.ca

Estimated price: \$599

Continued on page 72

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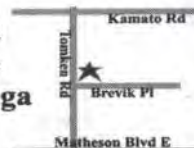
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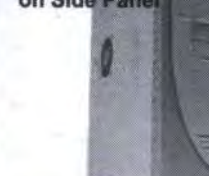


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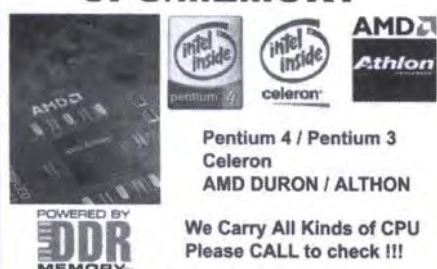
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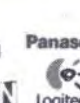
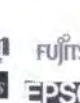
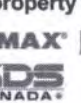
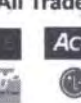
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Business in hand

Making the small business case for PDAs

By Geof Wheelwright

"Now why would I do that?" This question pretty much summarizes the reaction you might anticipate when you ask the average small business owner if they plan to buy a handhand computer.

Despite more than a decade of service, handheld computers still have a reputation that places them firmly in the "executive gadget" category rather than as a mainstream small business tool. But that is starting to change, as the prices of handhelds come down and their capabilities increase.

Technology as business driver

The real turning point of this change, however, will come as small businesses move handheld systems from the "want" to the "need" column. There are a number of other technologies that have made



this difficult leap over the last 100 years.

The first was the telephone. Somewhere early in the last century, a telephone was still something that small

businesses would have to cost-justify. Over time, it simply became a requirement for doing business.

Continued on page 68

Assessing the need for e-commerce

Is it a priority for your small business?

By Geof Wheelwright

Should e-commerce still be a priority? For lots of small business operators who were worrying two years ago that they were missing out on huge volumes of potential online business—and did not have the time, money, or inclination to do so at the time—the question is both real and valid.

The answer, as with many business applications, depends a great deal on your expectations. If the expectations are that merely by hanging out a shingle on the Web and opening up a small e-commerce site, your business will see huge increases in sales of products and services, then they are clearly out of sync with reality. That is so-o-o-o 2000, man!

But if you have an ongoing business strategy that can be better supported by making e-commerce tools available to your customers, it may still be worth investing in e-commerce.

What business are you really in?

The first thing you need to look at is the business that you're really in—and the products and services you sell. If you run a business that is largely based on selling your services (i.e. your time) and personally delivering and installing products alongside those services (as would be the case with a plumber, electrician, carpenter, and so on), then you really have to wonder whether or not you are going to add any value to the experience by setting up an e-commerce site.

While there may be some utility in allowing your business to be listed in

Continued on page 78

Designing forms in Access



When entering information into an Access database you have a couple of choices: use the plain table view, which looks like a simple spreadsheet; or use a form, a fancy front end for

your database. Forms make it easier to enter data, particularly when there is a lot. Access includes a tool that creates forms you can customize.

Adding a form

Before you can add a form to a database, you need a table or query to base it on. For the purposes of this column, we'll



To give a form a background, add an image to its Picture property.

use a database we created in a previous column. Create a Blank Access Database and name it Employee. You'll need to create two tables in Design view, so begin by selecting Table from the Objects list, and choose Create table in

Design view. Enter the field descriptions as listed in Table 1.

Click in the margin opposite the EmployeeID field to select it, right-click and choose Primary Key from the menu. This sets this field as the primary key for the database. Save the table by clicking the Save button on the toolbar, name the table Employee, and click OK. Close this table.

Now create the second table (see Table 2) required for the relational database. Don't set a primary key for this table. When you save it, call it Evaluations and answer No when prompted to add a primary key.

Create the relationship

To create the relationship between the

Continued on page 64

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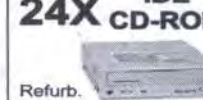
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Designing forms in Access

Continued from page 62

tables, choose Tools, then Relationships. When the Show Table dialogue appears, click Employee, Add, Evaluations, click Add again, then click Close. Click on the EmployeeID field in the Employee table and drag it over the EmployeeID field in the Evaluations table and let go. When the Edit Relationships dialogue appears click the Enforce Referential Integrity checkbox and click Create to continue. Close the dialogue and answer Yes when prompted to save your changes.

Now the tables have been created, you can enter some sample data. Before you do this, add a form to the database that will allow you to enter the data more easily.

Create a form

From the Objects list choose Forms and select the Create Form By Using Wizard option. From the Tables/Queries drop-down list select Table:Employee and click the double chevron (>>) to move all the fields from the left window to the right. From the Tables/Queries drop-down list choose Table:Evaluations, move the EvalDate, Score, and Salary fields to the right window (you don't need to add the EmployeeID field from this second table as it already appears there from the first), and click Next.

When asked, "How do you want to view your data?" choose By Employee, click the Form With Subform(s) option, and click Next. Click Datasheet, click Next, select the Style you want to use, and click Next again. Name your form Employee Evaluation Details and choose the Open The Form To View Or Enter Information option and click Finish.

The form and subform option is the best one to use when you have a relational database. It allows you to enter both the data for an employee and data for their evaluations in the one place. As there can be only one record for an employee but each employee will have a history of evaluations that they've had since they were first employed, the subform allows you to add multiple evaluation entries for each employee.

You can now type data (see Table 3 and Table 4) into your form and click the New Record button to move from entering one employee to the next.

You will notice that the text you've entered as the Caption in the table's design view becomes the label for each field in the report. This means you can

use simple one word fieldnames but still have your forms display useful headings and labels.

Change a form

To tweak the form's design, open the form and choose View, then Design View. This shows the basics of how the form is laid out and you can use this view to make changes to how the form looks. For example, you can move controls around, add buttons to the form and alter the background image.

Each field from the table is listed on the screen with its fieldname or caption (in our case, because we used captions the captions appear). If you don't like the prompt that appears, you can change it by clicking to select the box in which the text appears. Click inside the box and alter the text to suit.

If you find that a box (control) into which you type your data is too large or too small for the amount of data you want to enter, you can alter its size. For example, for date fields and employee numbers you only need small controls and the current ones are very big. Alter the size of a control by selecting it and dragging on its sizing handles with your mouse.

You can also change the look of the control, by selecting a different fill or font, or making it appear flat or raised. To view your options, right-click on a control and choose one or more of the options: Fill/Back Color, Font/Fore Color, or Special Effect and make changes to them. You will also find these options can be used to alter the look of the labels for your fields. If you choose the Transparent Fill option, you will be able to see the form's background image through the label.



To change the appearance of form boxes, right-click on them and use the menu options.

To alter the style of the form to one in the Style dialogue, choose Format, AutoFormat, to display the available

Table 1

Field Name	Data Type	Description	Caption
EmployeeID	Number	Employee ID number	Employee Number
FirstName	Text	Employee first name	Employee First Name
LastName	Text	Employee last name	Last Name
Hired	Date/time	Start date	Date employed
Department	Text	Department	Department

Table 2

Field Name:	Data Type:	Description:	Caption:
EmployeeID	Number	Employee's unique number	Employee Number
EvalDate	Date/time	Date of Evaluation	Date of Evaluation
Score	Number	Score out of 10	Evaluation Score
Salary	Number	Salary	Salary

Table 3

Employee number	First name	Last Name	Date employed	Department
165	Jane	Smith	12/8/99	Accounts
150	Susan	Smithson	2/24/92	Accounts

Table 4

Employee number	Evaluation date	Score	Salary
165	12/8/00	8	30000
165	12/8/99	7	28000
150	2/24/00	5	35000
150	2/24/99	5	34000

styles. Click Options to fine-tune the effects that will be applied to the form, and to enable or disable application of fonts, colours, and borders.

Adding buttons to forms

Access provides a number of built-in command buttons that you can attach to your forms. For example, you can add a New Record button that can be clicked to add a new record to your database. To do this, ensure the Toolbox is displayed. If not, choose View, then Toolbox to display it. In the Toolbox area, locate and click the Command Button tool and drag a small rectangle onto your form—this becomes the button. (You can alter it later if it isn't the right size.)

When the Command Button Wizard dialogue appears, from the Categories list, choose the Record Operations option and, from the Actions list, choose Add New Record. Click Next and, when you see the prompt to add text or a picture to your button, choose one. You'll find that adding text will leave your user in no doubt as to the purpose of the button and is probably the preferred choice.

Choose the Text or Picture option and then a picture you want to use (your choice will be displayed in the Sample window). If you choose Text, you can edit the text if needed. When you're done choose Next, type a name for your button (it's usual to give the name a "cmd"

prefix, cmdAddNewRecord, for example), and click Finish. You can now move the button into position on the form, and, if necessary, adjust its size.

To test the button, choose View, Form View to display the form, and click the button to see that it adds a new empty record to the data file.

There are other useful buttons you can add and one of these is a button to search for a record. To do this, return to Design view and choose the Command Button tool again to add another button to your form. This time, from the Categories list choose Record Navigation and, from the Actions list, choose Find Record. Click Next and, when prompted, choose the Text or Picture option (if you choose Picture, select an image), and click Next. Name the button cmdFindRecord and click Finish.

To make the buttons the same size, make one the size you want. Hold Shift as you select the second one, right-click and choose Size, Size To Widest (or Size To Narrowest) according to which works best. Then, with the buttons still selected, right-click, and choose Align, and you choose an option for lining them up with each other on your form.

Test the new button by returning to Form View and clicking on it. A dialogue will appear, into which you can type the text you want to search for. You can also

Continued on page 67

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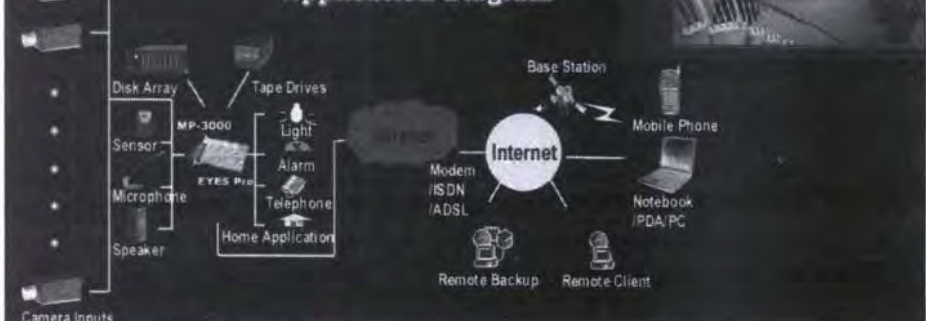
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Excel printing tips

Add filenames to footers • In Excel 2002, you can add the filename and path to the header or footer of a worksheet by choosing File, Page Setup, the Header/Footer tab, and selecting Custom Header or Custom Footer. Select the button for the Filename and Path, which inserts the code string &[Path]&[File] into the header or footer.

Filename and path for pre Excel 2002 • With Excel 2000 or 97 you can add the filename and path to a worksheet footer with this macro:

```
Sub FileNameInFooter()  
ActiveSheet.PageSetup.RightFooter=  
ActiveWorkbook.FullName  
End Sub
```

This places the text in the RightFooter area (other options are LeftFooter, CenterFooter, LeftHeader, CenterHeader, or RightHeader). If the file moves or its name is changed, run the macro again to update the information.

Naming print areas • When you want to print only one part of a worksheet, select it, and name it using Insert, Name, and Define. Then before printing select the name from the list

and choose File, Print, then Selection.

Fit to a page • Ensure your worksheet prints on a single page by choosing File, Page Setup, Sheet tab, and enable Fit To 1 Page(s) Wide By 1 Tall. You can also omit either of the width or height values to make it one-page wide but multiple pages tall, or vice versa.

Troubleshooting print preview • If your worksheet appears in black and white and not colour in the print preview window, it is because you have a monochrome printer selected. To alter the preview, choose a colour printer instead.

Adding column and row identifiers • To print the column letters and row numbers on your printed worksheet, choose File, Page Setup, Sheet tab, and enable the Row and Column Headings checkbox.

Printing formulas • Print your worksheet showing formulas rather than cell displayed values by choosing Tools, Options, View tab, and enable the Formulas checkbox. Size the

columns so the formulas display as required (or select all columns and choose Format, Column, and AutoFit Selection) and print.

Worksheet titles • Print selected rows and/or columns at the top or left of every page of a printed worksheet by choosing File, Page Setup, then the Sheet tab. Select Rows to repeat at top and select the rows with your headings. Select Columns to repeat at left and select the columns containing the row headings. Now each column and row will have a heading regardless of how many sheets of paper are required for printing.

Hiding gridlines • Choose File, Page Setup, Sheet tab, and disable the Gridlines option to hide the gridlines on your final workbook.

Centre on the page • Centre a worksheet between the top and bottom margins or horizontally between the left and right margins of the paper by choosing File, Page Setup, Margins, and either the Vertically or the Horizontally checkbox (or both).

Vertical text • Add a strip of vertically aligned

text down the side of a worksheet by first selecting the cells in column A and choose Format, Cells, Alignment, then Merge. Also, from this dialogue, rotate the text 90 degrees (or choose the option that places text one character per line). Type your text into the large merged cell and format it.

Manage long headings • To ensure that long headings don't make your worksheets too wide for the paper, wrap them in the cell. To do this, select the row with the headings and choose Format, Cells, Alignment, and enable the Wrap text checkbox. Now narrow the columns to fit the data and the headings will wrap to multiple lines where necessary.

Fine tune margins • Fine tune margins before printing from the Print Preview screen. Click the Margins button and the margins on the page appear as adjustable lines. Drag them into their new positions and check the effect on the page as it will print.

Print Multiple worksheets at a time • When you have more than one worksheet to print, select those you need to print by holding Control

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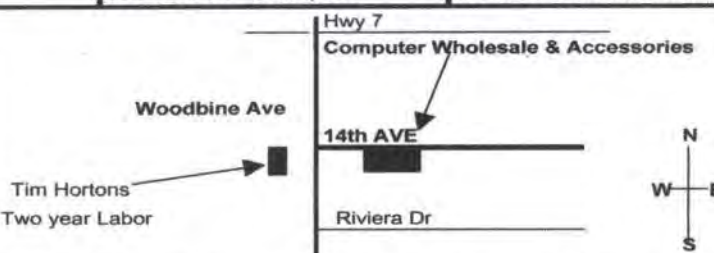
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Excel printing tips*Continued from page 66*

and clicking on each sheet tab. Now choose Print. In Print Preview you can click Next and Previous to move from one to the next.

Previewing the layout • Choose View, then Page Break Preview to see where the worksheet will be divided into pages when it is

printed. If you'd prefer the pages to break at different positions, either click where the page should end and choose Insert then Page Break or drag the page break lines into different positions. To clear the page breaks you've created, right-click on a blank area of the worksheet and choose Reset All Page Breaks.

—Helen Bradley

Ten years ago in TCP

In the November 1992 issue of *The Computer Paper*, we ran a news report of Hewlett-Packard's first foray into portable inkjet printers. It had just introduced the Deskjet Portable. Coincidentally, HP has just announced a new portable printer, the Deskjet 450. We reported on a Microsoft briefing in which the company demonstrated Windows 3.1 for Workgroups and outlined its push into networked computing.

We also carried a report on the MacWorld Toronto show, and a newsbrief on the soon-to-arrive PowerPC chip, a joint development venture involving Apple, IBM, and Motorola.

Atari's demo of its latest personal computer, the Falcon was hot news. The biggest Commodore news was the company's announcement of the next-gen Amiga 4000, along with news that it was entering the IBM-PC clone business with four Intel 386 and 486 models.

Our cover story looked at desktop publishing with commentary on Aldus PageMaker, Quark XPress, Ventura Publisher, FrameMaker, and CorelDraw. Believe it or not, all of these brands still exist, although ownership of some has changed—Adobe now owns PageMaker and FrameMaker, while Corel has Ventura Publisher.

—TCP Staff

Designing forms in Access*Continued from page 65*

set the search field to either the current field or the entire table by selecting the table's name from the dialogue. Then choose from the options, Match: any Part Of Field, Whole Field, or Start Of Field. Other options include matching the case of the text (Match Case) and the direction (All, Up, or Down). Click Find Next to search for the text.

When you add to or alter the controls on a form, you may need to adjust the Tab Index property that controls the order in which controls are selected when you press the Tab key. The Tab Index is an integer ranging from zero up, each integer can be allocated to only one control and the value of the Tab Index sets the order of the controls (zero is first, one is second, etc.). To alter a Tab Index, click the control you want to alter, then right-click it and choose Properties, then Other tab. Locate the Tab Index property and set it to zero (or another value), and repeat for each field to alter.

Images on forms

You can apply a logo or image to a form

by adding it inside an Image control. Click the Image control in the Toolbox and click on the form in the position the top-left corner of the image will appear. When the Insert Picture dialogue appears, select an image and click OK. Resize the image by right-clicking the control, choose Properties, then the Format tab. Set Size Mode to Zoom, the Picture Alignment to Top Left, and use the sizing handles to adjust its size. Now choose Format, and Send To Back to place it behind the other form controls.

Add or modify the background image on the form by right-clicking any part of the form and choosing Properties. From the dropdown list at the top of the Properties dialogue, choose Form, then the Format tab. Click the ellipsis next to the Picture property and locate the image you want to use behind the form (type c:\windows\clouds.bmp, for example). The image will be tiled to fit the form if you set the Picture tiling option to Yes. □

Helen Bradley specializes in writing hands-on tutorials. Her columns appear regularly in a number of publications in Australia, the U.K., and the U.S. Contact Helen at helen@helenbradley.com.

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Business in hand*Continued from page 62*

The same can be said of the typewriter, photocopier, fax machine, answering machine, voice mail, desktop computer, computer printer and—more recently—email and Internet access. The most direct comparison with the handheld computer, however, is the mobile phone.

Ten years ago, the mobile phone was expensive and its use limited to those small businesses that really felt they could justify the heavy ongoing expense of such a move. In recent years, however, many small business owners (particularly those who are mobile, such as real estate agents, salespeople, service agents, consultants, plumbers, carpenters, appliance repair people, and so on) have come to the conclusion that customers now require them to be reachable remotely at all times.

If you can't be contacted when your customers need you, your customers may well just switch their business elsewhere. Mobile phones are now a mainstream device for business. There are several business drivers that might give

mobile computers this status.

Driver 1: Email creates demanding customers, higher service expectations

Customers these days expect very quick processing of email requests they send to small businesses. Customers whose email queries sit unanswered for a few hours may also take their business elsewhere. When a potential customer sends out an email seeking bids on a project, it is very much in the interests of the small business to be able to respond to that email quickly.

And so, we arrive at a compelling need—if not an outright requirement—for small businesses to adopt wirelessly enabled handheld computer technologies. It's sometimes not enough to be able to read an email and respond with a line or two from the keypad or your mobile phone.

As a small business owner receiving wireless email, you may need to read through a Word document or analyze an Excel spreadsheet in order to respond quickly and intelligently to customer queries. For that, you'll need something

with wireless email and the ability to accept and convert attachments into a form you can read and to reply to them.

Driver 2: Let's set a meeting time now

Expectations about the ability of small business operators to manage their time and business information effectively are also on the rise. This expectation originally drove the rise of the FiloFax organizer in the late 1980s and early 1990s, and has been a big part of the success enjoyed by the Palm handheld.

Double-booking appointments, being late for overlapping meetings, or losing the scrap of paper on which you had written the address of your client are not acceptable options in these competitive times. And handheld computers offer users a simple and compelling way to avoid doing just that.

By having an electronic address book (which includes email addresses, Web addresses, and phone numbers—along with “real world” physical office addresses) on a handheld computer, small businesses owners can save time and provide the level of professionalism and responsiveness that they *know* they need to survive in today's tough economy.

Driver 3: I'll read it on the train

Running a small business today also means coping with vast quantities of incoming information—and using that information to make intelligent business decisions quickly. That information can come from Web sites, email messages, or documents that may exist in popular applications formats such as Microsoft Word, Excel, and PowerPoint.

A small business owner who can read, understand, and act on that information most effectively is likely to fare better than those who can't. Having the information on a handheld computer means not having to pull together huge amounts of paperwork or copy lots of documents onto floppy disks before going home at night. These documents can be kept in the “synchronized files” folder and a copy of each is automatically created on the handheld computer every time it is connected to the desktop or notebook computer on which the small business owner does the bulk of his or her work.

Reality check

All of these business cases, however, assume that small business owners will use their handheld computers with a degree of dedication and organization, which may not be the case. They also assume a high level of reliability by the devices themselves, and that the convergence of wireless and application functions on handheld devices will continue apace.

I see no reason why that will not continue to happen, and those who want to be able to walk out of the house with a single device to meet their wireless voice, data, and personal organizer needs will be able to do so. The latest versions of RIM's Blackberry and Handspring's Treo both aspire to this goal and succeed to varying degrees. In the near future, I expect we will see even more successful “converged” devices that will further help drive the business need for handhelds. □

More hands holding handhelds

According to Evans Research (www.evansresearch.com) shipments of handheld computers in the second quarter of this year were 20 percent higher than in the same period in 2001. Shipments of devices using the Palm OS were 29 percent higher, while shipments of handhelds using the Windows Pocket PC OS were 14 percent lower.

Evans states that Palm remains the number one vendor, but Sony (which also uses the Palm OS) leapt into second spot after being in the Canadian handheld market for only two quarters. Hewlett-Packard (counting HP and Compaq product lines, which both use Pocket PC) claimed third spot, followed by Handspring (Palm OS), Casio (Pocket PC), and Toshiba (Pocket PC).

—TCP Staff

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Inkjets, lasers brighten HP's fall colours

You know you want your next business printer to be colour, but should you choose a laser or inkjet model? In the past, this choice was determined by what you were willing to spend on capital and consumables, with lasers being the big ticket item up front, but inkjets having higher operating costs (yeah, those pricey inkjet refills).

Hewlett-Packard Canada (www.hp.ca) muddled that bit of conventional wisdom in late September by introducing high-end business inkjets and entry-level colour lasers priced within \$300 of each other. The **Business Inkjet 3000** has a manufacturer's estimated street price of \$1,299, while the **Color LaserJet 2500** should be available for \$1,599. Moreover, HP says the inkjet is cheaper to operate: 1.9 cents per page for black and 7.9 cents per page for four colour versus 2.4 cents and 12 cents for the colour laser (five percent coverage). In fact, HP says the Business Inkjet 3000 has the lowest cost of ownership of any HP colour printer today, inkjet or laser.

While these two models have roughly

the same target audience—small business or workgroups within a larger enterprise—they represent the bottom and the top of their respective technologies.

It wasn't too long ago that we considered the \$3,000 colour laser a price milestone. Now, we have the HP Color LaserJet 2500, expected to cut the price nearly in half again. As an "entry-level" colour laser, it doesn't have the technologies or feature set of HP's higher priced colour lasers. For example, duplexing is optional. The standard paper tray holds 125 sheets, while a 250-sheet second tray is optional. A network interface is also optional. It also uses a four-pass system, which means that rating for monochrome printing is a respectable 16 ppm (pages per minute), but that falls to 4 ppm for four-colour printing. Single-pass colour lasers print monochrome or four-colour at roughly the same speed. Despite the speed and feature considerations, the LaserJet 2500 is still a colour laser, with the inherent advantages of smudge-free and water-resistant output.

The Business Inkjet 3000 is slightly

slower than the LaserJet 2500 for monochrome printing (14 ppm versus 16 ppm, for laser-like output) but nearly twice as fast for four-colour output (8 ppm versus 4 ppm). The "laser-like" rating is HP's and the company says it is to indicate the speed of the inkjet at a print quality comparable to what one would expect from a laser—the Inkjet 3000 will print draft quality output even faster.

It will handle up to 13x19 inch stock, and has a 300-sheet paper tray.

Model	LaserJet 2500	Inkjet 3000
Street price (est)	\$1,599	\$1,299
Max. paper size	Legal	13x19 in.
Rated speed (mono)	16 ppm	14 ppm
Rated speed (colour)	4 ppm	8 ppm
Paper tray capacity (sheets)	125	300

Other printers

HP Canada also introduced a new portable inkjet, a high-end colour laser and a wide-format printer. The **Deskjet 450** is a battery-powered inkjet that will support six-colour printing with an optional photo cartridge that replaces the black cartridge.



HP Inkjet 3000

It will sell for approximately \$450.

At the high end of laser printing is HP's new **LaserJet 5500**, a tabloid colour printer. It should be available in Canada in December for an estimated price of \$5,400.

Aimed primarily at quick-print service bureaus (or rich consumers with an appetite for posters) is the **DesignJet 5500**, an inkjet printer line that accepts paper up to 42 and 60 inches wide (depending on model). The printer is aimed at businesses that service the graphic arts, signage or computer-aided drafting, and design markets. Prices start at approximately \$15,000.

—David Tanaka

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Bluetooth inches forward*Continued from page 60*

One of the earliest Bluetooth-enabled products we got a chance to see was Hewlett-Packard's DeskJet 995c inkjet printer. It has a rated print speed of up to 17 pages per minute (black, draft mode), and maximum print resolution of 2,400x1,200 dots per inch. As with most other HP printers we've seen, its photographic output was excellent. It also comes with a duplexing module as a standard feature, allowing you to print on both sides of a sheet of paper without manually refeeding it.

The DeskJet 995c resembles the 990 with a bit of extra ornamentation on the

lid and one big bonus feature under the hood: Bluetooth. As soon as we plugged it in, our computers were able to see it on the Bluetooth network. Almost immediately after we installed the drivers for the printer, we could send pages to it from across the TCP Lab. Of course, you can also hook it up to your PC via USB, if you'd prefer.

As with other HP DeskJet printers, its a bit more expensive than competitors' printers. Of course, spending a bit of extra money on the 995c means getting a printer with integrated Bluetooth (no extra power cords or dongles!), a duplexing module, and HP's typical high quality output, to boot.

IBM Bluetooth products

From: IBM Canada, www.ibm.ca

Estimated price: \$229



One of our first glances at the world of

Bluetooth came courtesy of IBM, with the announcement of a new ThinkPad notebook that would feature built-in Bluetooth capabilities. Now, there are two such notebook models, both of which also come with 802.11b networking onboard. The ThinkPad A31P costs between \$5,879 and \$6,149 (depending on configuration), and is designed as a "mobile workstation." If your needs aren't so demanding, you can try the ThinkPad T30 instead; with prices ranging between \$4,999 and \$5,499 (again, depending on configuration), it's a more basic model.

Though we weren't able to get our hands on either of these notebooks in time for this review, we did get our mitts on IBM's Bluetooth PC Card, which will add Bluetooth capability to any notebook, not just a ThinkPad. It has a standard PC Card design, with a wedge-shaped antenna sticking out the side. The software install was quick and trouble-free, and within minutes we were able to locate all of the other Bluetooth-enabled devices on our network.

Our biggest problem with the software is that the password is blank upon

install, and there's no readily apparent option for changing it—if you need a password for pairing a device, that's problematic. Otherwise, we found it more intuitive than the 3Com interface, and it was pretty easy to get the Bluetooth products working together (the cell phone excepted).

Sony Ericsson T68i + HBH-30

From: Sony Ericsson Mobile Communications, www.sonyericssonmobile.com

Estimated price: \$300-plus (phone, final price depends on subscription plan), \$199 (headset)



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Bluetooth was the ability to connect wirelessly to compatible cellular phones, without having to worry about lining up ports (like you had to do with infrared cellular phone connections). You'd be able to use your cellular phone as a modem, just by making a simple request from your PC.

The Sony Ericsson T68i cleanly illustrates both the advantages and frustrations of the Bluetooth cellular phone. The phone is a wonderfully compact unit with a ton of features. It also has a companion Bluetooth headset (available separately) that can be used up to 9 m (30 ft.) away from the phone (great for those moments when you need both your hands free to search for a document). The phone paired up with the headset very easily and we've had no problems with it since.

However, connecting the phone with other devices is a problem. The phone only remains "discoverable" for three minutes at a time, which means that every time you want to connect your PC to the phone you'll have to sort through the phone's menus to activate the three-minute discoverable period. Once you

pair the phone with the other device a permanent link should be established, preventing this frustration.

This feature has both positive and negative aspects: It's a minus because if you haven't already paired your PC device with the phone you'll have to go into the menu settings. It's also a plus, though, because it means you won't have every Joe in the room who happens to have Bluetooth getting access to your phone (which could be very costly very quickly if they figured out your phone's password).

Though you might have problems trying to use the phone as a wireless communications device (we found that using it as a wireless modem or fax device was needlessly complicated, owing partly to the vagueness of the phone's manual and the obliqueness of the control programs at the PC end), it's almost worthwhile getting this Bluetooth-enabled phone just for the wireless headset. The HBH-30 comes with a small rechargeable battery built in, and requires the occasional recharge, but it sits fairly comfortable on the ear and sounds great at both ends of the conversation. □



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Microsoft adds US\$900 million to research and development

By Geof Wheelwright

Microsoft is spending even more money on research and development this year than it did last year. The world's largest software company announced recently that it has boosted its research and development spending in 2002 to US\$5.2 billion, up from US\$4.3 billion last year.

When you have US\$38 billion in cash and equivalents lying around, a US\$900 million annual increase in the research budget may not seem like much, but you can expect Microsoft to use that cash in a

number of key areas.

The first of those is likely to be the business market. Microsoft acquired Great Plains Software a couple of years ago to gain entry to the "enterprise" accounting software market and has made a number of other strategic purchases in recent years to fill out this product offering. The company has also announced plans to move into the customer relationship management (CRM) market by the end of this year, setting up a battle with existing players such as Oracle, Siebel, and PeopleSoft.

Microsoft is also expected to continue

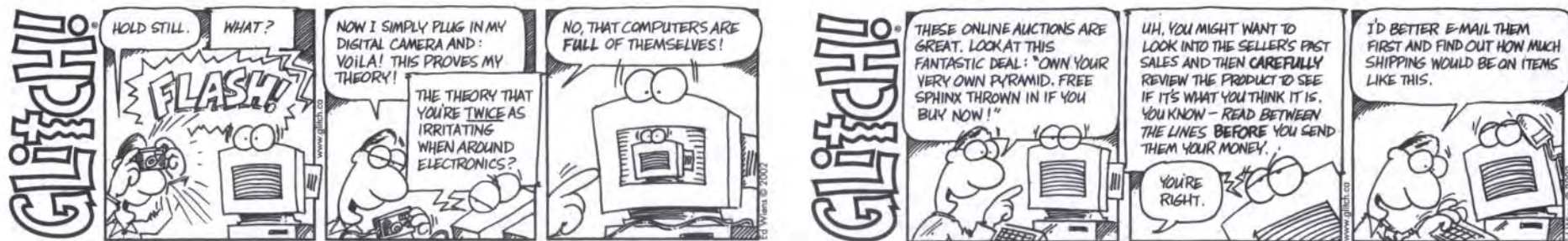
pouring money into further development of its xBox game console, with the latest rumours suggesting that xBox 2.0 will include the ability to use the system's hard drive as a digital video recorder (much like the popular TiVo system). More immediately, Microsoft will need to continue spending potfuls of cash encouraging development of the hottest new games for the xBox platform.

As well, the company could not survive without continued major development of its Windows operating systems and flagship Office productivity applications, which are "cash cows" that rely on the

continued sale of upgrades and newer versions of both.

Finally, Microsoft is expected to continue developing "pump-priming" hardware products that underpin some of its software solutions. This year, those solutions will include a broad range of 802.11 wireless networking products.

As well, the company will continue to work with major hardware development partners on systems that use the Pocket PC and Tablet PC platforms. On Tablet PC, in particular, there is likely to be lots of further development as the first wave of these systems hits the streets in the last quarter of this year. □



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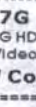
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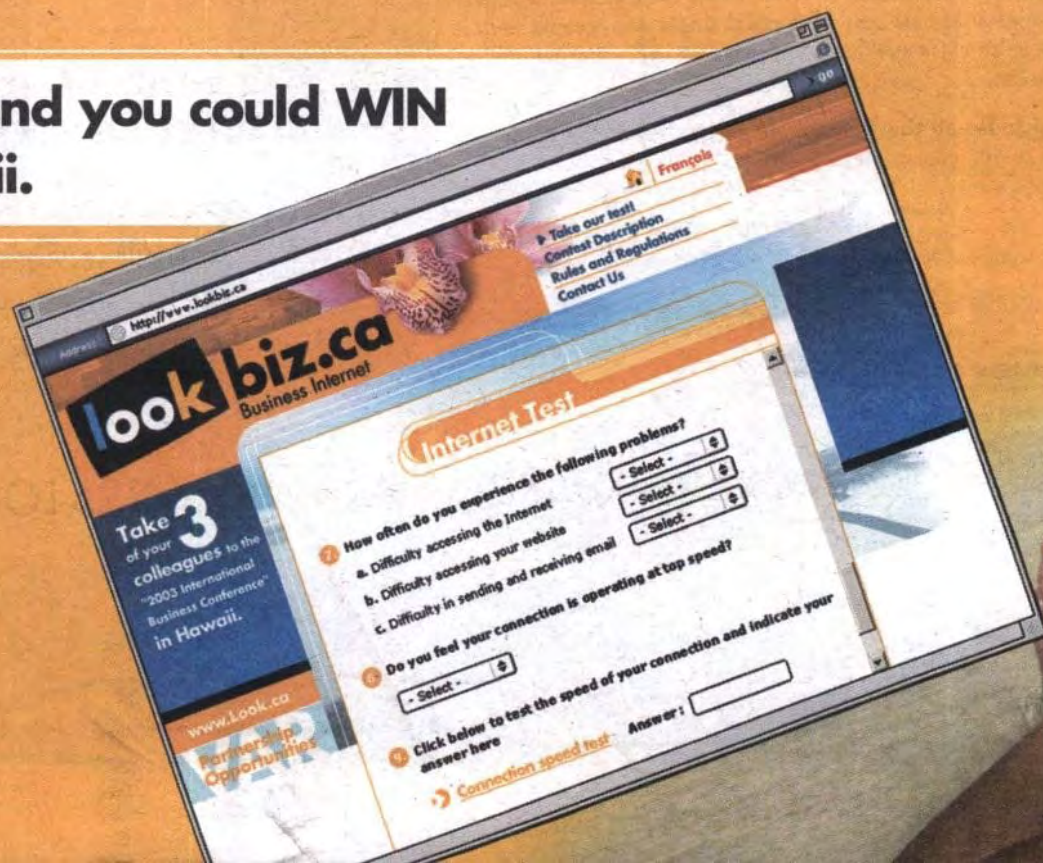
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Assessing the need for e-commerce*Continued from page 62*

some online directories for services, the fact of the matter is that a lot of your business probably comes from word-of-mouth testimonials in your local community. You are unlikely to be doing business outside that community, so therefore the "world wide" Web is not necessarily the best place to try and uncover new business.

None of this is to say that a locally based, service-oriented business can't benefit from Internet-based tools—it's just that an e-commerce Web site probably isn't one of them. If you wanted to communicate better with your customers and potential customers, an email sent to all existing customers and perhaps the local chamber of commerce members might produce more results than simply setting up a Web site. After all, the "call to action" at the end of this marketing is that you want customers to call or email you. You don't actually have anything that you could really sell from a Web site.

While it's true that you could set up an online calendar so customers could make provisional bookings when they see you're free—and you could manage

all of that wirelessly with a Web-enabled personal digital assistant (PDA)—none of that will probably matter to the 80-year-old woman whose basement is being flooded. She just wants a plumber, not an enticing interactive experience.

Can you think locally, but act globally?

E-commerce solutions typically work best when you have a product that you want to sell to the world, but your resources in selling to the world are limited. That's why used booksellers and antique dealers love eBay—they get the benefit of being able to do business with the world without having to leave home.

Now if you make a product that is very specific to a niche market, you can use an e-commerce solution to reach that market in a targeted fashion (ie. designer collars for ringtailed Nubian cats, which you could advertise in Ringtailed Nubian Cat Fancier Magazine citing the Web address of your e-commerce site). However, your success is likely to be heavily dependent on your advertising budget—and your delivery mechanism.

Delivery: The missing link

The stories of customers who ordered

products on the Web and were disappointed when they took forever to arrive—or found that their orders were lost, wrong, or misaddressed—are legion. Most people who have shopped on the Web regularly have at least one such tale of woe. Remember that you only have one chance to get it right with each customer—and if you don't, that customer is never likely to order from your e-commerce site again.

That means you need to pay lots of attention to the security, usability, and reliability of your e-commerce site—and to your own delivery infrastructure (even if that merely consists of regular visits to your local Purolator office). Your delivery mechanism is potentially the weakest link in the chain—and likely to be the one over which you have the least control—so spend some time planning it and working with whoever will deliver your goods to ensure reliable, timely and accurate deliveries.

Digital products

Although it may not seem to apply to digital products, all of the above is true for anything you sell to customers as a downloadable product. If you are selling

software, music, movie clips, e-books, templates, or any other product that can be delivered digitally, you need to pay as much attention to your delivery infrastructure as anyone delivering a physical product.

In many ways, the demands on you are even higher, as customers will instantly be on your case if they don't get the product they have paid for. If a customer orders a dog kennel online, that customer will probably wait a week or so before complaining that it hasn't shown up. However, a customer who orders software online for managing a local baseball team, that it won't install after the download will start complaining right away. And you will have to be able to handle the customer's complaints in real time.

Not for the faint of heart

The long and short of e-commerce for small businesses is that it shouldn't be entered into lightly.

It is not for the faint of heart or short of patience. You need to have a plan and a clear understanding of what your e-commerce solution is doing for your business. □

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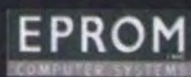
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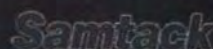
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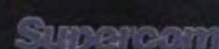
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Appreciating the classics

Old hardware finds new life with budget-conscious buyers

By Peter Tupper

"Classic computer" may sound like a contradiction in terms. Computers are only supposed to get better every year. For the most part they do, but they also fetch top dollar and may be more power than you really ever need.

A lot of people only use their computers for word processing, email, and games (these days, burning CDs should be added to the list.) Of this group, games are the applications that seriously tax the computer's processing power. For the other uses, a small, inexpensive machine would do the trick, but hardware manufacturers aren't building them.

Some users, however, are getting off the "newer, better, pricier" treadmill and investing their money and time in computers that don't have titanium shells



and USB ports, but do get the job done, and cheaper. They are buying last year's models or computers that have been

abandoned by their manufacturers and kept alive by support groups and used computer stores.

High-end computers are built to keep working long after they are supposed to be obsolete.

Located in Vancouver's Kitsilano neighbourhood, PC Galore's shelves hold yesterday's cutting edge at discounted prices. Notebook computers only a few years old sell at this—and computer consignment stores in many Canadian cities—for under \$2,000, and older desktop systems and notebooks sell for \$1,000 or less.

PC Galore's manager, Larry Offley, says many people buy used: "Normal, everyday people. Rich, poor, it doesn't matter." Businesses also take the less expensive route.

"Instead of the bleeding edge, you buy a year or two-old notebook and still have a perfectly good machine," says Offley. "In a couple of years, you buy another one, and you still spend less than if you bought brand new. And usually by then, [the buyer] has a lot better idea of what they want to do with it."

Since the cost of RAM dropped sharply a few years ago, it has become even easier and cheaper to improve an old computer. Windows 95-era PCs can be easily upgraded to handle modern operating systems and gear. With enough memory, even a Pentium I can run Windows 98 or higher, which is necessary for USB connectivity. Add a USB card (about \$35 for a desktop, and \$80 for a notebook), and older machines can talk to printers, digital cameras, and other peripherals. The reverse is also true; a \$55 USB-to-parallel adapter will let modern machines talk to old devices.

A few doors down from PC Galore is the Mac Market. Owned by Rick Martin, the store is about wringing as much use as possible out of old computers. Even an ancient beige box Mac Plus earns its keep; it holds the front door open.

Here you can find a Powerbook 2300c Duo, with a mini-dock that includes ports for monitor, mouse, and keyboard, on consignment for \$275. The battery will barely hold a charge for 15 minutes, but everything else works, and the standard AppleWorks office software suite that came with the Mac OS 8.5 is more than enough for simple word processing

Continued on page 81

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Appreciating the classics*Continued from page 80*

and spreadsheets.

For another \$75, you can get a Mac printer with ink cartridge, perfect for letters, Christmas lists, and other household documents. Another \$20 will get you a 14.4Kbps modem, which is enough

for email. The whole system costs less than \$400 and takes up less space than a desktop system.

The Mac Market also provides a home for some of Apple's quirkier products, including machines from the brief Mac clone era, and orphaned experiments like the Newton Messagepad and the

eMate.

The Newton Messagepad, a precursor of the Palm and Windows CE and Pocket PC handhelds, was the size of a paperback book, and ran an original OS. It also handled IR communication and PC Cards for storage and audio.

The Newton's big selling point, and

perhaps biggest shortcoming, was its claim to having true handwriting recognition. Users were supposed to train it to recognize their handwriting with a built-in stylus, instead of adapting to it with a simplified alphabet like the Palm's Graffiti system. In practice, the Newton made creative interpretations of the pen input, prompting many users to use a small portable keyboard instead.

Compared to the Palm and Windows CE handheld devices that followed, the Messagepad was bulkier, heavier and costlier, a technology released before it was ready. Newton fans also blame marketing misjudgments by Apple management, and current chief executive, Steve Jobs, in particular.

However, there is still a demand for Newtons, in shops like Martin's and on eBay. Even the broken Messagepads the Mac Market collects have found new life, as alien props on the *Stargate SG-1* television series.

The Newton's OS also ran the Apple eMate 300, a sub-notebook intended for teachers and students, which was released in 1997. Some reviewers

*Continued on page 83***Tinker toys: Enthusiasts keep early personal computers running**

Next to PC Galore's computer consignment store in Vancouver is a small Internet café, where customers can check their email on the latest generation of Macs and PCs. However, a shelf near the ceiling holds a small museum of the history of personal computers: a Texas Instruments 99-4A, an Apple IIc, a Commodore 64, a Vic-20, a Tandy 1000, and an Osbourne "portable" computer that's the size of a large suitcase and weighs more than 15 kg (34 lb.).

Unlike classic computers, which are still capable of doing useful work, antique computers are only for hobbyists and collectors. The challenge of making them do something useful is the appeal.

Wayne Steward, the vice-president of

Apple IIs for the Apples B.C. club, owns at least one of every version of the Apple II ever made. These machines have no hard drives, so data and applications have to be stored on floppies. Steward equipped his Apple II with an Ethernet card and connected it to the Internet through DSL, for email and Web surfing. He considers them easier to use than new Macs.

Steward got his software from the Syndicomm.com Web site, which sells CD-ROMs of applications and other support for Apple IIs. The site also links you to the community of enthusiasts who create shareware and freeware programs.

Searching eBay, you can find these and other antique machines with starting bids of US\$10 or less. A buyer may end up

spending more on shipping and handling than on the machine itself, but he or she will get a machine that can be opened and modified from the hardware on up. Computers these days are taking a turn towards being just another appliance with a sealed case and proprietary OS.

This is a return to what personal computers were back in the late '70s and early '80s, something to fuss over and tinker with and program. It wasn't until the introduction of VisiCalc, the first spreadsheet application for the Apple II in 1979 and for PCs in 1981, that computers proved they could actually earn their keep, instead of being a fascinating diversion.

—Peter Tupper

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Appreciating the classics*Continued from page 81*

described it as "the perfect notebook computer."

Martin owns one of these rare machines, complete with the box and manuals. Someone who won it in a contest years ago, and had no idea what to do with it, sold it to the store. Rick gave it to his daughter to use at high school, but he eventually replaced it with an iBook. His demonstration of the eMate had to wait until he could dig up a replacement for the missing power cord. Finally he plugged it in and it booted up in a few seconds.

The eMate is slightly larger than a PowerBook, a little lighter, with a translucent green plastic shell. The clamshell lifts up to reveal a nearly full-size keyboard and the same monochrome LCD as the Newton. The machine comes with the NewtWorks suite of applications for word processing, spreadsheets, drawing, and graphing calculations. It ran the NewtonOS 2.1 on a 25 MHz RISC processor with 3 MB RAM and 8 MB ROM. It also featured an infrared port and PC Card slots. Its

rechargeable batteries kept it going for 10 hours. About the only design flaw was that the unattached stylus could easily be lost.

The eMate was cancelled less than a year after its introduction, along with the rest of the Newton line, but many of its design elements ended up in the original iMac and iBook, including the rounded, translucent exteriors and all-in-one construction.

Though the built-in handle and rounded corners makes it look a little like a purse, the eMate was also sold on its durability. Reportedly, salespeople would drop it on solid floors from arm-height and then boot it up again. This was supposed to be a machine kids could bang around in their backpacks. The device packed an amazing amount of functionality for a retail price of US\$800 in 1997.

The eMate was cancelled less than a

year after its introduction, along with the rest of the Newton line, but many of its design elements ended up in the original iMac and iBook, including the rounded, translucent exteriors and all-in-one construction.

The Newton devices have a small but loyal following. Internet sites provide freeware applications and drivers written by enthusiasts. No matter how old or obscure the machine, there's a support group for it somewhere on the Internet.

Gerry Himmelman, a member of Apples B.C. and a retired engineer who cut his computing teeth running engineering calculations on a desk-sized Burroughs E-101 in 1958, maintains a small museum of old Macs. He held on to the Mac 512KB he bought back in 1985 for \$4,000, and it still works. He's repaired and upgraded other machines to handle Mac OS 9.1.

When he's on the road, he uses a PowerBook 520C he bought for \$300, which gives him full Internet access with an external modem. It has the advantage that it's cheap enough to be easily replaced if stolen, a problem for computer-carrying travelers.

Himmelman says he's never had an original component fail on any of his Macs, new or used. Only when he's upgraded with replacement parts has he had problems. The longevity of the hardware means that old machines become family property. His wife uses the 7200/120 he passed on to her, which meets all her needs for email and word processing. His son inherited a Mac Plus, which has the small size and ease of replacement suited for his trailer.

Another use for old machines is email. Computers and modems that can't even handle Winsock connections to the Internet can still be used to call bulletin board systems (BBSes). The Apples B.C. and Mac West computer clubs operate First Class BBSes and even give away old 14.4Kbps and 9.6Kbps modems to provide free email accounts.

The business of used computers shows there is a market for machines of modest power to perform simple tasks. With the exception of Apple's brief flirtation with the eMate, manufacturers seem not to want to go down that road. Until they do, it appears many people will find their own way to the computers that meet their needs. □

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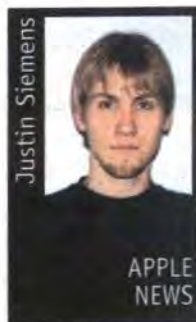
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A not-so-new writing mate



Justin Siemens
APPLE NEWS

I have a new writing tool this month and I'd like to share it with everyone. It cost under \$200, which is much less than the price of a single copy of Microsoft Word. It lets me work any-

where I want for hours at a time, and it includes a spell checker and other basic editing tools. It's larger than a Palm but smaller than a laptop, and the most amazing part: this device is five years old!

What is it? An Apple eMate. Originally sold only to schools, this amazing device was built to be nearly bulletproof, with more than 24-hour battery life and a high-resolution backlit LCD touch screen. You can write on the screen and it converts it into text, or use the built-in QWERTY keyboard, which is 80 percent of the size of a standard keyboard.

After spending months trying different Palm OS, PowerBook, and iBook models, the eMate is the best fit. It really makes me wish that the Newton had survived at Apple because even compared to current technology the five-year-old Newton OS still shines. The Newton handwriting recognition software was resurrected in Jaguar as Ink but Apple really needs to give the Newton another chance. It would be a perfect fit for its new digital appliance lineup. At any rate,



if you're looking for something light and portable to do word processing, email, address, and date book functions, then a used Newton may be the way to go.

Now on to this month's news.

Apple releases Jaguar to huge sales

It's official, Mac OS 10.2 (codenamed Jaguar) is a hit. Selling 100,000 copies in the first weekend—several times what OS X sold in March of 2001—is a new record for first weekend sales of a Mac OS release. The only thing slowing the adoption rate of OS X at this point is the lack of several major apps, including ProTools and QuarkXPress. However, Apple intends to move forward with or without support from these developers, and has announced that, as of Jan. 1 2003, all new Mac hardware will only be able to boot into OS X. No more booting into OS 9, although the new machines will still be able to run OS 9 programs in the Classic-compatibility environment.

The timing behind this announce-

ment is twofold: the OS 10.2 launch was well received by end users, better than even Apple predicted; and it simply costs Apple too much to have to update both OS 9 and OS X each time a new device is released. By disbanding the OS 9 development team and putting it to work on OS X projects, Apple can cut costs and speed up development of new OS X technologies. This means that, as of next year, all new iPods and iApplications that come out will be OS X-only as well—a trend started with iPhoto and iCal.

Apple estimates that up to 20 percent of Mac users have already switched to OS X, and with the phenomenal reception Jaguar has received, that number should be higher when January rolls around. OS 10.2 is now shipping as the default OS on all new Macs, and there is an up-to-date program if, for some reason, your machine doesn't include it from the factory. If you bought a Mac after July 17 you are entitled to use the US\$19.95 upgrade path, otherwise you must pay the full retail price of \$199.99 (Canadian).

For those who bought OS X when it debuted in March of 2001 this seems fair, but for people who just upgraded to OS 10.1 in the past six months, the lack of an upgrade discount is disappointing.

Apple releases iCal

When Apple announced OS 10.2 at Macworld New York in July, it also

announced two new iApps due to ship in September. These new apps, iCal and iSync, along with the Mac OS X Address Book, aimed to replace the Palm Desktop and Entourage with an all-Apple solution.

At Macworld Paris in early September, Apple chief, Steve Jobs, released the first of these new applications, iCal. It is a free calendaring program for OS 10.2 users that is similar to Palm Desktop and Entourage in execution and look, although it needs other software to link up to for the full PIM functionality. Version 1.0 seems to have a number of flaws, but it also shows great promise.

First the bad news: iCal is slow, very slow, in fact. On a dual-867 MHz PowerMac it strikes you as being merely sluggish, but on a 500 MHz PowerBook at times it's unbearable. Most users will be able to put up with it, but it's a lot slower than Entourage or Palm Desktop are under 10.2. So, if you are currently using one of those programs, you may want to continue for a while longer.



Continued on page 85

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The second bug is that certain things don't seem to work in the usual Macintosh way. For example, you cannot double-click an item to get info on it. You have to click once, then choose Get Info from the menu bar. Also, when you change views, it changes the window size and shape, and resizing the windows is painfully slow. Microsoft gets it right in Entourage: when you change between day, week, and month view the window size and location stays the same with only the window content changing.

We saw a number of display bugs in our tests of iCal, from an inordinately large brushed metal border to having all appointments greyed out in month view no matter what category is selected. Also, numerous times appointments simply disappear in one of the views, but reappear when switching to another view then back again. It took several tries to publish calendars, but once it worked it was quite slick. In order to publish a calendar on the Web you need a .mac account, but once posted anyone on a Mac or PC can view it via a Web browser.

Still, many of the features need a lot more tweaking before we'd consider them stable enough to use on a daily basis. Having said that, though, iCal has some amazing features. Using an iDisk or any other webDAV server, you can publish calendar files that people can subscribe to with their own copy of iCal. So a production company, for example, could have calendars for all the different units and each person could subscribe to just the calendars that apply to them. Subscriptions can be set to auto update

at preset intervals, daily, weekly, or monthly. Subscribers don't actually download the calendars to their computer, just a URL that the program can go to and get updates.

Another timesaving feature is the pre-made iCal files Apple provides on its Web site, including Holidays, DVD release dates, Movie release dates, and sports schedules. Notably missing from the initial batch are Canadian holidays and NHL schedules, but Apple plans to add more public iCals in time. Someone has already started making the hockey schedules available online, calling them iceCal.

When you want to add a person to an event, iCal links to the Address Book in 10.2 to give you access to all your contacts. This feature works much the same as in Entourage. You can even email invitations to people from iCal. The other big feature of iCal is not available yet but will be released when iSync ships, hopefully before the end of September. iSync will allow you to sync your calendars with an iPod, Palm OS PDA, cell phone, and another Mac. It will sync both iCal data and address book data to all the devices at the same time—it's like Palm's HotSync Manager, but for all the digital devices you use.

The ability to post your entire calendar on an iDisk with a password, then access it from any Mac, anywhere will be an amazing feature for a lot of students and business users. If Apple can just work out the speed problems and improve the interface, it could have a major hit on its hands. At least it's free, so you can try it out while you wait for version 1.1.

Personally, I'll be sticking with Entourage for the time being, but I'll be watching the progress of iCal with interest.

A brief review of .mac

At the end of September all free iTools accounts will be locked out and the only way to keep your "@mac.com" email account is to buy a full .mac account. Aside from the considerable anger in the Mac community towards Apple for offering free email, then taking it away two years later, .mac is actually turning out to be a compelling product. We've been testing a full .mac account for the past several weeks, and are impressed with the technology.



Not only does .mac get you a mac.com email address with 15 MB of space and a great Web interface, it includes a 100 MB iDisk with the ability to publish Web pages, iCal files, and share photos. Apple is also offering lots of freebies for .mac users, including 100 free prints in iPhoto and a free copy of the game Alchemy.

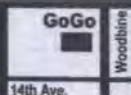
Also included in the .mac subscription price are several useful utilities, simple backup software from Apple, and the

anti-virus software Virex for both OS 9 and OS X. Sold separately, backup software, antivirus software, a personal Web site, remote storage, and email would all cost a fair bit, so in that respect .mac represents a good value. It's still too bad, though, that Apple couldn't offer a limited email-only option for a reduced rate, because not all Mac users want or need all these features. You do at least get a break if you were an iTools users before July 17. If you were, you get the first year of .mac service for US\$49 instead of US\$99. In Canada, you can pay for your account online using a credit card, but soon Apple will have boxed copies available from retailers just like the Apple Care retail boxes. The boxed version will contain a software CD with Virex and Backup on it, as well as a registration code that can be used to activate a new account or upgrade an existing one. There will not be a boxed upgrade at the US\$49 price however, so if you qualify for that you must register online.

The Backup software from Apple is currently at version 1.2 if you are using OS X 10.2, which is the version we tested. In keeping with Apple's goal of moving all development to OS X by the end of the year, there is no OS 9 version of Backup. Backup 1.2 allows you to backup files both to an iDisk, and to CD or DVD media. The iDisk mode allows you to backup by file type, which is a handy way of making sure you don't miss anything. You can, for example, tell it to backup all Word files and it will do a search of your entire home directory, find all the Word files, and back them up to your

Continued on page 87

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Share printers, files between OSes*Continued from page 86*

at www.linuxprinting.org. You'll also find news about the latest driver and feature additions here.

Share files between Linux, Unix flavours

If you only need to share files amongst multiple varieties of Unix, then you don't need Samba. Instead, you can use the Network File System (NFS) to control who can access what files over your network. Since NFS is a far more specialized tool than Samba, many find it simpler to set up, but it is important with any network service to ensure you've done everything

A not-so-new writing mate*Continued from page 85*

iDisk. You can also backup by folder if you prefer, and the program will give you a nice visual indicator of how much of your 100 MB of space is still free.

On the CD/DVD side of things, you can back up an entire volume or by folder. If necessary, it will even split the backup over multiple discs and tell you how many discs will be required before you start. It's nice to see Apple give users the

possible to set it up securely.

An excellent guide to help you set up NFS—and secure it properly—is the Linux NFS-HOWTO, which is available through the Linux NFS project's home page, at nfs.sourceforge.net/.

Wrapping up

Computers are tools. It's easy to forget this as we get drawn into debates over which OS is the "best." If you're one of those people who prefer to use the best tool for each job, you can relax in the knowledge that mixing and matching OSes does not mean you have a network full of isolated systems. □

tools to backup their own data, since many users never back up. Macs may not crash often, but it only has to happen once for your important data to be damaged.

The Virex component runs in OS 9 or X, and seems to be the same as the full commercial version. It takes a long time for it to scan an entire drive, and even scanning the home directory can be quite slow. Since there are so few Mac viruses, we didn't feel it was worth it to

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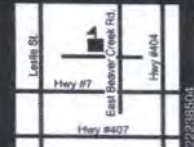
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Online story flashes to life

North Vancouver trio puts Flash to the test with 24-part epic



Source: www.brokensaints.com

By Peter Tupper

"What would you give to know the truth?" is a question that echoes through Broken Saints, an epic story told with Flash animation. Over 24 chapters, four characters scattered around the world struggle against a vast conspiracy of supernatural forces and multinational corporations.

The Web site attracts an average of 5,000 unique visits each day and provides more than six hours in total of Flash animation. Yet there are no ad banners, no sponsorship logos, and no product placements anywhere.

The site's message board once carried rumours that the whole project was secretly backed by some movie or game company, on the assumption that only a corporation could pay the small army of artists and programmers and buy the computer hardware needed to create such an epic.

The truth is, it's all done by three guys in a basement in North Vancouver with average computers.

The original music comes from two

different artists in Berlin and Toronto. But everything else is done by three men: creator, writer, and director Brooke Burgess; Ian Kirby, who is in charge of technical direction, editing and post-production; and art director Andrew West. Broken Saints is a completely creator-owned and fan-supported project.

"The business plan didn't start off as a business plan. It started off as a portfolio piece," Burgess explains, sitting with West and Kirby on a couch in the well-equipped basement, decorated with *Lord of the Rings* movie posters.

Before starting on the current epic, Burgess quit his producer's job at Electronic Arts. "I was basically making drugs for kids in the cubicle barnyard, and I got tired of it."

His friend Kirby worked at Switch Interactive as a creative director, and suggested that Burgess pitch an idea. Broken Saints would showcase the artists' technical and artistic skills and the company's promotion and marketing abilities. Switch provided the bandwidth costs as well as office space and modest salaries for Kirby and West. The creators and

Continued on page 94

Hi, I *can* come to the phone right now Iridium satellite service and true meaning of 'always connected'

By Geof Wheelwright

Canada is a vast nation, the second largest in the world. Yet the majority of us live within a few hours' drive of the U.S. border, meaning that most of our huge territory is unpopulated. Yet many of us still find a need to travel around these sprawling and largely unspoiled parts of the country, whether on holiday or on business.

Staying in touch while getting in touch with the Canadian wilderness, however, can be a challenge, since mobile phone coverage is largely limited to major metropolitan areas.

So if you really need to make that call while you're on the road, at the cabin, on the boat, exploring in the bush, or making your way to a logging camp or a mine, you will probably need to consider a satellite phone.

In one form or another, satellite phones have been around for a couple of decades, and have typically been the province of the very rich or those who absolutely required them for their work—reporters in a war zone, international men (and women) of mystery, explorers, and those in the natural resource industry—and anyone stupid enough to go exploring in Jurassic Park.

The problem with satellite phones has been that they were not only expensive, but were offered by very few carriers (which helped to ensure they remained expensive).

So you can imagine the delight of any potential satellite phone user back in 1997 when Motorola's Space and Systems Technology Group (SSTG) announced that it was working with a group called Iridium to launch a "constellation" of satellites in Low Earth Orbit (LEO) to provide a competitive satellite phone service.

Iridium was the brainchild of Motorola engineer Bary Bertiger, who was inspired to push for the creation of such a service while on a Caribbean vacation with his wife Karen in 1985.

During the vacation, she apparently wondered aloud why it was that he couldn't use his mobile phone to link to a satellite network and call anywhere in the world, rather than relying on huge deployments of cell sites.

When the service was launched, Motorola set an industry record for the deployment of satellites, putting its first 41 satellites into orbit with eight rocket launches from three countries in just eight months. Eventually, the Iridium constellation consisted of 66 satellites in polar orbits at an altitude of only 780 km (485 miles) and it indeed fulfilled the promise of offering a satellite service alternative.

The problem was that the company set itself a huge uphill climb to reach the goal of making any money (something that has once again become a prerequisite for the continued operation of any enterprise these days).

So, when Iridium was acquired out of bankruptcy about 18 months ago, the new owners decided the service would have to be more affordable, easier to use, and more reliable than it had been. And that meant lowering the prices of handsets and airtime (original Iridium handsets had been priced in excess of \$2,000 and airtime would cost up to \$4.95 per minute).

No one should be under the impression, however, that Iridium is now a mobile phone for the average user. To even get started with an Iridium phone, you must be willing to shell out almost \$1,500 for the handset, and then another \$39.99 per month to connect to the satellite network. Airtime charges are \$2.29 per minute on this plan. Obviously, if you commit to a higher-cost monthly service/airtime package, the per minute rates are lower (the Connect 250 package, which offers 250 minutes per month, costs \$469.99 and gives you a rate of \$1.89 per minute). You can, of course, rent a handset from \$139 per week (add an extra \$55 per

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week for loss and theft protection) and airtime charges of \$2.59 per minute.

Voice calling in the wilderness

Regardless of the price, you never know when you might need a telephone—sometimes it can be a lifesaver. It was with this in mind that I set out to test the new Motorola Iridium handset on a trip through the rivers, mountains, and lakes of British Columbia—in places where I knew there was certainly going to be no cellphone coverage.

I used the Motorola 9505 Portable Satellite Phone, which was considerably bulkier than most mobile phones, yet not quite as onerous as the earlier models of Iridium handsets I had tried out in March 2000. The first thing I noticed in using the handset is that all numbers are dialed as long-distance calls. In other words, users need to put a country code and area code in front of all dialed numbers. And I guess that makes sense, since the distance from the handset up to the satellite and back down to earth is at least 1,560 km (twice the 780 km orbit altitude).

The second thing I noticed is that the tonal range of the handset seems to be a lot narrower than on a typical mobile phone, meaning that much of the nuance and intonation in a person's voice is lost when you talk to them. If you're the type of person who gathers a lot of meaning from the tone or inflection of someone else's voice, then the Iridium phone would drive you crazy. I wouldn't recommend it for salespeople or for wooing lovers. Both these categories of people read almost as much into how people say things as from what is said. This proved to be the case no matter where I used the handset, whether it was in the suburbs of Vancouver, on a lonely stretch of highway way off in the mountains, or on a ranch outside of Vernon.

None of this is to say, however, that this invalidates the use of the phone. If you are in the oil business or the resource industry and you urgently need to speak with someone, this phone will let you do exactly that from anywhere you happen to be. Likewise, if you're involved in search and rescue work, or are simply an adventurer who spends a lot of time on the sides of mountains, then this is a

highly portable, reliable, and accurate communications solution.

Indeed, it was a great help to me when I drove from Osoyoos to Kelowna via Rock Creek (i.e., out in the middle of nowhere) and had to stop several times when one of my sons became car sick. I was able to use the phone to get a message to my daughter at her riding camp in Vernon, letting her know that we would be late getting there. While the same thing could have been achieved by stopping at any of the towns along the way and using the payphone at the general store, it would have meant additional stops and taken extra time.

If you have more money than time (and that's the audience at which this handset and the whole Iridium enterprise is clearly aimed), then this service is probably worth it. As for me, I'm going to buy some Gravol (for my motion-sick son) and map out the locations of the various small towns along the route before my next road trip with the kids—it will hopefully be a little more peaceful and a lot cheaper than buying an Iridium phone. □

A not-so-new writing mate

Continued from page 87

wait for several minutes every startup for the scan to finish, so we disabled that feature early on. However, if you work in an office environment and exchange Word files frequently, you might find it useful to keep macro viruses at bay.

In all, the .mac package is very well thought out and, so far, seems to work exactly as planned. We know Apple has plans to add new components to it, possibly to correspond with its new "digital lifestyle" devices that have yet to be announced. In the meantime, the only

downside to .mac is that it could have found a better way to announce it without hurting many loyal customers who just want to keep their mac.com email accounts.

Update

After the initial backlash, many people talked about boycotting the .mac service and we wondered how this would affect sales. According to Apple, from July 17 to Sept. 17, 100,000 people paid for the .mac upgrade, which is a much higher adoption rate than many people expected. We'll see if that number jumps up even

higher after the Sept. 30 cut-off date.

Apple releases OS X 10.2.1 update

The first patch for the new Jaguar OS, the 10.2.1 update, was released Sept. 18. It fixes many issues, including SCSI device support under OS X, network stability issues, and many smaller bugs and speed issues. It also adds support for more brands of CD-RW drives, scanners, and printers, as well as improvements to both FireWire and USB support drivers. It's a 16 MB update and is available through Software Update in the System Preferences, or on the Web (www.apple.com/support).

The noticeable improvements include better support for SCSI scanners and CD burners, which were working in 10.1.5 but broken in 10.2. The latest update running on several machines here seemed to use slightly less processor time on average, although it did not seem noticeably faster. The spinning rainbow cursor was also less apparent, and connecting to ftp servers in the Finder is much improved.

We are pleased to say that since installing 10.2 we have not seen a single kernel panic, so it looks like a lot of the bugs from 10.1 are gone for good. □

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Weaving your own Web site

Table-like layouts using CSS

By Keith Schengili-Roberts

When most Web authors create tables in Web pages, it is to better lay out text/editorial content, rather than tables of figures or other tabular data. This is where the Cascading Stylesheets 3.0 (CSS3) columns module is to come in, but as yet no browser supports those properties, nor is likely to in the immediate future.

It is possible, though, to do standard columnar layout for a Web page using some relatively safe CSS properties. All of the code in this section displays well in the most recent releases of the major browsers and is relatively safe to use. If your target browsers are capable of doing such things as absolute positioning, basic floats, and using width and margin you can get away with using these "tables."

One of the chief advantages of using CSS for layout is the compact nature of the code, and the fact that it is very easy to reference. What's more, since loading table structures is a very intensive process for any browser, you can expect quicker average loading times for your pages.

Basic, two-column layout *

One of the most common layouts for a Web page is a two-column approach: the narrow column to the left containing links, and a second, wide "body" column where the majority of a page's content resides.

Here's how this page might look using regular HTML:

```
<table width="780" border="1">
<tr>
<td width="200">
<strong>Left Column</strong><br />
<a href="link1.html">Link 1</a><br />
<a href="link2.html">Link 2</a><br />
<a href="link3.html">Link 3</a>
</td>
<td width="580">
<strong>Body Column</strong><br />
<p>
```

Here is some basic content designed to fill a 580 pixels wide "body" box.

```
</td>
</tr>
</table>
```

This same arrangement can also be

made using CSS, using the following code:

```
<html>
<head>
<title>Basic Two-Column Box Design</title>
<style>
#leftcolumn {position:absolute; left:10px;
width:200px; border:1px solid black}
#bodycolumn {margin-left: 199px; margin-
right:199px; width:580px; border:1px solid black;
voice-family: "\"\""; voice-family: inherit;}
html>body #bodycolumn {margin-left: 203px;
margin-right:203px}
p, strong, a {margin:0px 10px 10px 10px}
</style>
</head>
<body>
<div id="leftcolumn">
<strong>Left Column</strong><br />
<a href="link1.html">Link 1</a><br />
<a href="link2.html">Link 2</a><br />
<a href="link3.html">Link 3</a>
</div>
<div id="bodycolumn">
<strong>Body Column</strong><br />
<p>
Here is some basic content designed to fill a 580
pixels wide "body" box. You'll notice that that
amount of content contained within a given box
also sets the size of the resulting border around
the box.
</p>
</div>
</body>
</html>
```

If you take a look at this code in a recent browser, you'll see an elegant columnar display. Given the nature of this code, it probably makes more sense to place this in a separate .css page that is referenced using a link element. For the sake of clarity, though, it is contained within the header of our example Web page.

If you look at the code behind this layout you'll see that the basic concept goes something like this: create a single, absolutely positioned left column set to a given width (200 pixels in this case); add a border around it; then create a second column whose margin begins after the absolutely positioned left column, also set to a given width (580 pixels in this case).

But if you take a closer look, you'll see there is some other interesting code

here: there are three pairs of margin values, for example. Why? The extra code is included in order to get around some known bugs in Internet Explorer 5.x. Unfortunately, this browser does not implement the CSS box model correctly, and places things like padding and borders within its stated width, instead of outside of it. Hence, the first pair of margin values is set to 199px so the border values from the left and body columns are overlaid in Internet Explorer 5.0 for the PC.

So, why the subsequent "\"\"; voice-family: inherit; code? That's because this browser contains a bug when it comes to parsing CSS code that contains "\"\" and will prematurely close the CSS style rule. It is enclosed within a voice-family property, which is used because it can't do any harm to the layout of the page, and the subsequent voice-family: inherit statement ensures that any proper value that may be needed for this property can be inherited from the body tag. Browsers that understand the proper box model move past the original code, and cascading rules ensure that the margin-left: 203px; margin-right:203px values overwrite the original ones there solely for Internet Explorer 5.x for the PC.

This table layout is about as browser-compatible as you can expect for any CSS-based construct. It only works in the following (and later versions) of these browsers: Internet Explorer 5.0, Netscape Navigator 6.0, and Opera 5.0. The browser you should be most aware of is Netscape Navigator 4.x, which at the time of writing is still in relatively wide circulation.

People using earlier browsers will see two horizontally laid out blocks instead of the intended vertical columns.

Creating a standard three-column layout

A standard three-column arrangement is probably one of the most popular layouts on the Web: consisting of a navigation column on the left, a "body" column containing the majority of the content, and an additional narrow column for placing other items and links. To accomplish this, you simply need to amend the two-column code from the previous example.

To do this using CSS, take a look at the following code:

```
<style>
#leftcolumn {position:absolute; left:10px;
width:200px; border:1px solid black}
#bodycolumn {margin-left: 199px; margin-
right:199px; border:1px solid black; voice-family:
"\""; voice-family: inherit;} html>body #body-
column {margin-left: 203px; margin-right:203px}
```

```
#rightcolumn {position: absolute; top:15px;
right:10px; width:199px; border:1px solid black;
voice-family: "\""; voice-family: inherit;}
html>body #rightcolumn {width:200px; top:8px}
p, strong, a {margin:0px 10px 10px 10px}
</style>
```

There are two main changes to this code: the width value has been removed from the #bodycolumn rule, and a new

#rightcolumn rule has been added. The #rightcolumn rule is also set using position: absolute but this time it is set to the right instead of the left.

The same browser trick seen in the first example is used here to send one set of values (top:15px; width:199px;) to Internet Explorer and another set (width:200px; top:8px;) to CSS2-compliant browsers,

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ensuring broad browser compatibility for the layout.

In addition to browser-compatibility issues, there are some other disadvantages to the CSS columnar approach: one example being that content that is too big for a column (such as setting a <pre> value containing text that is too large)

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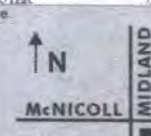
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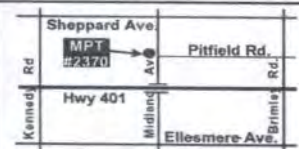
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< ONLINE & CONNECTED >

Online story flashes to life

Continued from page 88

Switch parted amicably after the first six chapters, when it became apparent the project didn't have a revenue model.

Without corporate or government funding, they moved the operation into the basement of Kirby's parents' house. Now, they live on their savings and work at part-time jobs while devoting most of their time and energy to producing a chapter of Broken Saints each month.

Since they had already purchased the equipment, the single biggest expense of Broken Saints is the Web hosting by NetNation Communications. The site has up to 200 GB of traffic each month, costing up to \$2,000. "We've definitely drained our savings," says Burgess.

The trio decided early on not to sell advertising, so the project's main income is fan donations, totaling more than \$8,000 so far. Other sources are the benefit concerts and merchandise such as t-shirts and posters.

Broken Saints tests the storytelling ability of Flash to deliver long narratives, instead of short subjects. Flash programmer Kirby has figured out the technical difficulties of making 10- or 20-minute files that could run well on both Mac and Windows PCs of varying speeds.

Working from a treatment that covers the entire story, Burgess writes each chapter as a shot list. West does the storyboards and Kirby does the special effects and backgrounds on Wacom tablets, using Corel Painter and Adobe Photoshop. "There's no time to scan every image and process it. So, without the tablets it would be impossible to do what we're doing with three people," says Kirby.

The images go into a Macromedia Flash 5 timeline. Burgess then creates specific dialogue for each scene, and the images are tied together with special effects, transitions and music, mixed with Nuendo and edited through Sound Forge. The goal is to make it feel like a film.

"We've evolved the comic-book medium and taken the cinematic medium somewhere else," says Burgess. Unlike some other Web comics, viewers don't click through a chapter of Broken Saints, choosing when to move to the next image. The producers considered having a click-through interface at first, but decided on an immersive approach instead. Each installment flows at its own pace, like film, but with the dialogue and narration presented as short sections of text.

Burgess says the pacing is deliberate. "Some of [the chapters] are meant to be painfully slow," he explains. "So you're thinking, 'I am here, the music has brought me here, I'm not answering my phone right now, I'm not typing an



Source: www.brokensaints.com

email while watching this. This demands my total attention.' And that's where the sheer satisfaction comes from."

The interactivity of Broken Saints lies in the secondary materials on the site. Fans puzzle out the plot twists and read editorials on the message board, as well as downloading art samples, music files and Flash games.

Whether you call it viral marketing or fan appreciation, Broken Saints couldn't be what it is without its worldwide fan base. Fans not only view and comment on the chapters, they take part in the distribution of the series. The site encourages viewers to download copies of the Flash files for their own use, and to make them available to other people as free mirror sites, to cut down on the bandwidth costs.

Burgess, Kirby and West plan to post the twenty-fourth and final chapter on Jan. 17, 2003, the project's second anniversary. Not only have Burgess, Kirby and West demonstrated their artistic and technical skills, they've shown their commitment and dedication to finishing a years-long project.

The question is, can Broken Saints be commercially viable? Or will this kind of Web publishing only be a possibility for those who make this kind of sacrifice?

Burgess says, "If we chose to do another online project after this, we probably could do a subscriber model, because we've proven ourselves. That's the thing, you have to prove yourself first because the Internet audience is educated and jaded."

However, as Kirby points out, "Because the Internet started as free, [people] don't see the value in anything online. The only thing they're willing to pay for is porn."

According to Mel Brooks' *Star Wars* parody *Spaceballs*, the most powerful force in the universe is actually merchandising.

Broken Saints already receives a small

amount of revenue from merchandise sold by CafePress.com, which prints t-shirts and posters as needed. This spares the producers the hassle and expense of maintaining an inventory.

The Broken Saints press kit discusses the licensing and merchandising potential of the property, such as adapting the story to a printed graphic novel or an animated or live-action TV series. "We've definitely had some serious nibbles" regarding adaptations, says Burgess, but he adds, "We'd absolutely maintain control over the copyright... it would just be horrible karma [to do otherwise.]"

They do plan on selling a DVD version with all 24 chapters and additional material, for people who might not have sufficiently fast connections or powerful computers. "Yes, we started Broken Saints purely online, for our own pleasure and to entertain an audience that was hungry for something interesting," Burgess explains. "But... if we choose to make money from it, we'll have to produce something in the real world, like a DVD set or a series or something that's tangible."

Parlaying Broken Saints into real money never was a very high priority for Burgess and the others. Whatever money might come their way later, either from licensing their property or from jobs and contracts, will be just a bonus. Even if they've lost money after the two years, they'll still consider it a success.

Despite the financial sacrifices he's made for his vision, Burgess says, "Every time I get an email from the other side of the planet going, 'Thank you so much for moving me. You've given me faith in humanity again,' that's what I'm going to remember on my deathbed."

Kirby agrees. "Whatever Broken Saints turns into, it won't be about how many action figures we can get out in a month." □



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Finding a job that fits

A guide to career counseling options

By Maria Ford

It might feel like a knot in the pit of your stomach or a clenching around your heart. Perhaps you sense your blood pressure rise as you get closer to your office. Maybe the days drag so slowly that when you look at the clock expecting to see the workday's end, it's only 2:00 p.m.

These are just a few possible symptoms of a common ailment: job dissatisfaction. It's so common, in fact, that a 2001 study by Ipsos-Reid found that a mere 29 percent of white-collar workers in Canada are "stable and satisfied" in their careers.

"Job dissatisfaction is guaranteed in every economy," says Doug Martin, co-founder and executive vice-president of Ottawa-based TalentLab (www.talentlab.com), a high-technology placement agency. TalentLab recently formalized a partnership with JobJoy (www.jobjoy.com), a career coaching firm, to meet its clientele's growing demand for career guidance beyond finding a better position or bigger salary. "In a down economy," Martin says, "workers might feel the dissatisfaction more and ask the big questions, like, 'what was I called to do?'"

Patrick Langston, owner of Career Advancement Consultants (CAC, at careerac@istar.ca), agrees. "A few years ago, people were jumping on the technology-

career bandwagon because they thought it was 'the way of the future.' Sure, but is it your way? I think now many of these workers are ripe for career counseling. Job security is the worst reason to take a job."

Vera Adamovich is a case in point. "I was in a career that I got into out of convenience as so many people do. Years later, I was examining my life because I dreaded Monday mornings. I made the decision to choose a career that would allow me to feel fulfilled, and I decided to solicit help in the process."

Caveat emptor: Worker be wary

The process of finding a career counselor in Canada—and in many states south of the border—is a buyer beware proposition.

There is no official provincial or federal certification for career counseling in this country, meaning that anyone can call him or herself a career coach, and any business can say it offers career counseling.

Without clear standards, the types of businesses advertising in the career counseling category varies widely. Ottawa's Yellow Pages have 23 unique listings under Career Counseling. In Toronto, there are 44, and Vancouver has at least 20.

Placement agencies are among the most common firms listed under this

category. Focused on recruiting and placing talent, they may offer resumé writing and interviewing skills to help ensure successful placement of viable candidates.

Career-consulting firms like CAC, on the other hand, offer job seekers consultation in aptitudes, resumé writing, interviewing, vocational research, and more, but do not recruit or place candidates.

Career marketing firms also position themselves as career counselors and typically charge an up-front fee to the job seeker. They may offer outplacement services and promise access to a "hidden job market" of unadvertised positions. This commission-based model has come under fire from some former clients who complain of "hard sell" tactics and "smooth-talking sales people" who didn't deliver.

Perhaps the most legitimate claim to the title of career counselor is by an accredited counselor. Counseling is a recognized academic study, and many of its graduates make their way into career guidance. Two examples are George Dutch, chief joy officer at JobJoy, who has a doctorate in counseling, and Neil Baldwin, owner of Advanced Career Planning Concepts (ACPC, at www.planycareer.net), who has a masters degree in education and Canadian Counsellor Certification.

Finding the right fit

Finding the right career counseling service is about finding a match between your needs and personality and the counseling approach and fee structure. These five steps will help you make the right choice:

- **Self assess:** Think about what you want. Do you feel you are doing the right work, but need a different environment or position? Or, are you asking yourself questions about what you were put on Earth to do? The difference will determine whether you need help with job-search skills or a coach with counseling credentials.
- **Know thyself:** The touchy-feely aspects of counseling may not be for everyone. Personality assessment tests might be exciting to some but threatening for others. Consider what you will be comfortable with.
- **Establish a budget:** Know what you are willing to pay and how much time you can to commit to the process.
- **Research the options:** Find out what services are available in your community. If none seems to fit, broaden the search—a new crop of Web-based counseling services is growing, and some firms offer distance services, such as tele-coaching.
- **Speak to reference clients:** Ask former clients questions designed to help

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Finding a job that fits

Continued from page 96

you understand the company's approach and the counselor's personality. You can also check consumer-watch Web sites such as www.ripoffreport.com, or your local Better Business Bureau, to confirm a company's reputation.

In addition, consider these important criteria:

- **Credentials and experience:** Does the counselor have a relevant degree from an academic institution, training from a credible career counseling franchise, certification by the Canadian Counselling Association, or substantial experience?
- **Tools used:** What tools are available to clients? For example, CAC uses the Strong Interest Inventory (www1.cpp.com/detail/detailprod.asp?pc=26) test to pinpoint the careers for which a

client is best suited. JobJoy offers IDAK's (www.idakgroup.com) Assessment System of Natural Talents. Both tests require certain qualifications to administer.

- **Compensation structures:** Is the company open about its fees and payment policies? How are the counselors compensated? For objective, long-term career guidance, a service focused on placement may not be the right fit. And beware: consumer-watch services warn that you should never pay large upfront fees for any "guarantee."

And finally, before making a commitment, meet the counselor for an initial consultation, for which many charge only a minimal fee. During this consultation, Baldwin suggests, "understand how the career counsellor would approach your situation, ask to see the tests and materials used, and don't be afraid to ask about background and qualifications."

Understand what service is recommended, what it will cost, and what you will get."

No matter which option you choose for guidance in your career, assessing the company's experience, credentials and track record ensures that you invest in a credible service. The right choice will pay back in happiness and career advancement.

"We readily make investments in things like vacations, but not in ourselves," notes Adamovich, who initially enlisted a large outplacement firm and later found satisfaction with the JobJoy process. "But an investment in career planning is going to return a thousand-fold when a person finds the satisfaction of the right career." □

Maria Ford is an Ottawa-based writer whose own career-coach-assisted journey led her to found Kaszas Communications (www.kaszas.ca), a high-technology marketing communications consulting firm. Maria can be contacted at mford@kaszas.ca.

Table-like layouts using CSS

Continued from page 93

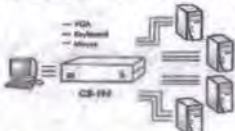
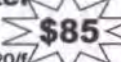
will overflow the content of the "box."

One of the advantages of this approach is that the code is easily modular: all you have to do is create two different id references for the #bodycolumn depending on whether you want a two- or three-column layout, and then simply reference the additional #rightcolumn rule if required.

Kudos to Eric Costello for coming up with the original version of these columnar layouts, from which these examples are ultimately derived; for more info, see: www.glish.com/css/.

Next time: Latest in XHTML (really this time :-).

Keith Schengili-Roberts welcomes any comments, suggestions or HTML tips you may have. You can email Keith at: robertsk@rogers.com. His book on CSS published by Prentice Hall *Core CSS* (ISBN: 0-13-083456-4), is available in bookstores.

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Hunting for bugs

By Sharlene Myers

If you've ever struggled with a software bug, you have some idea of the challenges software testers face every day. Each new feature added to a program requires that someone in the quality assurance (QA) department of a software company creates and implements a test plan to ensure it works the way it is supposed to work. Any problems need to be documented and tracked so they can be fixed, hopefully before the software is released for purchase.

Romi Weiss combined her background experience in QA in the food industry with new knowledge she gained by returning to school, to reach her current position as a QA test engineer with Crystal Decisions (formerly Seagate Software). In a recent conversation with TCP, she discussed her job and talked about how her old skills helped her move into a new career. What follows is an edited version of that conversation.

TCP: What does your job involve?

RW: I'm a QA test engineer and I test desktop products, so mainly Crystal Reports.

How did you first become interested in

computers and technology?

I was in the food industry, in QA, and after about five years I noticed that there was a huge boom in jobs in the software and IT industry. I'd seen a lot of these ads for Seagate Software, and I [thought] "Hey, that sounds like a cool place to work." I wanted a change, so I went back to school to get into this industry.

I went to SFU [Simon Fraser University, in Burnaby, B.C.] and I took the object technology program, [which] basically focuses around the core programming languages like Java, C++, Visual Basic, and went into a little bit about SQL, and a little bit of Web design. When I went back to school I had all intents and purposes to work for Seagate Software—that was something I wanted so badly to do. They had a co-op program and there happened to be a position available that I applied for, and during my co-op I was hired on full-time.

How did you end up in the position you're in now?

There were only two positions available for the co-op: software developer and documentation. I wasn't skilled enough for the software development

Career Profile



Name: Romi Weiss

Title: Quality assurance test engineer

Company: Crystal Decisions

www.crystaldecisions.com

Related education: Post-degree certificate in object technology programming, Simon Fraser University

position, so I'd applied for the documentation, but they saw that I had QA experience from my previous job, so they said "You know, I think you'd be better suited for a QA position."

Tell me about your typical workday.

It sort of depends on what stage of the development cycle the project is [in]. Usually in the early stages there [are]

Continued on page 101

JavaScript, CSS, DOM tutorial has basics covered

By Keith Schengili-Roberts

At first glance, I thought I'd have a problem with the layout of this book. While other books in the New Riders' Magic series have benefited by the landscape format—which allows screenshots, raw code, and explanatory text to be viewed alongside each other—this topic covers inherently dynamic structures and browser code. After spending some time with this book, however, I'd go so far as to say the layout is not only suitable, it's ideal for the beginner who wants to create dynamic Web pages.

The book is a good introduction to Cascading Stylesheets (CSS) and Document Object Model (DOM) programming, which can be combined to make CSS-based dynamic Web pages. It begins with the basics for each, looking at such things as basic layout with CSS, and using JavaScript to create basic dynamic elements on a Web

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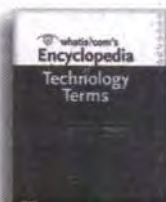
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Hunting for bugs*Continued from page 100*

meetings with [the] development and product [teams], and you go over what the feature functionality is going to be for that product.

Once you get builds going, you start creating test plans for the features you're going to be working on, and you'll start installing the builds and testing your features for their functionality, making sure everything's working the way it should be. If you find any bugs, you would track them. You try and determine exactly the underlying cause for the bug, and then you may work with developers as well, to pinpoint where it happens. But basically it's a lot of installing builds, tracking bugs, creating and upgrading test plans, working with pretty much all of research and development and product to make sure that everything's working the way it should be.

What do you like best about your work?

I pretty much like everything about my job. I love the fact that you're constantly challenged. Every project you work on has something new, and you're constantly having to upgrade your skills by learning a new technology, and you don't really have a whole lot of time to figure it out. You

jump into a project and they just kind of want you to figure it out and start working on it right away. I love working with people and it's great that in QA you get to work with the different teams together.

So what do you like least about your job?

Not a lot, but I'd have to say, frustrating bugs. It's really tough when you find something and it doesn't work the way you want it to, and you can't reproduce it. You know that you can reproduce it somehow, but there's probably about 50 steps you did and you have to backtrack and figure out which one actually caused that. That can be really frustrating, because you can spend almost a whole day just trying to reproduce exactly what happened and how to track that.

We also have to write test plans. And with every new feature, it's a new technology, and there's going to be more ways to approach testing it, so you're going to have more test cases, and eventually the test plans just get huge. I don't think a lot of people will say they love making test plans. Test plans are just so time consuming.

You mentioned that you need to constant-

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< CAREERS & TRAINING >

Hunting for bugs

Continued from page 101

ly be on top of the technology. What do you do to keep yourself up to speed?

There's a lot of in-house training. When we have a new project, we tend to have a lot of "lunch and learn" sessions, where people in-house that are really familiar with the technology or one of the features we're working on [will] gather everybody together and go over how it should work, and then show examples of how it's working currently, and what you want it to do.

We also have workshops for personal or professional upgrading, where they'll bring in someone from outside to give you a two-day workshop to upgrade you.

There's a lot of self-leadership programs as well: just promoting teamwork and working with others. There's also a lot of online tutorials that have been written up by some of our developers, or [that we find on the Net]. But a lot of it is self-learning, too. You go out and grab a book, you start trying stuff out on your computer, and just keep yourself up to date.

What skills or qualities someone would need to do your job?

You really need to be able to make quick and sound judgement calls. When you find something like a bug, you have to decide: is this a really big issue, or not. And you need really creative ideas in terms of testing—you have to be able to think of different ways to approach what you're testing, to cover all aspects.

Communication is key—you communicate with so many people. And multitasking as well. You could be working on one thing, and then you get called away for a second to do something else, and to be able to come back and do that, or to be able to do two things at once. You're not necessarily doing just one thing the whole day long.

What are the biggest challenges you expect to face in your position over the next couple years?

I would say keeping up with technology. That would be probably our biggest thing. Software is getting more sophisticated, and you have to know how to communicate with different interfaces and other types of software, and the QA tester needs to be familiar with all these kinds of technologies it communicates with.

Right now with Crystal Reports, it has an SDK [software development kit], which can talk with Java, C++, VB, and .Net, and you have to know a little bit about all of those in order to test it, so that you can make sure it's working properly. So if you haven't become

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Hunting for bugs

Continued from page 102

familiar with those, you have to learn them on the fly when you're testing.

What's your favourite thing to do in your spare time?

I'm a pretty avid beach volleyball player. I

play competitive volleyball all year round, indoor and outdoor, so I'd say 70 percent of my life is volleyball aside from work. Actually, in the summer I play beach volleyball, golf, hike, and go camping. In the winter, I play indoor volleyball, snowboard, run, and work out at the gym. But volleyball is still the main focus of my free time. □

JavaScript, CSS, DOM book covers basics

Continued from page 100

page. Over the course of the book, the reader learns how to bring these things together to make rollover links, create and use browser detection routines, and position dynamic elements, as well as more advanced tasks like creating collapsible menus and dynamic updating pages on the fly. The book covers 14 separate projects that combine CSS and JavaScript. All cool stuff, and enough to get a beginner's feet wet.

The only drawback is that it really only offers a taste of what you can do with CSS and DOM. While the book does an excellent job of covering the basics—including tips on dealing effectively with browser compatibility issues—there's not a lot of depth here.

In the end, JavaScript + DOM + CSS

JavaScript + CSS + DOM Magic
 Author: Makiko Itoh
 Publisher: New Riders,
 www.newriders.com
 Softcover 306 pages/CD
 ISBN: 0-7357-1132-1
 Price: \$62.99

Rating (out of *****)

Information content *****
 Readability *****
 Overall rating *** 1/2

Intended for Beginner

Magic is a decent if unremarkable introduction to the subject. However, it would be one of the first books I'd suggest to someone who wants to learn more about dynamic HTML. □

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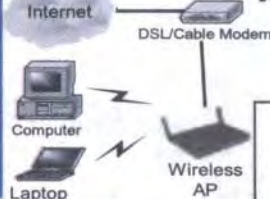
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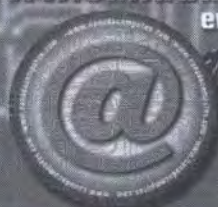
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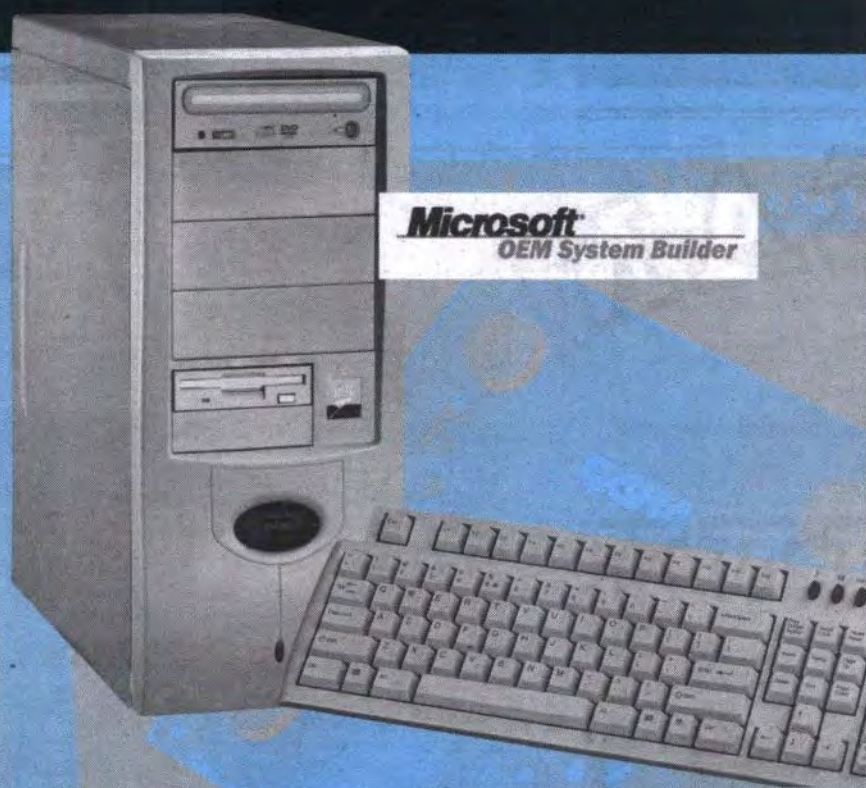
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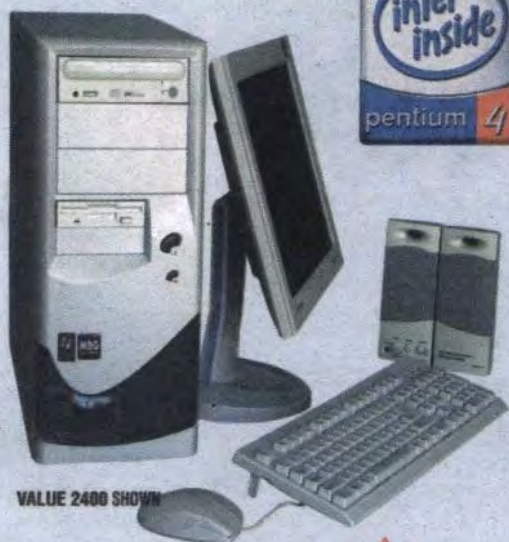
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