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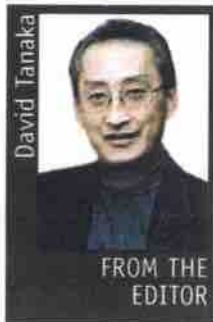
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A new leaf

While I wanted to avoid pointing out the obvious, it seems we've got some explaining to do. First, let me reassure you. Despite the new look, this is *The Computer Paper* you're reading, chock full of the news, reviews, features and product advertisements you've come to expect. But we've long felt the publication needed a facelift, and what better time to launch a redesign than with the January 2000 issue.

Ever since Volume 1, No. 1 rolled off the presses in January 1987, *The Computer Paper* has retained the same basic logo. There have been refinements over the years, but the general design stayed the same. So, one of the issues we wrestled with was whether we should change something that had become so distinctive and recognizable.

In the end, we decided to go for it, and about six months ago, held an internal design competition for a new logo. We restructured the editorial content into fewer but stronger sections, based on the feedback we've been receiving from readers. We also redesigned the basic page layouts, changing the typefaces and opening up the pages visually with more white space.



David Tanaka

FROM THE EDITOR

I hope you like what we've done; I think it is an improvement, both aesthetically and organizationally. There are two people who played key roles in this redesign and they deserve to be applauded for their contribution. Nella Pascal, one of the very talented graphic artists working in our Toronto office, designed the new TCP logo. Ernie Stelzer, a member of the strong design team in our Vancouver office and TCP's

Ramping up canadacomputes.com

With the objective of taking *The Computer Paper's* online presence to the next level, we've been working for the past few months to prepare our new umbrella Web site, canadacomputes.com. It is the new home of www.tcp.ca, where you will find back issues of TCP and our other print publications.

But canadacomputes.com will be more than just an archive of past issues. In the coming weeks and months, expect to find engaging new content—the kind that only the Web can effectively deliver. Many of you consider TCP an essential read. We want to make canadacomputes.com an essential bookmark.

Stay tuned,
David Tanaka
Editorial director,
canadacomputes.com

Lead layout artist for many years, redesigned

the interior page layouts. And of course everyone involved in TCP worked extra hard to bring this issue to life.

What else is new

As this was transpiring, another month of computing events passed, including the biggest trade show in North America. That's right, Comdex Vegas, an event that's as loud and brash as the city that hosts it. Many people who follow the personal computer industry have been saying that the industry is changing, and this was quite evident at this year's trade show.

Microsoft is one of the few big PC technology companies that still exhibits at the show, and its sprawling partner pavilion is almost a show in itself. But both Philips and Sony—companies known more for their consumer electronics than their pure computing products—staged huge and impressive displays of their own, right next to Microsoft in the south hall of the Las Vegas Convention Center. And Creative Labs' light-and-sound extravaganza sprawled across a significant portion of the Sands Convention Center.

Philips, Sony and Creative—along with what seemed like dozens of companies pushing MP3 audio players—send the clear message that digital convergence is under way big time.

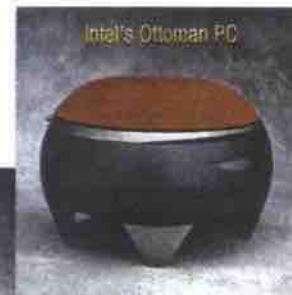
Computers, digital audio and digital video are coming together, and both manufacturers and consumers will be exploring where these new connections can take us.

PCs in the 21st century

In terms of mainstream computing, the most interesting display I saw was in Intel's briefing suites, away from the tradeshow floor in a local hotel. In one room, Intel displayed a dozen or so examples from its Concepts for 21st Century PCs project. Intel commissioned industrial design firms to break away from the beige box, and design new forms using technology that is available today.

These are "legacy free" (no serial or parallel ports, and no ISA bus) designs, using Intel's FlexATX motherboard, which is smaller than the normal ATX motherboard. Among the more interesting designs were the Ottoman PC (as in footrest), the Magic Bean (an organic, bean-like shape for kids) and the scrubbable Vesta kitchen PC. Rarely on these designs did I see a 3.5-inch floppy drive. Many included DVD drives, and all of them used USB as the sole port to connect to external devices. These creations and others can be seen on Intel's Web site at <http://developer.intel.com/technology/easeofuse/conceptpc.htm>.

While we may never see the Ottoman PC as a real product, we will be seeing legacy free PCs in the next few months. I saw several case manufacturers displaying prototypes of small colourful enclosures designed for the FlexATX motherboard. One representative told me that they were gearing up their manufacturing, and could begin shipping the cases to PC



manufacturers in the first few months of 2000. And already Compaq Canada has introduced

its legacy-free iPaq Internet PC, which it is marketing as a business computer. The iPaq uses Windows 2000 as its operating system, and has no ISA/PCI slots or legacy ports. Compaq Canada says it will be available in the middle of the first quarter of 2000.

Interesting times ahead,
David Tanaka,
Editor

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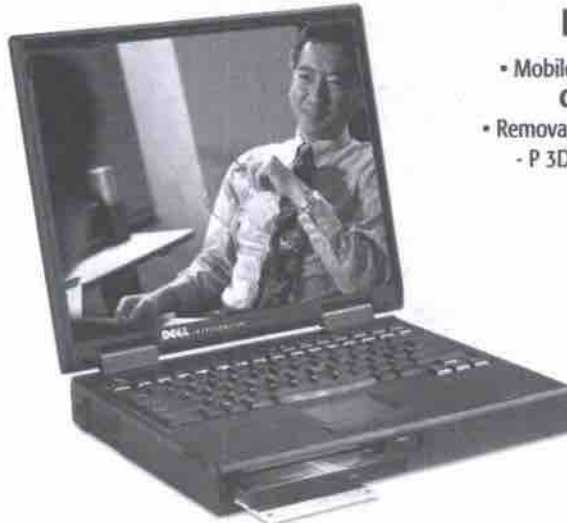
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Aw shucks

I just wanted to send TCP a short note of appreciation. Over the past few years, I flipped casually through your magazine whenever I spotted it. But recently, while shopping for a computer for my retired dad (a first-time computer user), I found TCP to be an invaluable resource. Your issue on upgrades (October 1999) provided me with more information than an entire year's worth of the big glossy

mags' back issues. It was refreshing to read editorial and review content that was not brazenly beholden to advertisers and that dug deeper than how wonderful the manufacturers' Web page looks.

Mark Allen

Canadian digicam info sought

I have been researching digital cameras for about two months now. I find it impossible

to get any Canadian info on cameras. Your magazine has some ads with Web sites, but when going to these sites, you still can't find any cameras or prices in Canadian dollars. Perhaps you could add a section on new cameras and new hardware for cameras. It would be nice to see Canadian reviews and what these cameras cost in Canada.

Nancy

TCP replies: As it happens, TCP Lab Test's reviews of more than 20 digital cameras appear in this month's issue. Here are some other sources of information: if you live in a metro area, you might find that the larger photography stores have started to sell digital cameras alongside their traditional film offerings; we've also noticed computer retail stores and consumer electronics stores are stocking the most popular brands of digital cameras, along with accessories like rechargeable batteries and removable memory modules.

Throwing some light on projectors

I am frustrated by the number of LCD projectors currently available, and have found some good information regarding them on your Web site. However to simplify matters, have you in past done a comparative review on them in your paper? Any help would be appreciated. Thanks.

Scott Jones

TCP replies: The last roundup of LCD projectors was in our July 1999 issue. There are a few points you should keep in mind when choosing one of these devices. The first distinction is in the image-forming system used in a projector.

Presently, there are three main types: LCD, reflective LCD and DLP. Some LCD projectors use a single LCD, but these are less common, with three LCD units (one each for red, green and blue) gaining favour because the image is better.

Reflective LCD is a newer technology. Its main benefit is that it allows designers to make smaller, lighter projectors. DLP stands for digital light processing, and DLP-based projectors use a chip called a DMD (digital micromirror device) to form the image. DLP devices are generally brighter, but some argue that the colours aren't as saturated as colours cast by an LCD projector.

The other important specification is light output, which is usually stated in ANSI lumens. For corporate boardrooms 400 ANSI lumens is generally adequate. For presenting in large halls or conference ballrooms, you would need a projector with at least 1,000 ANSI lumens.

Empac Azura includes Microsoft Works

The Lab Test in the December issue ("Under the tree: TCP Lab looks at systems for family computing") incorrectly stated that the Empac Azura system came with no additional software. In fact, the system comes with Microsoft Works bundle.

TCP survey winner

In the summer of 1999, TCP conducted its annual readership survey, and all those who completed a questionnaire became eligible to win a notebook computer from Angel Computers.

We'd like to thank everyone who participated in the survey. The results will help us chart TCP's direction so that it remains your best source for Canadian computer and technology information.

The winner of TCP's readership survey draw for a notebook computer is Jason Washington of Kingston, Ont.

Congratulations Mr. Washington! □

Find an organization's site quickly

NB—Network Solutions has revamped its Web site search portal, Dot Com, to allow anyone to find almost any organization's Web site with a .com, .org, or .net suffix. The site, which contains more than two million listings, will soon offer a similar facility for finding European Web sites.

<http://www.dotcomdirectory.com>



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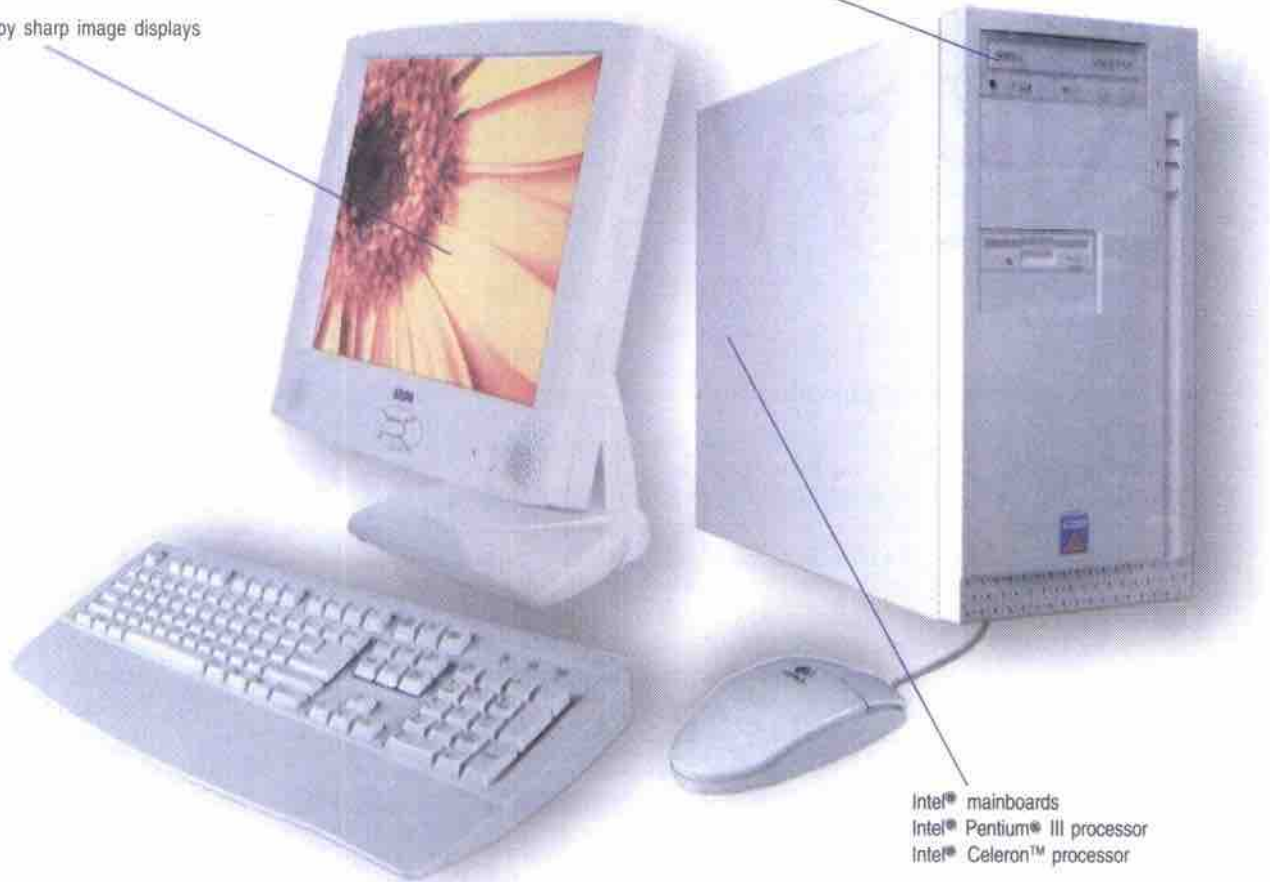
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WHAT'S NEW

Password tracker doesn't collect info

A Web-based password management application lets users surf more easily without collecting personal data, according to its developer.

The Passcenter service (<http://www.passcenter.com>) keeps track of multiple passwords and offers single sign-on privileges for free. No information is garnered for use in tailoring advertising or for other Web marketing applications, the company said.

"Passcenter will never accept advertising nor enter into financial agreements with other Web sites," said Paul Barrett, chief executive of ID Arts, the company that developed Passcenter.com. "There's enough 'noise' on the Internet already. Users are looking for simpler, quieter Internet tools."

Based on a service developed for the British government, Passcenter doesn't use traditional authentication methods, according to ID Arts. Instead of entering passwords, users have to memorize five "pass faces" when they sign up. To access the service after that, users have to identify the five from groups of other "faces."

The service makes more sense than using alphanumeric keys, since "everyone can remember a face," the company said.

Founded in 1997, ID Arts is based in Brighton, U.K.

—canadacomputes.com



New Volvo gets mobile office features

Buyers of the Volvo's new S80E model have a new option to consider alongside the typical add-ons like CD player, sunroof and automatic transmission—an integrated in-car mobile office. Customers can have a mobile phone in the driver's position, as well as a mobile paper fax installed in the rear seat arm rest.

The mobile fax, the Possio PM80, is optimized to work across cellular services and can send and receive regular faxes, as well as print out SMS (short message service) text messages and copy documents. It includes a 50-sheet thermal printer and a PCMCIA Type II interface for connection to a notebook PC. It also has memory storage that allows documents to be scanned and stored into memory for later transmission, as well as an infrared connection facility. Plans call for the PM80 to incorporate email and Web-surfing facilities, using paper as the viewing mechanism.

—Newsbytes

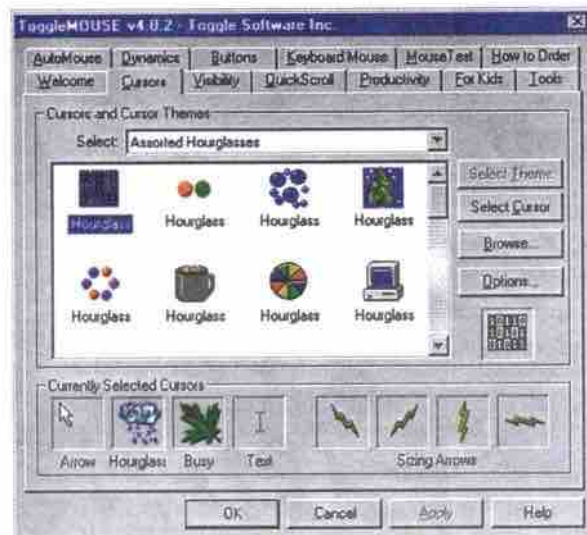


Teach an old mouse new tricks

Although Ottawa-based Toggle Software Inc. sent a copy of its ToggleMouse utility to TCP about eight months ago, it wasn't until late November that this editor installed it on her older model notebook PC to help solve a port-deficiency problem.

The notebook in question uses a touchpad to control the cursor. But the touchpad—located on the palm-rest area in front of the keyboard—can send the cursor skittering around the screen if thumbs and palms are not held high. The simple solution was to hook up a PS/2 mouse and a full-size PS/2 keyboard for using the notebook at home. The simple obstacle to this solution, though, was the single PS/2 port on the notebook.

Enter ToggleMouse. I picked up the diskette that had been collecting dust on my desk for months, installed the software, and within minutes was able to configure my PC so the number pad on the full-size PS/2 keyboard controlled the cursor. It may sound like a clunky alternative, but depending on how finely you configure the movements (you can choose the number of pixels the cursor will move each time you press a number key) it is quite smooth and accurate, with the number pad Enter key acting as a mouse click.



This option is just one of the many configurations offered by ToggleMouse. It allows users of older mice to scroll without scrollbars, reduce mouse movement with QuickPoint and ScreenWrap features, reduce mouse clicks with ActiMouse and EconoClick, assign functions to unused mouse buttons, choose high-visibility cursors, and configure a mouse so it is easier for children to use.

Toggle says ToggleMouse offers mouse users features of some of the new high-end scrolling and wheel mice without having to buy new hardware. The latest version, ToggleMouse 4.5.2, has introduced more advanced features and some fixes for application- or OS-specific problems.

ToggleMouse is compatible with Windows95/98/NT. It is priced at US\$19.95, and can be purchased through the Toggle Web site (<http://www.toggle.com>), or ordered by phone (888-6-TOGGLE). A free 30-day trial edition can be downloaded from the Toggle site.

—Megan Johnston

Comdex Canada West 2000

Ask industry leaders what's hot at TCP's Towne Hall Meeting

The Computer Paper and canadacomputes.com are presenting the Towne Hall Meeting, at Comdex Canada West 2000. The conference and expo will be held at the Vancouver Trade and Convention Centre, Jan. 19-21. The Towne Hall Meeting runs from 12:30-1:45 p.m. on Jan. 21.

As with previous Towne Hall Meetings, this is a great opportunity for TCP readers to interact with some of Canada's most "connected" technology experts, to discuss the hottest computing topics at the edge of the millennium.

The themes of the meeting will be networking, mobility, usability, and pervasive computing. On hand for live interaction with the audience will be representatives from leading technology companies.

Co-moderating the meeting will be David Tanaka, Editor of The Computer Paper, and Jeff Evans, Editor of canadacomputes.com, the country's newest technology Web site.

If you have questions you'd like to ask our panel, please feel free to submit them by email to townhall@tcp.ca.

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What's New

Continued from page 10

Software reads Net email over phone

Guildsoft has started shipping a US\$60 package that monitors a PC user's Internet mailbox, then calls them up over the phone to interactively play their messages back.

Richard Clooke, a spokesperson for Guildsoft, said the software was developed by Italy's Gensoft (<http://www.gensoftonline.com>), and

is being distributed in the U.S. by Centurionsoft (<http://www.centurionsoft.com>). (In the U.S., the software is called Mercury Mobile, but is called Mail2Mobile in the U.K.)

The 32-bit Windows package regularly dials up and downloads a user's email, placing it in the user's Internet email application as usual. It then dials the user up—either on a regular land-line or a mobile phone—and offers to play the messages back using text-to-speech technology.

The system is billed as operating like a commercial voice-mail service, allowing users to check and skip messages, go back and/or repeat the current message. Messages can also be filtered using parameters set by the user, such as only offering urgent messages for playback.

The heart of the software's text-to-speech system is a speech engine from Lernout & Hauspie. Guildsoft says the package can be set

to present the user with a male or female voice, and offers adjustable pitch and/or speed. It can also recognize and speak French, German, Italian or Spanish language emails, in addition to English.

The software is priced at US\$59.95. It requires Windows 95/98, a PC with 16 MB of memory, 30 MB free hard disk space, a 4x or faster CD-ROM drive, and a voice-capable (TAPI-compliant) modem or ISDN terminal adapter. A demo version is available on Centurionsoft's Web site.

—Newbytes

AOL begins big push into Canada

AOL Canada (<http://www.aol.ca>), a division of America Online, the world's biggest Internet service provider (ISP), has announced a multi-year strategic alliance in Canada with Bell Nexxia, and UUNET Canada. Bell Nexxia, a BCE company, has coast-to-coast telecom service provision capability, while UUNET is an MCI WorldCom Company, which specializes in Internet services to business customers.

AOL Canada, while a major ISP on the national scene, has a considerably smaller subscriber base than Sympatico, Canada's largest Internet service provider. (AOL Canada has about 180,000 subscribers, which includes CompuServe Canada clients, while Sympatico has about 650,000 subscribers.) Since signing a deal with the Royal Bank, which involved a substantial payment to AOL Canada for a share in AOL Canada's operation, the ISP has indicated it is looking to increase market share in Canada.

The alliances with Bell Nexxia and UUNET will provide over three times the reach to AOL's infrastructure, with local dial-up service now being offered in most major urban centres in all 10 provinces. According to AOL Canada chief executive Stephen Bartkiw, "Tripling the reach of our network, coupled with the introduction of our unlimited use pricing plan, makes it even easier for Canadian consumers to explore the unique features of the AOL Canada service, including email, Internet access, exclusive content and parental controls, and make it central to their everyday lives."

The unlimited-use plan consists of unlimited connect time and other new content and commerce features for \$22.95 per month. AOL Canada also announced a reduction of more than 60 percent in surcharges for its long-distance access number.

AOL Canada says it also plans to introduce a high-speed DSL version of its service, so it can compete for a share of power-user market, which is currently served by Sympatico High Speed Edition DSL, or the @HOME cable modem service.

This extremely vigorous ramping up by AOL Canada will no doubt lead to reactions from Sympatico and other major Canadian ISPs, ensuring that Canadian consumers will be offered some attractive Internet service deals this winter.

—canadacomputes.com

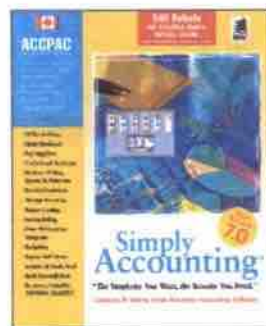
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 On Board AC-97 2.0 Audio Sound Card
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 ATX Mid-Tower Case with CSA Power Supply
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 2 Year Parts & Service Warranty



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K6-2 3D 400	\$ 775
K6-2 3D 450	\$ 795
K6-2 3D 500	\$ 870
K6-3 3D 450	\$ 930

Video Graphics Adapters

ATI 3D Charger AGP 4MB/8MB	\$ 44 / 60
ATI All-in-Wonder 128 AGP Card 16MB/32MB	\$235/328
ATI Xpert98/Xpert99 AGP Card 8MB	\$ 70 / 99
ATI Rage 128 AGP Card 16MB	\$130.00
ATI Rage Fury/Magnum/Xpert 2000 AGP 32MB	\$175/155/145
ATI TV Wonder Tuner Card (NTSC)	\$105.00
ASUS AGP-V3400 nVIDIA TNT TV Out, Video-in 16MB	\$154.00
ASUS AGP-V3800 nVIDIA TNT2 Ultra Deluxe 32MB	\$325.00
Creative Labs 3D Blaster Savage 4 AGP 32MB	\$110.00
Creative Labs Blaster TNT2 AGP 32MB	\$195.00
Creative Labs 3D Blaster TNT2 Ultra 32 TV Out	\$276.00
Matrox Millennium G400 AGP 16/32MB SGRAM	\$173/243
Matrox Millennium G400 AGP 16/32MB Dual Display	\$200/275
nVIDIA TNT Vanta 3D AGP 16MB	\$ 96.00
nVIDIA TNT2 M64 AGP 32MB	\$133.00
S3 Savage 128Bit 3D AGP 8MB TV Out	\$ 60.00
S3 Savage4 GT 3D AGP 16MB/32MB	\$78/110

HD/FD Controllers

Sony 110GS 15" N/L/R(1280x1024, 25mmDP)	\$325.00
Sony 210GS 17" N/L/R(1280x1024, 25mmDP)	\$505.00
Sony 220GS 17" N/L/R(1280x1024, 25mmDP)	\$700.00
Sony E200 17" N/L/R(1280x1024, 24mmDP) FD	\$610.00
Sony G200 17" N/L/R(1600x1200, 24mmDP) FD	\$690.00
Sony 420GS 19" N/L/R(1600x1200, 25mmDP)	\$890.00
Sony 520GS 21" N/L/R(1600x1200, 25mmDP)	\$1490.00
Samsung 550S 15" N/L/R(1024x768, 28mmDP)	\$198.00
Samsung 950P 19" N/L/R(1600x1200, 26mmDP)	\$560.00

Keyboards & Cases

Fujitsu 4725/8725 Enhanced 104 Keys	\$59 / 17
Proxcel Windows 98/Internet Keyboard	\$ 12 / 25
Logitech Deluxe/Internet Keyboard	\$ 23 / 38
Logitech New Touch Compact Ergo Keyboard	\$ 56.00
Logitech Cordless iTouch/Desktop Pro Keyboard	\$123/160
Microsoft Natural Elite/Internet Keyboard	\$ 32 / 32
17/19" ATX Mid Size Tower w/ CSA Power Supply \$ 43 / 54	
25" ATX Tower with 250W CSA Power Supply	\$ 88.00
15/19" Mid Size Tower with CSA Power Supply	\$ 33 / 43

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Abit BH6 440BX Pentium III Board (AGP)	\$159.00
Abit BP6 440BX Dual Socket 370 Board (Ultra66)	\$218.00
Abit BF6 440BX Pentium III Board	\$178.00
Acer MX59Pro MVP4 Socket 7 Board w/Sound & Video	\$133.00
ASUS P5 A-B 100MHz AGP Socket 7 512KB L2	\$137.00
ASUS P3BF 440BX Pentium III Board (AGP)	\$194.00
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ASUS P2BDS 440BX, Dual CPU, Ultra2 SCSI Board	\$698.00
PC Partner VIA VP3 100MHz AGP Socket 7 512KB L2	\$ 98.00

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Creative Labs Sound Blaster Live! Platinum/Live Value	\$275/78
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Hewlett Packard 9210/e 64x4x32 SCSI/USB CDRW	\$520/650
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Toshiba 40X SCSI CD-ROM Drive	\$129.00
Yamaha 8424E/8 Int IDE/SCSI CDRW	\$385/415

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Diamond SupraMax 56K v.90 PCI Voice	\$ 54.00
US Robotics 56K v.90 Int/Ext Fax Modem	\$ 62 / 175
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Microsoft Trekker Mouse/IntelliMouse	\$ 16 / 23
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Microsoft Compatible Mouse	\$ 6.00

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Canon BJC-6000 Color Inkjet	\$298.00
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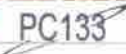



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9.1GB	ST39103LW	5.6ms	1MB	10000	ULTRA 2 SCSI	\$ 630
18.2GB	ST318275LW	6.9ms	1MB	7200	ULTRA 2 SCSI	\$ 690
18.2GB	ST318203LW	6ms	1MB	10016	ULTRA 2 SCSI	\$ 990
36.4GB	ST136475LW	8ms	1MB	7200	ULTRA 2 SCSI	\$1300
36.4GB	ST136403LW	5.7ms	1MB	10000	ULTRA 2 SCSI	\$1650
50.1GB	ST150176LW	7.4ms	1MB	7200	ULTRA 2 SCSI	\$1390
9.1GB	309170U2	7ms	2MB	7200	ULTRA 2 SCSI	\$ 435
9.1GB	39100LZX-LW	5.4ms	2MB	10000	ULTRA 2 SCSI	\$ 650
18.2GB	318350U2	7ms	2MB	7200	ULTRA 2 SCSI	\$ 725
18.2GB	18LZXU2	5.4ms	2MB	10000	ULTRA 2 SCSI	\$1010
18.2GB	18ZXU2	5.3ms	4MB	10020	ULTRA 2 SCSI	\$ 990
36GB	XP36U2	7.5ms	4MB	7200	ULTRA 2 SCSI	\$1380
36GB	336000ZX-LW	5.4ms	2MB	10000	ULTRA 2 SCSI	\$1695
73.4GB	72ZX	5.3ms	16MB	10000	ULTRA 160	Call
9.1GB	WD9180-0048	8ms	2MB	7200	ULTRA 2 SCSI	\$ 475
9.1GB	WD9150-0040	5.2ms	2MB	10000	ULTRA 2 SCSI	\$ 620
18GB	WD18300-048	8ms	2MB	7200	ULTRA 2 SCSI	\$ 755
18.3GB	WD18310-040	5.2ms	2MB	10000	ULTRA 2 SCSI	\$ 980
9.1GB	QM309100KN	6.9ms	2MB	7200	ULTRA 2 SCSI	\$ 415
9.1GB	QM309100TN	5ms	2MB	10000	ULTRA 2 SCSI	\$ 605
18.2GB	QM318200KN	6.9ms	2MB	7200	ULTRA 2 SCSI	\$ 700
18.2GB	QM318200TN	5ms	2MB	10000	ULTRA 2 SCSI	\$ 970
36.4GB	QM336400KN	6.9ms	2MB	7200	ULTRA 2 SCSI	\$1350
36.4GB	QM336400TN	5.5ms	2MB	10000	ULTRA 2 SCSI	\$1685
9.1GB	MAE3091LP	10ms	256KB	7200	ULTRA 2 SCSI	\$ 435
9.1GB	MAG3091LP	7.5ms	2MB	10000	ULTRA 2 SCSI	\$ 620
18.2GB	MAE3182LP	10ms	256KB	7200	ULTRA 2 SCSI	\$ 770
18.2GB	MAG3182LP	7.5ms	2MB	10000	ULTRA 2 SCSI	\$1065
36.4GB	MAF3364LP	5.2ms	2MB	10000	ULTRA 2 SCSI	\$1695

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\$3,030

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i1420	Cel433	32MB	4.8GB	24X	13 HPA	\$2,175
i1540	Cel433	64MB	4.8GB	24X	12.1 TFT	\$2,670
240	Cel300	64MB	6.4GB		10.4 TFT	\$2,245
240	Cel366	64MB	6.4GB		10.4 TFT	\$2,810
390X	Cel400	64MB	4.8GB	24X	12.1 TFT	\$2,825
390X	PII400	64MB	6.4GB	24X	14.1 TFT	\$4,100
390X	PII400	64MB	6.4GB	24X	15.0 TFT	\$4,380
390X	P3-450	64MB	12GB	24X	14.1 TFT	\$4,565
390X	P3-500	64MB	12GB	24X	14.1 TFT	\$5,115
570	PII333	64MB	4.0GB		13.3 TFT	\$4,320
570	PII366	64MB	6.4GB		13.3 TFT	\$4,930
600E	PII400	64MB	10GB	24X	13.3 TFT	\$5,145
600E	PII400	64MB	10GB	DVD	13.3 TFT	\$5,375
600E	P3-450	64MB	6.0GB	24X	13.3 TFT	\$4,565
600E	P3-500	64MB	12GB	24X	13.3 TFT	\$5,570
600E	P3-500	64MB	12GB	DVD	13.3 TFT	\$5,845



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 64MB RAM
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 128-Bit 3D Graphics 2MB
 24X CD ROM
 56KBps Fax Modem
 12.1" TFT Display

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Model	CPU	RAM	HDD	CD	Display	Price
V300	Cel400	32MB	4.3GB	24X	12.1 DSTN	\$2,205
V300	Cel400	64MB	4.3GB	24X	12.1 TFT	\$2,645
V300	Cel466	64MB	4.3GB	24X	14.1 TFT	\$3,240
M300	Cel333	64MB	4.3GB		11.3 TFT	\$2,780
M300	PII333	64MB	6.4GB		11.3 TFT	\$3,520
M700	PII366	64MB	6.4GB	24X	14.1 TFT	\$4,300
M700	P3-450	64MB	6.0GB	DVD	14.1 TFT	\$5,055
M700	P3-500	64MB	12GB	DVD	14.1 TFT	\$5,880
E500	PII366	64MB	4.3GB	24X	12.1 TFT	\$3,090
E500	PII400	64MB	6.0GB	24X	14.1 TFT	\$3,970
E500	P3-450	64MB	5.0GB	24X	13.3 TFT	\$3,675
E500	P3-450	64MB	12GB	24X	14.1 TFT	\$4,410
E700	PII400	128MB	14GB	DVD	14.1 TFT	\$6,030
E700	P3-500	128MB	18GB	DVD	15 TFT	\$6,780

Acer

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 32MB Memory
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 20X CD-ROM/built-in sound
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 56Kbps Fax Modem/USB

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722ITX	PII366	64MB	6GB	24X	14.1 TFT	\$3,310
722ITXV	PII366	64MB	6GB	DVD	14.1 TFT	\$3,450
723TX	PII400	64MB	10GB	24X	14.1 TFT	\$3,590
723TXV	PII400	64MB	10GB	DVD	14.1 TFT	\$3,875
512T	Cel366	32MB	4GB	24X	12.1 TFT	\$2,155
518DX	Cel400	32MB	4.3GB	24X	12.1 HPA	\$1,900
513T	Cel400	64MB	4.8GB	24X	12.1 TFT	\$2,350
517TE	PII366	64MB	4.1GB	24X	13.3 TFT	\$2,870
340T	PII450	64MB	6GB	24X	12.1 TFT	\$2,860
342T	PII500	64MB	9GB	24X	12.1 TFT	\$3,960



Satellite 4090XDVD

400MHz Intel Celeron
 64MB RAM exp. to 192MB
 6.4GB Hard Drive
 Trident Graphics w/2.5MB
 14.1" TFT Display
 2X DVD ROM Drive
 56KBps V.90 Fax Modem
 Built-in Sound System

\$3,200

Satellite 2610DVD

433MHz Intel Celeron
 64MB RAM exp. to 192MB
 6GB Hard Drive
 Trident Graphics w/2.5MB
 12.1" TFT Display
 56KBps V.90 Fax Modem
 DVD ROM Drive
 Built-in Sound System

\$2,945

Model	CPU	RAM	HDD	CD	Display	Price
7020CT	PII366	64MB	6.4GB		13.3 TFT	\$4,850
2100CDS	K6/400	32MB	4.3GB	24X	12.1 DSTN	\$1,835
2100CDT	K6/400	64MB	4.3GB	24X	12.1 TFT	\$2,520
3110CT	PII300	64MB	6.4GB		10.4 TFT	\$3,320
4070CDS	Cel366	64MB	4.3GB	24X	13 DSTN	\$2,455
4090DVD	Cel400	64MB	6.4GB	DVD	14.1 TFT	\$3,200
4100DVD	PII400	64MB	6.4GB	DVD	14.1 TFT	\$3,660
8000	PII333	64MB	6.0GB	24X	13.3 TFT	\$3,425
8000	PII366	64MB	9.3GB	24X	14.1 TFT	\$4,660
8000	PII366	64MB	9.3GB	DVD	14.1 TFT	\$4,830
8000	PII400	128MB	14GB	DVD	14.1 TFT	\$5,835

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- Adaptec APA-1350 MiniSCSI Parallel Port Kit \$ 9 7 . 0 0
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- Adaptec APA-1480A SlimSCSI Kit (CardBus) \$ 2 4 5 . 0 0
- Adaptec USB-2000 USB To SCSI Converter \$ 9 6 . 0 0
- Exp DVD Traveller Plus DVD ROM w/Software \$ 4 7 5 . 0 0
- Intel Pro/100 Mobile LAN CardBus II RealPort \$ 2 0 8 . 0 0
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- Intel Pro/100 LAN+56K Modem CardBus II RP \$ 4 5 0 . 0 0
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- Kingston EtherX PCMCIA Ethernet Combo \$ 1 1 3 . 0 0
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- Nogatech USB TV Tuner, 151 Cable Channels \$ 1 8 0 . 0 0
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- PCMCIA 20x CD-ROM Drive (A/C not required) \$ 2 3 9 . 0 0

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IBM-ThinkPad

ThinkPad 760E/ED/EL/ELD \$ 86/ 99/ NA
 ThinkPad 365X/XD & 560,380 \$ 86/ 99/235
 ThinkPad 760C/CD/L/D \$ 97/135/ NA
 ThinkPad 750, 755 486 \$132/232/NA
 ThinkPad 770,770E,600E,TP390, I-1451,1511 \$ 82/162/285
 ThinkPad Z50 \$ NA/135/NA

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Armada 7710-MT,73XX,1510DM,1520DM,1550 \$ 86/ 99/272
 Armada 7400, 7800, 1500C, 3500, 17XX \$ 88/162/285
 Armada 4100, 4110, 4120, 4130, 4131,4220T \$ 83/156/246
 Armada V,M,E Series \$NA/162/286

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Extensa 366D/367T/367D/368 \$ 88/ 99/234
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- Intel T440BX Pentium III Server Board (RAID Capable)
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- 1.44MB Floppy Drive
- Quantum 9.1GB Ultra Wide SCSI Drive 6.9ms access time, 7200 RPM, 2MB
- On Board Symbios Logic Single Channel Ultra Wide SCSI Controller
- On Board GD5480 Video Card 2MB
- Toshiba 40x Speed SCSI CD-ROM
- 15" SVGA Monitor
- On Board EtherExpress Pro+ 10/100
- 56Kbps External Fax Modem
- ATX NetServer Case with 300 Watts Power Supply
- 14 Device Bays, 5.25" x 8 & 3.5" x 6
- 104-keys Keyboard & PS/2 Mouse

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PIII-500MHz...	\$2,465
PIII-550MHz...	\$2,630
PIII-600MHz...	\$2,815
PIII-650MHz...	\$3,065

BigData BX²

- Intel L440GX Pentium III Server Board (Dual Processor/RAID Capable)
- 128MB ECC SDRAM/8MB EEPROM
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- On Board Adaptec AIC-7896 Dual Channel Ultra 2 SCSI Controller
- On Board GD5480 Video Card 2MB
- Toshiba 40x Speed SCSI CD-ROM
- 15" SVGA Monitor
- On Board EtherExpress Pro 100+ LAN
- 56Kbps External Fax Modem
- ATX NetServer Case with 300 Watts Power Supply
- 14 Device Bays, 5.25" x 8 & 3.5" x 6
- 104-keys Keyboard & PS/2 Mouse

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3D Station BX¹

- Asus P3B-F Pentium III Board
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- 1.44MB Floppy Drive
- 13GB Hard Drive UDMA 66 8.5ms access time, 7200 RPM
- 3Dlabs Oxygen VX1 GLINT R3 Card with 32MB SDRAM
- 44x Speed UDMA CD-ROM
- Viewsonic E790 19" SVGA Monitor 1600x1280 resolution, 0.26mm DP
- ATX Mid-Tower Case w/Power Supply
- Fujitsu 104-keys Keyboard /w MS Mouse

PIII-450MHz...	\$2,095
PIII-500MHz...	\$2,145
PIII-550MHz...	\$2,310
PIII-600MHz...	\$2,495
PIII-650MHz...	\$2,745

3D Station BX²

- (Dual Processor Capable)
- Asus P2BDS Pentium III Board
- 128MB SDRAM (100 MHz System Bus)
- 1.44MB Floppy Drive
- Seagate ST318275LW 18GB Hard Drive Ultra2SCSI, 7200 RPM
- 3Dlabs Oxygen GMX Dual GLint GMX 2000 chipset with 96MB
- 44x Speed UDMA CD-ROM
- Viewsonic G810 21" SVGA Monitor 1600x1280 resolution, 0.25mm DP
- ATX Mid-Tower Case w/Power Supply
- Fujitsu 104-keys Keyboard/w MS Mouse

PIII-500MHz...	\$5,915
PIII-550MHz...	\$6,080
PIII-600MHz...	\$6,265
PIII-650MHz...	\$6,515
PIII-700MHz...	\$6,790

Video Cards

G400	Millennium G400 chip w/16MB Dual Display	\$200.00
G400	Millennium G400 chip w/32MB Dual Display	\$275.00
G400 Max	Millennium G400 Max chip w/32MB Dual Display	\$335.00
G400 Marvel	G400 chip 16MB w/Motion JPEG Capture & Editing	\$420.00
FireGL1	IBM 256 bit processor w/32MB AGP (SIMD ext.)	\$1250.00
Oxygen ACX	Premedia 2 processor with 8MB SGRAM AGP	\$156.00
Oxygen VX1	GLINT R3 processor with 32MB SDRAM AGP	\$328.00
Oxygen GVX1	GLINT R3 & GLINT Gamma G1 chipset 32MB AGP	\$1115.00
Oxygen RPM	3D Labs RPM chipset 64MB, Support Dual Screen	\$1315.00
Oxygen GMX	Dual GLint GMX 2000 chipset w/96MB AGP	\$2500.00
Premedia Create!	Premedia 3 processor with 32MB SDRAM AGP	\$310.00
Lightning 1200	ReallImage 1200 chipset 15+16MB 3D Memory AGP	\$575.00
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DScan 70	70 17"/16"V 0.28mmDP, 1280x1024@65Hz	\$470.00
DScan 90e	90e 19"/18"V 0.25mmDP, 1600x1280@75Hz	\$790.00
DPro 710	DP710 17"/16"V 0.25mmDP, 1600x1200@65Hz Flat	\$635.00
DPro 900u	900u 19"/18"V 0.25mmDP, 1600x1280@75Hz USB	\$1050.00
DPlus 100e	100e 21"/19.7"V 0.28mmAG, 1600x1280@85Hz	\$1535.00
DPlus 120u	120u 21"/19.7"V 0.28mmAG, 1800x1440@75Hz	\$1610.00
DPro 2020u	2020u 21"/19.7"V 0.25mmDP, 1800x1440@80Hz	\$1875.00
LXA550W	15" LCD Panel 1024x768@75Hz	\$1725.00
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FP950	19"/18"V 0.25mmDP, 1920x1440@73Hz	\$1030.00
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CPD-G500	21"/19.8"V 0.24mmDP, 2048x1536@75Hz	\$1785.00
GDM-500PS	21"/19.8"V 0.25mmDP, 1600x1200@85Hz	\$1725.00
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15"	OPTIQUEST. Q51	0.28mm	1024x768	13.7"	30-50KHz	\$ 235
	OPTIQUEST. Q55	0.28mm	1280x1024	13.8"	30-70KHz	\$ 246
	ViewSonic E655	0.28mm	1280x1024	13.8"	30-70KHz	\$ 256
	ViewSonic M50	0.27mm	1280x1024	13.8"	30-70KHz	\$ 295
17"	OPTIQUEST. Q71	0.27mm	1280x1024	16.0"	30-70KHz	\$ 325
	OPTIQUEST. Q73	0.26mm	1280x1024	15.9"	30-70KHz	\$ 420
	OPTIQUEST. V75	0.26mm	1600x1280	16.0"	30-85KHz	\$ 495
	ViewSonic E771	0.27mm	1280x1024	16.0"	30-70KHz	\$ 330
	ViewSonic E773	0.25mm	1280x1024	16.0"	30-70KHz	\$ 425
	ViewSonic G773	0.26mm	1280x1024	16.0"	30-70KHz	\$ 440
	ViewSonic GS771	0.27mm	1280x1024	16.0"	30-70KHz	\$ 450
	ViewSonic PS775	0.25mm	1600x1200	16.0"	30-95KHz	\$ 520
19"	ViewSonic M70	0.27mm	1280x1024	16.0"	30-70KHz	\$ 445
	ViewSonic PF775	0.25mm	1600x1200	16.0"	30-97KHz	\$ 540
	OPTIQUEST. V95	0.26mm	1600x1280	18.0"	30-95KHz	\$ 575
	OPTIQUEST. Q95	0.23mm	1600x1200	18.0"	30-86KHz	\$ 575
	ViewSonic E790	0.26mm	1600x1280	18.0"	30-95KHz	\$ 590
	ViewSonic GS790	0.26mm	1600x1280	18.0"	30-95KHz	\$ 670
21"	ViewSonic PS790	0.25mm	1600x1280	18.0"	30-95KHz	\$ 755
	ViewSonic PF790	0.25mm	1600x1200	18.0"	30-97KHz	\$ 795
	OPTIQUEST. Q115	0.26mm	1600x1280	19.6"	30-95KHz	\$1,095
	ViewSonic G810	0.25mm	1600x1200	20.0"	30-89KHz	\$1,160
	ViewSonic P810	0.25mm	1600x1200	20.0"	30-95KHz	\$1,290
	ViewSonic P815	0.25mm	1800x1440	20.0"	30-115KHz	\$1,355
LCD Panel	ViewSonic PT813	0.28mm	1600x1200	20.0"	30-107KHz	\$1,495
	ViewSonic P817	0.26mm	2048x1536	20.0"	30-137KHz	\$2,210
	OPTIQUEST. L700	0.30mm	1024x768	15.1"	31-61KHz	\$1,600
	ViewSonic VP140	0.30mm	1024x768	14.0"	30-61KHz	\$1,320
	ViewSonic VG150	0.30mm	1024x768	15.0"	30-62KHz	\$1,665
	ViewSonic VPD150	0.30mm	1024x768	15.0"	48-62KHz	\$1,665
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Personal computing's recent history

In 1969, Intel, a small maker of memory chips, was approached by a Japanese company to build a chipset for an electronic calculator. Instead of supplying a set of 12 chips as the customer requested, Intel engineers proposed putting all the chips' functions on a single integrated circuit.

By Jeff Evans

Intel engineer Marcian E. Hoff designed the Intel 4004 processor that same year, which combined many circuits and functions on one piece of silicon. Once they had delivered the product to the Japanese customer, Intel executives sat back and realized that they had just given away something that might be extremely valuable. As the Japanese company was in some economic difficulties, Intel negotiated to buy back all the rights to the 4004 chip and the integrated circuit concept, for the sum of \$60,000.

Computing gets personal

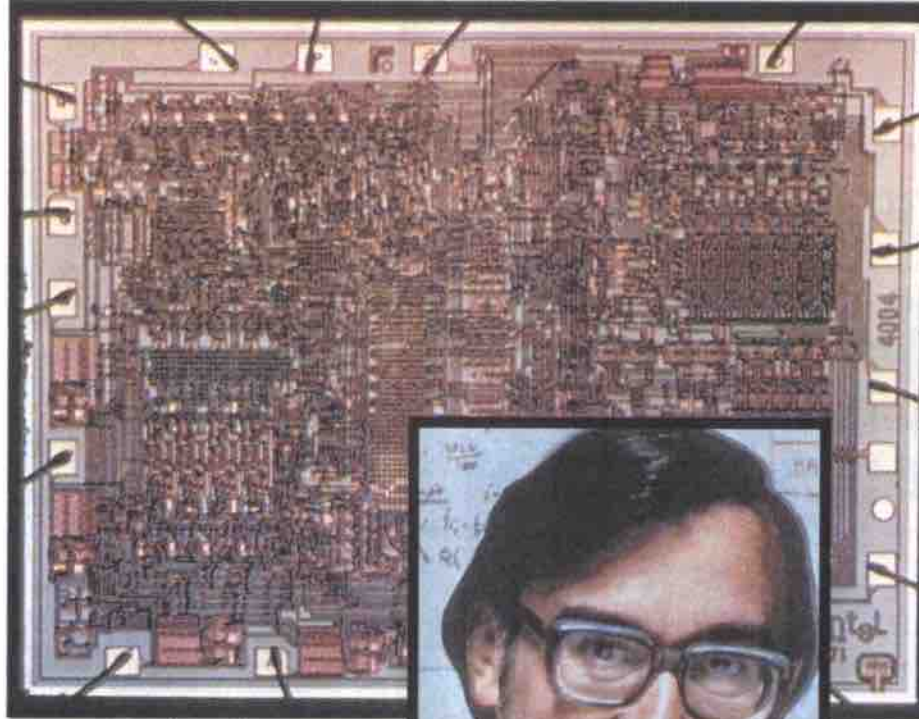
Rather than regard the integrated circuit as a deviation from its core business of building memory, Intel management had the foresight to see that the integrated circuit, the central processing unit for a potentially infinite range of computing devices, should become the focus of the company's efforts. In short order, Intel developed the 8008, then the 8080 chips, just in time to sell the 8080 to a little company called MITS, which wanted to make do-it-yourself computer kits for hobbyists.

Two rather geeky kids named Bill Gates and Paul Allen wrote software for the MITS Altair 8800 microcomputer, which had been launched in 1974. Also foreseeing the possibilities of personal computing, Gates and Allen started a company called Microsoft to supply software to the fledgling microcomputer market.

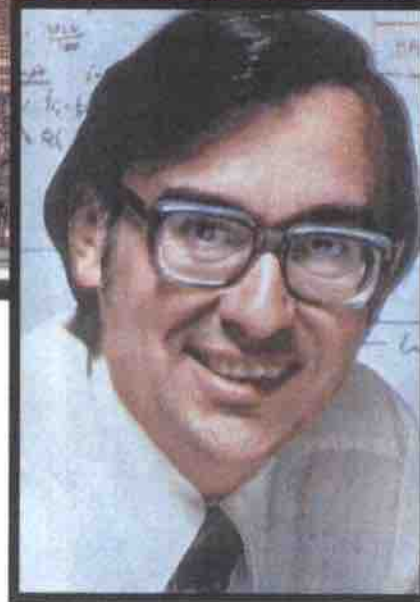
Around the same time, two other kids in California were selling "blue box" devices to allow users to steal telephone services. These two pranksters, Steve Jobs and Steve Wozniak, got out of that line of work before being arrested, and instead decided to build a personal computer circuit board, which they called the Apple I. In April 1976, the circuit boards went on sale in electronic Byte Shops, with the slogan, "Byte into an Apple." The rest, of course, is history. Demand for the circuit boards was so strong that Jobs and Wozniak released a fully assembled personal computer system, the Apple II. By 1978, they were even able to move Apple's headquarters from the garage to a real office.

Once a surprisingly vigorous market for personal computers showed itself, many companies jumped into the PC manufacturing game. Toronto-based Commodore Business Machines briefly marketed a KIM kit computer before releasing the Personal Electronic Transactor (PET) PC, followed by the VIC 20 and the Commodore 64. Texas Instruments developed the TI 99 and Tandy Radio Shack the TRS 80 PC, and a variety of other computers from Kaypro, Atari, Timex/Sinclair, Coleco, and others appeared at least briefly on the scene.

By the end of the 1970s, it was obvious that the personal computing market was a viable



Intel engineer Marcian E. Hoff and the 4004—the first processor to combine many circuits and functions on one piece of silicon.



one, and this attracted IBM's interest. Initially declaring that there might be a market for about 100,000 or so IBM PCs, IBM released its first personal computer. Based on a licensed version of Microsoft's MS DOS operating system, and an Intel 8088 processor, the IBM PC lent a blue chip stamp of approval to the PC market.

Also, by providing a quasi-standard for the personal computer industry ("IBM compatible") without owning either the operating system (Microsoft DOS) or the CPU (Intel 8080, 8088, 8286, etc.), IBM unwittingly made the IBM-compatible PC a viable mainstream product category, which it had no hope of controlling. Hundreds of IBM-compatible PC makers jumped into the market, and fairly quickly, a few major vendors including Compaq, Hewlett-Packard, Packard Bell, Dell and Gateway achieved the status of brand names.

The golden age of the PC

Between the launch of the IBM PC in 1991, and the rise of the World Wide Web by about 1996, was a period of happy chaos in the PC market. In spite of the simple fact that the Apple Macintosh, first released in 1984, was manifestly superior to the PC, Apple's insis-

tence on a monopoly over manufacturing Mac compatible computers meant that all the other PC makers in the world had to make something else, and for most of them, IBM compatible was the only game in town.

One of the worst things about the PC was that there really were no firm standards for basic items like graphics, sound, peripheral devices, networking or telecommunications. Adding any new hardware or software to a system was an "adventure." Corporations that were pressured to get PCs for their flexibility watched the total cost of ownership of these flaky things go through the roof due to down time, training, maintenance and integration difficulties.

The two companies that were benefiting most from the PC remained the two that had provided the key hardware and software components since the beginning: Microsoft and Intel. Over time, they used their influence, in subtle and not so subtle ways, to try to bring some order to the chaos of the PC. With plug and play, Microsoft took a big step forward in improving the user experience of adding new hardware to a PC. Intel, for its part, waged an endless diplomatic campaign across the industry, attempting to assemble alliances and set standards for improving the PC.

The semi-annual Intel Developer Forums (IDFs), currently held twice a year in Palm Springs, Calif., have become closer to true "Industry" Developer Forums, and Intel and thousands of other PC product developers get much better every year at agreeing to technology standards in advance of the release of new products. The result is that the PC is becoming a much more stable professional appliance, and less of a hobbyist's tinker toy.

The future of the PC

In the age of the Internet, any device that can hook onto a network is a Network Computer. This includes PCs with dial-up modems, cable modems, DSL modems, or Ethernet, Token Ring, or wireless networks. It also includes any other information tool that has Internet connectivity. Alternatives to the PC include handheld devices, such as the Palm line from 3Com, digital cell phones with text and graphics displays, and Windows CE devices of all shapes and sizes.

According to presentations at the most recent IDF in late August 1999, the PC industry has set broad goals for the evolution of the PC over the next few years. They include:

- **Instant on:** Going from power on to ready to use in less than 30 seconds in 2000, to in less than 10 seconds by 2001.
- **USB 2:** Forty times faster than the original universal serial bus, USB 2.0 approaches the FireWire (IEEE 1394) data transmission speed. This means USB 2.0 may find great favour with developers, for uses from small business and home networking, to video transfers.
- **Miniaturization:** The guts of a PC keep shrinking, to the point that the basic motherboard can fit in a slot in a monitor chassis, or be embedded in a car or a home appliance. This leads to the next area of probable innovation.
- **New form factors:** Intel showed PCs at IDF that were built into furniture (the ottoman PC), customized for certain demographic groups (the Barbie PC), and installed in appliances (the kitchen PC).

Computing to go

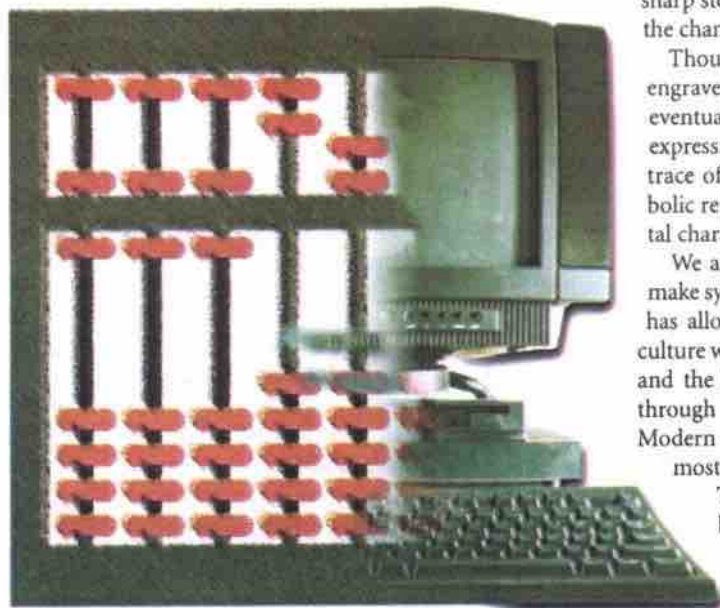
Both Microsoft chief executive, Gates, and Intel executives claim the personal computers of the future will be portable and personalized. The emphasis will be on computing that travels with the user, either in the form of portable devices, or a portable "personality," which allows the individual to automatically customize whatever connected computing device he or she comes in contact with.

At the Comdex Fall/99 conference held recently in Las Vegas, several computing trends were in evidence. For one, as Gates stated in his keynote address, our user experiences of the Internet will become more personal, with the face the Internet presents to us conforming to each user's wishes. For another, the age of dig-

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From Y1K to Y2K

A thousand years (give or take a few millennia) of computing



By Jeff Evans

Near the end of the last Ice Age, someone in what is now France stood under the clear winter sky night after night, looking at the moon. He or she took a piece of

sharp stone, and over the period of an entire month, scratched the changing shape of the moon's phases onto a piece of bone.

Thousands of years later, that bone with its carefully engraved record of the phases of the moon was unearthed, and eventually recognized for what it was—the earliest known expression of human astronomical observation. This ancient trace of mankind's obsession with time, counting, and symbolic representation of reality speaks of one of the fundamental characteristics of the human species.

We are the apes that count. The built-in human ability to make symbols that stand for time, things, beliefs and numbers, has allowed us to construct the intricate, interrelated global culture we live in today. For human beings, knowledge is power, and the knowledge systems that civilizations have developed through history have been central to their success or failure. Modern computing didn't spring out of nowhere. It is just the most recent expression of this basic aspect of being human.

This article will look at how computing came into being, mainly over the last millennium, from the year 1000, to the year 2000 (although to understand this period, we will also delve into prior civilizations).

It's all Greek (and Babylonian) to me

In the year 1000 AD (Y1K), the most technologically advanced civilization on earth was the Muslim Arab Abbasid Caliphate, with its capital city at Baghdad, in what is now Iraq. At its peak, the Caliphate ruled vast lands stretching from Spain to India.

Although by the year 1000 some parts of the Caliphate had become independent Islamic states, all parts of the Islamic world still shared strong cultural, religious, trading and technological links. The Muslim Arabs had not conquered primitive peoples and brought civilization to them. On the contrary, although much of Western Europe was still attempting to recover from the barbarian invasions that brought about the Dark Ages, the nations the Arabs conquered included many of the most ancient civilized cultures of the Middle East, North Africa, and Persia.

The victories of Muslim Arab imperialism in the sixth and seventh centuries A.D. had given the Arabs ownership of the rich traditions of astronomy, mathematics and computing of the Graeco-Roman, Babylonian, Egyptian and Persian cultures. Under brilliant rulers, such as Haroon Al Rashid, Arab universities were established and trade, science and economic growth flourished. By the year 1000, the technologies and arts of the conquered peoples had been synthesized into a distinct, unique Arab civilization.

Continued on page 35



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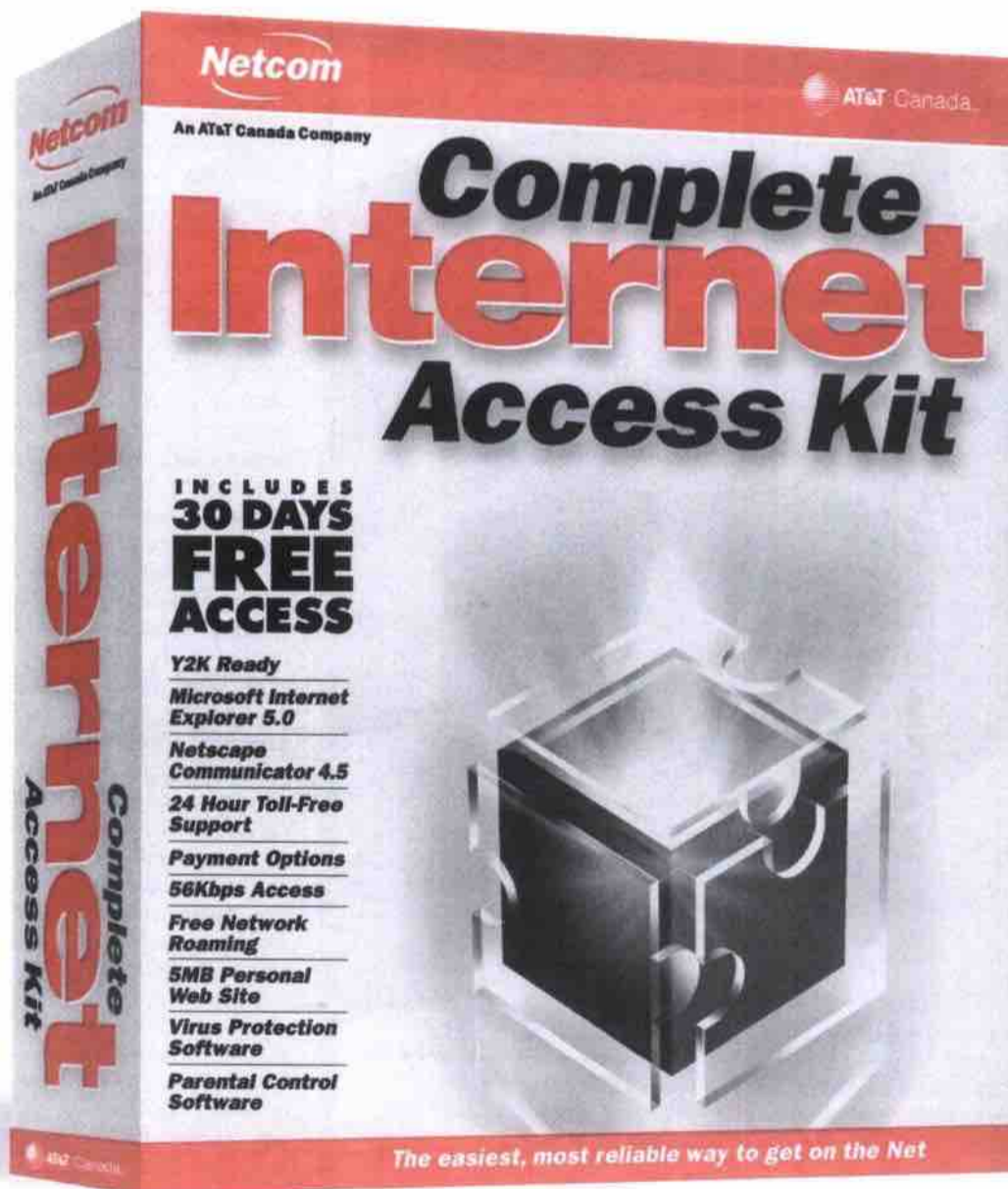
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Personal computing's recent history
Continued from page 19

ital gadgets is upon us: as the form factor of the PC shrinks and mutates into many forms, tiny connected gadgets will be developed to meet particular needs.

Hence, in the keynote by Sony's chief executive, the presentation seemed to consist of one amazing widget after another being pulled out of a pocket and demonstrated. Which widget is

which? Try them all, if they eventually only cost a few dollars each. But, confronted with the dizzying rate of change in computing, a question that begs to be answered is: where is it all going?

Y3K and the nanoverse

In an article in the September 1999 special issue of *Scientific American*, Ray Kurzweil, one of the pioneers of human/machine interface

technology (he led the development of the first commercial computer speech-recognition program), makes some startling predictions about where computing will go in our lifetime.

Kurzweil's logic is simple: computer technology has surprised its own creators over the past 50 years by increasing in power exponentially. Against expectations, it has not hit any absolute barriers, and with the almost unlimited research resources now being devoted to

high technology, there is no reason to assume any imminent slowdown in the development of either digital or biological technologies.

Looking past the wearable, always-connected, instant-on personalized PC gadgets of the next five years, Kurzweil makes some disturbing predictions.

First: "Sometime early in the next century, the intelligence of machines will exceed that of humans."

Second: "Once computers achieve a level of intelligence comparable to that of humans, they will necessarily soar past it... Ultimately, non-biological entities will master not only the sum total of their own knowledge, but all of ours [humanity's] as well."

Third: "As this happens, there will no longer be a clear distinction between human and machine."

Fourth: "Humans have beaten evolution. We are creating intelligent entities in considerably less time than it took the evolutionary process that created us. Human intelligence—a product of evolution—has transcended it. So, too, the intelligence that we are now creating in computers will soon exceed the intelligence of its creators."

Kurzweil is mainstreaming a concept that has generally been property of a fringe among technology commentators, the concept of "post humanism." Put simply, the combination of computer technology and biotechnology, extrapolated only a few generations into the future, results in a vision of a new form of life. As articulated over the last quarter century by Hans Moravec, a truly scary person, the post-humanist world view seems to take a weird kind of pleasure from the possibility that humans will replace themselves with a kind of disembodied, perfect-world brain.

According to both Kurzweil and Moravec, the nanotechnologies that are being created for the next millennium—Y3K—combine control of matter and energy at the fundamental atomic particle level with the computational power to create incredibly complete simulations of reality.

At some point, when all of the gene sequences in a human being's genetic structure have been identified and analyzed by some future computer, that computer could run simulations of that "person's" life as a sort of super detailed computer game.

Similarly, if every atom of a human brain can be identified by some computational system, then presumably, that computer could recreate a perfect replica of a human consciousness inside itself.

Or could it?
Scientific American went out on a limb to publish Kurzweil's speculations, because whether he is right or not, computers have given humanity capabilities to manipulate information, energy, and matter in ways our species never has before. Computers may turn out to be more limited than the post humanists believe, but nobody knows what those limits may be. In our rush to the brave new world of the future, we'd better start thinking about what we don't want technology to do to us, rather than merely what we'd like it to do for us. □

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A short history of computers

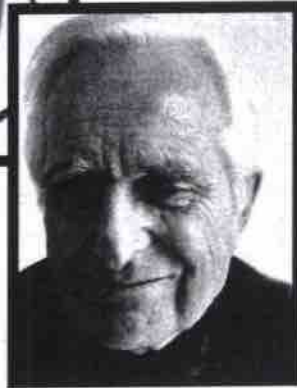
By Nathan Segal

Look around you. Computers seem omnipresent, occupying so many areas of our lives. The most obvious is probably the personal computer you have at home or at work, but computers can be found almost everywhere: from the chip that controls func-

edged as the birthplace of the abacus (though earlier examples of this counting device are credited to the Babylonians), one of many examples of an analogue computer. Over the millennia, computers changed little until the last few hundred years—an era that ushered in some of the most of the important advances in our modern age.



Doug Engelbart and the first computer mouse.



tions in your car to the chips in mundane devices like your toaster. Computers have become a part of our busy lives to the degree that they are easily taken for granted.

Where did they come from? Some have suggested that this technology was stolen from aliens, but the truth is actually much closer to home.

To properly appreciate the origins of the computer, one has to go back some 5,000 years to ancient China, which is generally acknowl-

200 years ago: thank Jacquard

In 1801, Joseph Marie Jacquard invented the Jacquard loom, a machine that used punch cards to create patterns with fabric.

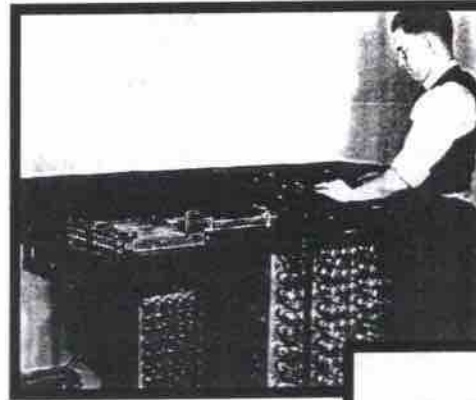
In 1833, Charles Babbage, designed the Difference Engine (which he never completed) and the Analytical Engine. Both were analogue machines, but the Analytical Engine used memory, as well.

A major advance in computing took place in 1880, when Herman Hollerith, an American inventor, adapted the Jacquard loom and Babbage's designs, creating a machine that would punch cards using a mechanical process. Data was actually stored on the cards. A single punch on the card indicated a single number, while grouping of two punches denoted a letter. With this method, up to 80 variations could be generated. Hollerith won a contract to compute the U.S. Census. Using previous methods, the task was estimated to take 10 years, but

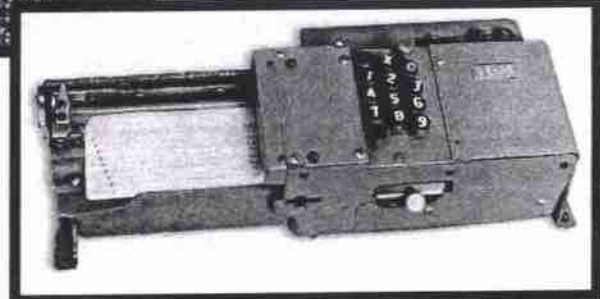
with Hollerith's machine, it took only six weeks.

100 years ago: the seeds of IBM

In the wake of his success with the U.S. Census, Hollerith founded the Tabulating Machine



Clifford Berry, an Iowa State University graduate student, constructs the computer designed by his professor John Atanasoff. Data was entered into the Atanasoff-Berry Computer on cards marked by IBM's first card punch.



Company in 1896. It eventually joined two other companies to become the Calculating-Tabulating-Recording (C-T-R) company in 1914, and in 1924, it was renamed International Business Machines (IBM).

Punch cards were a central part of computing in the 1960s and 1970s. For those of us old enough to remember, the utility companies used to mail punch cards that served as bills to consumers.

The 1930s ushered in the Atanasoff-Berry Computer, now known as the ABC, which was developed at Iowa State University from 1936 to 1942. It contained the electronic arithmetic unit and regenerative, cyclic memory—concepts that would later appear in more modern computers. In 1937 George Stibitz was working at the Bell Telephone Laboratories where he constructed a relay-driven arithmetic unit. From there, he built several varieties of relay machines that were eventually used in World War II. In 1939, Stibitz designed an electromagnetic relay calculator that solved the com-

putational problem of complex numbers. Named the Complex Number Calculator, it was used remotely over telephone lines.

With the beginning of World War II, computers became an important strategic weapon. In 1941, Konrad Zuse, a German engineer, had developed a computer called the Z3 to design airplanes and missiles (the first of his Z machines was developed in 1936). The Allies spend much of the early part of the war trying to develop a comput-

er to decrypt German messages. In 1943, the British finally created such a device, which was dubbed the Colossus. The Allies built several more machines to assist in their D-Day planning. The systems were available in time for the Normandy landings, making a significant contribution to the defeat of Nazi Germany. Outside of the war, the Colossus contributed little to the computer industry for two reasons: it was only designed to decrypt secret messages, and its existence remained secret for many decades after the war.

In 1944, Howard H. Aiken, a Harvard engineer working with IBM, developed a completely electronic calculator. The purpose of the machine was to compute ballistic charts for the navy and mathematical tables, much like Babbage's Difference Engine. The machine was huge—half the length of a football field with roughly 800 km (500 miles) of wiring. The Harvard-IBM Automatic Sequence Controlled Calculator Mark I or ASCC, used

Continued on page 30

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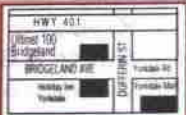
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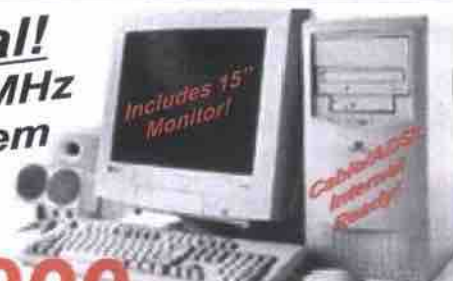
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Information technology timeline

BC

- 15,000-8,000 Lunar phases engraved on bone.
- 4,000 Earliest writing, cuneiform, Sumeria.
- 3,000-2,000 Astronomical-religious sites, e.g. Stonehenge.
- 3,000 Early Abacus, Babylonia.
- 2,500 Babylonian numbering system, astronomy.
- 1,800 Algorithms used by Babylonians.
- 1,500 Egyptian counting dots.
- 1,000-500 Bead and wire abacus in Egypt, China.
- 485 Greek counting pebbles.
- 450 Abacus used in Greece.
- 300 Hindu numeral system (basis for modern numerals).

AD

- 105 Block printing in Graeco-Roman Cairo.
- 800 Arab numbering system (largely influenced by Hindu system).
- 1000 Pope Sylvester II promotes improvements to abacus.
- 1045 Moveable ceramic type in China invented by Pi Scheng, a printer.
- 1202 Leonardo Fibonacci brings Arab/Hindu numeral system to Europe.
- 1400 Wood-block printing in Europe.
- 1440-1456 Johann Gutenberg develops moveable metal type press.
- 1539 Moveable metal-type printing press in Spanish Mexico.
- 1614 John Napier invents system of algorithms and Napier's Bones rod calculator.
- 1620 Slide rule invented by Edmund Gunter.
- 1623 Wilhelm Schickard invents calculator clock/adding machine.
- 1632 Rev. William Oughtred's improved slide rule and circular rule.
- 1642 Blaise Pascal's Pascaline, or Arithmatique, mechanical calculating machine.
- 1646 Word "computer" coined by Thomas Browne, to describe someone who calculates time using calendars.
- 1671 Gottfried von Leibnitz invents Liebnitz Wheel to do multiplication, division and extraction of square roots.
- 1786 Luigi Galvani's experiments in electrophysiology indicate electricity plays a role in living nervous systems.
- 1801 Joseph Marie Jacquard's "programmable" punch card machine.
- 1820 Charles Xavier Thomas invents practical, mass-produced mechanical calculator.
- 1820 Johann Seebeck discovers thermoelectricity principle whereby heat can be used to generate electrical current.
- 1833 Charles Babbage's Difference Engine, a workable mechanical computer (never completed).
- 1834 Ada Byron, Countess of Lovelace, perhaps the first woman computer programmer, writes account of the Difference Engine.
- 1837 Morse Code developed, becomes standard for transmitting text over wires.
- 1850 Mechanical keyboard adding machine.
- 1854 George Boole invents system of representing numbers with zeros and ones, referred to as Boolean algebra, and basis for binary information languages.
- 1872 Thomas Edison's electric typewriter.
- 1876 Alexander Graham Bell invents the telephone.
- 1879 Thomas Edison invents workable electric light.
- 1880 Herman Hollerith invents and uses tabulating machine to process U.S. census data. His company eventually becomes IBM.
- 1884 Paul Nipkow's mechanical scanning disk, a forerunner of video.
- 1888 Invention of photoelectric cells, which generate electricity from light.
- 1889 Automatic telephone switch makes telephone networks feasible.
- 1904 Fleming Valve vacuum tube invented.



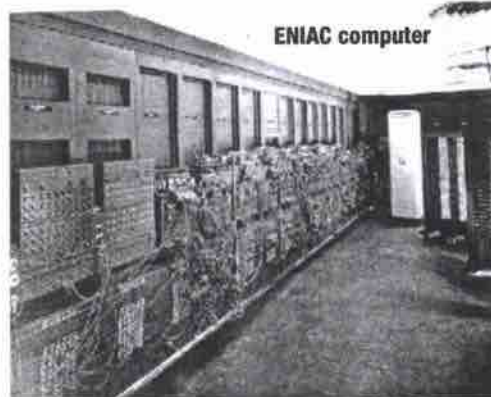
Ada Byron

1912

- National Cash Register (NCR) controls 95 percent of world cash register market, is prosecuted by U.S. government on anti-trust charges, executives found guilty.
- 1915 Edward Hugh Hebern's coding machine, for encrypting messages.
- 1919 Alexander Koch's encryption machine, adapted by Germans for the Enigma coding system.
- 1921 The word "robot," meaning "slave" in Czech, used in play, *Rossum's Universal Robots*, by Karel Capek.
- 1925 J. Logie Baird transmits television image.
- 1926 Electromechanical analogue computer Integraph by Dr. Vannevar Bush.
- 1926 Derek Lehmer's "number-sieve" analyzes 3,000 numbers per second to find prime numbers.
- 1928 Vladimir Zworykin invents cathode ray tube, precursor to TV and monitor screens.
- 1928 First TV station, WGY in Schenectady, N.Y.
- 1930 Norbert Weiner promotes concept of digital computers.
- 1932 U.S. government files anti-trust suit against IBM.
- 1933 Homer Dudley invents Voder electronic talking machine.
- 1936 Alan Turing writes *On Computable Numbers*, develops concept of a computer called the Turing Machine.
- 1936 Konrad Zuse develops Z machine computers in Nazi Germany.
- 1939-1945 Bletchley Park facility does research into breaking German encryption system, develops computing devices for code breaking. Plays major part in winning World War II.
- 1940 Norbert Weiner does research into study of human and machine communications and control systems, invents term "cybernetics" to describe his work.
- 1942 John Atanasoff's electronic digital computer.
- 1943 Colossus digital computer (for World War II code breaking).
- 1945 Grace Hopper coins word "bug" for a problem in a computer system (in this first instance, a dead moth in a computer cabinet).
- 1946 The word "bit" is used as an abbreviation for "binary digit," a single binary number sequence.
- 1947 Transistor invented at Bell Labs (enabling replacement of vacuum tubes).
- 1948 ENIAC computer: begun in 1943 for artillery ballistic research, weighed 30 tons and contained 18,000 vacuum tubes.
- 1948 IBM 604 electronic calculator.
- 1949 First chess playing computer, by Claude Shannon of MIT.
- 1951 Univac 1 computer developed for general business computing.
- 1952 U.S. government anti-trust suit against IBM (over 90 percent market share in tabulating machines).
- 1954 Fortran programming language developed.
- 1956 GENIAC, an "electrical brain construction kit" computer sold



Alan Turing



ENIAC computer

1956

- John McCarthy coins the term "artificial intelligence."
- 1957 Digital Equipment Corporation (DEC) founded.
- 1957 First Earth orbiting satellite, Sputnik, launched by Soviet Union.
- 1958 Jean Hoerni invents "planar process" for constructing silicon transistors.
- Integrated circuits from Fairchild.
- 1961 Time-sharing networked computing.
- 1961 First communications satellites launched into geo-synchronous orbit: eventually become a global communications network.
- 1962 Paul Baran of Rand Corp. proposes a packet-switched network that could survive a nuclear war: the basis of the ARPANET, and eventually, the Internet.
- 1962 First practical industrial robots, called "unimates."
- 1965 DEC PDP-8, minicomputer for mainstream business market.
- 1968 Contract to develop ARPANET, the precursor of the Internet, awarded to BBN.
- 1972 First handheld calculators, from Hewlett-Packard and Texas Instruments.
- 1972 First email program developed by Ray Tomlinson of BBN for use on ARPANET.
- 1974 First personal computer prototypes.
- 1974 First mention of the term Internet, in a paper by Vint Cerf and Bob Kahn.
- 1974 Bill Gates III and Paul Allen start Microsoft Corp.
- 1975 First personal computer kits commercially available, MITS Altair and KIM.
- 1976 Intel 8748 "computer on a chip."
- 1974 Steve Jobs and Steve Wozniak form Apple Computer Company, release Apple 1 computer.
- 1977 Apple II, first PC with colour graphics, \$1,298.
- 1977 TRS-80 microcomputer, 8KB of RAM, \$600.
- 1977 Commodore, a company founded in Toronto, releases Personal Electronic Transactor (PET) computer.
- CompuServe online service launched.
- 1979 USENET, a decentralized news group network, created by grad student Steve Bellovin and others.
- 1981 IBM PC launched, 64KB of RAM, 200,000 processes per second, \$2,665.
- 1982 U.S. government anti-trust suit against IBM withdrawn after 13 years of litigation.
- 1984 Apple introduces Macintosh computer with 1984 Super Bowl commercial.
- 1985 The term "vapourware" is invented to describe the common practice of talking about and promoting non-existent computer products.
- 1986 Microsoft goes public: stock price rises steadily, eventually makes Bill Gates III world's richest man.
- 1988 Robert Morris, Jr. sends a "worm" onto the Internet, which infects more than 6,000 computers. Morris is tracked down, tried, convicted and sentenced to probation, community service and a fine.
- 1990 Tim Berners-Lee and others at the CERN research facility in Geneva develop HTML, a multimedia hypertext authoring language based on SGML, for communicating over a network with other researchers.
- 1992 The World Wide Web, invented by Berners-Lee and others, is freely released by CERN to the world, and becomes the technology standard that allows the Web to become a global communications medium.
- 1993 Marc Andreessen and others develop Mosaic, a graphical user interface browser for the World Wide Web.
- 1994 Pizza Hut begins selling pizzas on the Internet via its Web page.
- 1994 Netscape, founded in April 1994, releases Netscape Navigator server in December. An early example of Internet Speed Navigator Personal Edition browser is released in June 1995.
- 1997-2007 U.S. government investigates Microsoft Corp. for alleged anti-trust violations, begins prosecution.

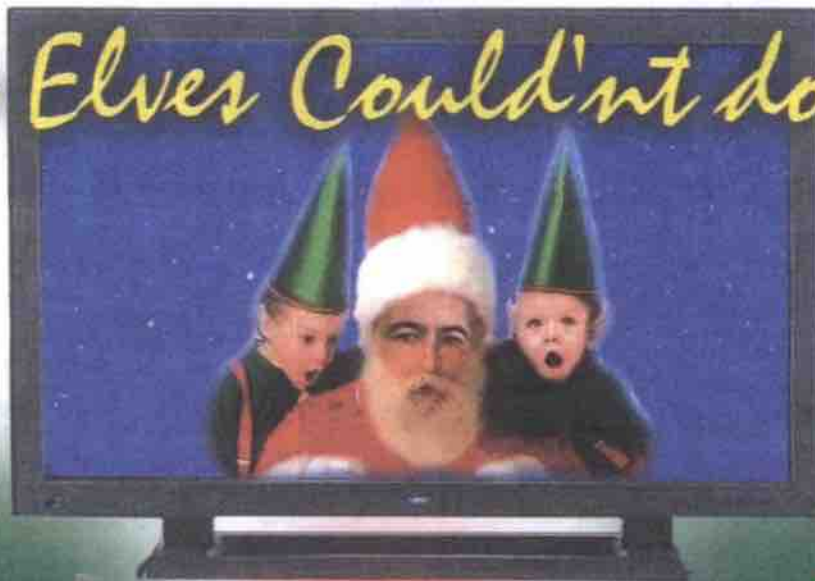
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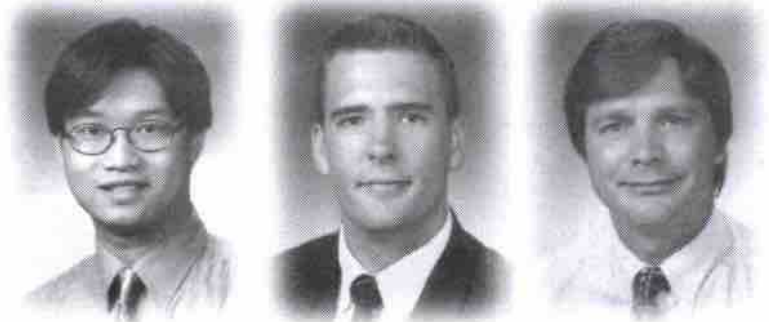
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NF3000	847650U	P-III 500	64/768MB	0 / 72.8GB	10/100int	UW-SCSI	Tower	\$2269
NF3000	847651U	P-III 500	64/768MB	9.1 / 72.8GB	10/100int	UW-SCSI	Tower	\$2909
NF3000	847661U	P-III 550	64/768MB	9.1 / 72.8GB	10/100int	UW-SCSI	Tower	\$3289
NF3000	847671U	P-III 600	64/768MB	9.1 / 72.8GB	10/100int	UW-SCSI	Tower	\$3969

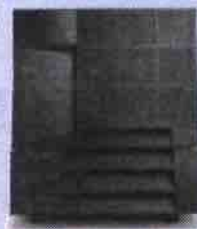
NF5000	865931Y	P-III 450	64/2048MB	0GB/91GB	10/100int	Dual UW	Tower	\$3189
NF5000	865941Y	P-III500	128/2048MB	0GB/91GB	10/100int	Dual UW	Tower	\$3319
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NF5500	866062U	P-III500	256/1024MB	0GB/109GB	10/100int	D-UW-RAID	Tower	\$7379

NF5600	866411Y	P-III533(133)	128/4096MB	0/109GB	10/100int	D-U2W-LVD	Tower	\$5319
NF5600	866421U	P-III600(133)	256/1024MB	0/109GB	10/100int	D-U2W-LVD	Tower	\$6689
NF5600	866431U	P-III667(133)	256/1024MB	0/109GB	10/100int	D-U2W-LVD	Tower	\$7609

Model	Part #	Processor	Memory	Ethernet	Controller	Form	Price
NF7000	86806RY	P-IIIeon500(512K)	256/8192MB	10/100int	D-UW-RAID	Rack	\$13,939
NF7000	86808RY	P-IIIeon500(2048K)	256/8192MB	10/100int	D-UW-RAID	Rack	\$17,719
NF8500	86816RY	P-IIIeon550(2048K)	512/16384MB	10/100int	D-U2W-LVD	Rack	\$39,239

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Frontier Upgradable Notebook

Model	CPU	Memory	HardDrive	CD-ROM	Screen Size	Modem	Windows	Price
2100P-333	Intel Pentium III 333	64MB SDRAM	6.0GB	24Xmax	14.1" TFT	56K V.90	Win98	\$2978
3100C-400	Intel Celeron 400	64MB SDRAM	6.0GB	24Xmax	14.1" TFT	56K V.90	Win98	\$2715
5100C-366	Intel Celeron 366	64MB SDRAM	6.0GB	24Xmax	12.1" TFT	56K V.90	Win98	\$2215

UPGRADE OPTIONS

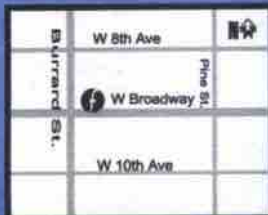
CPU Celeron 400/433								
Pentium III 366/400								+\$80/140
Hard Drive 6.0/10GB								+\$240/490
Memory 64/64x2/128MB								+\$140/370
								+\$60/ 160 / 360



TOSHIBA Model	CPU	Memory	HardDrive	CD-ROM	Screen Size	Modem	Price
Satellite 2100CDT	Intel AMDK6-4400	32MNSDRAM	4.3GB	24X CD	12.1" TFT	56K V.90	\$2599
Satellite 4090XDVD	Intel Celeron 400	64MB/SDRAM	6.4GB	2xDVD	14.1" TFT	56K V.90	\$3585
TECRA 8000	Intel Pentium III 333	64MB/SDRAM	6.4GB	24X CD	13.3" TFT	56K V.90	\$4219
TECRA 8000	Intel Pentium III 366	64MB/SDRAM	9.31GB	2xCD	14.1" TFT	56K V.90	\$4652
Tecra 8000	Intel Pentium III 400	128MB/SDRAM	14.1GB	2X DVD	14.1" TFT	N/A	\$5859

IBM THINKPADS Model	CPU	Memory	HardDrive	CD-ROM	Screen Size	Modem	Price
I-series I-1420	Intel Celeron 433	32/256SDRAM	4.8GB(ATA-4)	24Xmax	13.1"800x600 TFT	56K V.90	\$2289
I-series I-1460	Intel Celeron 433	64/256SDRAM	4.8GB(ATA-3)	2X DVD	14.1"1024x768TFT	56K V.90	\$3198
I-series I-1540	Intel Celeron 433	64/256SDRAM	4.8GB(ATA-3)	24XmaxD	12.1"1024x768TFT	56K V.90	\$2769
390E-26EDU	Intel Pentium III 333	64/256SDRAM	6.4GB(ATA-3)	24Xmax	14.1"1024x768TFT	56K V.90	\$3969
600E	Intel Pentium III 300	64/256SDRAM	5.1GB(ATA-3)	24Xmax	13.3"1024x768TFT	56K V.90	\$5979
770Z	Intel Pentium III 366	128/256SDRAM	14.1GB(ATA-3)	24Xmax	14.1"1024x768TFT	56K V.90	\$6789

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ASUS P3W / P3W-E PentiumIII 810 Video, AGP, ATX	\$179 / 209
ASUS P2-99 PentiumIII Celeron, AGP, ATX / AT	\$149
ASUS P3B-F1/F PentiumIII 440BX, AGP, ATX	\$198
ASUS P2B-D PentiumIII 440BX, AGP, ATX	\$388
ASUS P2B-DS PentiumIII 440BX, SCSI AGP, ATX	\$665
Abit BH6 / Bf6 PentiumIII 440BX AGP, ATX	\$159 / 188
Abit BM6 BM6 Celeron Socket 370 AGP, ATX	\$172
Abit BX6-II PentiumIII 440BX ATX	\$198
Abit BE PentiumIII 440BX ATX, Ultra66	\$199
Abit BP Dual Socket 370 440BX ATX, Ultra66	\$208
Elite P6SET-ML PIV/PIII, Cel, Video, 3DSound, 56K/NI	\$138
Elite P6BAT-A+ PIV/PIII, Cel, PC133, 3DSound, Ultra DMA66	\$128
ASUS P5A(A) / P5AB Super 7, AMD K6-2, (Sound)ATX / AT\$142 / 152 / \$135	\$142
ASUS P5-99VM Sis530 MicroATX Ultra 66	\$185
ASUS P5S-B Sis530 U66 MB w/AGPSound AT	\$185
ASUS P5S-VM Pentium III Super 7, Video ATX	\$128
ASUS P3B11394 IEEE Link Layer Controller ATX	\$288
ASUS K7M Athlon AMD Slot	\$258

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Maxtor 91741U 17.2GB / 92040U 20.4GB Ultra 66 2MB	\$215 / \$205
Maxtor 92720U 27.2GB / 92360U 36.0GB Ultra 66 2MB	\$335 / \$438
Maxtor 91024U 10.2GB / 92048U 20.2GB Ultra 66 2MB (7200)	\$218 / \$319
IBM Deskstar 20.0GB Ultra ATA (5400)	\$286
IBM Deskstar 9.1GB / 13.5GB Ultra ATA (7200)	\$185 / 206
IBM Deskstar 20.0GB / 34.5GB Ultra ATA (7200)	\$308 / \$15
Fujitsu MPC3043 4.3GB Ultra ATA (5400 rpm)	\$145
Fujitsu MPC3084 8.4GB Ultra ATA (5400 rpm)	\$168
Quantum Fireball CX 10.0GB / 13.2GB / 20.5GB (5400 rpm)	\$179 / 199 / 299
Quantum Fireball KA 9.4GB / 13.2GB / 18.4GB (7200 rpm)	\$208 / 236 / 316

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Seagate ST150176LW 50GB Ultra-2W ((Cheetah)	\$1488
Seagate ST318203LW 18GB Ultra-2W ((Cheetah)	\$1048
Seagate ST318275LW 18GB Ultra-2W ((Barracuda)	\$788
Quantum Atlas IV 9.1GB / Atlas IV 18.2GB U2W (7200rpm)	\$440 / 780
Quantum Atlas IV 9.1GB / Atlas IV 18.2GB U2W (10,000rpm)	\$570 / 1080
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IBM Ultrastar 9.1GB 39130 7,200rpm	\$385

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HP SureStore CD-Writer Plus 9210 SCSI 6R/4W Int.w/SW / Ext	\$399 / \$635
Plexor Writer PX-R820 8/20 SCSI Int. / Ext. (Retail)	\$510 / 615
Yamaha CRW6416S 16R/6X/4RW SCSI Int. (OEM) / (w/Software)	\$299 / \$358
Sony CRX1207 24X/4X/4X IDE Int. (OEM)w/ Software	\$279
Ricoh 24X/6X/4X IDE Int. (OEM)w/software	\$279

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Matrox Millennium G400 16MB / G400 32M Dual Display	\$199 / 278
Matrox Millennium G400 Max Dual Display	\$334
Matrox G400-TV New	\$Call
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3DFx AGP Voodoo III 3500 16MB TVTuner (Retail)	\$355

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3Com-USR V90 56k PCI FaxModem (OEM)	\$65
3Com-USR V90 56k ISA FaxModem (OEM)	\$98
3Com-USR V90 56k ISA Voice FaxModem (OEM)	\$109
3Com-USR V90 56k FaxModem Ext. (Retail)	\$198
3Com-USR PCMCIA 3CCFEM56B 56K Modem (Retail)	\$299
3Com-USR PCMCIA 3CCFEM56B 56K + 10/100 Lan	\$445
Aepion PCI / ISA 56k V90 Voice Fax Modem (Retail)	\$58 / 79
Xircor CreditCard (PCMCIA) 56K Modem (Retail)	\$199
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Epson DeskJet Stylus 440 720 dpi (Windows Only)	\$148
Epson DeskJet Stylus 660 / 740 Color 1440 dpi	\$198 / 299
Epson Stylus Photo 750 720x720	\$385
Epson Stylus 900 / 900N	\$588 / 878
HP DeskJet 810C / 830C / 985C Color	\$229 / 299 / 445
HP DeskJet 2000C / 2000CN Professional	\$735 / 1298
HP LaserJet 1100 600dpi 8ppm 2MB	\$578
HP LaserJet 2100 600dpi 10ppm 4MB	\$988
HP 4050 4MB / 4050N 1200dpi 17ppm 8MB	\$1689 / \$2198
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Agfa Snapscan 1236S 1200dpi Flatbed	\$298
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Visioneer 7600 600x1200 dpi, 36-bit Parallel	\$225
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Creative PC Works Fourpoint surround FPS1000	\$138
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Altec Lansing ACS44 5 Speaker w/Subwoofer	\$136
Altec Lansing ACS45.2 PowerCube System w/Subwoofer	\$199
Altec Lansing ACS44 PowerCube System w/Subwoofer	\$79
Micromedia M-9000 Multimedia Subwoofer System	\$69
Micromedia M-8100 Multimedia Subwoofer System	\$69
Micromedia M-4100 2way Speaker Systems	\$55
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SoundBlaster PCI 128 bit PnP (OEM)	\$58
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Aopen CD-940E 40X / CD-948E 48X CD ROM	\$75 / 89
Creative 48X CD / 52X CD ROM	\$68 / 83
Toshiba XM6502B 40X EIDE Int.	\$82
Pioneer DVD 10X DVD (Drive Only)	\$148
Sony DDU220E06 DVD 6X/32X IDE Int. (Drive Only)	\$119
Hitachi GD2500 6X DVD IDE Int. (Drive Only)	\$109
Toshiba M1202 DVD-3 IDE Int. (Drive Only)	\$128
Toshiba XM6402 40X CD-ROM SCSI Int.	\$155
Plexor Ultraplex Wide SCSI Int.	\$189
External Case for CD-ROM SCSI / IDE	\$78 / 98

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Optique Q95 19" 1280x 1024 .23mm (Horizontal)	\$545
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Optique V95 19" 1600x1280 .26mm	\$582
ViewSonic E771 17" / E773 .27mm	\$328 / \$425
Viewsonic GF775 17" 1600 x 1200 .24mm Flat	\$515
Viewsonic GS790 19" 1600 x 1200 .26mm	\$689
Viewsonic PF775 17" .25mm PerfectFlat (New)	\$555
Viewsonic PF790 19" .25mm PerfectFlat (New)	\$798
ViewSonic PS790 19" .25mm	\$740
Viewsonic VP150 15 inch LCD Monitor	\$1668
Sony Multiscan CPD-110GS 15" 1280 x 1024 .25mm	\$345
Sony Multiscan CPD-210GS 17" 1280 x 1024 .25mm (Demo)	\$390
Sony Multiscan CPD-210GS 17" 1280 x 1024 .25mm	\$498
Sony Multiscan CPD-E200 17" 1600 x 1200 .24mm	\$599
Sony Multiscan CPD-G200 17" 1600 x 1200 .24mm	\$710
Sony Multiscan CPD-G400 19" 1800 x 1440 .24mm	\$1634
Sony Multiscan GDM-F400 19" 1600 x 1200 .22mm	\$1545
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Samsung Syncmaster 700P+ 17" 1600 x 1200 .26mm	\$648
Samsung Syncmaster 1000P 21" 1600 x 1200 .25	\$1488
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Samsung LCD 530TFT 15 inch LCD Monitor	\$1680

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3Com Fast Etherlink PCI 3C980-TX 10/100BT (For Server)	\$234
D-Link DE-530TX PCI Fast Ethernet 10/100MB RJ-45	\$38
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Aopen 5 Port 10BT Hub	\$49
D-Link DE-805TP 5 Port / DE-809TC or 809TC 9 Port Hub	\$68 / 78
D-Link DE-812TP 12 Port / DE-816TP 16 Port Hub	\$198 / 238
Intel InBusiness Hub SH10T5 5-Port / SH10T8 8-Port	\$ 72 / \$88

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3Com OfficeConnect TP400 3C16723 4Port 100Base-TX	\$ 160
3Com OfficeConnect TP800 3C16722 8Port 100Base-TX	\$ 239
3Com OfficeConnect TP1200 3C16721 12Port 100Base-TX	\$ 404
3Com SuperStack II 3C16610 Dual Speed Hub 500 12 Port	\$ 955
3Com SuperStack II 3C16611 Dual Speed Hub 500 24 Port	\$1310
D-Link DSH-5 5 Port Hub 10/100MB Dual Speed	\$158
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D-Link DSH-16 16 Port Hub 10/100MB Dual Speed	\$506
LinkSys EtherFast 10/100MB Auto Sensing 5 Port Hub	\$145

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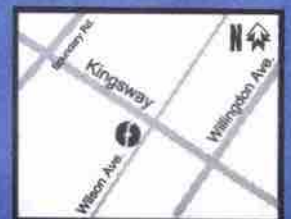
3Com/Megahertz PCMCIA 3CXFE575BT 10/100 CardBus	\$210
3Com/Megahertz PCMCIA 3CCFEM56B 10/100LAN +56K Modem	\$445
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D-Link PCMCIA DFE-660TX 56k & Ethernet 10MBLAN	\$299
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A short history of computers

Continued from page 24

electromagnetic signals to move mechanical parts. The machine could perform basic arithmetic and more complex equations. There were no stored programs onboard. Instead, instructions were fed into the machine by a paper tape.

In the wake of the Mark I, the ENIAC (Electronic Numerical Integrator and

Computer) came into being, the result of a partnership between the University of Pennsylvania and the U.S. government. While the ENIAC was 1,000 times faster than the Mark I, it consumed 160 kilowatts of power, enough energy for a small city. The ENIAC was an enormous piece of equipment, with 5,000,000 soldered joints, 70,000 resistors, and 18,000 vacuum tubes.

In 1945, John von Neumann, created the

EDVAC (Electronic Discrete Variable Automatic Computer). This computer could hold a stored program along with data. With his innovations, the computer could be paused at any time, then resumed, picking up where it left off. This offered more flexibility with programming. Another important innovation was the central processing unit (CPU), which funneled all computer functions through a single area of the machine. By 1951, this culminated

in the production of the Univac I, one of the first commercially available computers. A claim to fame for the Univac was predicting that Dwight D. Eisenhower would win the 1952 U.S. presidential election.

50 years ago: the rise of transistors

In 1948, U.S. researchers John Bardeen and Walter H. Brattain took out a patent for a transistor. William B. Shockley applied for a patent for the transistor effect and a transistor amplifier. In 1951, semiconductors became commercially available. By 1955, transistors were being produced in large quantities quickly replacing nearly all vacuum tubes. In 1962, semiconductor transistors were reduced to the size of a grain of salt.

In 1958, Jack Kilby, an engineer with Texas Instruments, invented the basic integrated circuit. Robert Noyce improved upon it, inventing and patenting a method to interconnect the components on a chip.

After the creation of integrated circuits, came the challenge to miniaturize them further. This went through three main steps. The first, LSI (large scale integration) made it possible to fit hundreds of components onto a single chip. VLSI (very large scale integration) came next, fitting thousands of components onto a chip. Finally, ULSI (ultra large scale integration) made it possible to fit millions of components onto a single chip. As the chips became smaller, they also became faster, more flexible, and cheaper.

During the 1960s, computers were built from solid state components, utilizing transistors and replacing vacuum tubes. During this time, the IBM 1401 was produced. The 1401 was an important milestone, because it contained all the components one would find in a present day computer.

An important feature of these computers was that they stored programs and languages. This made it possible to instruct the computer and easy to replace or update these instructions as necessary. One task could be for number crunching, while another would be for payroll computations. FORTRAN (Formula Translator) and COBOL (Common Business-Oriented Language) became the most common languages, making it easier to program a computer, and replacing the older method of using machine code.

The origin of the Y2K "bug"

What we now call the Y2K "bug" (essentially a two-digit date field, which, when it rolls over at the stroke of midnight on New Year's Eve, can be interpreted by a computer as 1900 instead of 2000) began with the creation of the Cobol in 1959. For the next 20 years, more programs were written in Cobol than any other language. Programmers during that time had the option of using two- or four-digit fields, but the two-digit field was much more common. By 1974, Cobol officially adopted the four-digit field, but unfortunately, it didn't catch on immediately.

The mighty mouse

On June 21, 1967, Doug Engelbart applied for a patent on his X-Y Position Indicator for a Display System, now better known as the mouse, a device that he had been thinking about and working on for more than a decade. Engelbart had originally sketched out the idea of the mouse in notebooks that he had carried around for years. Around 1964, he and a group of people he worked with got some money to

Continued on page 34

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- Dimm 100Mhz SDRAM 32MB 168pin
- Matrox AGP Millennium G400 16MB (OEM)
- Maxtor 90871U2 8.7GB Ultra66
- Creative PCI Ensoniq Audio (OEM)
- Creative 48X int. IDE CD-ROM
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A short history of computers

Continued from page 30

develop a pointing device and he looked up his old notes. The group experimented with light pens, joysticks, etc., but the most efficient one was the one dubbed the mouse, so named because of its tail.

The '70s: personal computing arrives

The development of the Intel 4004 chip in

1971 fitted all computer components onto one small chip. This chip could be programmed for a variety of purposes, such as fuel injection systems, televisions, and more.

As computers became smaller and more affordable, more people could use them. Rather than being available only for business, computer manufacturers began to take aim at the home computer market during the middle 1970s. Some of the more popular applications

at that time were word processing and spreadsheet programs. One could choose from a variety of computers made by such vendors as Commodore and Apple. In the early 1980s arcade games like Pac Man and Space Invaders, sparked interest in the new computers.

During the 1980s, computers became more popular, especially as clones of the IBM models were introduced. In 1981, there were approximately two million computers in use.

By 1982, that number had more than doubled to over 5.5 million. By 1984, the Apple Macintosh line was introduced, offering a user-friendly interface, and a simple pointing device (the mouse) to access the icons on the screen. Eight years later, over 65 million PCs were in use.

As computers have grown ever smaller, they have become more powerful. Advances in technology have created the LAN (local area network) as a way to link computers together in an office setting. WANs (wide area networks) extended connectedness further, by joining LANs, often in different cities or continents. Networking has made it possible to share files and programs over a wide area, making data transfer extremely efficient. Perhaps the greatest expression of networked computing is the Internet and the World Wide Web, which have spanned the globe and made the world a much smaller place.

2000 and beyond

So where is all this technology taking us? Predictions abound, but here are a few to think about:

- It will become possible to speak in one language and have it automatically and instantly translated into another, not unlike the universal translator in *Star Trek*. (At Comdex Fall/99 in November, Lernout & Hauspie demonstrated software that translates an email message written in French into English in a matter of seconds.)
- Major medical procedures will be performed by tiny robots (micromachines), inserted through small incisions in the body, and programmed to handle virtually any medical emergency.
- The Internet will become completely wireless, eliminating the need for phone lines and cables.
- The microcomputers as we know them will become a thing of the past. Instead, programs will be available from a large centrally located database (for a small fee, of course). Users will have dumb terminals at home or the office, and will simply log on when they want to use a program. This is already taking place to a certain degree on the Internet, where users can log into schools online.

Some of these predictions may appear fictional, but as computing history has shown, what was science fiction often becomes science fact. □

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Sources

Flashback: The History of Computing
<http://www.cnn.com/TECH/computing/specials/flashback/>

Univac Memories
<http://www.fourmilab.ch/documents/univac/>

Computerseum: Commercial Computing Museum
http://granite.sentex.net/~ccmuseum/hist_sites.html

The Virtual Museum of Computing
<http://archive.com lab.ox.ac.uk/other/museums/computing.html>

A Short History of the Computer
<http://www.softlord.com/comp/>

From Y1K to Y2K

Continued from page 20

Sitting astride the trade routes between China and India to the east, and the Greek Byzantine Empire and a slowly recovering Europe to the west, the Arabs and their subject peoples were world leaders in scientific thought and research for more than 500 years. For example, the mathematical term "algorithm," a clearly defined procedure for obtaining the solution to a problem, is derived from the name of al-Khowarizimi, a ninth century Persian mathematician.

The scholars, astronomers and engineers of the Abassid Caliphate had access to all the numbering and computing technologies that Eurasian and African humanity had developed over the previous 5,000 years. These technologies were extensive and impressive, even by modern standards.

From abacus to astrolabe

Mathematical information management and computing technology had been the essential tools that permitted the development of the large scale, advanced civilizations that the Arabs had conquered.

Rate of change

What is unprecedented about modern computing technology is the accelerated speed with which it is progressing, and the unknowable consequences of the imminent merging of electronics and cybernetics with biology. Compared to geological processes, or the normal evolution of living species, or even the cultural evolution of mankind over the last 10,000 years, the technological evolution of computing in the last 50 years has happened in the blink of an eye—perhaps too quickly for us to even understand, much less control.

As computer technology has become a common medium for modern business, government, communication and scientific research, the speed with which it is evolving means that increasingly, information technology is moving and shaping humanity, rather than the other way around. The global corporations racing to create new computer and biotech technologies really have no idea of where that technology will be in 20, 10, or even five years. The complexity of the inter-relationship of technology with the human world is too great to grasp at any one moment and it changes so quickly that even a partial understanding of it is immediately outdated.

There is an increasing belief by many experienced observers, however, that if the exponential rate of change in computing technology keeps increasing in line with the progress of the past 50 years, the world in the next 50 years will be transformed utterly from anything previous generations of mankind could have imagined. Some people foresee a "post-human" era in less than 100 years, where a new form of digital intelligence will become the dominant force on this planet.

—Jeff Evans

By 3000 BC, the ancient Egyptians and Babylonians had developed geometry to help build huge structures such as the pyramids and ziggurats. Map making and surveying technology was created to determine land ownership, boundaries, and to aid in navigation and international trade.

The religion of computing

Ancient peoples all over the world, from the

Maya of Central America, to the ancient Chinese and Hindus, to the Pre-Celtic inhabitants of Britain, developed great skill at astronomy, developing mathematical systems that allowed them to predict astronomical events, and building structures such as Stonehenge (a religious and astronomical monument in England, that was started around 3000 BC). Astronomy had practical economic uses, such as calculating the dates in the year when it

would most probably be best to plant crops, as well as religious significance, in creation myths and in attempting to predict or control the future.

In most ancient civilizations, religion and magic were not rigidly separated from politics, technology or business. All parts of a culture's belief system were integrated, with religion generally being the most important.

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10 / 13 / 17 / 20GB UDMA \$163/173/199/269
WD UDMA 10.2/13/20 2MB Buffer \$179/189/295
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SiS 4MB / 8MB PCI \$35/49
ATI Rage IIC 4M / 8M AGP \$119/149
ATI Xpert 98 Rage Pro/ 99 Rage 128 AGP 8M \$119/149
ATI Xpert 128 AGP 16MB AGP \$119/149
ATI Xpert @Play AGP 8M \$119/149
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3D Blaster Savage 4 AGP 32MB Retail \$123
Graphics Blaster Riva TNT2 Value 32M \$159
Stealth III Savage 4 5540 32MB AGP \$139
Stealth III 5540 32MB PCI Retail \$139
Viper 770 TNT2 32MB AGP / Ultra Retail \$179/235
Asus V3400 RIVA TNT 16MB TV OUT/Video In \$159
Asus Voodoo3 3000 / 3Dfx Banshee 16M \$149/119
Creative RIVA TNT2 32M AGP \$189
Asus V3400 Riva TNT 16MB TV OUT/Video In \$149
Logitech Dig. Camera / Sharp PC Camera \$95/85
ATI TV Wonder PCI / TV Tuner w/FM ISA \$115/115

Sound Cards • Speakers

Sound Card 16Bit / PCI \$19/23
Creative Ensoniq PCI-64 bit \$35
Sound Blaster PCI 128 / Live value Digital \$46/77
Diamond Monster Sound MX300 3D PCI \$75
Speakers SB 689/3D 105 with subwoofers \$39/62
Altec Lansing ACS45-2(2retail) / ACS48 \$89/189
PC Works 2/4-point Speaker System \$85/139

Monitors

Samtron 15" (55E) / 17" (75E) \$189/305
Proview 15" / 17" / 19" \$195/289/479
Samsung 15" (550S) / 17" (750S) \$199/299
ADI 15" 4P / 17" 5P+ / 19" G66 \$210/385/629
MAG 17" XJ700T .25dp / XJ700E .26dp \$265/330
Panasonic S501 / E701 \$319/499
Sony 110GS (15") / 210GS (17") \$869
Sony 420GS (17") \$869
Hansol 15" / 17" / 19" \$205/299/609
Viewsonic / Optiquest \$119/149

Memory

4M 30 pin \$119/149
4 / 8 / 16 / 32M EDO 72 pin \$119/149
32 / 64 / 128M SDRAM \$119/149
PC100 32/64/128/256M SDRAM \$119/149

Motherboards

ASUS P3B-F / P3W (slot 1) MEW (S370) \$195
ASUS P22 99 ATX / P2 99B AT Slot 1 \$145/145
ABIT BH6 / BM6 / BE6 / BP6 \$160/165/189/209
Gigabyte Intel 440ZX / BX2000 ATX \$119/155
Super7's AT SYE/Shuttle 591P/FIC VA503+\$95/109/118
Super7's ATX FIC PA2013 / ASUS P5A \$135/135

CD-ROM • CD Writer

Toshiba 40x / Acer 40x / Acer 50x \$79/59/69
Creative 52x / Delta 48x / Samsung 48x \$69/55/63
Toshiba 40x SCSI / Pioneer 36x SCSI \$135/108
Ricoch CD-RW 6x4x24 / Mitsumi 4x4x8 \$279/235
Creative CD-RW IDE \$119/149
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AcerScan 620S / 620U \$119/149
Samsung Laser QL5100A / QL6050 \$375/435
BIC 1000 / 2000SE Printer \$109/145
Epson 440 / 660 / 740 Printer \$155/185/295
Lexmark Z11 / Z31 / Z51 Printer \$145/239/329
HP 340 / 810C / 830C / 880C / 895Cxi Printer \$119/149

Fax Modems

56k V.90 with / without voice \$30/25
USR 56k Int. V.90 voice / without voice \$65/63
Acer 56k with dual standard PCI / ISA \$47/67

* Call for current prices • All prices and product availability subject to change without notice • All advertised prices reflect 3% cash discount • Not responsible for typographical errors • All brand and trademarks are property of respective manufacturers.



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OFFICE WORKSTATION

Intel Celeron 366 MMX \$605

- 32MB PC100 SDRAM, 440BXPro, UDMA66, USB
- 4.3GB UDMA66 hard drive
- 3.5" 1.44MB floppy disk drive
- 64Bit AGP 8M (Share w/ RAM) 3D Video Accelerator
- 15" ATX Mini-tower case 230W
- 2B Mini Mouse & Pad
- 104 Win98 Keyboard
- 50X UDMA CD-ROM Drive
- Full Duplex A3D Sound Card w/ 4 SPKs support
- 100W Multimedia Speakers
- 56K V.90 Voice/FAX Modem
- 10/100 Mbps NetCard (@HOME /ADSL Ready)
- 2 Years Parts and 3 year Labour Warranty (Monitor Extra)



HOME ENTERTAINMENT

Intel Celeron 500 \$1262

- 64MB PC100 SDRAM, 128K, Microstar 6163Pro 440BX, USB
- Quantum 13GB UDMA33 Hard Drive
- 3.5" 1.44MB Floppy Disk Drive
- Graphics Blaster TNT2 Value 16mb AGP Full Screen Mpeg, support software DVD
- 15" Monitor N.I.L.R, Digital Control 1280x1024, .28 dp, PnP
- 19" Med-Tower case ATX 250W CSA
- Microsoft 3B IntelliMouse
- 104 Windows 95/98 Keyboard
- 6X DVD-ROM Drive
- 64 Voices Full Duplex 3D Sound Card
- Juster 3D-FX1 450W /Subwoofer & Mic
- 56K PCI Voice/FAX Modem V.90 Ready
- 2 Years Parts and 3 year Labour Warranty



SUPER 7 SUPER DEAL

AMD K6-III 400MMXw/3D NOW! \$1079

- 32MB PC100 SDRAM, 512k Cache, AGP,USB
- 8.4GB UDMA66 Hard Drive
- 3.5" 1.44MB Floppy Disk Drive
- Sniper TNT2 M64 32M w/TV DVD SW
- 15" Monitor N.I.L.R, Digital Control 1280x1024, .28 dp, PnP
- 17" Med-Tower case ATX 250W CSA
- Logitech 2B PS/2 Mouse
- 104 Windows 98 Keyboard
- 50X UDMA CD-ROM Drive
- 64 Voices Full Duplex 3D Sound Card
- 100W Multimedia Speakers
- 56K PCI Voice/FAX Modem V.90 Ready
- 2 Years Parts and 3 year Labour Warranty



EUREKA 2000

Intel Celeron 433 MMX \$1587

- 64MB PC100 SDRAM, 128k, M741, UDMA66, USB
- 10GB UDMA Hard Drive
- 3.5" 1.44MB floppy disk drive
- On-board 8mb Video
- 17" Imago Monitor N.I.L.R 1280x1024, .28 dpi
- 19" ATX Tower Case 250W
- Logitech Netmouse w/Scroll & Pad
- Logitech Internet Keyboard /6X DVD-ROM Drive
- Full Duplex A3D Sound Card & 500W 3D Speakers w/Sub
- 10/100 Mbps NetCard (@Home /ADSL Ready)
- 56K V.90 Voice/FAX Modem
- Lexmark Z11 Printer & Artec 1236P 36-bit Scanner
- Windows 98SE full ver w/CD & Manual
- 2 Years Parts and 3 year Labour Warranty

HOME & OFFICE PLUS

Intel Pentium III 450 MMX \$1606

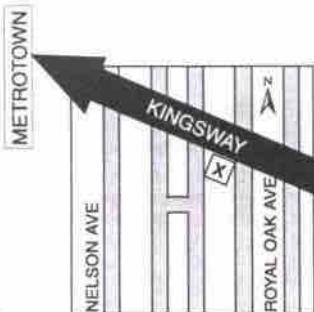
- 64MB PC100 SDRAM, 512k, Microstar 6163Pro 440BX, USB
- Quantum 13GB UDMA33 Hard Drive
- 3.5" 1.44MB Floppy Disk Drive
- Creative 3D Blaster SAVAGE 4 32MB AGP
- VIEWSONIC E771 17" Monitor N.I.L.R, OSD 1280x1024, .27 DPI, PnP
- 19" Med-Tower case ATX 250W CSA
- Logitech 2B NetMouse w/scroll
- 104 Windows 98 Keyboard
- 48X UDMA CD-ROM Drive
- SoundBlaster PCI-512 Full Duplex 3D Wave
- Juster 3D-FX1 450W /Subwoofer & Mic
- 56K PCI Voice/FAX Modem V.90 Ready
- 2 Years Parts and 3 year Labour Warranty

GAME BUSTER

Pentium III 450 MMX \$1896

- 64MB PC100 SDRAM, 512k, Microstar 6163Pro 440BX, USB
- Quantum 13GB UDMA66 Hard Drive
- 3.5" 1.44MB Floppy Disk Drive
- 3DFX Voodoo3 3000 16MB w/ TV Out
- Optiquess V95 19" Monitor .26dpi 1600x1280 TCO PnP
- 17" Med-Tower case ATX 250W CSA
- Logitech 2B NetMouse PS/2
- 104 Windows 98 Keyboard
- 50X UltraDMA CD-ROM Drive
- Aureal Vortex2 SuperQuad (Digital I/O) A3D 2.0
- Juster 3D-FX1 450W /Subwoofer & Mic
- 56K PCI Voice/FAX Modem V.90 Ready
- 2 Years Parts and 3 year Labour Warranty (**Creative 4 Point FPS2000 Black Speakers +\$199)

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Fujitsu	6.4GB	10ms	5400	256K	UDMA33	\$155
Fujitsu	8.4GB	9ms	5400	256K	UDMA33	\$170
Fujitsu	10.2GB	9ms	5400	256K	UDMA66	\$179
Fujitsu	17.3GB	9ms	5400	256K	UDMA66	\$270
Western Digital	4.3GB	9.5ms	5400	512K	UDMA66	\$159
Western Digital	6.4GB	9.5ms	5400	2MB	UDMA66	\$168
Western Digital	10.2GB	8.5ms	5400	512K	UDMA66	\$195
Western Digital	13GB	9.5ms	5400	2MB	UDMA66	\$229
Western Digital	18GB	9ms	7200	2MB	UDMA66	\$349
Western Digital	27GB	8.5ms	7200	2MB	UDMA66	\$409
Western Digital	20.4GB	9ms	7200	2MB	UDMA66	\$399
Quantum	6.4GB	9ms	5400	512K	CX UDMA66	\$159
Quantum	10.2GB	9ms	5400	512K	CX UDMA66	\$178
Quantum	13GB	9ms	5400	512K	CX UDMA66	\$199
Quantum	20GB	9ms	5400	512K	CX UDMA66	\$308
Quantum	9.1GB	8.5ms	7200	512K	KA UDMA66	\$201
Quantum	13.6GB	8.5ms	7200	512K	KX UDMA66	\$235
Quantum	18.2GB	8.5ms	7200	512K	KX UDMA66	\$318
IBM	13.5GB	9ms	7200	512K	UDMA66	\$220
IBM	27GB	9ms	7200	2MB	UDMA66	\$399
IBM	34GB	9ms	7200	2MB	UDMA33	\$504
IBM	37GB	9ms	5400	2MB	UDMA66	\$490
Maxtor	8.4GB	9ms	5400	2MB	UDMA66	\$170
Maxtor	10.0GB	9ms	5400	2MB	UDMA66	\$179
Maxtor	13.6GB	9ms	7200	2MB	UDMA66	\$215
Maxtor	20GB	9ms	7200	2MB	UDMA66	\$299
Maxtor	27.3GB	9ms	7200	2MB	UDMA66	\$353

SCSI-2 ULTRA WIDE HD

IBM	U2W	36.4GB	7.5ms	7200	4MB	UltraStar 36XP	\$2199
Seagate	U2W	50GB	8ms	7200	512k	BARRACUDA	\$1905
Quantum	U2W	9.1GB	6.9ms	7200	512k	ATLAS IV	\$419
Seagate	U2W	9.1GB	8ms	7200	512k	BARRACUDA	\$728
Seagate	U2W	9.1GB	8ms	10K	1M	CHEETAH	\$1448

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CPU

MHZ	350	366	400	433	466	450	500	550	600	650
Celeron(A) PPGA	\$109	\$125	\$128				\$229			
Pentium II MMX		\$215								
Pentium III MMX						\$315	\$365	\$549	\$748	
AMD K6-2 3D	\$79	\$85				\$100				
AMD K6-3 3D		\$168				\$230				
AMD K7 ATHLON							\$339	\$468	\$659	\$998

RAM

Memory Type	4MB	8MB	16MB	32MB	64MB	128MB	256MB
Regular 30pin	\$25						
Regular 72pin Fast Page	\$32	\$58	\$119	call			
EDO 72pin		\$30	\$58	\$108	\$179		
SDRAM 168pin			\$109	\$229	\$429		
PC100 SDRAM 168pin			\$90	\$139	\$268	\$628	
ECC PC100 SDRAM				\$189	\$349		
Corsair PC133				\$168	\$299		
Corsair PC100-CAS2				\$180	\$338		

MOTHER BOARD

ABIT PII/PIII 233-500MHz PC100 BH6 /BX6-2 /BM6	\$165 /189 /168
New ABIT PII/PIII 233-500MHz PC100 BE6/BP6/BE6-2	\$198 /220 /215
ASUS PII/III 233-500MHz PC100 P3B-F /P2BDS	\$193 / 689
New Asus P3B-1394 PII/PIII 233-500MHz 3 PCI+1 400mbps Firewire	\$279
ASUS P2B-LS 440BX SCSI3 W/LAN	\$534
ASUS P5A SUPER7 ATX w/sound / w/o/sound	\$150 /140
ASUS P5A-B SUPER7 ATX W/O SOUND	\$130
INTEL MB6 SE440BX2 PII/III 233-500 w/o audio	\$183
INTEL CAB10 CEL/PPGA ATX W/SOUND & VIDEO	\$168
ACER 440BX PII AX6BC/AX6BC Pro Gold	\$160 /220
HOUSTON TECH. ATX 760/AT 766/741LMRT	\$128 /133 /135
NEW MICROSTAR MS-6163 PRO ATX	\$148
MICROSTAR MS-5169 SUPER 7 ALL ATX 512K W/ USB	\$117
MICROSTAR MS-6182 ALL-IN-ONE I810 CHIPSET ATX	\$163
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Manufacture	Model	CPU	MEM	HDD	CD	Display	Modem	Price
ACER	723TX	PII-400	64MB	10GB	24X	14.1TFT		\$3673
ACER	722ITX	PII-366	64MB	6GB	24X	14.1TFT		\$3387
Compaq	1700	PII-300	32MB	5GB	24X	14.1TFT	56K	\$3466
Compaq	3500	PII-333	32MB	4.1GB	20X	12.1TFT		\$2501
Compaq	7800	PII-400	64MB	14GB	DVD	14.1TFT	56K	\$5872
Toshiba	3110CT	PII-300	64MB	6.4GB		10.4TFT	56K	\$3365

Manufacture	Model	CPU	MEM	HDD	CD	Display	Modem	Price
Toshiba	7020CT	PII-366	64MB	6.4GB		13.3TFT	56K	\$4741
Toshiba	4090XDVDC400		64MB	6.4GB	DVD	14.1TFT		\$3286
Toshiba	4080XCDTPII-366		64MB	5.9GB	24X	14.1TFT	56K	\$3623
Toshiba	8000	PII-400	128MB	14.1GB	DVD	14.1TFT		\$5946
Toshiba	110CT	P-233	32MB	4.3GB	DVD	7.1TFT		\$2160
IBM	380Z	PII-300	32MB	4.0GB	24X	13.3TFT		\$3706

Manufacture	Model	CPU	MEM	HDD	CD	Display	Modem	Price
IBM	390E	C366	32MB	4.8GB	24X	12.1TFT		\$2863
IBM	390E	PII-333	64MB	6.4GB	24X	14.1TFT	56K	\$3909
IBM	600E	PII-366	64MB	6.4GB	24X	13.3TFT	56K	\$4765
IBM	560Z	PII-300	64MB	6.4GB		12.1TFT		\$4384
IBM	770Z	PII-366	128MB	14GB	DVD	14.1TFT	56K	\$6667
ASUS	L7300	C300	64MB	4.1GB	24X	13.3TFT	56K	\$2481
ASUS	F7400	PII-400	64MB	6.4GB	DVD	14.1TFT	56K	\$3470

AOpen PIII-450 TNT2

Intel Pentium III 450 MMX \$1651

- 64MB PC100 7ns SDRAM, 512K, 440BX, AGP,USB
- 13GB UDMA66 512K 7200RPM Hard Drive
- 3.5" 1.44MB Floppy Disk Drive
- Diamond Viper770 RivaTNT2 AGP 32MB 2D/3D
- ViewSonic E771 .27 1280X1024 OSD PnP
- AOpen 17" Med-Tower case ATX 230W CSA
- AOpen 2B PS/2 NetMouse
- AOpen Spill-resistant PS/2 WIN98 Keyboard
- AOpen 50X UDMA CD-ROM
- Acer AW37 3D Wavetable 64 Voice Sound
- Juster 3D-FX1 450W /Subwoofer & Mic
- Acer 56K PCI Voice/FAX Modem V.90 Ready
- 2 Years Parts and 3 year Labour Warranty

Favourite OPTIONS

30 Day Internet	FREE
WIN98 SE Full Version	\$138
NT Workstation 4.0	\$276
MS Home Bundle	\$88
Corel/WordPerfect Office2000	\$44.95
Corel/WordPerfect Suite 7	\$5.95
DVD Software	\$15
Linux RH6.1/Open 2.2	\$59/69

UPGRADE PACKAGES

Intel CELERON 366A MMX - PII 440BXPro ATX, 32MB PC100, 15" ATX Tower, AGP Video, 3D Sound, 56k Modem, NetCard	\$406
Intel Pentium II 400 MMX - PII 440BXPro ATX, 32MB PC100, 15" ATX Tower, AGP Video, 3D Sound, 56k Modem, NetCard	\$511
AMD K6-2 3D 400 w/ 3D Now - <Super 7> 100 MHz board, 32MB PC100 SDRAM 168 pin. S3 3D AGP 4MB	\$340

*All packages are year 2000 compliance, FREE installation and 1 year warranty.

WORKGROUP SERVER

Intel Pentium III 500 MMX \$1452

- 128MB PC100 SDRAM, 512K, ASUS P3B-F 440BX, USB
- 20GB UDMA33 Hard Drive
- 3.5" 1.44MB Floppy Disk Drive
- S3 Trio3D 4MB AGP 128bit
- 19" Med-Tower case ATX 250W CSA
- Logitech 2B PS/2 Mouse
- 104 Windows 98 Keyboard
- 50X UDMA CD-ROM Drive
- 64 Voices Full Duplex 3D Sound Card
- 100W Multimedia Speakers & MIC
- 3COM PCI 3C-905 10/100Mbps Netcard
- 2 Years Parts and 3 year Labour Warranty

(*** Monitor Extra)

SONY VIDEO CARD

ATI All-in-Wonder PRO 8MB PCI /AGP /WONDER 128	\$167 /157 /245
ATI AGP 8MB XPERT98 / XPERT99 /XPERT 128 16MB	\$88 /105 /139
ATI FURY 32MB AGP OEM /TV WONDER PCI (Retail)	\$180 /125
DIAMOND SPEEDSTAR A70 AGP 8MB w/soltdvd	\$76
S3 3D VIRGE 4MB PCI/AGP	\$42 /42
MATROX AGP 8MB MILLENNIUM G200 / G200LE	\$148 /99
MATROX AGP MARVEL TV 8MB	\$376
MATROX AGP G400 16MB /32MB /32MB (OEM)DH /MAX	\$172 /237 /259 /316
CREATIVE BANSHEE 16MB RETAIL AGP	\$89
HOT VOODOO 3 AGP 2000 /3000 /3500	\$140 /190 /350
DIAMOND VIPER V770 TNT2 OEM 32MB	\$188
DIAMOND VIPER V770 TNT2 RETAIL 32MB /ULTRA	\$188 /245
CREATIVE TNT2 32MB AGP ULTRA	\$267
ASUS V3800 TNT2 32MB TVR RETAIL /DELUXE	\$279 /313
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CREATIVE SAVAGE4 32MB PCI /AGP RETAIL	\$143 /130
NEW CREATIVE 3D BLASTER ANNIHILATOR 32MB GeForce	\$375
NEW GUILLEMOT MAXI GAMER 3D PROPHET 32MB GeForce	\$399

CONTROLLERS

ADAPTEC PCI SCSI 2940UW /2940U2W OEM	\$289 /319
SIIG CYBER PCI ECP/EPP PRINTER PORT	\$69
TEKRAM PCI 310 / 310U / 390U / 390U 2W	\$61 / 79 / 119 / 277
TEKRAM PCI 390F SCSI3 ULTRA WIDE 40MB/S	\$135
PROMISE UDMA66 PCI w/CABLE	\$81
PROMISE FASTTRAK66 IDE RAID CNTRL	\$211

NETWORK

3C905 PCI Fast Link 10/100BaseT (OEM)	\$78
10/100Mbps PCI D-LINK 538TX / ACER 320 ALN-320	\$32 /30
ACER COMBO ISA/PCI / ACER 9-PORT HUB	\$25/37/88
INTEL EtherExpress Pro 10/100 PCI 32BIT	\$80
D-LINK 10/100 AUTO-SENSE 5/8/16 PORT HUB	\$147 /222 /491
LINKSYS 10/100 AUTO-SENSE 5/8/16/24 PORT HUB	\$125 /202 /348 /525
Samsung SmartEther 10/100 4/8 PORT HUB	\$119 /218
NETGEAR STARTER KIT 10 / 100 / 4 PORT 10/100 HUB	125 /160 /138
D-LINK 10/100 PCI NETWORK STARTER KIT	\$165
LINKSYS SWITCHED NETWORK KIT 10/100MBPS	\$196

KEYBOARD/MICE/CASE

15" /19" /24" AT Tower case	\$45/65/85
15" /17" /19" ATX Tower case	\$48 /68/75
InWin ATX Tool Free 235W 17" /24" /24" 300W	\$84 /113 /131
18" ATX Tower Case Side Open w/ 2 T.C. Fan	\$138
A-TOP 21" ATX Tool Free 250W w/ 1 extra fan	\$134
ANTEC 24" FULL TOWER 10BAY ATX 253W	\$169
SUPERMICRO SC-750A PCI 2.01 COMPLIANT	\$266
NEW HDD Cooler/I-STORM II	\$18 /48
CHASSIS FAN ASUS 3-PIN /GENERIC DX /GENERIC	\$25 /15 /12
SOCKET 370 TO SLOT 1 CONVERTER HOUSTON	\$19
SOCKET 370 TO SLOT 1 CONVERTER MSI	\$45
LOGITECH 2B Mouse / 3B MouseMan /4B PLUS	\$22 /32 /69
LOGITECH TRACKMAN MARBLE /FX	\$88 /128
104 Keys PS/1 / PS/2 Win95/98 Keyboard	\$22
FUJITSU 8725 /4725 /Focus 2001	\$25/59 /48
LITEON Win95 Natural K.B. with TouchPad	\$63
LOGITECH INTERNET /CORDLESS DESKTOP	\$49 /133
MS NATURAL ELITE KEYBOARD PS/2 /USB	\$40 /78
QTRONIC PS/1 /PS/2 /INTERNET	\$15 /18 /32
MICROSOFT INTELLIMOUSE EXPLORER PS/2/USB	\$90

CD-ROM WRITER & MEDIA

RIICOH 6X/4X/24X INT IDE W/SOFTWARE OEM	\$280
PANASONIC 8X/4X CDR w/EZ-CD SCSI	\$345
CREATIVE 6424 Retail	\$330
MITSUMI 4X4X24 IDE CDRW	\$249
NO NAME CDR. 74MIN 1/10PK	\$2.39 / 17.95
Yamaha CDRW6416S KIT/OEM	\$487 /298

MONITOR

Monitors	Size	Model	DPI	Resolution	Price
Acer	15"	54E	0.28	1280 x 1024	\$214
ADI	17"	5P+	0.26	1280 x 1024	\$404
ADI	19"	G66	0.26	1600 x 1280	\$636
LG	17"	795FT+	0.24	1600 x 1200	\$517
Mitsubishi	19"	900U	0.25	1600 x 1200	\$992
Panasonic	17"	E70/SL75	0.27	1280 x 1024	\$375/449
Panasonic	17"	PL70i	0.25	1600 x 1280	\$609
Panasonic	19"	SL90i	0.25	1600 x 1280	\$747
Sceptre	15"	D54	0.28	1280 x 1024	\$298
Sceptre	17"	D73A	0.25	1280 x 1024	\$465
Sceptre	19"	D97A	0.26	1600 x 1200	\$632
Optquest	15"	V55	0.28	1280 x 1024	\$250
Optquest	17"	Q71	0.28	1280 x 1024	\$339
Optquest	17"	V73	0.26	1280 x 1024	\$458
Optquest	17"	V75	0.26	1600 x 1200	\$471
Viewsonic	17"	E771	0.27	1280 x 1024	\$329
Viewsonic	17"	E773	0.25	1280 x 1024	\$408
Viewsonic	17"	G773	0.26	1280 x 1024	\$470
Viewsonic	17"	GF775	0.24	1600 x 1280	\$530
Viewsonic	17"	PS775	0.25	1600 x 1200	\$507
Viewsonic	19"	V95	0.26	1600 x 1200	\$580
Optquest	19"	G790	0.26	1600 x 1200	\$659
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Viewsonic	19"	PT795	0.25	1920 x 1440	\$1045
Impression	15"	5 Plus	0.28	1280 x 1024	\$191
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Proview	17"		0.28	1280 x 1024	\$286
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LUCENT 56K INT VOICE V90 PCI	\$46
DIAMOND PCI 56K SupraMax VOICE INT. V.90	\$58
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ARTEC	AM12E Plus	36	600 x 1200	\$119
ACER	620P/620U	36	600x1200	\$141/136
Genius	Color Page View	30	300 x 600	\$108
HP	5100C	36	1200	\$278
HP	4200CXI USB	36	1200	\$267
HP	PhotoSmart	30	2400	\$640
Canon	320P	30	1200 x 1200	\$137
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Lexmark OPTRA E+/E310	\$499/579
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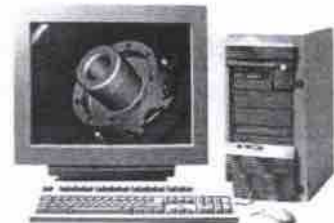
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- 13.3" TFT Celeron 400/466/500...\$2600/2650/2750
- 14.1" TFT Celeron 400/466/500...\$2750/2800/2900

Silver PII 14.1" TFT Netbook

14" TFT Active color 1024x768
AGP 8M 3D Video card built-in
Silver body color, All-in-one 6.2LB only
Intel Mobile PII -266/300/366/400 CPU
64MB RAM (96M...+\$100 / 128M ...+\$300)
6.1G Toshiba notebook HD
RealPort 56k Voice fax modem
1.44 Floppy, 24x CD-ROM (DVD.....+\$250)
3D sound, Microphone & spkrs built-in
USB, Infra, Parallel, serial, SVGA port
2 PCMCIA slots, Li-Ion Battery
AC adapter (110-220 auto switch),
Win' 98 full ver.2 with cd, FREE carrying case

- 14.1" TFT PII 333/366..... \$2820/3900
- 14.1" TFT PII 400 \$3050

Toshiba

- 4070CDS • Cel366/64M/4G/13.3" DSN/W98/56k \$2500
- 2100CDS • K6-400/32M/4.0G/12.1" DSN/Win98 \$1850
- 4080XCDT • PII366/64M/6.0G/14.1" TFT/Win98 \$3740
- 3020CT • P266MMX/32M/6.1G/10.4" TFT/Win98 \$2800

IBM ThinkPad

On WWW.ATIC.CA

Compaq (Presario and Armada carried)

On WWW.ATIC.CA

Notebook Accessories

- **Modems and EtherNet (PCMCIA)**
 - 56K PCMCIA fax modem v.90\$95
 - PCMCIA 10BT Etherne comb\$80
 - Xircom 100BT.....\$210
 - Xircom 100BT + 56k fax modem RealPort\$490
 - 3COM 10/100BT PCMCIA (3CXFE575BT) cardbus.....\$220
 - 3COM 37574-TX 10/100 LAN 16bit \$210
 - 3COM 10BT (3CXE589DT)/10B Com (3CXE589DC)...\$190/260
 - 3COM 3CCM156B 56K global modem\$320
 - 3COM 56K V.90 Fax modem w/ Cellu support (3CXM556)...\$325
 - 3COM 56K with 10/100BT LAN\$440
 - 3COM 52900 128k ISDN PC card U int.\$530
 - 3COM52903 128k ISDN PC card S/T int.\$475
 - Intel Etherxpress Pro 100BT PCMCIA 16bit.....\$220
 - Intel EtherExpress Pro Plus 10/100 PCMCIA ...\$370
 - Intel EtherExpress Pro 100 with 56k v.90 modem ...\$490
- **Batteries, Sound Cards, Backup, SCSI**
 - Adaptec1450/1460/1480 SlimSesi.....\$140/230/290
 - ext. parallel CD-ROM 40x / with power\$160
 - ext scsi 40x CD-ROM with case\$210
 - 32x Backup cd-rom parallel / with sound\$300/360
 - NewMedia sound / game port.....\$280/80
 - NewMedia SCSI Db25 / LAN 10BT\$125/110
 - Nogatech PCMCIA TV tuner\$385
 - Carrying case.Targus Notopac CN01/20.....\$40/35
 - Universal caseCUNI / Leather case CLN1.....\$100/120
 - Platinum Leather case CPLC1/ Traveler CL86.....\$210/198
 - Koskin case CKN2/Convertible case CCB1.....\$80/70
 - Encore Air Leather case CELIA\$200
 - Battery NiMH / Li-Ion for Netbook.....\$110/180
 - Battery for Toshiba/IBM/Compaq/Sharp/Canon.....Preorder

Cases



Three-Piece-Cover Unit
No Hand-Cutting
Elegant Look
Better Ventilation
Two Optional Spaces for Fan
Stand-Off Metal
fix the MB with stand-off metals
instead of brass screws
Extra 80mm fan

- ATX-200 19", 250W Extra fan.....\$140
- ATX-202 19", 250W Extra fan.....\$140
- ATX-298 19", 250W Extra fan.....\$140
- ATX-299 19", 250W Extra fan.....\$140
- ATX-102 24", 300W Extra fan.....\$140
- ATX-2000 24", 2x300W Redundant PS.....\$390
- ATX-iBlue 19", 250W Extra fan.....\$88
- ATX-Black 19", 250W Extra fan.....\$100

PRINTERS

- HP**
- HP DJ 340C/ 810C\$360/225
 - HP 880/ 895C / 1120C\$350/500/650
 - HP 2000C / 2000CN\$860/1450
 - HP 1100 8ppm2M / 2100 8P2M\$560/1000
 - HP 4050 /4050N/4050TN.....\$1640/2290/2450
 - HP 5000/5000N/GN.....\$2360/3360/3680
 - HP 8100/8100N/8100DN.....\$3520/3830/4390
 - HP ColorLaser 4500/4500N/4500DN.....\$3660/4330/5550
 - HP ColorLaser 8500/8500N/8500DN.....\$8690/9780/12890
 - HP OJ 725C color printer/copy/scan/fax.....\$565
 - HP laser 3100Xi printer/copy/scan/fax.....\$960
 - HP Color Plotter/ HP accessories.....www.ATIC.CA

- Canon**
- BJC 1000C / BJC 2000C/ 6000\$135/\$150/360

- Lexmark**
- Lexmark Z11/ Z51\$140/200
 - Optra E310(special).....\$550

- Epson**
- Stylus 440/660/760\$160/200/350
 - Stylus 850 (1440dpi)/ 850Ne.....\$420/670
 - Stylus 900/900N\$620/880

- Brother**
- HL - 1050DX\$390
 - Toner Tn100 / Tn200\$35

- Okidata**
- OL8W 600dpi laser.....\$370

CASE / KB / MOUSE / Cables

- AT15"/19"/23" case & power.....\$40/55/75
- ATX 15"/18"/23" case & power.....\$45/50/80
- InWin ATX case 17" / 24" & power.....\$80/100
- Server 2-in-1 Redundant/ Xeon.....\$460/880
- Landmark ATX-299 plastic, extra fan.....\$105
- Landmark 18" ATX-202 / 200 with 250W, extra fan.....\$80

- Mouse / Logitech 2B / Logitech 2B w/wheel ..\$8/12/18
- MS IntelliMouse / Intellimouse Pro / USB.....\$25/80/80
- Logitech Marble mouse / USB\$90/90
- Logitech Internet KB / cordless mouse & KB.....\$40/140
- 104KB /Fujitsu8725 / Fujitsu 4725.....\$12/20/60
- MS Natural / TouchPad KB\$30/65
- MS natural USB / USB keyboard.....\$75 / 30
- Black KB / Blue KB\$25 / 20
- Black mouse / MS black mouse\$20/25

- Scsi cable/ Wide scsi cable.....\$10/15
- over 4 devices cable (scsi/UW scsi).....\$35
- Ext. Scsi cable / 25p-HD50p/25p-HD68p.....\$25/40 /40
- ext. Scsi cable (any pin to Centronics).....\$40
- Rock mounting IDE/SCSI drawer.....\$20/25
- Rock mounting UW-scsi\$45

- Printer cables 6ft/10ft/25ft.....\$5/10/18
- Modem cables/Laplank cables.....\$10/15
- Ethernet cables ... In stock

MULTIMEDIA

- DVD KITS**
- Sony 6x/32x DVD3 / Toshiba DVD3.....\$120/130
 - Creative DVD4 Encore x6 kit.(retail).....\$320
 - Black DVD3 drive\$170
 - Hollywood+ decodable card\$140

- SOUND CARD**
- 16bit sound card.....\$20
 - SoundBlaster PCI 64 / PCI 128.....\$35/50
 - SB PCI Live Value / Live! Platinum\$80/260
 - Diamond Mx300\$95

- CD-ROM**
- Creative 52x /Toshiba 40x (Eide).....\$75/80
 - Affery 50x / Black Toshiba 40x.....\$60/100
 - 40x scsi Pioneer / Toshiba 40x scsi.....\$130 /130
 - Backpack 16x parallel slimmed with sound.....\$260

- CD WRITER**
- Creative 4224 Rewrite w/pen (retail).....\$255
 - Ricoh 7060A Rewriter eide.....\$290
 - HP9210i scsi 32x8x4x\$500
 - Sony CRX140 kit 24x4x4x / w/pen.....\$355/390
 - Yamaha 6416s scsi 16x4x4x/kit.....\$295/350
 - Yamaha 6416SX ext.\$500
 - Plextor 20x8x4x int/ext.....\$610/720
 - writable cd-disk /Sony\$1,6/2,0
 - Rewritable cd-disk/Sony.....\$6/10

- SPEAKER**
- 120W / Subwoofer 480W.....\$12 / \$30
 - GNT5000 subwoofer kit / Eastern 4016\$55/765
 - RockLive 2000A Subwoofer w/4 spkr\$55
 - Eastern SS325U/5107/9000.....\$105/110/270
 - Yamaha M28 w/Sub kit / MT10.....\$115/180
 - Altec ACS45.2/48/R880.....\$125/190/350
 - Creative PCWorks 4point 1000/2000.....\$130/230
 - McRioPhone / Headset.....\$8/15

- TITLES (w/CD-ROM kit or system ONLY)**
- MS Surf 2000 kit (Words,Works, Encarta'99, Money).....\$150
 - Conel WP Suit B / WP 2000\$50/60
 - MS Office 2000 Pro / Small Bus\$480/285

SCANNERS

- HP 4200C / 5200C\$260/385
- H P 6350C\$345
- UMAX 610P parallel flat bed\$90
- UMax 1220p / 1220/ USB.....\$175/250/298
- Acer 620P / 620S/620U.....\$150/160/160
- MicroTek X6 USB/ X6-EPP / X6-EL\$195/195/380
- OEM 600x1200 flat scanner.....\$100
- AGFA Snapscan 1212P / 1236S/1212U.....\$140/160/285
- Canon scan 320p/620p/620U.....\$145/190/188

CAMERA / CAPTURE

- Miro Dv300 PCI / Studio 400 PCI.....\$1030/298
- Miro DC 30 Plus\$1190
- Canon A5 Zoom / A500.....\$635/735
- Kodak DC220 ZOOM / De265 Digital.....\$790/1100
- ATI TV-tuner with FM.....\$130
- Logitech Quicam VC / Home /pro.....\$90/120/190
- Creative WebCamII USB\$170 in special

ZIP / TAPES / ORB

- HP 4G-8G Traven\$260
- Seagate TR-4 4-8G int/ext\$230/350
- Seagate DAT 4-8G 4mm int/ext.....\$960/1150
- SONY DAT 5000i 4mm 4G-8G drive.....\$930
- HP DAT 4G 90mm / 4-8G 125mm\$890/1050
- ViPower PCMCIA Reader int for desktop\$90
- ZIP 100M int eide /parallel.....\$100/155
- ZIP 100M scsi int/ext./ USB.....\$165/210/210
- Zip 250 Parallel/ USB\$250/250
- JAZ 2G scsi int/ext\$360/480
- Zip disk / Jaz disk 1G / Jaz 2G\$15/110/160
- JAZ traveler SCSI to Parallel adapter.....\$60
- ORB 2.2G int EIDE / disk.....\$270/65
- ORB 2.2G ext. Parallel with disk\$350
- ORB 2.2G ext. scsi with disk\$490
- Traven TR1/TR3/TR4.....\$20/25/35
- Ls120 super drive int. / disk\$120/45
- DAT disk DDS-2 / DDS-3\$25/40
- Stick drive PCMCIA w/ 40Mdisk\$390/20

NETWORKS / UPS

- 16 bit ISA comb 10BT / 32bit PCI comb.....\$18/20
- 32 bit PCI 10/100BT Ethernet.....\$25
- D-Link DE-530CT 10/100BT\$28
- Intel PCI Pro 10/100 / Server Pro.....\$70/130
- 3COM PCI 3C905 100BT.....\$70
- BNC/Terminator/T.....\$3
- Coaxial 10ft/20ft/50ft/100ft.....\$6/9/25/35

- Hub 10BT 5 port/ 9port /16port.....\$50 /70/120
- Hub 100BT 4 port / 100BT 8 port\$75/110
- Hub 10/100-8port.....\$170

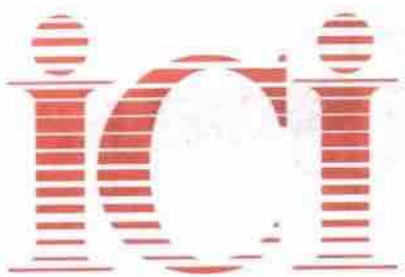
- Hub OfficeConnect 3C16700 8P 10BT\$110
- Hub OfficeConnect 3C16702 16p 10BT\$260
- Hub OfficeConnect 3C16750 8P 10/100BT.....\$290
- Hub OfficeConnect 12p 100BT\$580
- Hub500 SP-II 10/100BT 12p 3C16610.....\$880
- Hub SP-II 10/10024p 3C16611.....\$1580

- Hub HP 100BT 24 port (QTY limited).....\$680
- Hub HP 10/100BT 12/24port.....\$1280/1990
- Hub D-Link 10BT DE805 5p / DE809 8p.....\$70/95
- Hub D-Link 10BT DE812 12p / DE816 16p\$200/230

- Hub Intel InBusiness SH100T 100BT 8p.....\$260
- Hub Intel InBusiness Pus 10/100BT 8p\$380
- Router Intel Internet station SR10TPS\$580
- Router Intel Internet Express 8100/9100/9200 ..\$WEB
- Switch Hub 3COM/Intel list on WWW.ATIC.CA

- NT 4.0 Server 5 /10\$1000/1280
- NT 4.0 Server 25.....\$2390
- NT 4.0 client access license/each.....\$45
- NT Workstation 4.0 / license\$210/560
- MS Backoffice server V2.0/2.5\$2150/3100
- MS SMS v.1.2 10/25 users\$1420/2200
- MS SNAv.3.0 w/5 users.....\$1680

- UPS 300/500/650.....\$150/190/290
- UPS Smart 450/700/1000.....\$390/550/690
- UPS Smart1400/2200/3000.....\$820/1290/1990
- SurgeArrest Person 7/ w-tel.....\$25/30
- SurgeArrest Pro 7/ w-tel.....\$37/47
- SurgeArrest Net 7/ w-tel.....\$40/55



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Supporting Better Business through the BBB

Table with 2 columns: Product Name and Price. Items include HP 9110i IDE/9210i SCSI (\$398/398), Ricoh 6x4x24 CD-Writer Kit (\$288), BASF/Sony CD-R Media (10 pc) (\$15.8/19.8), Matrox Mill. G400 32M DualHead Max AGP\$318, Creative GeForce 32M/ Pro (\$328/388), Asus 6600 GeForce 32M Pure/Deluxe\$348/418, NEC FE700 17" Monitor (\$398), Viewsonic PF775 .25 17" Monitor (\$510), Viewsonic PF790 .25 19" Monitor (\$748).

Intel Pentium III Dream Machine for Power User

Pentium III Power User

Table listing Pentium III Power User configurations with prices and monthly lease rates. Includes items like Intel Pentium III CPU w/ 512K Cache, ABIT BH6 (Asus P2-99) M/B, 64MB PC100MHz SDRAM, etc.

Pentium III Dream Machine

Table listing Pentium III Dream Machine configurations with prices and monthly lease rates. Includes items like Intel Pentium III CPU w/ 512K Cache, ABIT BH6 (ASUS P2-99) M/B, 64MB PC100MHz SDRAM, etc.

Pentium III 3D Theatre

Table listing Pentium III 3D Theatre configurations with prices and monthly lease rates. Includes items like Intel Pentium III CPU with 512K Cache, Asus P3B-F (ABIT BH6) 440BX AGP M/B, 128MB PC100MHz SDRAM, etc.

Pentium III CD-Creator

Table listing Pentium III CD-Creator configurations with prices and monthly lease rates. Includes items like Intel Pentium III CPU w/ 512K Cache, ASUS P3B-F (Abit BH6) 440BX M/B, 128MB PC100 SDRAM, etc.

All P-III systems come with 5-year service & 2-year parts warranty and one month FREE internet

Options: Windows 98SE +\$138 • Acer 56K V.90 V/F/Modem (HW) +\$50 • Acer 10BT Ethernet Card +\$20 • MS Office 2000 SBE +\$288 • MS Office 2000 Pro +\$468

Power/Budget Maximizer

AMD Athlon (K7) Special

Celeron Net-Surfer

Table listing Celeron Net-Surfer configurations with prices and monthly lease rates. Includes items like Intel Celeron CPU w/ 128K Cache, ECS Dual-Slot Mainboard, 32MB PC100MHz SDRAM, etc.

Celeron WorkHorse

Table listing Celeron WorkHorse configurations with prices and monthly lease rates. Includes items like Intel Celeron CPU w/ 128K Cache, Gigabyte 6LA7 AGP Mainboard, 64MB PC100MHz SDRAM, etc.

AMD WorkHorse

Table listing AMD WorkHorse configurations with prices and monthly lease rates. Includes items like AMD K6-II / III 3D MMX CPU, Asus P5A-B (Gigabyte 5AA) 512K, 32MB PC100 SDRAM, etc.

Athlon (K7) PowerMax

Table listing Athlon (K7) PowerMax configurations with prices and monthly lease rates. Includes items like AMD Athlon (K7) CPU, Asus (Gigabyte) Athlon M/B, 64MB PC100MHz SDRAM, etc.

All Celeron & AMD systems come with 3-year service & 1-year parts warranty and one month FREE internet

Options: Windows 98SE +\$138 • Acer 56K V.90 V/F/Modem +\$50 • Acer 10BT Ethernet Card +\$20 • MS NT Work Station 4.0 +\$298 (Free upgrade to Windows 2000)

CPU/RAM

Table listing CPU and RAM options with prices. Includes items like PC100 SDRAM 32M/ 64M (\$68/118), PC100 SDRAM 128M/ 256M (\$238/580), AMD CPU K6-II-350/ 400/ 450 (\$70/75/95), etc.

Drives & Controllers

Table listing Drives and Controllers options with prices. Includes items like Fujitsu (UDMA66 IDE/ U2W SCSI) 8.4/ 10.8/ 13/ 17G (\$160/170/188/218), IBM (7200rpm IDE/ U2W SCSI) 13.3/22/27G U-DMA 7200rpm IDE (\$218/348/398), etc.

CD Writers

Table listing CD Writers options with prices. Includes items like Acer 4432 CD-RW (-30USD) \$245, Creative 4224/8432 CD-RW \$248/398, HP 9110i Int. IDE Kit (8x4x32) \$388, etc.

Modems/Camera

Table listing Modems and Camera options with prices. Includes items like Acer 56K V.90 Voice/Fax PCI (HW) \$50, Motorola 56K V.90 Voice/Fax PCI (SW)\$38, etc.

Printers

Table listing Printers options with prices. Includes items like Color Printer Canon 1000 / 2000 (-\$20/-50) \$98/138, Epson 440 / 660 / 740 \$150/198/288, Laser Printer Brother 1020/ 1040DX \$370/448, etc.

Motherboards

Table listing Motherboards options with prices. Includes items like Pentium / K6 / K7 Motherboard Asus P5A-B (AT) / P5A (ATX) \$135/138, ASUS K7M (AMD K7) \$228, etc.

CD / DVD / Sound

Table listing CD, DVD, and Sound options with prices. Includes items like Acer 40x / 48x / 50x CD-ROM \$60/72/75, Pioneer 10x IDE / 6xSCSI DVD \$148/198, etc.

Spkr/ Mice/ KB/ Cases

Table listing Spkr, Mice, KB, and Cases options with prices. Includes items like USB Adapter / Hub PCI to USB Card/ USB 4 Port Hub \$40/55, Speaker 120W/ 260W \$15/28, etc.

Tape Backup

Table listing Tape Backup options with prices. Includes items like Tecmar Ditto Max Pro 10G Int. \$318, Onstream 30G IDE/SCSI Int. \$388/550, etc.

ZIP / JAZ / LS120

Table listing ZIP, JAZ, and LS120 options with prices. Includes items like ZIP 100M IDE / Para / USB \$98/148/178, ZIP 250M IDE/ Para/ SCSI \$198/248/248, etc.

Scanners

Table listing Scanners options with prices. Includes items like Acer 620P / 620U / 620PT \$138/148/248, AGFA Snapscan 1212P/ 1212U \$138/168, etc.

Rogers@Home: High Speed Internet
FREE installation (Nov.13 - Dec. 25) Plus:
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 1 month **FREE** access with purchase of other systems

Plain Paper Fax/ Scan/ Copy/ Print-All-in-one
 Brother 7150 Color/ 4650 Laser \$638/648
 Canon C5500 Color/ L6000 Laser \$628/748
 HP 1170C Color/ 3100 Laser \$968/968

Upgrade Your PC
Intel Celeron Upgrade

• Intel Celeron CPU w/ 128K Cache
 • ECS Celeron / PII ATX M/B
 (On-board with Video/Audio/Modem/Network)

C-400	C-433	C-466	C-500
\$248	\$278	\$318	\$378

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- 10/100 Fast Ethernet
- 3D AGP Video
- 3D Stereo Sound
- TV out (composite & S-Video)
- Keyboard/Mouse/Speaker

Intel Celeron 400MHz CPU

\$398

Before Rebates \$698
 Infinet Rebates* \$300

* Sign up for up to 3 years of Infinet Communication Group Service of \$22.95 per month plus applicable taxes, and receive up to \$300 in mail-in rebates. Infinet Communication Group registration must be made by completing a mail rebate (subscription program) form, using a valid Visa, MasterCard or American Express card within 30 days of purchase.
 • Sign up for 3 years Infinet Communication Group Service and receive \$300 in rebates: \$100 after 4-8 weeks of service, \$100 after 12 months of service and \$100 after 24 months of service.
 • Sign up for 2 years Infinet Communication Group Service and receive \$200 in rebates: \$100 after 4-8 weeks of service, \$100 after 12 months of service.
 • Sign up for 1 year Infinet Communication Group Service and receive a \$100 in rebate after 4-8 weeks of service.
 • If contract is cancelled prior to completion, the outstanding obligation, less any outstanding rebates will be charged the customer's credit card. Not applicable to previous purchases. Valid for new Infinet Communication Group customers only. One rebate per customer per household. Not valid with any other promotional offer. See in-store for details.

NoteBook / Mobile Solution



I1420	C-433	32M	4.0G	13HBA	24X	56K	\$2168
I1540	C-433	64M	4.8G	12.1TFT	24X	56K	\$2668
I1460	C-433	64M	4.8G	14.1TFT	DVD	56K	\$3028
390X	C-400	64M	4.8G	12.1TFT	24X	56K	\$2828
390X	PIII450	64M	12G	14.1TFT	24X	56K	\$4688
600E	PIII400	64M	10G	13.3TFT	DVD	56K	\$5368
600E	PIII450	64M	6G	13.3TFT	24X	56K	\$4688
600E	PIII500	64M	12G	13.3TFT	DVD	56K	\$5988



332T	PII-366	64M	6.4G	12.1TFT	24X	56K	\$2868
512DX	C 366	32M	4.0G	12.1HBA	24X	56K	\$1898
512T	C 366	32M	4.0G	12.1TFT	24X	56K	\$2138
517TE	PII-366	64M	4.1G	13.3TFT	24X	56K	\$2798
722TX	PII-366	64M	6.0G	14.1TFT	24X	56K	\$3298
723TX	PII-400	64M	10G	14.1TFT	24X	56K	\$3550
723TXV	PII-400	64M	10G	14.1TFT	DVD	56K	\$3838



E362	C 400	32M	4.3G	12.1TFT	24X	56K	\$2168
E360	PII-333	64M	6.4G	13.3TFT	24X	56K	\$2948
E370	PII-366	64M	6.4G	13.3TFT	24X	56K ZIP	\$4098

HP HANDHELD PC

HP Jornada 430 Palm PC	\$650
HP Jornada 680/690 w/ modem	\$1180/1330
HP Jornada 820 w/ modem	\$1350

3COM

PalmPilot W/VX	\$525/508
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TOSHIBA

2100cds	C400	32M	4.3G	12.1DSTN	24X	56K	\$1868
4070cds	C366	64M	4.3G	12.1DSTN	24X	56K	\$2398
4090Xovo	C400	64M	6.4G	14.1TFT	DVD	56K	\$3098
4100Xovo	PII-400	64M	6.4G	14.1TFT	DVD	56K	\$3498
8000	PII-333	64M	6.0G	13.3TFT	24X	56K	\$3418
8000	PII-366	64M	9.3G	14.1TFT	DVD	56K	\$4698

NoteBook Add-On's

PCMCIA CARD

Adaptec 1350 Mini SCSI Parallel Port Kit	\$98
Adaptec 1460D/1480A SlimSCSI Kit	\$170/245
Adaptec USB-2000 USB Kit	\$98
Intel EtherExp. Pro100 16bit/ Card Bus	\$208/208
Intel Pro100 LAN+56K Modem Cardbus Realport	\$448
Linksys 10BT Ethernet PCMCIA	\$78
MegaHertz 3CXFE575BT 10/100 Cardbus	\$190
MegaHertz 3CCFEM556 56K Modem+10/100	\$315
Viking 56K PCMCIA Fax Modem V.90	\$148
Xircom Realport 56K V.90 + 10/100 BT	\$455
Xircom Realport 10/100 Ethernet Cardbus	\$210

PORTABLE CD-ROM & CD-WRITER

HP 820e 8X4X32 CD-RW PCMCIA/SCSI	\$518
Micro Solution Bantam 24X CD-ROM	\$245
Micro Solution Bantam 24X CD w/Sound	\$290
Micro Solution 4X4X20 CD-Writer	\$438
Nogatech TV Tuner PCMCIA	\$222

NOTEBOOK MEMORY & HDD & CASE

8/16/32/64M	\$Call
Toshiba 4.3/6.4/10.1GB 2.5" HDD	\$298/368/438
Targus Notepac CN01/CN20	\$41/30

Display Centre

Video Card

SiS PCI 8M/ ATI Xpn PCI 4M	\$60/68
Avermedia TV Turner	\$118
ATI All-in-Wonder 128 16M 32M PCI	\$228/328
ATI TV Wonder PCI	\$112

AGP Video Card

3D Labs Oxygen VX1 32M AGP	\$338
Asus 3800 TNT2 32M w/ 3D Glasses	\$268/308
Asus 6600 GeForce 32M Pure/Deluxe	\$348/418
ATI Rage 3D 8M / Xpert 98 8M	\$65/90
ATI Xpert 99 8M / Xpert 128 16M	\$108/138
ATI Xpert 2000 32M AGP	\$168
ATI Rage Fury 32MB AGP / OEM	\$208/198
ATI All-in-wonder 128 16M/ 32M	\$228/328
Creative GeForce 32M/ Pro 32M	\$328/388
Creative TNT2 32M/ 32M Ultra	\$168/268
Diamond V770 TNT2 32M / Ultra	\$188/248
Matrox Millennium G400 16M / 32M	\$178/238
Matrox G400 32M Dual Head / Max	\$268/318
Voodoo3 2000/3000/3500 16M	\$148/198/350

Monitors

AOC 17" 7Glr .26 / 19" 9Glr .26	\$308/520
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From Y1K to Y2K

Continued from page 35

Computing in the name of God (or gods) was the norm.

Among the peoples whose technologies the Arabs inherited, the ancient Babylonians had invented a numerical calculation system around 2500 BC, and were particularly skilled at astronomical observations. They appear to have invented algorithms to help make com-

plex calculations as early as 1800 BC. Even today, algorithms are fundamental conceptual tools in developing computer programs.

The Babylonians may also have invented one of the first artificial computing aids, the abacus. "Abacus" is based on a Semitic word for dust (the ancient Greek word for dust is *abax*), and in its earliest form the abacus was simply a flat wooden tablet, which was sprinkled with fine sand. Numerals were written on

it with a stylus made of wood or bone. As early as 1000 BC, a refined version of the abacus with rows of beads representing numbers was in use in China and Egypt.

The classical Chinese abacus, or computing tray, was called a Suan Pan. It appeared around 200 AD and was improved over the next 1,000 years. Its Japanese counterpart, called a Soroban, appeared several centuries later. The abacus is a remarkably fast and efficient com-

puting aid, still used widely for business in parts of Asia. (As recently as 1946, a skilled Japanese Soroban user named Matzukai went head to head against an American electronic computer in a calculating competition and won.)

The civilizations of Egypt, Babylonia and Assyria also established royal libraries, the first examples of extensive databases. The greatest library in the ancient world was at Alexandria, a Greek city in Egypt. It contained more than a million books, summing up the knowledge of the world of its day.

Beginning in the sixth century BC, the classical Greeks, learning from their more advanced neighbours, began to integrate and improve upon the foreign mathematical and computing systems. By 450 BC the Greeks were highly proficient with geometry, and were using the abacus. By 320 BC, Aristotle attempted to gather all scientific and natural knowledge into a single, comprehensive series of reference books.

By 150 BC, Hipparchus of Bythia is believed to have invented the astrolabe, a computing device that uses an engraved map of the sky to calculate time, distance and direction. By about 100 BC, the Greeks had devised even more complex mechanical computing devices for calculating the movements of major stars and planets (the remains of a Greek astronomical computer were found in a first century BC shipwreck off the island of Antikythera in 1901, but this fact was not published until 1959).

Around 300 AD, the Hindus developed the numerical system on which our modern system is based, and which included the concept of zero. The Arabs adopted a version of the Hindu numerical system around 800 AD, and "Arabic numerals" eventually found their way to the West, partly through the efforts of Leonardo Pisano Fibonacci, around 1202 AD.

Passing the torch

Although the Muslim Arab Empire preserved and even advanced the classical world's computing technology, its glory days came to a sudden end.

The Mongol invasion, which climaxed in the destruction of Baghdad in 1258 AD, ruined much of Central Asia and the Middle East, and mortally wounded the classical Arab civilization. (It's worth noting that the barbarian Mongols also respected high technology. Their invading hordes generally took with them a contingent of the best Chinese engineers and technicians to apply the latest military technology, including gunpowder and sophisticated mechanical siege engines, to break down the enemy fortresses that the Mongol cavalry could not overcome.)

In short order, most of the lands of the Muslim Arab Caliphate were taken over by the Muslim Ottoman Turks, whose empire contributed relatively little that was new in the way of science. As European science and scholarship revived during what we now call the Renaissance of the 1400s, the Turks inadvertently gave a final gift of classical civilization to the West.

In 1452, the Turks finally conquered the city of Constantinople, which had held out against Muslim attacks for nearly 900 years. A wave of well-educated Greek refugees fleeing the fall of the last great city of the Graeco-Roman world brought with them treatises on mathematics, mapmaking and astronomy that directly

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From Y1K to Y2K*Continued from page 42*

inspired Christopher Columbus to set out in search of the New World in 1492.

The quantum leap

During the 1400s, a fundamental change took place in the group of western European societies that transformed Europe from a relatively backward, weak region into the rulers of the planet—for better and for worse—for the next 500 years. To put it simply, Europe hoisted itself up largely by fostering what we would now call knowledge industries.

European universities established over the preceding centuries (Oxford in 1247, and Cracow, Poland in 1364) had helped develop a critical mass of scholars, and the technical guilds associated with metallurgy, mining and instrument making gave rise to a wave of technological invention that has continued to the present day. In 1391, the poet and storyteller Geoffrey Chaucer wrote perhaps the first English technical reference, a treatise on the astrolabe, which had been re-introduced to Europe via Moorish Spain.

To bypass the Islamic world's monopoly on trade with the Far East, Portugal's Prince Henry the Navigator established a research centre on the coast of Portugal called Vila do Infante. There, between 1418 and 1460, scholars and engineers developed the mapmaking, navigational and shipbuilding technology that enabled Europeans to sail around the entire planet and to map all of its oceans.

The value of "intellectual property" was recognized by the leaders of the European states from the Renaissance on, and both public and private money was lavished on education, publishing, research, and development. The perfection of printing presses using moveable metal type by Johann Gutenberg in the mid-1400s gave a huge boost to literacy and the spread of information. The development of sophisticated banking and trading systems completed a self-reinforcing loop of investment, invention and economic growth.

Euro-centric

Information technology was fundamental to keeping the European industrial engine going, and there were constant efforts to systematize and mechanize the collection and transmission of critical information. For several centuries, efforts were made to develop mechanical calculating devices that would speed up and improve the accuracy of financial, engineering and administrative calculations.

A Scot, John Napier, invented a system of algorithms and a simple arithmetic rod calculator, called Napier's Bones, in 1614. The slide rule, a mechanical device for performing a variety of computations, was invented in 1620 and improved several times over the next century. The great French mathematician Blaise Pascal invented a mechanical arithmetical calculating machine in 1642. In 1646, the word "computer" was first used, to describe persons who performed time measurement or calendrical calculations.

The interest by the ancient Greeks, Chinese, and Arabs in mechanical calculating or computing devices for astronomy was carried on with increasing energy in many European countries, resulting in the Nuremberg Clocks, astronomical computer/clocks that employed very sophisticated mathematics in the construction of their gear systems to accurately display the movements of stars and planets.

The Leibnitz Wheel of 1671 was a workable mechanical calculator, and the Jacquard loom of 1801 was a programmable automated weaving machine that used punched cards to program design patterns. The efficiency of the Jacquard loom encouraged European inventors to devise a host of manufacturing machinery to improve industrial productivity. European industry increasingly dominated the world economy as a result.

Europeans began to explore the nature of electricity, as it applied to both machinery and to living creatures. Luigi Galvani invented the study of electrophysiology in 1786, demonstrating that there was an electrical component to living nervous systems. Thermoelectricity, the phenomenon whereby heat can be transformed into electricity, was discovered in 1820.

As the industrial revolution gained steam, there was an ever increasing pressure for

greater efficiency and speed in processing commercial information. Charles Xavier Thomas invented the first practical, mass produced mechanical calculator for business use in 1820, and key-operated adding and tabulating devices became a growth industry of the 19th century.

The Difference Engine

The most ambitious attempt to build a truly



powerful computing device prior to the 20th century took place in England in the 1830s, where Charles Babbage spent a fortune and many years attempting to build his Difference Engine, an advanced mechanical computer. Babbage's theories were sound, but he ran out of money and time before the device was finished.

However, one of his associates in the project, Ada Byron, the Countess of Lovelace, wrote an account of the Difference Engine project. She

is credited with being the first female computer programmer.

In 1854, the mathematician George Boole invented a system for depicting numerical information in the form of zeros and ones, a method called Boolean Algebra. With the development of electricity, this "binary" mathematical system became the basis for encoding digital information, and the basis for developing computer programming.

Yankee ingenuity

By the mid-1800s, a new player appeared on the technology scene, in the form of the United States. Originally a mostly agrarian society dependent on European manufacturing, investment and science, the U.S. developed its own university system and a vigorous business culture that encouraged a sometimes ruthless quest for efficiency and an almost religious belief in the virtue of getting rich.

Inventors such as Alexander Graham Bell, Thomas Edison, and Nicholas Tesla invented many of the modern world's most significant technologies. In the case of Bell and Edison, who were also quite astute businessmen, their inventiveness resulted in enormous wealth, and the formation of great companies based on their names.

In the case of Tesla, one of the most profoundly inventive individuals in the history of mankind (the true inventor of radio, the alternating current, and the electro-magnetic motor), a complete lack of business sense resulted in his dying in obscurity and poverty, while a certain George Westinghouse and the company he formed became immensely rich.

The American Herman Hollerith invented a mechanical tabulating machine for processing census information, which was used to process the data from the 1880 U.S. census. The device was successful, and Hollerith's company eventually evolved into IBM. □



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WordPerfect Family Pack

Corel packs productivity, creativity, reference, tutorial titles into bundle that offers something for everyone

Corel Corp. (<http://www.corel.com>) has released a software bundle aimed at getting first-time PC users started off on the right foot. However, the WordPerfect Family Pack, which has a suggested retail price of \$89 (and a \$20 mail-in rebate offer), will also appeal to budget-conscious families or to those with older PCs because of its modest system requirements.

The WordPerfect Family Pack requires a minimum of a 66 MHz 486-based system running Windows 95/98/NT 4.0, with 16 MB RAM (32 MB recommended), 50 MB (200 MB for typical install) hard disk space, and a CD-ROM drive. The bundle includes:

- Corel's WordPerfect 8 word processor;
- Quattro Pro 8 spreadsheet program;
- Print House Magic 4 graphics program, which has a range of creativity projects such as greeting cards, banners, and party decorations, and includes easy-to-use templates and clipart;
- Photo House 3 image-editing software for touching up or adding special effects to digital photos;
- The Learning Company's Mavis Beacon Teaches Typing 9 to help children and adults learn to type and improve typing speed;
- Compton's Interactive Encyclopedia 1999 multimedia reference;
- a six-month subscription to ClipartCity.com, Corel's new online clipart collection, which features more than one million images;
- and the Task Manager, which steps new users through a variety of projects using different applications in the bundle.

—Megan Johnston

Comdex's hidden gems

By Tom Venetis and David Tanaka

Full Comdex in Las Vegas is always a time of major announcements and major product releases, and this year's massive trade show was no different.



While companies like Ottawa-based Corel Corp. grabbed the spotlight with the release of the Corel Linux OS, and seemingly dozens of companies showcased a variety of MP3 players, some of the most interesting technologies were promoted quietly, without the usual Las Vegas hype and glamour.

Linux connection

Edmonton, Alta.-based Bittco Solutions used Comdex to demonstrate NetReality, a search and visualization tool for Linux.

Marty Tascona, vice-president of marketing for Bittco, says NetReality is not a search engine in the classic sense, like Yahoo!, but is closer to the Sherlock search engine on the Macintosh operating system.

"The whole Mac positioning is the ability to go out and find things on your [hard] disk, in your file system and now across the Internet or intranet," Tascona adds. "Our positioning is

very similar, so NetReality will be to Linux what Sherlock is to the Mac."

Tascona adds that NetReality will be especially welcome in business and government environments that have Linux and need to access a number of databases and the Internet for information.

Unlike other search engines that group sites and information by how frequently they appear, NetReality uses neural net-based Self Organizing Maps to "fingerprint" documents. When someone keys in a search based on a word, phrase or idea, NetReality uses this neural net to pull information from the Internet, database or network. It then checks to see how closely the documents match the search, then compares them to each other to remove duplicates.

Tascona says NetReality can be set to only search for documents that are as closely related to the search guidelines as possible, cutting down on the number of sites and documents that have to be searched.

"We can quickly say that the engine should only give you documents that are 70 to 80 percent relevant, so different documents start to disappear, allowing you to whittle down to what you really want," Tascona adds.

Bittco is already in talks with federal and provincial agencies, including the Department of Defence, about using NetReality. However,

Tascona would not go into details on the progress of the talks.

Bittco Solutions, <http://www.bittco.com>

01 launches Communicate! i2000

If Bittco is aiming at large corporate and government clients, then Mississauga, Ont.-based 01 Communique Laboratory Inc. is aiming at the small and home office (SOHO) and small-business market with its Communicate! i2000 unified messaging solution, which integrates video, voice, email and faxing solutions.

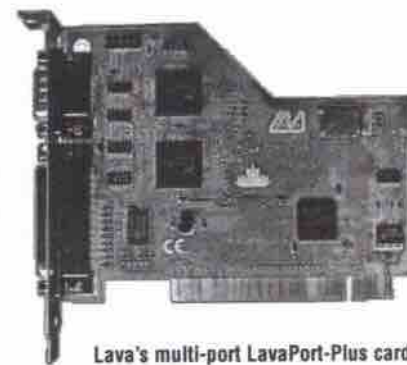
On the video end, Communicate! i2000 offers videoconferencing using the H232 protocol, video attachments and video monitoring. The monitoring and attachment features can be used together as a security system, allowing one to monitor everything from the office cubicle to one's home.

"You could have your PC with a camera at home facing the front door and it will detect motion, taking a picture of an intruder," says Brian McElwain, vice-president of sales and marketing for 01 Communique. "It will attach that image to an email and send it to your address. Then you can dial into the software and talk to the intruder and say, 'I can see you but you can't see me, and if you don't get out of the house, clean the dishes and mop the floors, I'll forward this photo to the local police department.'"

01 Communique offers an email reader function that lets users dial-in and have their email read back to them by a synthesized voice. They can then send a voice response, which will be attached to an email message as a sound file. Internet faxing is also included as well as support for up to four different modems, including cable and DSL.

"All of our products are directed at the SOHO market," McElwain adds. "We see broadband coming up strong and we want to give the SOHO user and small business user every type of business communication that is possible at a very low cost."

01 Communique!, <http://www.01.com.com>



Lava's multi-port LavaPort-Plus card

Continued on page 50

ILLEGALLY INSTALLED SOFTWARE DON'T BE A VICTIM!

Beware of PC prices that are too good to be true. Fact is, to get the price down, the PC dealer could have illegally installed unlicensed software onto the hard drives of the PCs prior to sale. With illegally installed software, you're missing out on more than just the licenses. If you need to reload the software, you can't do it without the CDs. If you need to fix a problem, there are no product manuals to help you. Without Certificates of Authenticity, the product is likely to be counterfeit and you put yourself at risk.

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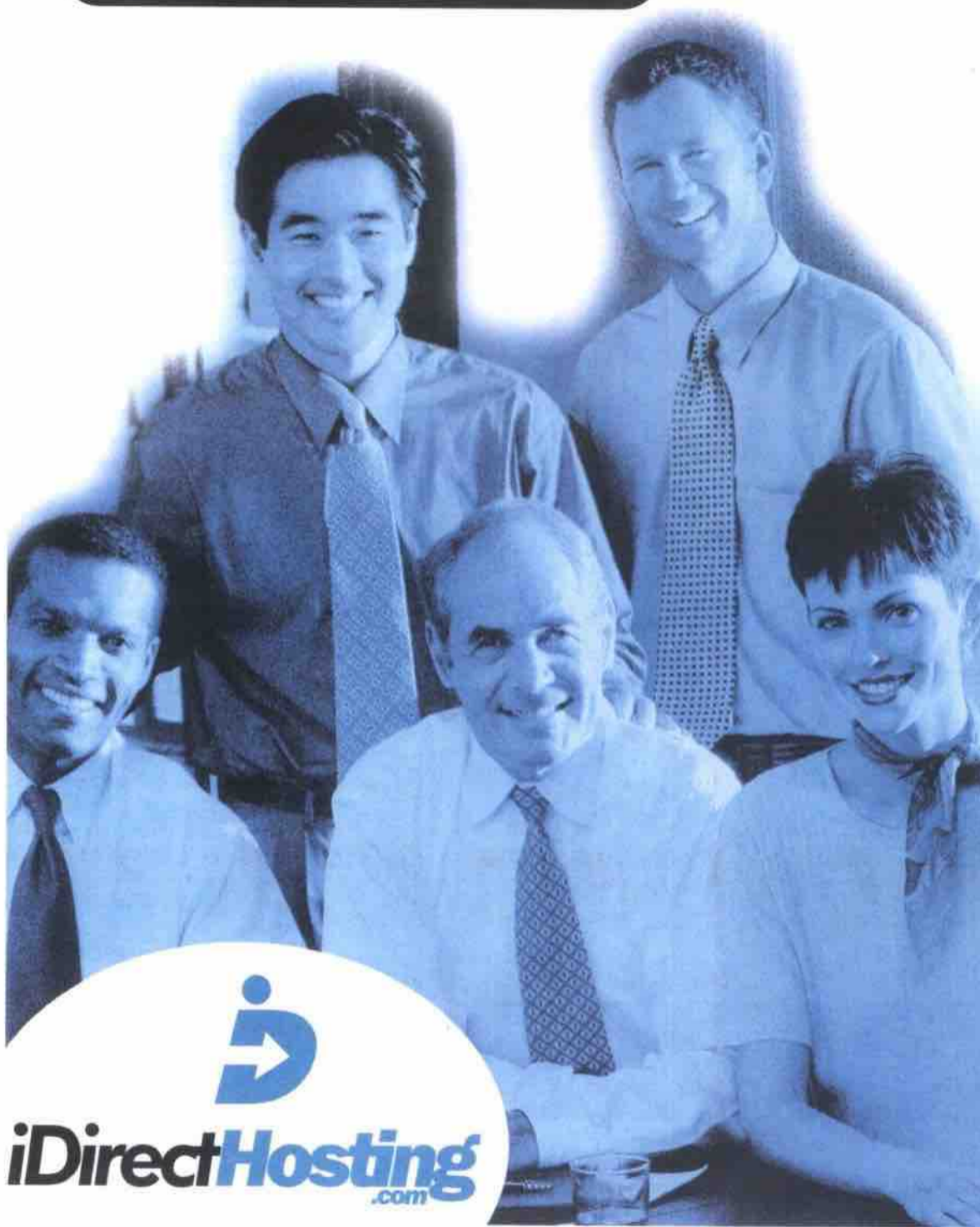
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Comdex's hidden gems

Continued from page 48

Multi ports from Lava

But if Canadians are looking at every possible kind of communication solutions for their computers, they are also becoming gadget happy, attaching everything they can find to their systems. This has caused congestion problems as computer users run out of ports. Toronto-based Lava Inc. plans to ease that con-

gestion with its LavaPort-Plus, which combines serial and parallel ports.

"We put three separate ports on one card, two serial and one parallel," says Kalyna Yosypiv, marketing manager for Lava. "The two serial ports are capable of IRQ sharing and COM port sharing because it is a PCI card. So you can hook up any serial device to the two serial ports and the two devices will share resources."

Yosypiv adds the parallel port is also three times faster than other built-in parallel ports allowing for faster data transfer rates, which are especially useful for people looking to attach Zip drives or scanners to their system. The two serial ports offer data rates of up to 460.8Kbps.

The LavaPort-Plus is not exclusively aimed at older systems. Yosypiv says newer systems are also targeted because "there are not enough

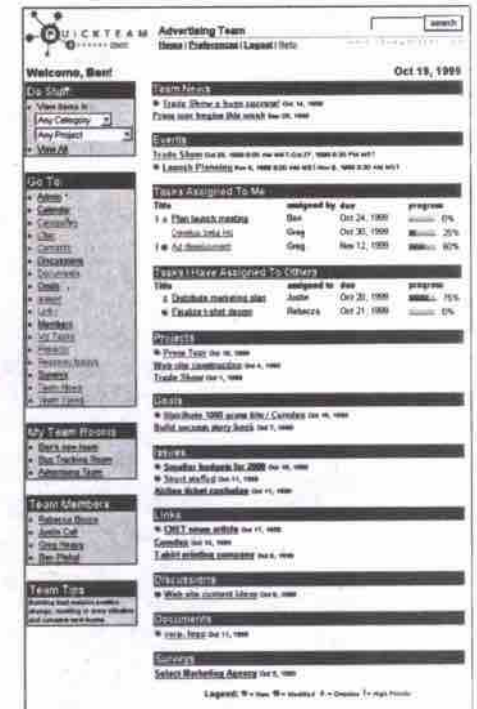
PCI products that can be hooked up to that PCI slot on the motherboard... so if you want to hook up an extra device, you have to scramble and look for other slots."

Lava Inc., <http://www.lavalink.com>

Team rooms

ThoughtStar, based in Sandy, Utah, introduced a collaborative computing environment called QuickTeam based on Internet technologies.

"[QuickTeam is] a portal where users can collaborate, work together, define and manage projects, and upload team information, such as documents, news, calendars, and many, many other things that we've found teams are finding useful in their work," said Greg Heaps ThoughtStar's vice-president of marketing.



Because it uses Internet standards, team members can access the virtual workspace using a Web browser. "Team members can access the team room any time, anywhere," said Heaps. "There's no client to install. You just need to get to a Web browser, get to the Internet, enter a password, and get to your team room."

Heaps says collaborative tools are being adopted most actively by four sectors: the technology, financial, telecommunications and pharmaceutical industries. But he adds that "anyone that works with teams either within or outside their organization, and uses the Internet will see the benefit of QuickTeam."

The company offers a free limited function version called QuickTeam Express. QuickTeam Professional has more features, such as enhanced security, whiteboarding and Gantt Charts. The professional service can be leased for US\$12.95 per user per month. For companies that want to host their own team room, ThoughtStar sells the server version of QuickTeam Professional for US\$899 with a five-user licence. Multiple-seat licence packs and site licences are also available.

ThoughtStar, <http://www.thoughtstar.com>

QuickLink Pen scans, stores text

A few years ago, we came across a product called the IrisPen, a single-line scanner about the size of a jumbo magic marker. You used it like a highlighter, moving the tip, which contained a small scanner, across lines of text on a page. Optical character recognition (OCR) software would

Continued on page 62

not getting any?



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Corel simplifies Linux experience

The development of a user-friendly Linux may be what's needed to move the much talked about OS off the server and onto the desktop

By Tom Venetis

Linux's greatest success to date has been its popularity as a server operating system. Framingham, Mass.-based International Data Corp. (IDC) reports that 13 percent of commercial organizations are using Linux. By 2003, IDC predicts Linux commercial shipments will have a compound annual growth rate of nearly 25 percent, compared with a rate of 10 percent for all other client operating environments, and 12 percent for all other server environments.

Linux's popularity on servers, however, has not translated into getting the operating system onto desktop PCs. In this market, Linux has a lot of catching up to do.

"Linux has a market share less than half of the Mac OS, but more than twice of OS/2 or Unix," says Dan Kusnetzky, director of operating environment research for IDC. "So Linux is there, but it is not a major force."

The reason is quite obvious, according to many analysts: in its present form, Linux is simply too hard to use. While efforts have been made to simplify it, many outside the pro-

gramming community still regard the OS as something only used by hardcore computer "geeks."

"Linux was developed by a community of developers, and it is great for developers who don't mind typing on a command line and niggling all the bits in the OS to get things just the way they want them," says Scott Draeker, founder and president of Loki Entertainment Software, in Tustin, Calif.

Loki ports popular PC-based games—including Civilization, Soul Glider, Rail Road Tycoon II and Ultimate Solitaire—over to Linux.

"But most people want to use their computer and don't have the time or the interest to deal with that kind of thing," Draeker says. "I want dialog boxes, menus and the kinds of tools created by Apple and Microsoft to make the computer more accessible to the rest of us."

Enter Ottawa-based Corel Corporation with its ambitious goal of making its Linux OS for the desktop as friendly to install and use as any other operating system. Corel's initiative was announced in April 1999 with an alliance between Corel and two open source developer

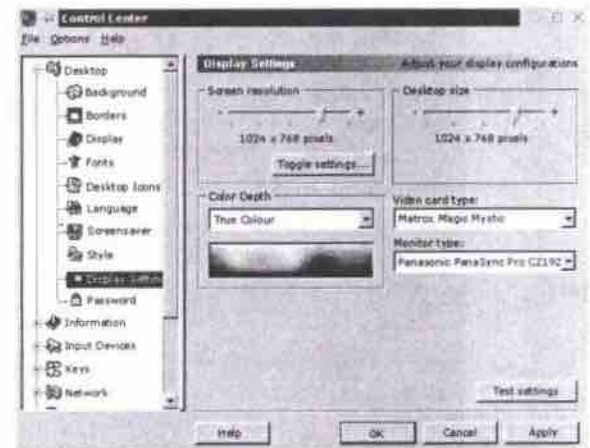
communities. The alliance was formed to develop a graphical user interface (GUI) for Linux, and to simplify the installation process, which many potential users discovered was too onerous a task as they tried to load Linux onto a system. Corel's goal was to develop a version of Linux OS that automatically detects the system's hardware—including sound cards, CD-ROM drives, printers, and scanners—and loads all the necessary drivers.

Corel and K Desktop worked to improve the KDE interface that Corel is using with its Linux OS. The Corel Linux OS is also built around the Debian GNU/Linux distribution, which is currently one of the more popular Linux installs.

Dining on Wine

A key and equally ambitious component of Corel's Linux strategy was to apply its work on the open source Wine Project to make 32-bit Windows applications run on Linux.

Corel recently gave TCP a demonstration of Quattro Pro for Windows running on Linux through a Wine layer—without the Windows OS on the system. By advancing the work of the Wine open source project, Corel hopes to make Linux more compelling to consumers who might otherwise stay away because of a lack of Linux versions of their favourite Windows applications. *Continued on page 58*



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XML, scalable software keys to the personal Web, says Gates

By David Tanaka

LAS VEGAS—The personal Web is the next big thing, according to Microsoft chairman Bill Gates.



"The advances in the PC and the advances in the Internet, and perhaps most importantly the advances in software are going to create an amazing new tool—a tool that brings together all the good things that we think about in a new world of communications," said Gates at the Sunday evening keynote address, which kicked off the Comdex/Fall '99 trade show here in mid-November.

about the Internet or the PC today."

Gates took the audience through a history lesson on the PC industry, pointing out the tension between "big iron" centralized computing and the personal computer model of processing power distributed across multiple desktops. He then applied the big box versus PC debate to his personal Web vision. The growth of PC penetration in the home (more than 50 percent of U.S. homes now have a PC, according to his statistics) has spawned an industry of innovators. Add the Internet phenomenon on top of that, and "you get something that even surprises the people whose job it is to make projections about what is going to happen. So, the PC has gone to new heights, and I believe, will continue to do so."

In the future, said Gates, Web surfers won't have to deal with Internet content through pre-

organized screens. Extensible markup language (or XML, a tagging schema related to standardized general markup language, or SGML, that treats content information and content presentation information separately) is the key to allowing information to be customized at a "semantic" level. For business, "it deals with the question of, if one person wants to buy and another person wants to sell, what information do they have to send back and forth."

Gates said that, from the user's perspective, it will mean a more seamless and continuous experience across devices, because "you won't have to move your information—your files, your favorites, your contact list—from one site or device to another device. If you personalize, it will show up on all your different screens, whether it's the PC, or the TV at home."

He said personal Web services would extend

to all of the user's devices, from a standard PC to a Web TV, to smartphones to—as Gates demonstrated—a smart automobile.

With everything going through the Internet, this will of course, demand reliability and scalability on an ever increasing magnitude. In the past, Gates said, scalability was often thought about in terms of hardware—adding more or bigger iron to the problem. However, scalability is also a software issue, and in fact, managing the scale and reliability is fundamentally, a software problem, according to Gates.

He said Windows 2000 (the long-awaited update of the Windows NT network OS) would be a key to software scalability. To illustrate this, Gates demonstrated how the software redistributed and balanced the load across a Web site's remaining servers when one server failed. □

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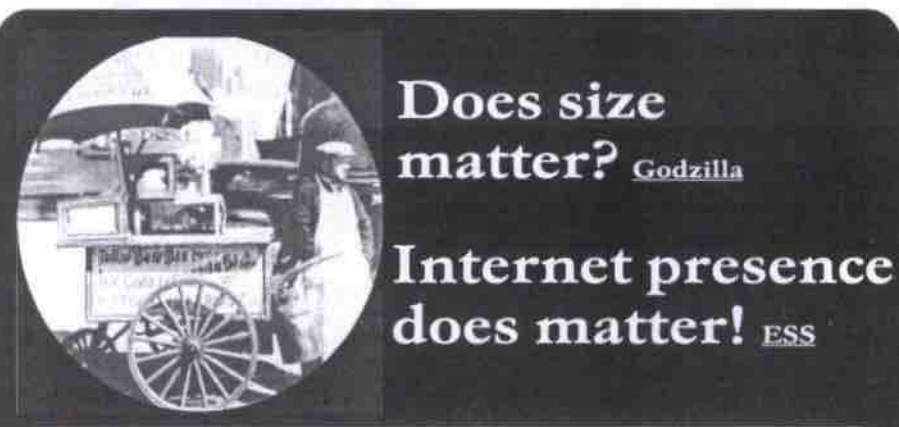
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Corel simplifies Linux experience

Continued from page 54

Mike Dickson, Corel's project development manager, says Wine is a reimplementaion of the WIN32 library set that allowed Corel developers to either create a binary port to run precompiled Windows applications in Linux through the transport layer of Wine, or to use a secondary port to compile directly against Wine's WIN32 implementation to create a native Linux code.

"The main benefit of Wine is that you are able to take an existing application and move it to another operating system with a minimum of recompile and a minimum of trouble," Dickson says. "This lets you have the same look and feel, the same feature set, and the same binary compatibility and file formats."

This preservation of the look and feel of commercially available office and productivity suites (such as Corel's applications) when moved over to Linux will be an important factor in making Linux a viable desktop OS—people want to use what is familiar.

Linux applications

At the same time, Corel also moved to add functionality to the Linux OS by partnering with several third-party developers to make available Linux-based productivity solutions and games.

Draeker says he signed on to make Loki's Linux-based games available to Corel since he saw it as a natural fit between the two companies.

"Loki and Corel are really two companies that are focused on Linux as a consumer desktop product," Draeker adds. "When they told

us of their plans for Linux distribution and of the Linux plans, we thought it would be a good thing."

Another company that is working closely with Corel is eFax.com Inc., a Menlo Park, Calif.-based developer of popular faxing and messaging solutions for the desktop.

"The idea is that if you bring out a new desktop, you want to make sure key applications and services are available to the user to make it competitive," says Michael Crandell, vice-president of eFax.com. "[Corel] gave us a call and identified eFax as a strategic opportunity to support faxing and other unified messaging services that we are working toward in the desktop environment."

Crandell adds that the inclusion of fax and messaging services should make Linux more appealing to everyday consumers who want prepackaged and preloaded solutions, much in the same way Windows offers a variety of pre-installed productivity solutions with its desktop OS.

Others embrace user friendliness

While Corel has been making a lot of noise about its Linux OS, it is certainly not the only company trying to make Linux more user-friendly. Caldera Systems Inc., of Orem, Utah, has been shipping its OpenLinux 2.3 to businesses since September. It offers remote mass installation features, Y2K compatibility and an improved Lizard (Linux's wizard) GUI for easier installation. The company also offers a variety of office productivity solutions that aim to preserve the functionality and familiarity that business consumers expect from commercially available products.

"People don't want to come into something and wonder what is GIMP [GNU Image Manipulation Program, a Linux imaging application]," says Benoy Tamang, vice-president of marketing for Caldera Systems. "People don't know what it is and what they want is familiarity."

"They want to make sure that what they are doing is not lost and there is not too much time spent on the learning curve. Corel entering in the marketplace is well needed because it validates what we have been trying to do and it is the right strategy, which is needed to enable more people to access Linux on a friendlier level."

Many argue that if Linux is to truly become a commercially viable desktop alternative to Windows or Macintosh, PC vendors have to begin offering machines with the OS installed. So far, most PC hardware vendors have been content to offer Linux on their server products. Companies like Caldera and Red Hat Software Inc., a Durham, N.C.-based Linux distributor and developer, have agreements with several manufacturers to put Linux on some of their servers.

Caldera's Tamang says his company is in discussions with several U.S. and overseas partners to offer Linux with dual-boot capabilities on commercial desktops, letting consumers flip between Linux and Windows.

And Ottawa-based PC manufacturer Eurocom is looking to offer dual-boot notebooks featuring Corel's Linux OS in the near future.

Dale Windle, manager of technical operations for Eurocom, would not go into specifics about the company's Linux plans, but would

say Eurocom is looking to offer Linux on notebooks in its 5100 and 5300 lines.

"We have gotten to the point where we have taken a couple of machines and given them triple-boot capabilities offering Windows 98, Windows NT and Linux," Windle adds.

He says Eurocom will also offer Corel's Linux-based office suite, but the company is still in negotiations with Corel about details of that relationship.

While dual-boot consumer machines are one way to take Linux into the mainstream, others suggest Linux will have a greater and more immediate impact on digital-ready devices that will connect people to the Internet. Here, Linux's small footprint, speed and flexibility would be an asset.

Even Corel may be looking beyond the commercial desktop space. IDC's Kusnetzky sees Corel as looking at Linux less as a means of opening up new commercial possibilities, but as a way to further consolidate its place in government and vertical markets where its office and productivity suites have done well against Microsoft products.

Kusnetzky believes Corel could be looking at businesses that are looking to lower the cost of their IT expenditures by offering them an operating system and office suite that can run on low-cost, low-maintenance hardware.

"And putting together a Linux package that installs very nicely and supports their office suite, they can approach a complete solutions bid, which is of lower cost," he adds. "They are looking to stay in the personal productivity market and looking to extend their solutions."

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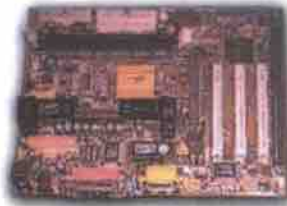
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3D PCI Sound Pro, meet PC'98 Spec. HRTF Positional Audio supports MS Direct 3D and Aureal's A3D interface, w/4 channel speaker out; software Wave-table Synthesizer and 24bit Digital Audio Interface (SPDIF) IN/OUT with 24-bit Stereo, Integrated 64-bit 3D AGP w/ 8MB share memory
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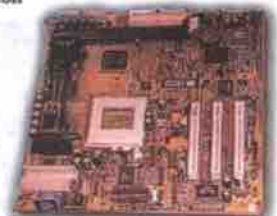


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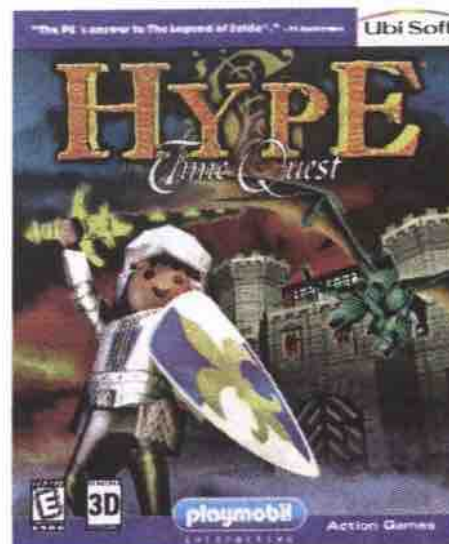
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Ubi Soft's kinder, gentler games don't skimp on excitement, magic



In the interactive gaming business, most press coverage goes to the big name, big gun, and big explosion action titles such as Tomb Raider, Aliens vs. Predator, Half Life and Quake. Sometimes, almost lost in the uproar of hormonally charged shoot-'em-ups, is the kinder, gentler face of gaming for those of a less bloodthirsty orientation.

Hype: The Time Quest

From: Ubi Soft
<http://www.playmobil-interactive.com>
Minimum system requirements: 200 MHz Pentium MMX-based PC, 32 MB RAM, 6x CD-ROM drive, 3D graphics accelerator card.
Suggested retail price: \$34.99

Rayman 2: The Great Escape

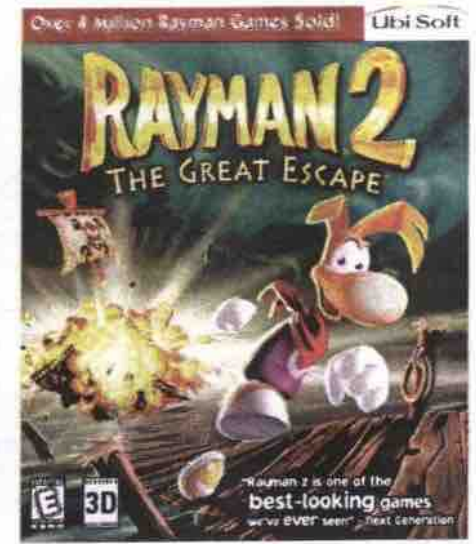
From: Ubi Soft
<http://www.rayman2.com>
Minimum system requirements: 100 MHz Pentium-based PC, 32 MB RAM, 4x CD-ROM drive, 16-bit sound card, 4 MB 3D graphics card.
Suggested retail price: \$34.99

Companies such as Disney Interactive, Humongous and Broderbund sell millions of copies of mild-mannered titles aimed at kids and their parents. One of the major success stories in the more pacifistic interactive arts is Ubi Soft, a French firm that has had great North American sales of its Rayman title.

Ubi Soft has sold more than 4.2 million copies of the Rayman title, building a large and loyal fan base in the process. For the last couple of years, Ubi Soft has been working on two new titles, a second edition of Rayman, titled Rayman 2: The Great Escape, and an entirely new title using characters from the Playmobil children's toy line, titled Hype: The Time Quest.

Ubi Soft showed TCP editors the two new games, which are now on Canadian store shelves. The Ubi Softies came from the firm's huge Montreal-based development facility. More than 400 people work out of the Ubi Soft facility in Canada, nearly half of the company's worldwide staff. Most of the development work on the new titles was done in Canada, which Ubi Soft has found to contain a rich pool of artistic and programming talent.

Rayman 2: The Great Escape continues the adventures of the familiar Rayman character, but moves the series from 2D to 3D technolo-



gy. In the game, space pirates have conquered Rayman's planet, and Rayman must win his way through 40 locations on 14 worlds in order to save his friends and defeat the pirates. A large part of the game's appeal is the combination of Rayman's incredible agility and the challenge of solving all the different levels of the game.

Hype: The Time Quest is based on the popular fantasy play characters from German toy-maker Playmobil. The title character, Hype, is a well-known Playmobil toy knight who is magically turned into a statue and cast backwards in time by Barnak, the Black Knight. His quest is to return to his own time and defeat the evil knight.

Both these games offer engaging problem solving and action in beautifully designed 3D environments, with gameplay that is quite involving and addictive. In Ubi Soft's case, the term "action" refers to acrobatics, blood-free tussling and magic. They are recommended for children eight years of age and older.

As well as pushing the new games towards launch just in time for Christmas, Ubi Soft has already released Rayman Forever, a special edition of the Rayman game. Priced at \$9.99, the special edition includes the original 2D Rayman game, 40 new levels designed by Rayman fans, and a Rayman Designer module.

A Nintendo 64 version of Rayman 2 has also been released, and is priced at \$59.99. Ubi Soft says it has plans to launch a Sony Playstation version of the game in the new year. It has no plans to release a Mac version of either title, however.

—Jeff Evans

World Wildlife Fund information site

NB—The World Wildlife Fund (WWF) now has its own Web site, complete with a kids section, an online press room, and a revamped endangered species section. The site lists information on endangered species such as tigers, rhinos, whales, and pandas, the places where they live, threats to their survival, and how WWF is helping to save them.

<http://www.worldwildlife.org>

Linux continues march into mainstream

By Tom Venetis

LAS VEGAS—Two key announcements at Comdex Fall/99 have helped strengthen the Linux operating system's position as a challenger to Microsoft's dominance in the industry and on user desktops.

COMDEX

Merger gives Red Hat tools, services

The first announcement at the November technology conference and exhibition was made by Robert Young, the chief executive of Red Hat Software Inc., a Durham, N.C.-based Linux distributor and developer. Young revealed details of a merger with the privately

held Cygnus Solutions that will allow Red Hat to offer Linux users a complete set of developer tools and support programs. The deal is valued at US\$674 million.

Cygnus specializes in software development tools and engineering services and developer support for desktops, client/server systems, real-time operating systems (RTOS), and embedded, post-PC-centric platforms.

"What Red Hat has not had is a set of developer tools and developer support programs that are the equivalent of the industry-leading developer tools and support programs," Young said. "And that is exactly what the merger with Cygnus Solutions is going to bring to our ability to build a complete open source suite, not only of operating system technologies, but of developer technologies and the support services."

With these new offerings, Red Hat hopes to

widen Linux's appeal in the developer community, spurring them to build applications for the open source OS, which in turn could make more people look at it as a viable alternative to Windows.

Young, however, played down the importance of Linux on the desktop, instead focusing on its development for Internet appliances and giving people access to Linux-based services and solutions over the Web. Young called these services the killer applications of the 21st century.

"The desktop is a 1980's technology model," Young said. "You have these dumb, DOS-based workstations connected to intelligent services. As [U.S. District Court] Judge [Thomas Penfield] Jackson has pointed out [in his ruling in the antitrust lawsuit brought against the company by the U.S. Justice Department], that marketplace is dominated by Microsoft and

they have a monopoly. The reason is that people don't buy operating systems, they buy applications. And all applications are built for the Windows platform. Our opportunity is to build the applications of the 21st century. It is not to reinvent the applications of what we are now."

Corel unveils its Linux vision

Ottawa's Corel Corporation, however, believes there's still a lot of life left in the desktop PC. It used Comdex to unveil its much-anticipated Corel Linux OS for the desktop.

"This will be the operating system for the next 10 years," said Michael Cowpland, Corel's president and chief executive. "DOS has had 10 years, Windows has had 10 years and now its time for Linux to surge ahead for the next 10 years. Today, Corel Linux is as easy to use as

Continued on page 62

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Comdex's hidden gems

Continued from page 50

then convert the scan into text or numbers.

The IrisPen was back at Fall Comdex, but joined by a crop of next-generation cordless pen scanners from a variety of manufacturers. One we got our hands on was the QuickLink Pen Personal Scanner, from WizCom Technologies. WizCom has its headquarters in Israel and a U.S. office in Acton, Mass.

The QuickLink Pen takes the general design principle of a pen scanner to new heights, by adding onboard storage (up to 1000 pages of data, according to the company). This means it doesn't have to be tethered to a PC serial port. It is a truly portable device, drawing its power from two AAA batteries.

An address book module allows you to scan specific parts of a business card into the correct field. Once you've scanned various bits of

text and business cards, you can then connect the device to your PC via a serial cable. The address book fields can be mapped to corresponding fields in popular PC organizers, such as Microsoft Outlook. A small LCD screen on the unit also allows you to use the pen as an electronic address book.

The pen measures 15.25x2.5x3.8 cm (6x1x1.5 in.), and weighs 85 g (3 oz.). The company said software would soon be avail-



WizCom's QuickLink Pen

able to allow the QuickLink Pen to communicate with infrared-capable PCs, 3Com Palm handheld devices, and cell phones through the pen's built-in infrared port.

We did a quick test of the device and found that in a scan of a 47-word paragraph of 14-point text, the scanner made four mistakes, misreading the first word of the scan and a word that was printed in boldface type, along with misreading two punctuation marks. Not bad when taking into account the window for error associated with never having used the product before. The company claims the device is 95 percent accurate. The unit will be selling for an estimated street price of US\$149.

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Linux continues march into mainstream

Continued from page 61

Windows and is totally compatible with Windows networks, Windows devices and Windows files."

Cowpland also touted the ease of installation—some three steps—of Corel's Linux. The complexity of installing Linux on a desktop PC has been one of the key barriers to widespread adoption of the OS.

Corel also demonstrated alpha versions of QuattroPro and CorelDraw for Linux, and announced that its complete suite of business productivity applications, WordPerfect Office, will be available in a Linux version early next year. (A Linux version of its word processor software, WordPerfect 8 Personal Edition, is already available.)

Dan Kusnetzky, program director for the Framingham, Mass.-based International Data Corp. said having such Linux-based applications will be important in getting mainstream acceptance for the OS, which he predicts will grow in use by about 25 percent per year until 2003. □

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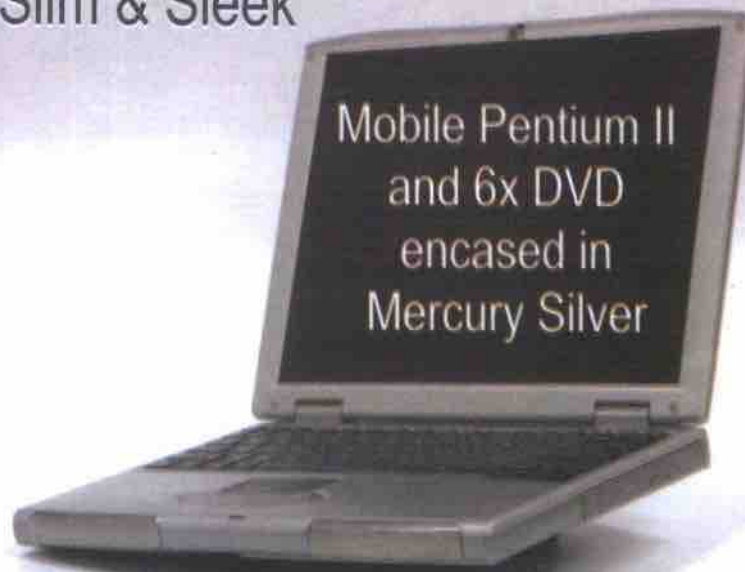
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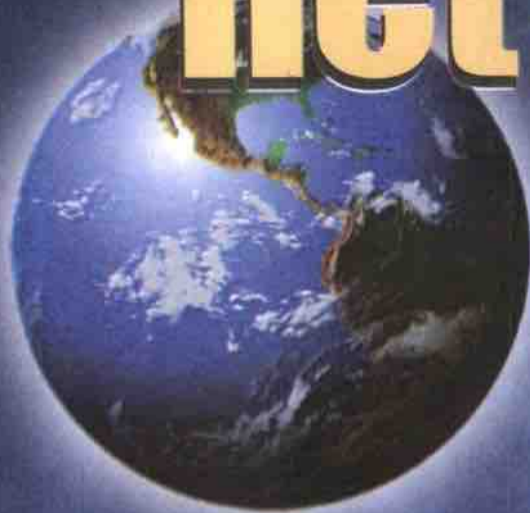
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By John Saunders
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Canada Post Corp. has launched its online delivery service, but security concerns may hinder its acceptance. Dubbed Epost, the service lets consumers and businesses send and receive electronic documents, including letters and bills. So far, more than two dozen organizations have signed on to the service, which Canada Post officials have taken pains to describe as secure.

However, one billing consultant wonders just how secure the service really is. "I have concerns in terms of its best-practices compliance, in terms of document management," said Bill Broddy, a partner with Toronto-based Prinova Technologies Inc. The company develops and integrates billing systems for financial, retail and utility organizations.

The service may not even meet the requirements set out in proposed federal legislation, he said. Referring to Bill C-6, which will set out rules for online privacy and e-commerce practices, Broddy said Epost falls short on protecting legal documents.

The recipient of a legally binding document, such as a legal writ or a credit card bill, has to take possession. When using the Epost service, Broddy said he couldn't save documents to his computer's hard drive and had to leave them in his online mailbox. For him, this doesn't necessarily qualify as taking possession.

As well, legal documents have to be presented in a format that won't change, he added. While Broddy said he couldn't transfer Epost files to his desktop, he was able to use screen captures as well as cut and paste information to other files. Less-than-honest subscribers could alter billing or other financial statements, then pass them off as legitimate documents for expense accounts, for example.

Broddy's guidelines follow similar ones set out about 20 years ago, following the advent of laser printing, he said. "They are reflective of the best practices that have been around for a long time in the computer documents business."

At the Nov. 26 launch of the service, Canada Post and its business partners dismissed security concerns. "The electronic post office is a major leap forward in facilitating secure and confidential electronic commerce transactions for all Canadians," said Andre Oullet, president and chief executive officer of Canada Post, at the Toronto event. "We are very confident that many Canadians will accept our invitation."

Oullet outlined several applications for the service, including sending and receiving contracts, bills, government forms, medical documents and credit card applications.

Epost "democratizes" e-commerce billing, according to Renah Persofsky, president and chief executive of Cebra Inc., also speaking at the launch. Cebra, an offshoot of the Bank of Montreal, helped develop the Epost service with Canada Post. Small businesses will be able to take advantage of cheaper electronic billing options than existed in the past, she said, referring to virtual private networks and extranets.

For Cameron Dow, Epost is the start of a new beginning for Canada Post. "It's a great opportunity," said the software research analyst with International Data Corp. (Canada)

Ltd. in Toronto. "It's pretty forward-thinking of Canada Post to be going down this path."

Security notwithstanding, Dow said the fight for the electronic bill presentation market is heating up and the sooner Canada Post gets


into the business, the better. The move could ultimately signal the end of paper-based documents, he said. "There's no question that within our lifetimes, we'll see the end of paper."

Broddy isn't so sure. While he said Canada

Post does stand to gain from its online business, he doesn't recommend clients switch their entire billing process over to Epost for the time being. "If you required the elimination of paper from the process, this is not ready yet." □

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TV on PC

Converged graphics cards let you watch, store and play television content on your PC. TCP looks at the latest offerings from ATI, Matrox and 3dfx

By Maarten Heilbron

It shouldn't seem so odd that computers and televisions are converging. Although television screens are larger and cheaper and computer monitors have more pixels per inch and are capable of displaying higher quality images, both are cathode ray tube (CRT) display devices driven by a box full of electronics.

So, on the surface, it seems we've waited a long time for the kinds of features found on graphics cards like the Matrox Marvel, the ATI All-In-Wonder and the 3dfx TV. And the basic functionality offered by these cards is just the beginning of a rich new feature set we'll soon enjoy.

What a TV tuner in your PC means

One of the neat features of all three cards reviewed here is their ability to display the output from your computer on a television screen using standard or high-quality S-Video connectors. And that's a minor feat compared to their ability to tune into 125 channels, record and play television programs, DVDs, and digitize videotapes on your PC.

Each of these cards starts as a top-of-the-line 16 MB 3D AGP graphics card and is loaded with software and all the cables you'll ever need. Together, these elements create what graphics industry pundit Jon Peddie describes as the virtual appliance—one that combines the capabilities of a DVD player, video tuner and recorder, game console and Internet browser. This may be the natural evolution, as

a dedicated media-rich feature set emerges, and the multi-functional PC—with its difficult to learn and manage operating system—fades away.

If you have a 350-plus MHz system, a free AGP slot, an older graphics card, you don't own a VCR, are technically minded and patient, then by all means start converging. If you have a DVD drive and an older DVD decoder, you'll see a substantial improvement in picture quality with these cards. If you're a telewebber who attempts to watch TV while surfing the Web on your PC, these cards will really help you cut down on the neck strain.

The 3dfx Voodoo3's FM tuner, the Matrox Marvel's DualHead capability, and the ATI All-In-Wonder's instant replay are all features that may push your "must-have" button.

Continued on page 68

Quicken: best consumer software ever?

Intuit's line of personal financial software is, by far, the most popular home-finance program in North America. It has been around nearly as long as the PC itself and has managed to best every competitor that has entered this arena.

By Rod Lamirand

I have been using and reviewing Quicken since 1992 and have watched it grow from a small DOS program that printed out cheques on my old dot-matrix printer, to a rich and complete line of financial programs. Quicken Deluxe 2000 is possibly the most useful and complete home software program in existence. If I could have only two software packages on my computer for the rest of my life (after the OS and a browser), I would choose an office suite (Microsoft Office or Corel Word Perfect Office) and Quicken!

Quicken Suite 2000

From: Intuit Canada
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Quicken comes of age

The maturation of this program began with the move to a graphical interface in DOS! Other advances have included the implementation of autocomplete, which, as far as I am aware, first appeared in Quicken. Intuit recognized the importance of the Web early and so a number of dial-out features were tried. The creation of the Canadian Quicken Web site (<http://www.quicken.ca>) in 1997 brought timely information and advice to Canadian users.

However, the jewel in the Quicken crown has to be the development of Open Financial Exchange (OFX). Intuit has finally managed to get industry players to buy into the OFX protocol. For you and I this means we can download all the information that usually arrives on a bank statement directly into Quicken!

Continued on page 77

Get funky with the 'disco' mouse

By Keith Schengili-Roberts

When I first saw a pre-production model of this mouse at Comdex Canada this past summer, I knew I had to get my hands on one, both literally and figuratively. It may seem odd to get excited about a mouse, but this is one funky device. The Microsoft IntelliMouse Explorer is easily one of the sleekest computer peripherals—it ranks near the top, right along with the iMac, for eye-catching design. Not only does it look groovy, it's also a pretty good mouse. It replaces the rubber ball used to direct a traditional computer mouse with an optical sensor, which offers smoother, more accurate tracking. While the IntelliMouse Explorer is not the first mouse to use such technology, as a Microsoft product, it is the first to be targeted at such a large consumer market. Or at least at the portion of that market willing to spend \$99 on a mouse.



IntelliMouse Explorer

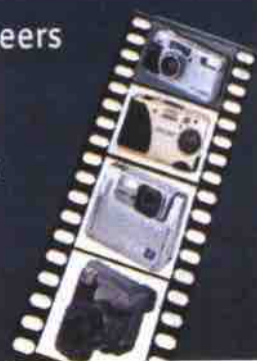
From: Microsoft
<http://www.microsoft.com>

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PC: 32-bit Windows OS (NT/95/98), 30 MB free hard drive space, round mouse port (PS/2-compatible) or USB port, and CD-ROM drive.
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The technology behind this mouse is what makes it truly interesting. The special optical sensor scans the surface beneath the mouse 1,500 times per second, which is sufficient to track very small and very quick movements. The mouse effectively scans whatever surface it is on, keeping track of the position of one image relative to the next, and converting that information into cursor movements. The results are amazingly smooth. *Continued on page 68*

TCP Lab peers down the lenses of the latest digital cameras page 84



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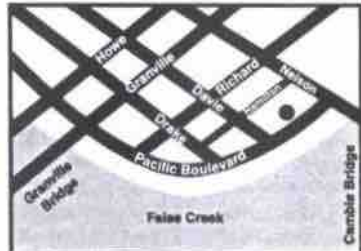
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TV on PC
Continued from page 66

What TV tuner cards are not
Before you buy, however, think carefully about the video signals you use, and how you use them. There's still a good list of things you can't do with a TV card and PC. You can't record one show and watch another. You can't pause a show while you answer the phone and

then start watching where you left off while it continues recording. You can't tune in a satellite signal or service from any other conditional access device, such as a pay-TV descrambler. These cards don't support digital TV.

Also consider that an onscreen remote is not as easy to use as a conventional handheld model. Features you take for granted, like fast-forward and rewind, may not even be available.

Don't buy one of these cards if you're looking for ease-of-use and flawless, problem-free performance. Although the graphics features are rock-solid, the convergence features need more work. Hardware, software, and operating system integration can be shaky, tentative and idiosyncratic. The 3dfx card is a first-generation convergence product. This is Matrox's second time out for the Marvel, and ATI's third release of the All-In-Wonder.

From my own experience, and from others in the newgroups for each of these cards, you will likely run into problems of one kind or another.

If you do decide to take one home, you'll be well on your way to creating your own converged media device that has more features and a lower price tag than those dedicated personal video recorders (PVRs) from Replay and Tivo.

Continued on page 71

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Get funky with the 'disco' mouse

Continued from page 66

With a traditional mouse, the rubber ball picks up the dust, dirt or oils of the mousing surface, which over time gums up the internal rollers controlling the movements, making it less accurate. All ball-driven mice eventually need their innards cleaned to continue to function properly. The IntelliMouse has no such moving components, and its light assembly is recessed into the mouse.

Despite claims in the U.S. computer press, this is not the first light-driven, ball-free mouse. Anybody who has used one of the ten-year-old Sun Microsystems workstations will remember the decidedly un-sleek, boxy mouse that employed similar technology. The major difference between that mouse and the IntelliMouse is that the Sun mouse required a special pad. You could effectively disable one of the workstations—which cost many, many thousands of dollars—by simply removing its mouse pad.

The IntelliMouse is a less finicky creature; it can work on virtually any surface, as long as it isn't transparent or mirrored. In decidedly informal tests, it worked equally well when run on the side of the computer, on the underside of the desk, and on the pant leg of the tester.

This mouse has four separate buttons and one trackwheel for easy scrolling through documents. Two of the buttons are at the front of the mouse, as on most PC mice. The two additional buttons are mounted on the left side (to be operated by the thumb of a right-handed person), and their functions can be customized with the included software. I programmed them to "copy" and "paste," but they can be set to emulate any Windows-specific standard commands.

I also found the IntelliMouse was very comfortable to use, nicely conforming to my hand. But if its ergonomic feel doesn't win you over, its look certainly will. Its sleek shiny gray case and the red light that glows from its underside have earned it the nicknames "Nike shoe" mouse and—my favourite—the "disco" mouse.

This IntelliMouse is not perfect, however. The finish is prone to nicks and scratches that may have been avoidable if a heavier grade of plastic had been used. Despite its premium features, a cordless model would have been that much better. Also, this premium mouse has a premium price: \$99. It's a lot, especially when you can get a decent mouse that won't show wear and tear as easily for a third of that (and if you want cheap, you can get a basic mouse for \$10 these days). But if your work demands accurate, smooth mousing and you can't be bothered to clean the grunge from a regular mouse every other month or so, you should consider investing in an IntelliMouse.

One can only hope that if this type of mouse becomes popular, volume sales will drive the prices down. □



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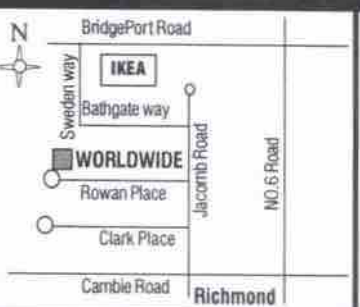
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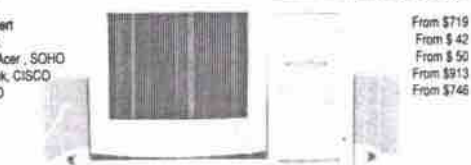


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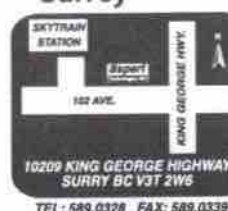
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TV on PC

Continued from page 68

Voodoo3 3500TV

From: 3dfx

http://www.3dfx.com

Estimated street price: \$340

Notable features: The only card in this roundup with an FM tuner. Best break-out box.

The 3dfx Voodoo3 3500TV has a little more attitude than the others in this review, and as a result is the card most likely to be chosen by serious gamers. Its printed documentation is sparser than the others, but an HTML file covers the details. Its minimum system requirement is a 266 MHz CPU, but a 500 MHz processor is recommended for optimum video capture.

During installation, I was surprised by the two coaxial cable connectors on the back of the card. The second one is for the FM tuner, a feature unique to this card. The QuickStart booklet recommends that you don't swap out your old card before you start. The pre-install includes a video that shows exactly how to setup a video card—a nice touch.

All of these cards have a break-out box, a separate enclosure that replicates the plugs on the card. Put the break-out box in a convenient location, and you eliminate the need to dig behind your system to plug in your camcorder, to do some digitizing on your VCR, or to record your finished productions. The 3dfx's break-out box is the best. It has the longest cable, and unlike the input-only All-In-Wonder break-out box, includes access to output as well as input connectors.

There are a variety of "skins" for the onscreen remote, allowing users to customize the look of the controller interface. In addition to channel and volume controls, you can freeze the image, capture stills, and surf. The surf window contains snapshots of each available channel. The VCR button opens a second control panel to start recording the current channel.

Timed recording controls are available on a standard tabbed dialogue box. The 3dfx has limited recording options: uncompressed AVI, or MPEG-2 at 320x240 or 160x120 pixels.

The quality of the live video image is about the same as on a television set, as long as you use a resolution of 800x600. If you go higher (and this card is capable of 2,046x1,536), the display starts to look a little chunky. The extensive properties dialogue includes specific presets for watching movies and sports. These

settings apply contrast, brightness and colour adjustments, and clearly enhance the image for those programs. You can also "zoom in" and magnify a small portion of the image to full-screen size.

When recorded at the highest settings, the playback is slightly lower quality than the original. As with the live signal, the lower the screen resolution, the better it looks. The included Ulead Studio video editor is a good tool for the first-time video producer. The limited feature set, and restrictive, modular approach may be frustrating for more experienced users. Within the Ulead software it seemed that a different capture driver would allow capture from a camcorder at resolutions up to 720x480. My system has a Webcam, and Ulead was able to record at its maximum resolution (352x288). Ulead couldn't find the 3dfx video input.

Although I had read reviews praising the output-to-TV capability, this must have referred to gaming or video playback at 640x480. Although 800x600 is supported, the image quality of the scan conversion at that resolution is less than at the lower resolution.

Like the other cards, in order to view the TV listings, you must install WebTV for Windows, the generic Windows TV viewer application. The electronic program guide (EPG) by Gemstar was disappointing. Gemstar still hasn't adjusted its channel lineup to reflect the changes my cable provider, Rogers, made in my neighbourhood last fall (listings in your area may be fine). Although the EPG should download automatically, I've not had much success, and have had to go to the Web site to update the listings. (Incidentally, if you have Windows 98, you can install WebTV for Windows and access the EPG even if you don't have a TV card.)

For DVD playback, the 3dfx uses the Intervideo WinDVD player. (If you don't already have one, you can add a bare DVD drive to your PC for about \$120.) The quality of the DVD playback image is excellent. However, even on a system powered by a 400 MHz Celeron processor, it was plagued by dropped frames.

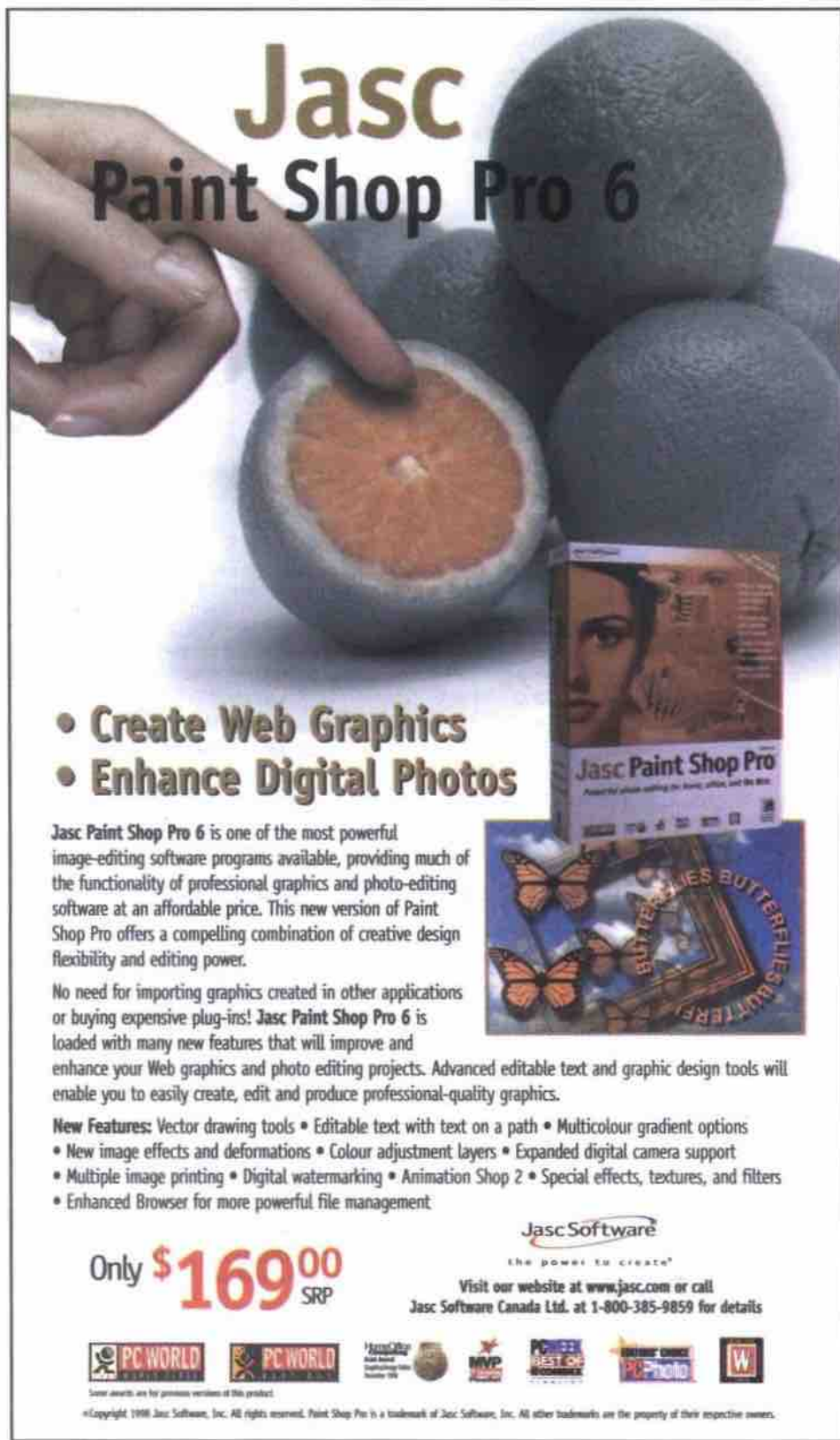
All-In-Wonder 128

From: ATI

http://www.atl.com

Street price: \$250 (\$350 for 32 MB version)

Notable features: TV magazine feature transcribes captioning into text. Best DVD player.



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ATI has led the way in the converged graphics card marketplace. The All-In-Wonder 128 maintains the lead in features and functions. With the exception of an FM tuner, this card has it all. There are no minimum CPU requirements listed on the All-In-Wonder 128 box, but it does indicate that a 200 MHz Pentium MMM processor is required for "good" video capture, and a Pentium III CPU is needed for "best" video capture.

Of the three cards, this one was initially the flakiest. After the second clean install, however, it did let me work and record or watch TV at the same time, and would record a show in my absence.

The All-In-Wonder 128 has no trouble scaling TV windows from 640x480 to 1,600x1,200. The nifty "TV desktop" mode uses the live TV image as your PC's wallpaper. In the end I preferred to watch TV in a window while I worked.

This card records in many formats, including AVI, MPEG-1 and MPEG-2. The default VCR2 format is proprietary, but the codec is available at the ATI Web site, so even those without All-In-Wonder cards can playback VCR2 files. The VCR2 format has a few more visible artifacts than MPEG-2, but only at full-screen playback resolutions higher than 1,024x768.

Both recording formats are comparable to VHS. I was quite happy with the 320x240 size at 30 frames per second (fps) for standard time-shift viewing. At that rate, a 30-minute file is about 1 GB. I'd be tempted to use a higher frame rate to edit my family camcorder

tapes, but the quality would likely be lost on transfer to VHS. While recording, the All-In-Wonder uses about 40 percent of the processor cycles, and playback ties up 100 percent—even if the processor is a 400 MHz Celeron. The bundled Video CD player does a better job of playing back MPEG files than the Windows Media Player.

ATI's experience with previous versions of the All-In-Wonder shows, especially in the bundled software. For each component—TV tuner, VCR features, DVD playback—the ATI software had the most bells and whistles. It's the only one with instant replay, allowing you to watch two images—one live, the other delayed by two to 10 seconds (or more, depending on system memory). There's also a channel scan window that displays still images from each available channel, updating them in rotation.

All three cards can capture stills from a video (not a DVD), but only the All-In-Wonder automatically numbers and saves the images. I love this card's TV Magazine—a transcript of a program created from the closed caption text and captured video frames. The ability to review the day's happenings on your favourite program by reading a transcript quickly becomes a must-have feature—you can even choose to omit the commercials from the transcript. The Hot words feature will track the closed captioning, looking for a specific word or words, and beep, display the TV window, start recording video or creating a magazine transcript.

The ATI DVD player is so good, I yanked

out my dedicated Creative Labs card. With superior colour and fabulous clarity, it offers the best computer-based DVD playback, an opinion expressed by other reviewers, too.

ATI includes a simple video editor to trim clips and do "cuts only" assembly. For more advanced work, ATI has included MGI's VideoWave II software in the All-In-Wonder bundle. Working with VideoWave II is a pleasure. I've waxed ecstatic over this software before, and my enthusiasm hasn't waned. It's visually attractive, full of well thought-out features and my first choice for personal use. (Note: MGI recently introduced VideoWave III).

The card's TV-out feature works well. When you select this mode from the control panel, the monitor changes to 800x600 resolution at 60 Hz. The same image is seen on both the monitor and the TV. This works well for games, and for watching DVD playback on TV in addition to, or instead of, the computer monitor. If the desktop resolution is larger when you select TV-out, the screen becomes a window onto the larger virtual display that follows when you move the mouse. A nice feature.

Marvel G400-TV

From: Matrox

Estimated street price: \$400

Notable features: External audio connectors. Best image from TV tuner. DualHead two-display feature.

The All-In-Wonder and the Voodoo3 3500TV are at the top of the ATI and 3dfx's respective lines. For Matrox, the Marvel series sits

between its consumer graphics cards and its professional video cards. Although the other two cards are clearly consumer products, the Marvel reaches a higher level.

Installation and setup was similar to the other cards, with two exceptions. The large connector for the breakout box on the cable, combined with a slight recess on the back of my system, made for a very tight fit. The Marvel is the only card with external audio connectors. The others have internal cables to the audio card.

The documentation indicates that the Marvel will be happy with a 166 MHz Pentium-based system, but recommends a 233 MHz Pentium CPU. The fine print indicates that a 350 MHz Pentium II is required for optimal DVD playback. That proved to be true in testing. On a 300 MHz Celeron system, only the All-In-Wonder offered stutter-free DVD playback capable of freeze frame. When I swapped in a 400 MHz Celeron, the Marvel's DVD playback was flawless.

The Matrox has the best image from the TV tuner, at any resolution. This may be because, unlike the ATI and 3dfx cards, the tuner is not on the AGP card, it's in the breakout box. The channel preview feature creates a resizable window that updates still images from up to 30 channels, in rotation.

The Marvel's scan conversion (converting VGA to NTSC, which is required for TV display) is the best of the bunch. This is the only card that can output a 1,024x768 resolution screen to TV. The TV output can be independent of the monitor, with its own resolution

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and colour depth—a feature called DualHead, that is also available on other G400 cards. The DualHead features deserve a review of their own. While other Matrox DualHead cards support a second monitor, the Marvel supports only a TV for the second display.

Matrox is very defensive about its choice of the Motion JPEG (MJPEG) recording format. This codec requires a hardware encoder/decoder that is built onto the Marvel G400. Unless you first convert the file to MPEG-2 with the supplied transcoder software, you won't be able to play it back on another system. It's worth noting that the three-pass transcoding process (video, audio, multiplexing) takes more than three times as long as the play length of the clip.

Those inconveniences are more than offset by the superior picture quality and flawless playback the MJPEG format delivers. In every way, the quality of the playback is equal to the original. Even at the 50 percent quality setting, there are no visible artifacts, motion is smooth, and colour edges clear. The other cards skip playback frames so often, it's distracting, and the audio and video synchronization often slips. Although I can't say the Matrox never

skips a frame, it's rare. And the audio-video sync is always perfect. Either recording or playback uses less than 10 percent of the processor cycles.

This card is good enough to use as a replacement for your VCR—and you won't have to apologize for the playback quality when friends come over. You'll want a large hard drive, as the MJPEG files are about 50 percent bigger than ATI's VCR2 format. This means a

30 minute recording is approximately 1.5 GB.

Because of my experience with Avid's professional non-linear video-editing systems, I was excited to see that the consumer version, Avid Cinema, was bundled with this card. However, I was disappointed. It was quite frustrating to use, and its limited feature set won't let anyone's creativity blossom. Oh well, luckily MGI's VideoWave is inexpensive as a stand-alone purchase. □

WebTV for Windows

PC version lacks interactive features, program guide data of set-top WebTV Plus

Each of the TV tuner/graphics cards reviewed in this issue requires the installation of WebTV for Windows if you want to view the Gemstar electronic program guide (EPG). Since it shares the same name and logo as the standalone set-top box (STB) made by Sony, you might assume, incorrectly, that it has the same features as the STB for enhancing your TV viewing experience.

The Sony WebTV Plus STB integrates TV and the Web, allowing you to browse the Internet using your television set as a display device. This fall has seen the launch of several enhanced TV shows, including *NBC Nightly News* and *Newshour with Jim Lehrer*. During the broadcast of these programs, special information is sent via the TV signal to the WebTV Plus box. If you choose to view the enhancements, the TV image shrinks, like a picture-in-picture feature, and a Web page opens offering more news and links for in-depth reading.

WebTV Plus also lets you to interact with programs, like *Wheel of Fortune* and *Jeopardy*, allowing you to play along with the game in real-time. You know a show is interactive when a little "i" logo appears in the upper right corner of the display.

While this logo will appear if you've installed WebTV for Windows on a PC running Windows 98, clicking on it will load a blank page. If you've upgraded your system to Windows 98 SE, the "i" doesn't even appear. No enhancements, no interactivity.

The WebTV Plus EPG isn't even the same as the one for the PC version. The STB guide is provided by TVData, and unlike the Gemstar guide, it gets the Rogers channel lineup right.

In my quest for an explanation for the discrepancies between the STB and PC versions of WebTV, I've posted questions in newsgroups, but have yet to get anyone to tell me what's going on. Stay tuned.

—Maarten Heilbron

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....except
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Animals keeps magic of School Bus series

By Jean Allen-Ikeson

Microsoft and Scholastic have another hit in their Magic School Bus series. As with previous titles in the series, Miss Frizzle leads her class on a wild adventure in the latest title, Exploring the World of Animals. This time the virtual safari is through seven habitats around the world, helping children learn about native species. Designed for six- to 10-year-olds, the trip is filled with information on animals and why some have become endangered. This is the seventh title in the series, which is based on the popular books and television show produced by Scholastic Entertainment, a wing of the book publisher of the same name.

Magic School Bus Animals

From: Microsoft
Platform: Windows
95/98
Price: \$29.95



According to Pam Meisner of the San Diego Natural History Museum, "The earlier we begin teaching children about the wonders science has to offer through interaction with their environment, animals and technology, the more we encourage them to develop a love of scientific exploration and discovery throughout their lives." Miss Frizzle must surely be the most unpredictable and fun science teacher any of us has come across. But this just makes learning science with this series sparkle and zing. She is always available to offer advice and help in solving the 30 different games and activities. One such activity asks children to find the animal that does not belong in the habitat—for example, a peccary wandering around a sea coast needs to be returned to the Sonora Desert. Another helps children learn why some animals come out only at night.

My son particularly enjoyed the bonoscope, a "tool" that allows you to see the skeletons of animals. An unusual activity is one that asks kids to match the animal to the correct scat (that's right! animal droppings), sound, or track mark. There are also multimedia reports on animals that offer a mini-encyclopedia of information. Like many educational titles, awards and certificates for solving activities can be printed out. Of interest to teachers is a section of Microsoft's Web site that contains lesson plans and activities for classroom use that tie in with this title. A trial version of the software is also available at the <http://www.microsoft.com/kids> site. □

Lying in wait: Money 2000 Deluxe

Unfortunately, I was unable to get an evaluation copy of Microsoft Money in time to compare it, head-to-head with Intuit's Quicken 2000 Suite. I have reviewed Money regularly since its introduction in Canada some four years ago and have been amazed by the great improvements that have taken place.

Money 2000 Deluxe

From: Microsoft Canada
320 Matheson Blvd W, Mississauga, ON L5R 3R1
<http://www.microsoft.com/canada/money>
Price: \$59.95 (minus \$15 mail-in rebate)

At a Microsoft press event, recently, I was given a demonstration of Money 2000 Deluxe and had a chance to talk about it with the representative. I was quite impressed by the interface. The demonstration also revealed that considerable effort has been taken to improve this product in two areas: customizability and Canadian content.

Microsoft's Money program runs on Windows 9x or NT 4.0 (with service pack 4). It requires a minimum of a system powered by a 90 MHz Pentium CPU, and the usual multimedia peripherals for playing video and sound. A modem and CD-ROM drive are also required. Money 2000 comes in two versions: Basic and Deluxe. Basic has a suggested retail price of \$34.95 (with a \$10 mail-in rebate coupon included in the box). Improvements include a Setup Assistant that is, perhaps, superior to Quicken's, and an improved financial home page, according to Microsoft Canada.

Money Deluxe 2000 combines the features of Basic with a LifeTime Planner, Investing Center, investment portfolio functions, and other features for \$59.95 (and a \$15 mail-in rebate). One excellent feature of the program is called Money Web Express, which allows you to access your finances using a browser from any Internet connection. You can even enter transactions remotely and later synchronize them with Money Deluxe. Obviously, this entails keeping some financial files (password protected of course) on the Microsoft server, which might make some people nervous. Money imports OFX files, thus allowing you to update your bank accounts if your financial institution has adopted this protocol.

A complete review of Microsoft Money will have to wait until we can get our hands on the software. However, considering the quality of Money 99 and the demonstration I saw, it is likely to compete quite well against Quicken. Considering its price, it might even be a better value than its rival. I would be surprised if that were the case, but the road to success is littered with those who have underestimated Microsoft.

—Rod Lamirand

Quicken: best consumer software ever?

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In other words, click Go To Bank and within minutes you'll see what the bank tellers see through Quicken's Account Register. The ramifications of this for personal financial planning are enormous. OFX is an open standard, which means other programs such as Microsoft Money can also take advantage of the function. Currently, 21 Canadian financial institutions have adopted OFX. Many are

small credit unions, but some are the largest and most popular banks in the country. Some sites, such as Canada Trust's (<http://www.canadatrust.ca/>), allow you to download information on your credit card transactions this way.

The Quicken lineup

There are five versions of Quicken 2000: Basic, Deluxe, Mac, Home and Business, and Suite. The basic Quicken is a stripped down version that does most of what most people need, for

\$39.95 (minus a \$10 rebate). Quicken Deluxe, adds all the bells and whistles for \$69.95 (and the same rebate). The Macintosh Quicken is more or less equivalent to Quicken Deluxe with the same price, but no rebate offer. Quicken Home and Business adds business-specific features to the Deluxe program and costs \$89.95 (minus a \$10 mail-in rebate). Quicken Suite 2000, the product reviewed here, adds a new version of QuickWealth

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Quicken: best consumer software ever?

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Planner and a downloadable version of QuickTax (when ready) to the Deluxe product for \$99.95 and no rebate.

The best ever

Quicken Suite 2000 is the best personal financial software ever written anywhere, anytime. In fact, I would argue that it could be the best software program ever written for consumers.

If you could drop it back in time, say 10 years, with a computer capable of running it, I am not sure who would be more surprised—the users or the programmers. Seriously, if you add the various components, like the slick interface and exhaustive functions, to the online banking features, Web page links, and CD-ROM-based tutorials, you would not only drop jaws, you'd implode heads!

Lest you think I am suffering from Newbie Syndrome, unwarranted enthusiasm, or simple bribery, let me explain that: a) When I began reviewing hardware and software my computer had 2 MB RAM and an 8 MB hard drive; b) I never give embarrassingly effusive praise; and c) No, I'm not on Quicken's payroll.

The specs

Quicken Suite 2000 combines QuickWealth Planner, QuickTax and Quicken Deluxe for Windows 95, 98 or NT. I tested it in Windows 98, and on Windows 2000, Beta 3, without incident. The minimum requirements are a system with a 486 DX processor, 16 MB RAM,

a CD-ROM drive, and speakers, but a Pentium is recommended. A modem is required for online banking and Web site access.

QuickTax 2000, the tax component of the suite, installs everything the program needs except the final tax formulas, which are not officially set until the end of the year. At that time you'll be able to download the final code. Usually purchasing a download version of QuickTax would mean missing out on multimedia and other space hogging files. This strategy overcomes those limitations and is likely a good idea, although I did not test the product.

Sadly, I have discovered that—due to the current state of my financial planning—I will be broke long before I die

QuickWealth Planner is a very good program that scared me. The step-by-step process of calculating your assets and liabilities now and into the future is as painless as such a process can be. Sadly, I have discovered that—due to the current state of my financial planning—I will be broke long before I die.

The program uses a day-planner metaphor for easy navigation. The name QuickWealth Planner is both a truth and a fib. The program is laid out like a planner, which is true, but the

quick wealth part is a lie according to what the program told me. I really liked the comprehensive summary that is produced at the end of the process.

After plugging my data into the planner, I realized I had two options for my future: I would either have to take up smoking and stop running, which would lower my life expectancy to 75 years; or tell my children no university money would be forthcoming. In all seriousness though, the future becomes much clearer when viewed through QuickWealth Planner, which is the point.

Quicken Deluxe 2000, the main program, is really the gem. It does it all. I could write all day about the Register, the Autofill, the Categorization functions. I could continue with charts and graphs and projections and still be praising only the Account Register. That would leave out the Home Center, Planning Center and Tax Center.

Then there are extensive essays, articles, video tutorials, and explanations—more of which can be accessed by links to the Web site where they reside. You want financial calculators? You got them. You want updated stocks and funds? They're here. The Financial Calendar memorizes transactions, the Portfolio Manager allows you to update from different sites, links are made between your loans, mortgages, and RRSPs and the QuickWealth Planner. These are but a few of Quicken 2000's features.

The single most useful feature in Quicken—it isn't new in this version but is improved and may be new to your bank or credit union—is

the online updating of your account information. If you are at all serious about tracking your bank account, go to the Web page of your financial institution and look for its online banking capability, it is usually called Something-or-Other Direct. Look for a Download to Quicken option, and if you can't find it, send them an email asking where it is.

I emailed four sites and received two answers within 24 hours and another within two days. Many banks and other financial institutions have been waiting to see if the function would be broadly supported and requested by their customers. Now that it is, many are in the process of bringing it about. The ability to update my chequing account, which I now have thanks to my credit union and Inuit, is excellent.

There is no downside to Quicken Deluxe 2000. The only reason I would not buy it is if I owned Quicken 1999. The redesigned interface has not changed much (it didn't really need to be improved), the investment tips and changes are minor, and the ability to HotSync data to a Palm handheld computing device with PocketQuicken is not something I need or want. If, on the other hand, I didn't already have a recent version of Quicken, but I did do some online investment or banking, I would pickup the Deluxe version.

The Suite is a good value if you are going to use the QuickWealth Planner. All in all, it is obvious that Intuit has invested in making its product useful to Canadians. Considering we're only slightly larger than the population of California, that's a real investment. □

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record the ambient sound or voice clip. The 4.5x3.5 cm LCD view panel can be tilted up or down for viewing during recording or playback.

The resolution of stills taken in Photo mode is suitable for the Web, but when scaled to a 4x6 inch print, doesn't come close the quality of shots from a 35 mm or APS film camera, or even a mid-range digital camera.

Video

Shooting digital video in Movie mode, however, really shows off the strengths of this camcorder. With the Optura, Canon is the first to utilize progressive scanning CCD technology in consumer video. This is made possible with a new digital integrated circuit (IC) that processes every pixel in its CCD array at a rate of 60 fields per second. What makes this even more amazing is that all of this signal processing is being done concurrently with other essential functions such as automatic focusing and exposure.

Digital cameras that don't use progressive scanning can capture and record 60 fields per second, but their ICs can only keep up with the CCD data by recording even line pixels on a first scan, and odd line pixels on a second scan. This effectively drops the recording rate to 30 frames per second and degrades the quality by introducing flicker. Progressive scanning also eliminates colour blurring, smearing and visual "noise" associated with other camcorder systems.

An optical image stabilization feature further contributes to the crispness and clarity of image capture by eliminating inadvertent shaking common to handheld shoots. The Optura also uses an RGB filter—the type used in high-end professional camcorders—for a higher signal-to-noise ratio and consequently truer colour rendering.

The Optura comes with two zoom modes: 14x optical, and 35x digital. I experimented with the 35x digital zoom for a few days, but was disappointed with the results. When enabled, digital noise is immediately recognizable when you zoom past the 14x optical zoom. I found the feature to be almost useless. However, the optical zoom, from wide angle to 14x, is impressive and should be enough for most videographers.

Like conventional professional cameras, the Optura gives you the freedom to override its standard easy recording mode that automatically adjusts your focus, aperture and exposure settings. A rotating dial on the side of the camera lets you choose from several presets that will compensate for extreme lighting conditions, such as shooting subjects against extremely light or dark backgrounds. The camera also has two settings that let you manually control the priority of your aperture and exposure settings.

Autofocus is supplemented by a feature Canon calls Flexizone AF (autofocus). In this mode, the camcorder places a small rectangle in the viewfinder that you can position over the portion of your scene that must remain in focus. This is indispensable for scenes with a lot of depth of field when you want to keep either the foreground or background sharp.

Shooting spectacular video wouldn't be justified if it wasn't accompanied by high quality sound. The Optura can record sound in PCM digital format for both still and video shots. It offers either CD-quality sound at 16-bit/48 kHz (two-channel) mode, or a lower

quality 12-bit/32 kHz (four-channel) mode that can be selected through the viewfinder menu.

In the compact design of this camcorder, Canon has managed to pack just about every kind of port possible for transferring video into other media. In addition to the standard composite jacks, the Optura provides S-Video output and a FireWire port. I hooked the Optura to one of the two FireWire ports on a

new Apple G3 system to play with video capture, writing back to tape, and controlling the camera deck. To do this, make sure you have FireWire software driver versions 2.1 or later (available for download on Apple's Web site).


The Optura is powered by a compact lithium ion battery. Although the camera has power management features, I found that turning off the viewfinders immediately after a shoot went a long way towards maximizing

their use. With careful attention you can probably make a single battery last the duration of a one-hour shoot. However, I would recommend carrying at least one fully charged back-up battery.

Bottom line


The Canon Optura digital video camcorder provides a perfect example of the kind of tech-

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RCA Lyra joins digital audio race

By Rod Lamirand

This ain't no Walkman, baby! If you're used to carrying a portable cassette or CD player when you go out, you'll notice a few important differences when you strap on the Lyra. First, there's no skipping. Run, skate, crash if you like; it has no moving parts. It's not going to skip. Second, it can play music from your CD collection, your computer, or the Internet. Third, any music you can play on your Lyra can also be played on your PC. You can even buy a car kit that will let you use the Lyra to play your music through your existing car stereo via an adapter inserted into its cassette player.



Lyra Personal Digital Player

From: Thomson Consumer Electronics Canada (RCA)
10th Floor, 5925 Airport Rd.
Mississauga, ON L4V 1W1
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Estimated street price: \$329.99

Compared to a portable cassette or CD player, the Lyra is also considerably more, well, portable. At 147 g (5.2 oz) with batteries, and taking up just 11.4x6.4x2.1 cm (4.5x2.5x0.825 in.) of volume, it is light and small. The silver coloured unit looks like a voice recorder with an LCD screen, and contains the usual assortment of music playback buttons, a volume control wheel, and jacks for the headphones and adapter.

The Lyra is powered by two AA batteries

that provide about 12 hours of playback. The included headphones offer only average quality sound. Physically there is nothing particularly intriguing about this product. Its LCD screen is larger and displays more information than a CD player screen, but the CompactFlash slot on the side of the unit is the only real hint that this not just another analogue device.

MP3 plus G2

The Lyra player includes a parallel port adapter for the CompactFlash card, the Music Management Software system, a RealAudio CD "ripper," and file management utilities.

The process for compiling songs on the CompactFlash card for playing on the Lyra is as follows:

- Load an audio CD into the CD-ROM drive of your PC.

The RealAudio player will start to play and record the CD. Choose

between recording in MP3 or RealAudio's G2 format.

- When the CD is recorded (in about half the time it would take to play the music), decide which songs you want to put on the CompactFlash card.
- Drag the selected songs, or list of songs, onto the CompactFlash card icon on your PC desktop. This copies the files to the card at a rate of 450Kbps, so filling up the card takes a few minutes.
- When copying is complete, remove the card, place it into the Lyra, press Play, and off you go.



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Comparison: Nomad vs. Lyra

	Creative Labs Nomad32	RCA Lyra 32
Dimensions:	5.7x8.5x2 cm (2.25x3.33x0.75 in.)	11.4x6.4x2.1 cm (4.5x2.5x0.825 in.)
Weight	70 g (2.24 oz) without batteries	147 g (5.2 oz) with batteries
Power	2xAA or 2xNIMH batteries	2xAA or 2xNIMH batteries
Removable memory type	Type I or II CompactFlash	Type I or II CompactFlash (32 MB incl.)
On-board memory	Yes (32 MB)	No
FM tuner	Yes	No
Voice recording feature	Yes	No
Music formats	MP3	MP3, RealAudio
Programmable	No	Yes

Windows recognizes the docking station as a new drive. You can go into Explorer and copy, delete, and save files just as you can on your hard drive, or on a floppy diskette. If the memory card is not in the docking station, the drive disappears from Windows. The memory cards are the standard CompactFlash format, and can be used in your your digital camera or other devices.

The whole experience of formatting your audio CD favorites for playback on the Lyra is actually quite fun. One thing that makes the process so good is the RealAudio CDDDB (CD Database), which is a free service included with RealAudio Player. RealAudio CDDDB matches your CDs to the company's database, then transfers the track information to your computer. The effect is that rather than having to enter the name of the album, author, genre, and individual track song names, it is done for you.

To test the database, I recorded four CDs, three of which the database recognized and labeled (Harry Connick Jr.'s *She*, Dixie Chicks' *Wide Open Spaces*, and Etta James' *The Sweetest Peaches 1960-66*). The Dixie Chicks' CD is only a year old so it wasn't surprising that it was recognized, but the Etta James collection was made in 1986, which means the RealAudio CDDDB is fairly extensive. The only CD I tried that wasn't recognized was an old Benny Goodman CD called *The Jazz Collector*

Edition, which was published by LaserLight Digital.

The obvious competitor to the Lyra is Creative Lab's Nomad. The Nomad has an FM tuner, which might be of interest to some. It can also make voice recordings, which is a more useful function as far as I am concerned. However, the Lyra and Nomad are quite similar in terms of audio recording functionality.

One big plus for the Lyra is that it is "future-proof." Its ROM can be reprogrammed, so presumably the Lyra can be upgraded to support standards as they emerge. Thus, if the MP3 format languishes, you are not left with an expensive and tiny removable 32 MB hard drive.

At about two minutes of audio per megabyte (based on the 64Kbps MP3 quality level, which is usually described as "near CD" quality), the included 32 MB card offers only 16 minutes of sound. However, you can lower the quality and increase amount of music you can put on the card. The Lyra can also be purchased with a 64 MB CompactFlash card, an option worth considering.

All in all, this is a well thought out and handy product that feels like a second edition rather than a first try. The only thing this reviewer would recommend is that RCA add a key lock function like most cell phones have. For consumers it might be time to consider moving on to the next big thing—all digital, portable music. □

Optura DV takes still and video images

Continued from page 81

nology that will eventually displace the dedicated camcorders and photographic cameras that many of us use today. Photography enthusiasts will instantly recognize the many common SLR camera features that have been merged into its design.

When shooting in the recommended minimum lighting conditions, the camcorder produces motion video of stunning quality. However, when shooting under low-light conditions indoors, I was somewhat disappointed with the brightness and level of colour reproduction. Manually controlling the aperture setting compensated somewhat for this. For the best possible results in low-light conditions, I recommend purchasing a video light.

Another big advantage of digital video is the ability play the tape back frame-by-frame—using the camera's remote or built-in control buttons—with absolutely no noise, banding or flicker.

As far as the digital still function is concerned, I would only use these images for display on video output devices. Perhaps in a future incarnation, the Optura will be capable of capturing higher resolution still images.

With a street price of around \$2,800, the Optura is expensive compared to conventional analogue camcorders. However, this dual-function camera is a technological marvel that has a lot of appeal to the video enthusiast who wants to capture, edit and output their work using a computer. □

Peter Milburn is a consultant with Elite Systems Support located in Calgary, AB. He can be reached at elite.systems@home.com.

Just relax

NB—A little tense? A new Web site called Body, Mind, and Modem might be able to help by introducing you to the "principles of calmness and relaxation." It's the perfect destination for office-bound folks with aches and pains, since Lesson One begins with information on how to sit up properly at your desk. The site is hosted by Shuji Maruyama, a long-time practitioner of the Aikido martial art, who adapted the techniques he learned tossing people around to create a program for "relaxation and inner peace" he calls Aikido Kokikai.

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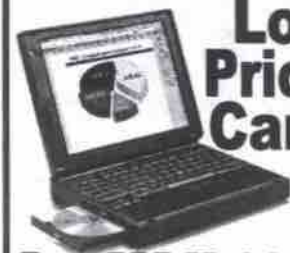
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By Sean Carruthers

There's been a lot of talk about digital cameras, both by professional photographers and by the simply curious. Although the technology has been around for a few years, it is just now starting to really take off in the consumer marketplace. A combination of falling prices and increasing quality is responsible for this. Although the date when digital photography will replace conventional film photography is still a subject for speculation, one thing is sure: with the quality and price of today's digital camera offerings, it's getting pretty close!

Enter the digital darkroom

The biggest problem most people have with conventional photography is with the developing. Sending film out for processing and printing can be very expensive—especially for those who shoot a lot of pictures. Additionally, when a roll of film is sent for developing, typically every photograph is printed, even those that are unfocused, too dark, have thumbs in the corner, or are, for any other number of other reasons, immediately consigned to the bin.

For most people, developing photographs at home isn't really an option. It is a time-consuming, messy process that requires expensive equipment and often precious space. Plus, the chemicals smell bad. Ultimately, it's not worth it for the vast majority of people.

With the digital camera, however, users have complete control over which pictures are printed. There is also the advantage of having photos in digital format to begin with, allowing them to be sent in email attachments without the hassle of scanning. The storage devices used on digital cameras might seem expensive, but the cost of a 32 MB memory card is roughly equal to about 20 rolls of 35 mm film. So after you've shot the equivalent of 20 rolls, "film" costs become zero, since the same memory card can be used over and over again.

Users can select the shots they want to print, meaning that one no longer has to pay for unwanted pictures. The digital print cost—i.e., the price of the ink and photo paper—is about the same as the cost for prints from a photo-finisher, on a per-print basis.

And perhaps the most appealing aspect of the digital darkroom is that photographers can do all these things in the comfort of a brightly lit computer room with little to no special equipment!

As good as the real thing?

Although conventional prints still have an edge over home brew digital photo output in terms of image quality, it's surprising just how close the two have become. Photo-quality inkjet printers now have very good to excellent photographic output, for a generally reasonable price.

It's a snap!

TCP Lab peers down the lenses of the latest digital cameras



Combine that with the improved resolution of newer digital cameras, and it's no longer that easy to pick out the conventional 3x5-inch or 4x6-inch prints from film cameras when they are mixed in with a batch of digital photographs printed out on a photo quality inkjet printer. The differences that do exist aren't great enough to be of concern to most users.

Along with the growing number of general-purpose inkjet printers that are capable of photographic output, there are a number of printers available specifically for digital photography. A few of the newer photo-oriented printers have slots onboard to accept digital camera memory cards directly, which allows users to print photos without even needing to own a computer.

We looked at two such printers while printing out hard copies of photos taken for this lab. Lexmark's Photo Jetprinter 5770 was the first inkjet printer on the market with slots for both SmartMedia and CompactFlash cards, and has a street price of roughly \$399. We also got to look at the new Hewlett-Packard PhotoSmart P1100, which has a suggested retail price of \$749. It also has slots for both media types, duplexing, and a USB interface. Both printers provide excellent photographic output and double as standard inkjet printers when hooked to a PC.

For users who choose to go the digital route, the biggest headache will be the cost of ink. With cartridges sometimes costing between \$50 and \$100, it can be expensive to create a lot of output. When printing full-colour photos, cartridges also tend to run out of ink quickly. Those who want prints of everything they shoot will still find that conventional photography has the price edge. Those who would rather print only select output may find the digital output more convenient and cost-effective overall.

Now, on to the cameras! Cameras were tested for usability in the only arena that matters: the real world. In other words, we broke out of the lab for a little while and took pictures in a variety of settings.

affordable way to get started in the world of digital photography. It doesn't have a lot of bells and whistles—no zoom, and a relatively simple user interface, but for users

who don't need the highest resolution going, it's certainly a useful little device. Although it takes a bit of time to warm up, the main problems that some people may have with this unit are design issues: the batteries rattled around a bit, and the all-plastic case may be a bit slippery if your hands sweat (it slipped out of our grasp once, so make sure to always use the camera's strap!). The inclusion of USB connectivity is a very nice touch. (NOTE: There is also a version of this camera that uses Iomega's Click! drive for storage.)

Highlights:

- USB connectivity for transferring pictures.
- LCD has a hard plastic guard.
- PhotoGenie ups the hardwired resolution using software interpolation.



Agfa ePhoto CL50
Suggested retail price: \$999
Tel: 800-268-6270, <http://www.agfa.ca>
Although it looks fairly basic, Agfa's CL50 has a number of features that make it worth considering. It has a good zoom, high photo quality, audio recording, and a battery-saving feature called Sun Catcher—a built-in prism that directs ambient light to help backlight the LCD screen, rather than drawing power from the batteries to backlight it internally. Some of the buttons on the camera aren't well-labeled, however, which forces the user to spend time figuring out which one does what. Although the 1.3 megapixel resolution is



Agfa ePhoto CL30
Suggested retail price: \$699
Tel: 800-268-6270, <http://www.agfa.ca>
A relatively new entry at the lower end of the resolution rating, Agfa's ePhoto CL30 is an

Compare image quality online

Photographs taken by each of the megapixel digital cameras reviewed in this issue's TCP Lab Test are available for comparison online at:
<http://www.tcp.ca/1999/digicam/>

lower than many cameras in this roundup, the camera's PhotoGenie setting boosts the resolution to 1.9 megapixels through software interpolation (not quite as good as true 1.9, but still quite nice). In general, it's easy to use, and its reasonable price adds to the overall attractiveness of the Agfa ePhoto CL50.

Highlights

- Sun Catcher feature helps save batteries.
- 3x optical zoom for getting in closer.
- PhotoGenie ups the hardwired resolution using software interpolation.

Canon PowerShot Pro70

Estimated street price: \$1,299
Tel: 800-263-1121.
<http://www.canon.ca>

Canon has been making conventional consumer cameras for a long time. The PowerShot Pro70 is a slightly more professional model in its consumer digital line. It's one of the larger cameras in this roundup, and may be a bit unwieldy for some. However, it has a number of features that users will find impressive. The 1.68 megapixel resolution is high, and the optics are excellent. Although it uses a proprietary rechargeable battery, a standard battery from a camera shop can be used in an emergency. While it doesn't have a built-in flash, it has a standard flash seat built into the body, allowing users to add their own flash. It also comes with an impressive software bundle, giving users a lot of control over their images after they've been transferred to a PC.

Highlights

- Swiveling LCD display is more versatile, allowing users to take self portraits and to turn the screen in toward the camera body to protect the LCD surface.
- Pictures can be saved in Canon's uncompressed CRW format for better quality.
- Despite smaller file size, picture quality is excellent.
- Has two slots for CompactFlash cards, and can make use of the larger Type II format (including IBM's microdrive).

Casio QV-7000SX

Suggested retail price: \$1,100
Tel: 905-882-0700, <http://www.casiocanada.com>

In addition to keyboards and handhelds, Casio is making its presence felt in the digital camera field. A slightly older unit, the QV-7000SX has a lower 1.3 megapixel resolution, but has a



number of other features that make it a very interesting choice. The lack of an optical viewfinder can be problematic in bright sunlight, which makes images difficult to see on the LCD viewfinder (especially when trying to line up scenes using the otherwise excellent panorama feature), and can drain the batteries fairly quickly. On the other hand, the Movie function is appealing, allowing users to capture up to 12.8 seconds of motion video. The swivel lens and the infrared transfer are also nice features.

Highlights

- Movie and Panorama capture modes offer a good variety of photographic options.
- Swiveling lens.
- Saves thumbnail-size JPEGs!



Casio QV-8000SX

Suggested retail price: \$1,300
Tel: 905-882-0700, <http://www.casiocanada.com>

Though it has roughly the same form factor and the same resolution as the QV-7000SX, the QV-8000SX has a number of bonus features that make it worth extra consideration. The 8x optical zoom is one of the highest available, and can be combined with 4x digital zoom for a total zoom of 32x.

In addition to the Movie and Panorama modes, the camera comes with a manual Bulb mode that allows the shutter to remain open up to 64 seconds (for that time-lapse photography you always wanted to try!) and a super macro mode that can focus on objects as close as 1 cm (.39 in.) away. The same caveats about the QV-7000's LCD panel apply to this model: it tends to drain batteries and can be hard to

see in bright sunlight. Otherwise, the QV-8000SX has a number of interesting features that make it both useful and fun.

Highlights

- 8x optical zoom is excellent.
- Movie, panorama, and bulb mode offer many good capture options.
- Swiveling lens.
- Super macro option for ultra-closeups.
- Wired remote control.
- Includes USB connectivity for faster picture transfer.



Casio QV-2000UX

Suggested retail price: \$1,350
Tel: 905-882-0700, <http://www.casiocanada.com>

Where the other two Casio cameras reviewed this month aim at the more casual user looking for a few neat features thrown in, the QV-2000UX is a more conventional and professional model. Although it fixes the lens in one direction, it ups the resolution of the camera to 2.1 megapixels for high-quality prints, and the lens is protected by an integrated hardshell cover. Best of all, is the use of the Type II CompactFlash slot, which allows the camera to use IBM's 340 MB microdrive. Coupled with the high resolution, that makes for a winning combination.

Highlights

- Great resolution.
- Movie mode.
- USB connection for faster picture transfer.
- Infrared picture transfer option.
- Type II CompactFlash slot accepts high-capacity microdrive.

Epson PhotoPC 750Z

Estimated street price: \$1,000
Tel: 800-463-7766, <http://www.epson.com>

Although Epson is better known for its line of printers, it is also in the camera field, and the 1.3 megapixel PhotoPC 750Z is a high-quality camera that's easy to use. The 3x optical zoom is a key feature, as is the internal flash memory. The Solar Assist panel is a very nice battery saver. The 750Z also comes with rechargeable



batteries and a charger, which will really appeal to the pocketbook. The fact that Play and Record modes are on opposite sides of the Off setting means that the lens extends and retracts more than necessary when quickly double-checking recent captures, but this is a small inconvenience.

Highlights

- Comes with rechargeable batteries and charger.
- Solar Assist panel saves battery life.
- HyPict feature uses software interpolation to boost resolution to 1.9 megapixels.
- Has both CompactFlash and internal flash memory.



Epson PhotoPC 800

Estimated street price: \$1,100
Tel: 800-463-7766, <http://www.epson.com>

The Epson PhotoPC 800 has a slightly different form factor than the other two Epson cameras looked at this month. Because it dispenses with a zoom lens, it can fit into a shirt pocket, and is one of the smallest digital cameras available (Fujifilm's are still smaller). The fact that it packs in a whopping 2.1 megapixels and audio functions is impressive. The lack of optical zoom may put off more demanding users, but those looking for a compact point-and-shoot camera will find this model to be just the ticket.

Highlights

- Excellent resolution.
- USB connection for faster picture transfer.
- Comes with rechargeable batteries and charger.
- Compact design.
- Audio capability.

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	Agfa ePhoto CL30	Agfa ePhoto CL50	Canon PowerShot Pro 70	Casio QV-7000SX	Casio QV-8000Sx	Casio QV-2000UX	Epson PhotoPC 750Z	Epson PhotoPC 800	Epson PhotoPC 850Z	Fujifilm MX-1700	Fujifilm MX-2700	Fujifilm MX-2900
Resolution rating (megapixels)	1	1.3	1.68	1.3	1.3	2.1	1.3	2.1	2.1	1.5	2.3	2.3
Max true resolution	1,152x864	1,280x960	1,536x1,024	1,280x960	1,280x960	1,600x1,200	1,280x960	1,600x1,200	1,600x1,200	1,280x1,024	1,800x1,200	1,800x1,200
Saves files as	JPEG	JPEG	JPEG, CRW (Canon Raw)	JPEG	JPEG, AVI	JPEG, AVI	JPEG	JPEG	JPEG	JPEG	JPEG	JPEG, TIFF
Viewfinder	optical, LCD	optical, LCD	optical, LCD	LCD	LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD
Zoom (optical/digital)	none/2x	3x/2x	2.5x/none	2x/4x	8x/4x	3x/2x	3x/2x	none/2x	3x/2x	3x/2x	none/2.5x	3x/2.5x
Shutter speed (sec.)	1/700-1/30	1/500-1/2	1/8000-1/2	1/1000-1/4	1/2000-64	1/800-1	1/750-1/3	1/750-1/2	1/800-4	NA	1/1000-1/4	1/2000-3
Focal range (incl. macro)	10 cm-infinity	20 cm-infinity	12 cm-infinity	10 cm-infinity	1 cm-infinity	20 cm-infinity	20 cm-infinity	15 cm-infinity	20 cm-infinity	n/a	9 cm-infinity	25 cm-infinity
Included memory	4 MB CF	8 MB SM	8 MB CF (type II slot)	8 MB CF	8 MB CF	8 MB CF (type II slot)	8 MB CF, 4 MB flash	8 MB CF	8 MB CF (type II slot)	8 MB SM	8 MB SM	8 MB SM
Batteries included	4xAA	4xAA	NIMH	4xAA	4xAA	4xAA	4xAA NiMH	4xAA NiMH	4xAA NiMH	Fuji NP-80	Fuji NP-80	Fuji NP-80
Communication	serial, USB	serial	serial	serial, IR	serial, USB	serial, USB, IR	serial	USB, serial	USB, serial	serial	serial	serial
AC adapter included	no	no	yes	no	no	no	no	no	no	yes	yes	yes
Lenscover	none	none	none	none	tetherable	slidable hardcover	tethered	internal	internal	internal	internal	tethered
Accepts lens adapters	no	no	yes	no	yes	no	no	NA	NA	no	no	yes
Softcover case included	yes	yes	no	yes	yes	yes	no	yes	yes	no	no	no
OS compatibility	Windows, Mac	Windows, Mac	Windows, Mac	Windows	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac
Bundled software	PhotoGenie, PhotoWise	PhotoGenie, PhotoWise	Photoshop LE, PhotoImpact	PhotoDeluxe, Panorama	PhotoLoader, Panorama	PhotoLoader, Panorama	Image Expert	Image Expert	Image Expert	PhotoDeluxe	PhotoDeluxe	PhotoDeluxe
Extras		audio record	audio record, external flash seat		wired remote		battery charger	audio record, battery charger	audio record, battery charger, external flash seat		external flash seat	
Dimensions (mm)	127.5x80.3x37	131x72.2x55.5	145x84x13.2	140.5x75x52.5	142.7x71.1x77.5	129.5x61x73.7	137.5x76.4x61.8	114.3x35.6x68.6	125x70.1x80	79x33.4x97.5	80x33x97.6	129.5x59.8x68.5
Weight (g)	265	300	595	280	312	298	310	218	322	230	230	345
Contact	800-268-6270	800-268-6270	800-263-1121	905-882-0700	905-882-0700	905-882-0700	800-463-7766	800-463-7766	800-463-7766	800-263-5018	800-263-5018	800-263-5018
Web site	agfa.ca	agfa.ca	canon.ca	casiocanada.com	casiocanada.com	casiocanada.com	epson.com	epson.com	epson.com	fujifilm.ca	fujifilm.ca	fujifilm.ca
Warranty	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year
Price	\$699 SRP	\$999 SRP	\$1,299 street	\$1,110 SRP	\$1,300 SRP	\$1,350 SRP	\$1,000 street	\$1,100 street	\$1,200 street	\$1,045 street	\$999 street	\$1,349 street

NOTE: CF = CompactFlash, IR = infrared, NA = Information not available, SM = SmartMedia.

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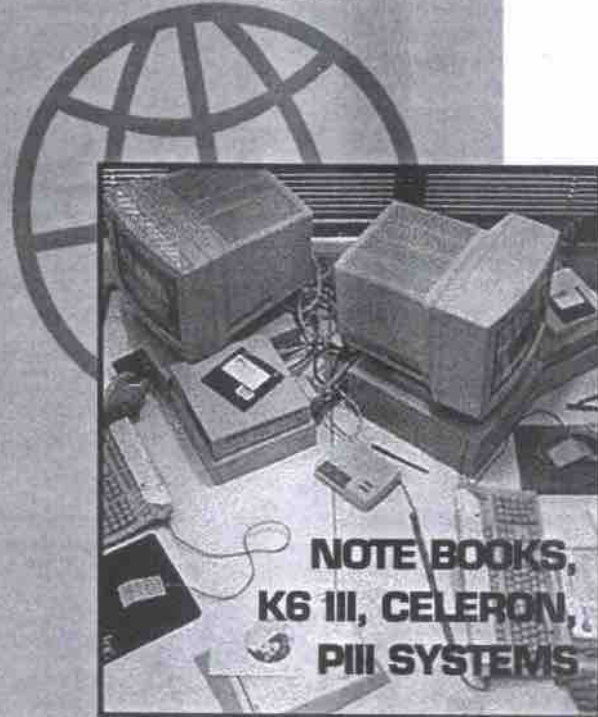
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1	1	1.3	2.1	2.1	1.5	2.1	2.1	2.1	2.1	2.3	1	2.1
1,152x872	1,152x864	1,280x960	1,760x1,168	1,760x1,168	1,344x1,008	1,600x1,200	1,600x1,200	1,600x1,200	1,600x1,200	1,792x1,200	1,024x768	1,600x1,200
JPEG	JPEG, Flashpix	JPEG, Flashpix	JPEG	JPEG, TIFF	JPEG	JPEG, TIFF	JPEG, TIFF	JPEG, TIFF	JPEG, TIFF	JPEG	JPEG, MPEG	JPEG, MPEG
optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	optical, LCD	LCD
none/2x	2x/none	3x/2x	2x/3x	3x/2x	3x/none	none/2.5x	2x/2.5x	3x/2.5x	3x/2.5x	3x/2.5x	14x/none	none/2x
1/500-4	1/362-1/2	1/755-1/2	1/755-1/2	1/360-1/6	1/4000-2	1/750-8	1/750-8	1/750-8	1/800-1/2	1/500-1	1/4000-1/60	1/1000-1/25
25 cm-infinity	20 cm-infinity	25 cm-infinity	25 cm-infinity	30 cm-infinity	35 cm-infinity	9 cm-infinity	7 cm-infinity	2cm-infinity	20 cm-infinity	4 cm-infinity	10 cm-infinity	10 cm-infinity
8 MB CF	4 MB CF/8 MB CF	8 MB CF	20 MB CF	20 MB CF	8 MB CF	8 MB CF	8 MB CF	8 MB CF	8 MB SM	8 MB internal flash	standard floppies	4 MB MemoryStick
4xAA	4xAA	4xAA, 4xAA NiMH	4xAA, 4xAA NiMH	4xAA, 4xAA NiMH	4xAA NiMH	4xAA	4xAA	4xAA	4xAA	4xAA	Sony InfoLithium	Sony InfoLithium
serial	serial	serial, USB	serial, USB	serial, IR, USB	serial, IR	serial	serial	serial	serial	serial, USB	floppy	serial
yes	no	no	no	no	no	no	no	no	no	yes	yes	yes
slidable, hardcover	tethered	tethered	tethered	tethered	none	tetherable	tetherable	tetherable	untethered	internal	tethered	tethered
no	no	no	no	yes	interchang. lenses	yes	yes	yes	yes	NA	yes	no
no	no	no / yes	no	no	yes	yes	yes	yes	no	yes	no	no
Windows	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows, Mac	Windows
Microsoft Picture It!	PhotoDeluxe, PageMill	PhotoDeluxe, PageMill	PhotoDeluxe, PageMill	PhotoDeluxe, PageMill	Digita Desktop, Digita Script	Adobe Photoshop 5 LE	Adobe Photoshop 5 LE	Adobe Photoshop 5 LE	PhotoDeluxe, QuickStitch	PhotoStudio, PhotoBase, more	n/a	PictureGear Lite
	SanDisk ImageMate**	battery charger	battery charger	battery charger	battery charger			external flash sync	remote control, external flash sync	LCD cover, external flash sync	audio record	audio, PC card adapter
127x80x48.3	115x43.3x67.5	133x76x51	133x51x76	118x57x106	127.5x67.5x58.5	114x67x38.5	119x61x69	143x76.5x36.5	107.5x73.8x66.4	131.1x54x68.8	139.8 x162.8x103	103x79.1x48
318	303	328	342	525	310	270	270	350	306	350	830	250
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1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year
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*LCD-based optical. **Millennium version only.

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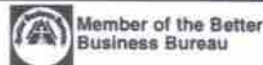
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<p>AMD K6 III 3D now Systems: 10G Hdisk, 1.44mg Floppy 50X CD-ROM, 16bit sound Riva TNT-2 16mg AGP 17" LowRad SVGA Monitor Win 98 keyboard, Mouse 64mg SDRAM, 56K Fax/Modem Windows 98 with Manual 17" ATX tower, 100W speakers 256 internal +512K cache</p> <p>400 MHz \$1399 450 MHz \$1489</p>	<p>Intel Celeron Pro Systems: 10G Hdisk, 1.44mg Floppy 50x CD-ROM, 16 bit Sound SIS 3D 8meg AGP Share memory 17" SVGA Monitor, .27dp PS/2 Win 98 keyboard, Mouse 64meg SDRAM, 56K Fax/Modem Windows 98 with Manual 17" ATX Tower case, 100w spkrs 100mb/s Network card</p> <p>Celeron 433 MMX \$1249 Celeron 466 MMX \$1289</p>	<p>Intel Pentium III, Athlon (K7) Systems:</p> <ul style="list-style-type: none"> Windows 98 with Manual IBM 13.6 G 7200rpm Hdisk 128meg SDRAM, 133mhz Compatible 17" Tower case 250watt ATX format Logitech Netmouse, NMB keyboard 56K Voice/Fax/modem Riva TNT-2 32mg AGP w/TV Out ASUS P3-BF, ASUS AM7 Athlon board 50X CD-ROM, 1.44mg Floppy drive Samsung 750s 17" NI SVGA monitor .27 2+USB, EIDE, Serial and Printer Ports SB 128 Sound card, 100watt Spkrs <p>Upgrade Options:</p> <ul style="list-style-type: none"> ATI All-in Wonder 128 AGP 16mg \$99 ATI Fury 32mg TV out AGP \$49 Creative DVDx6 \$65 Cambridge Sound Works w Subwfrs \$59 																											
		<p><i>Less than major brand, better components</i></p> <table border="1"> <thead> <tr> <th>Speed</th> <th></th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>Pentium III</td> <td>500MMX</td> <td>\$1899</td> </tr> <tr> <td>Pentium III</td> <td>533B</td> <td>\$2139</td> </tr> <tr> <td>Pentium III</td> <td>550MMX</td> <td>\$2169</td> </tr> <tr> <td>Pentium III</td> <td>600B</td> <td>\$2399</td> </tr> <tr> <td>Athlon K7</td> <td>550MMX</td> <td>\$2139</td> </tr> <tr> <td>Athlon K7</td> <td>600MMX</td> <td>\$2359</td> </tr> <tr> <td>Athlon K7</td> <td>650MMX</td> <td>\$2519</td> </tr> <tr> <td>Athlon K7</td> <td>700MMX</td> <td>\$2799</td> </tr> </tbody> </table>	Speed		Price	Pentium III	500MMX	\$1899	Pentium III	533B	\$2139	Pentium III	550MMX	\$2169	Pentium III	600B	\$2399	Athlon K7	550MMX	\$2139	Athlon K7	600MMX	\$2359	Athlon K7	650MMX	\$2519	Athlon K7	700MMX	\$2799
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Epson PhotoPC 850Z

Estimated street price: \$1,200

Tel: 800-463-7766, <http://www.epson.com>

Although its resolution is the same as Epson's 800 model, the 850Z has a bigger form factor, allowing for a few extra features, most obvious of which is the 3x optical zoom lens. The camera also comes with an external flash seat, for those who would rather use their own flash. Additionally, the 850Z uses the wider Type II CompactFlash slot for higher capacity storage media, such as IBM's microdrive. It costs about \$100 more than the 800, but more demanding users may well find the extra investment is worthwhile.

Highlights

- Excellent resolution coupled with 3x zoom lens.
- USB connection for faster picture transfer.
- Type II Compact Flash slot accepts microdrive.
- External flash seat.
- Audio capability.
- Comes with rechargeable batteries and charger.

Fujifilm MX-1700

Estimated street price: \$1,045

Tel: 800-263-5018, <http://www.fujifilm.ca>



Based on the design of Fujifilm's award-winning MX-700, the MX-1700 addresses the

issue pointed out by most detractors of the earlier model: the lack of an optical zoom. The MX-1700 hides a retractable 3x optical zoom behind an internal lens cover. Like other members of the Fujifilm family, this model uses a proprietary rechargeable battery. Although it provides reasonably long life and recharges when the camera is plugged in, if the battery runs out of juice while the user is in the field, an expensive supplementary battery is required to continue shooting. Despite that, the MX-1700 is a powerful addition to Fujifilm's digital camera line.

Highlights

- Ultra-compact design allows shirt-pocket storage.
- Includes retractable 3x optical zoom.
- Reasonably long battery life from included cell.

Fujifilm MX-2700

Estimated street price: \$999

Tel: 800-263-5018, <http://www.fujifilm.ca>



When Fujifilm's MX-700 model came out last year it was revolutionary, putting the power of a megapixel camera into a unit that could fit into a shirt pocket. Now, the MX-2700 raises the bar, keeping the same form factor and increasing the resolution to an astounding 2.3-megapixels. The big drawback with this model is the lack of an optical zoom, which will put off some of the more serious photographers. For those looking for a really compact point-and-click model with great resolution, this one will be a great choice.

Highlights

- Ultra-compact design allows shirt-pocket storage.
- 2.3 megapixel resolution is excellent.
- Reasonably long battery life from included cell.
- Brings price of a 2-plus megapixel camera under the \$1,000 street mark.

Digital Film

Although the CompactFlash technology was created by Sandisk, other companies market the media under their own name. One of those companies, Lexar Media (<http://www.lexarmedia.com>), offers "accelerated" CompactFlash media, with faster write speed and USB compatibility. We had a chance to look at Lexar's 48 MB Digital Film package, which comes with the JumpShot USB connector cable, allowing users to plug their CompactFlash card into their PC and read/write as if the card was an external hard drive. The 48 megabyte card and JumpShot bundle is available for roughly \$299 street price, and the card's higher capacity makes it a great addition to any digital camera travel kit.

—Sean Carruthers





Fujifilm MX-2900

Estimated street price: \$1,349

Tel: 800-263-5018, <http://www.fujifilm.ca>

Adopting a different form factor from the models that are earning Fujifilm cameras a lot of attention, the MX-2900 is both bigger and more fully featured than the other Fujifilm units in this roundup. Also, with a resolution of 2.3 megapixels, the MX-2900 includes a 3x optical zoom. On top of that, it has an external flash seat, for those who'd prefer to use their own flash. All in all, the added features make it a nice improvement over the MX-2700, for users who want more control over their images.

Highlights

- 2.3 megapixel resolution is excellent.
- 3x optical zoom included.
- Reasonably long battery life from included cell.
- External flash seat.

DC215 is a success, bringing Kodak's traditional high-quality down to a more affordable price point. The \$539 standard version is pretty basic, with 1 megapixel resolution, a 4 MB memory card and a 2x optical zoom. The \$699 Millennium version has a metallic gold finish (rather than the silver finish of the standard model), and comes with an 8 MB memory card, and a Sandisk ImageMate card reader with USB connectivity for downloading images faster. Although the resolution is too basic for demanding users, those with a casual interest in digital photography may find either version of the DC215 a good starting point.

Highlights

- Features Kodak's high-quality optics.
- Millennium version ships with 8 MB card and Sandisk ImageMate card reader.
- Reasonable price point.



Kodak DC240 Zoom

Suggested retail price: \$799

Kodak DC240i Zoom

Suggested retail price: \$799

Tel: 800-465-6325, <http://www.kodak.ca>

The DC240 has 1.3 megapixels resolution, great optics, a great zoom, and includes an 8 MB memory card. On top of that, it features Kodak's amazingly easy-to-use interface, sports USB connectivity, and comes with rechargeable batteries—in short, everything necessary to make digital photography a pleasure, even for amateurs. As with the DC215, the DC240 also comes in two versions. The 240i has its own softcover carrying case, but what really distinguishes it from the standard DC240 is its blue/clear plastic case, reminiscent of Apple's iMac computer. Ultimately, it may be more gimmick than anything, but for those who want to try something different, this could very well be it.

Highlights

- 3X optical zoom lens.
- Comes with rechargeable batteries and charger.
- USB interface for faster picture transfer.
- 240i has iMac-like translucent blue-and-white plastic body and comes with its own carrying case.

Kodak DC280 Zoom

Suggested retail price: \$1,199

Tel: 800-465-6325, <http://www.kodak.ca>

Using the basic body of the DC240, the DC280 ups the resolution to an excellent 2.1 megapixels. The DC280 also has Kodak's excellent user interface, USB connectivity, and comes with its own rechargeable batteries and charger. To reflect this camera's higher pixel count, Kodak has included a 20 MB CompactFlash card (still the highest capacity card currently shipping as a standard item with any camera). Where this camera falls down a bit is with its zoom; it features 2x optical and 3x digital zoom, which is more limiting and the reverse of other higher-end Kodak cameras. Despite this drawback, the DC280 takes excellent pictures and makes a great choice for a more demanding user. ➤



Hewlett-Packard PhotoSmart C200

Suggested retail price: \$429

Tel: 800-387-3867, <http://www.hp.com>

At just 1 megapixel, Hewlett-Packard's PhotoSmart C200 isn't exactly leading the pack in terms of resolution, but it manages to squeeze a lot out of the resolution it has. The image quality is always good, and it comes with its own built-in hardshell lens cover. Even though the user interface is on the clunky side, the camera is an excellent choice for buyers who want a basic point-and-click unit with reasonably good quality without spending a ton of money.

Highlights

- Comes with 8 MB memory card.
- Hardshell lens cover provides good protection.
- Low price makes the camera an excellent value.



Kodak DC215 Zoom

Suggested retail price: \$539

Kodak DC215 Zoom Millennium

Suggested retail price: \$699

Tel: 800-465-6325, <http://www.kodak.ca>

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Understanding digital camera storage options

CompactFlash, SmartMedia and IBM's microdrive

An important consideration when purchasing a digital camera is the size and kind of removable storage it uses. It's all well and good to be able to reuse a digital camera's memory card, but if the card has a small capacity, it can quickly become an annoyance, forcing the user to download images to a PC after taking just a handful of shots.

With the new generation of higher-resolution digital cameras, this issue becomes even more pressing. Photographers who plan to take a lot of shots at the highest resolution will want to make sure they get all the memory they need ahead of time. (There's nothing more frustrating than running out of space on your memory card just as something interesting is about to happen in front of your lens!)

These days, most cameras make use of one of two kinds of storage: CompactFlash, and SmartMedia. (Sony cameras appear to be the big exception, making use either of floppy diskettes or Sony's own Memory Stick technology.) Both technologies have advantages and drawbacks.

CompactFlash and SmartMedia are both small, solid-state technologies. Typically, camera manufacturers prefer to use one or the other through their entire product line, and they often offer memory cards branded with their own name to sell as accessories to their camera lines.

Think Smart

Although CompactFlash has the edge in North America, Toshiba's SmartMedia format is the most popular format in most of the world. SmartMedia is thinner—memory cards are less than 1 mm thick. This allows manufacturers to design camera bodies that are exceptionally thin. Data on SmartMedia can read via external readers and PC Card adapters. Because this media is so thin, floppy disk adapters, which can be inserted into standard floppy drives, have also been developed as a way to transfer SmartMedia data.

The first disadvantage with this technology, however, is that the cards may be less durable than CompactFlash because the memory area is exposed on one side of the card and may be subject to abrasion during insertion and removal. More pressing for many critics of the SmartMedia format is the current 32 MB cap for the cards; although cards up to 128 MB are apparently working in the prototype phase and manufacturers are hopeful that they'll ship soon, they're still not available.

Compact is big!

Sandisk's CompactFlash technology, on the other hand, has sprinted ahead in terms of capacity, with 96 MB memory cards already shipping, and 200-plus MB cards available in a double-width format (although this format hasn't made its way

to many consumer cameras yet). Even with today's highest resolution digital cameras, 96 MB is a lot of storage space, allowing more than 150 JPEG captures at the highest-quality settings. Most users would probably run out of battery power first!

The biggest problem with CompactFlash is its larger physical size. Although it's not going to be a major issue for most digital camera users, cards that accept CompactFlash media are necessarily slightly thicker. (It would be much harder to implement an ultra-compact design like Fujifilm's MX-2700, for example, if it used CompactFlash cards.) To be fair, most cameras using CompactFlash media aren't noticeably thicker than their SmartMedia-wielding counterparts.

Cost-wise, the two technologies appear to be running neck and neck. At 32 MB (the highest capacity shared by both formats), both had a street price of about \$225 to \$250 per card at the time of writing. It will be interesting to see how the pricing skews when both formats are available in 128 MB versions.

Although the CompactFlash technology was created by Sandisk, other companies market the media under their own names. One, Lexar Media (<http://www.lexarmedia.com>), offers "accelerated" CompactFlash cards, which have a faster write speed and USB compatibility.

We had a chance to look at the 48 MB Digital Film package, which comes with the JumpShot USB connector cable, allowing users to plug their CompactFlash card into their PC and read/write as if the card was an external hard drive. The 48 MB card and JumpShot bundle are available at a street price of roughly \$299. The card's higher capacity makes it a great addition to any digital camera travel kit.

A drive for storage

A new entry into the world of digital camera storage is IBM's new microdrive. The use of a small "m" in the spelling is intentional, as IBM hopes this form of storage will catch on, and the name will become a generic term. Slightly thicker than CompactFlash cards but using the Type II CompactFlash form factor, the microdrive is a mechanical hard drive, and is currently available in 170 MB and 340 MB capacities.

Cameras with a Type II CompactFlash slot can use both standard CompactFlash cards and the microdrive interchangeably. Those who choose to use the microdrive will be able to store hundreds of photos at a camera's highest resolution. Like SmartMedia and standard CompactFlash, the microdrive can be used in other devices, from handheld PCs to MP3 players, and more. Current street-level pricing for a 340 MB microdrive is around \$899.

—Sean Carruthers

Highlights

- Excellent 2.1 megapixel resolution.
- Comes with rechargeable batteries and charger.
- USB interface for faster picture transfer.
- 20 MB CompactFlash card included.

Kodak DC290 Zoom

Suggested retail price: \$1,549

Tel: 800-465-6325, <http://www.kodak.ca>



The DC290 Zoom is a big camera in a number of ways: it has a lot of features (including audio), 2.1 megapixel resolution, a 20 MB CompactFlash card, and a big form factor that allows the user to get a good grip on the right side of the camera. It comes with the 3x optical zoom, features both USB and infrared transfer ability, and the shutter can be kept open for up to 16 seconds. For those who like their files uncompressed, images can be saved in TIFF format. It's a higher-priced camera that's far better suited to professional users than casual users—but even the latter will find it easy to use.

Highlights

- Excellent 2.1 megapixel resolution and 3x optical zoom.
- Resolution can be boosted to 3.3 megapixel through software interpolation.
- Audio recording capability.
- 20 MB CompactFlash card for extra storage.
- Ability to save images in uncompressed TIFF format.
- USB and infrared file transfer.
- Comes with rechargeable batteries and charger.
- Orientation detection means images taken in Portrait mode are saved as such at the camera level.



Minolta Dimage EX 1500 Zoom

Estimated street price: \$930

Tel: 905-890-6600, <http://www.minolta.ca>

Despite a few minor kinks, the Dimage EX 1500 Zoom is a versatile little unit with a number of interesting features. As with the previous model, the Dimage V, the EX 1500 line features a removable lens, which can be attached to an optional extension cable. The 1.5-megapixel resolution delivers high-quality images, and the orientation detection can be a big time-saver for those who take a lot of photos in Portrait mode. The one minor annoyance in the camera's interface is the need to hit "save" to instantly save pictures, if users don't want to wait for the autosave delay.

Highlights

- Detachable lens for greater capture versatility.
- 1.5 megapixel resolution provides high-quality images.
- Comes with rechargeable batteries and charger.
- Infrared file transfer.
- Orientation detection saves Portrait shots as such at camera level.



Nikon Coolpix 700

Estimated street price: \$900
 Tel: 905-625-9910
<http://www.nikon.ca>

Nikon is a well-respected name in the field of conventional photography, and its Coolpix line is cementing its reputation more firmly on the digital

side. Of Nikon's newer 2.1 megapixel resolution models, the Coolpix 700 is the little sister, offering the same image quality but keeping the price down by removing some of the higher-end features. The lack of optical zoom will put off a number of people, but for those looking for a more basic model, the high resolution and the amazing optics will be very attractive.

- Highlights
- 2.1 megapixel resolution and high-quality Nikkor lens.
 - Captures in uncompressed TIFF format.
 - Brings camera with 2-plus megapixel resolution

- below \$1,000.
- Ships with Photoshop 5.0 Limited Edition.

Nikon Coolpix 800

Estimated street price: \$1,100
 Tel: 905-625-9910, <http://www.nikon.ca>

Splitting the difference between the basic Coolpix 700 and the more fully-featured Coolpix 950, the Coolpix opts for the basic size of the 700 while adding a high-quality zoom lens. As with the other models, the 800 features

Continued on page 94

Do you have the power?

Tips on digital camera batteries

Ever since the first digital camera rolled off the drawing board, they've had a reputation for using up batteries at an alarming rate. This is largely due to the fact that the flash and the LCD screen on the back of most cameras consume power like it's going out of style. Since most cameras use standard AA batteries, it's generally just a matter of popping out the old batteries and inserting a new set. This is a convenient but often very expensive solution, as some cameras can eat through a set of batteries in as few as 30 minutes when the LCD display is in use.

One way for users to get around this problem is to purchase a set of rechargeable batteries and a charger. Although the initial cost of the batteries will be higher, they'll quickly pay for themselves. You should use the higher-capacity nickel metal hydride (NiMH) variety rather than nickel cadmium (NiCad). Although some camera manufacturers include a set of rechargeable batteries and a charger in the camera box, it's always a good idea to get at least one spare set for those extra-long shoots.

It also pays to shop around. We recently saw a NiMH charger and set of four AA NiMH cells, branded by a digital camera maker, selling for nearly \$70 at a consumer electronics store. We ended up paying less than \$40 for a similar kit offered by Radio Shack, then picked up another four batteries at \$13 per pair. So we got a charger and eight AA batteries for roughly the same price the other store was asking for a charger and just four batteries.

For customers who purchase a camera that uses a proprietary battery, the choice is a bit harder. Although proprietary batteries are already rechargeable and typically hold their charge for a lot longer, users who run out of power while using one of these cameras don't have the option of running to the corner store and buying a new pack of batteries for emergency use. Moreover, additional proprietary batteries can be very expensive, running between \$50 and \$100 a crack. But users who plan to use their new camera for extended periods of time may find this expensive purchase a necessity.

—Sean Carruthers

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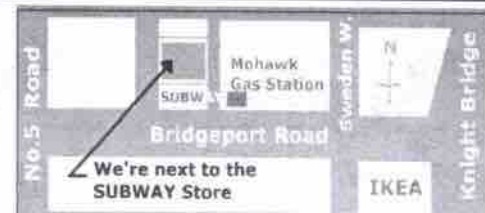
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It's a snap!

Continued from page 91

2.1 megapixel resolution and can save files in uncompressed TIFF format. For those who want high-quality output and a zoom without all the other higher end features, the Coolpix 800 is a nice compromise.

Highlights

- 2.1 megapixel resolution and high-quality Nikkor lens.



- 2x optical zoom.
- Captures in uncompressed TIFF format.
- Ships with Photoshop 5.0 Limited Edition.

Nikon Coolpix 950

Estimated street price: \$1,500

Tel: 905-625-9910, http://www.nikon.ca

For photographers looking for high-resolution, amazing optics and versatility, Nikon's Coolpix 950 is a great choice. The 2.1-

The proof is in the printing

Comparison of prints from digital and film cameras yields surprises

We went into this digital camera Lab Test with the idea that when presented with digital camera output alongside conventional film-based photography, people would choose conventional prints as their favourite.

To test this, we printed samples from each of the 25 digital cameras in this month's Lab Test on colour inkjet printers and asked 20 staff members from other departments at *The Computer Paper* to judge them: to pass or fail the output from each camera, and to select and rank their top five favourite photos.

The digital camera photos—three to eight images from each camera, 111 images in total—were all printed out at the same resolution, using the same output settings, and on the same paper. For an added twist, we threw in six photographs taken with a professional-quality 35 mm film camera and printed by a conventional photofinisher. The results weren't as clear-cut as we had expected:

- The conventional photography prints garnered the most first choices, but for the majority of those who didn't pick a conventional print as their number one choice, they didn't rate one in the top five either.
- Prints from 16 of the digital cameras appeared in at least one person's top five choices.
- Twenty-two of the digital cameras were failed by at least one person.
- Two test participants flunked the conventional photography.

What does this all mean? For the most part, photography is a matter of perception and personal taste. The output preferred by one person may not make the grade for someone else. For that reason, it may be a good idea to request inkjet-printed samples when considering the purchase of a digital camera, to make sure your tastes are compatible with its output.

What is clear from this quick experiment, is that the age of digital photography is upon us. Many of our voters were impressed with the quality of most of the digital cameras—even devoted 35 mm film camera users. With even more improvements in digital camera technology just around the corner, it's certain to be an area worth watching!

Thanks to Lexmark for the use of the Jetprinter 5770 and to Hewlett-Packard for the use of a PhotoSmart P1100. Both of these colour inkjet printers were essential in making this experiment happen.

—Sean Carruthers

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ever, is a sliding plastic LCD cover (attached to the power switch, no less) to protect the screen when the camera isn't in use.

Highlights

- Excellent 2.3 megapixel resolution.
- 3x optical zoom.
- Protective LCD cover.
- Internal flash memory.
- 4 cm macro mode for extreme closeups.
- External flash sync.

megapixel sensor and the swiveling Nikkor lens combine to offer very high-quality digital images. The 3x optical zoom, the external flash sync and the ability to save files in uncompressed TIFF format will catch the eye of the more experienced and serious photographers. All in all, this one raises the bar for the other players in the digital camera field.

Highlights

- 2.1 megapixel resolution and high-quality Nikkor lens.
- 3x optical zoom and swiveling lens section.
- Captures in uncompressed TIFF format.
- Ships with Photoshop 5.0 Limited Edition.
- External flash sync.



Olympus C-2000 Zoom

Estimated street price: \$1,399

Tel: 800-387-0437, <http://www.olympus.com>

Olympus' C-2000 Zoom is a very powerful and compact unit with a lot of features to appeal to more experienced photographers. It offers users a lot of control over the settings, has external flash sync and an infrared remote control. Further, the optics are high quality, and users can save images in an uncompressed TIFF format for higher quality reproduction. Despite a few drawbacks (most notably the overly sensitive menu selector button and a slightly non-intuitive user interface), the C-2000 is a very attractive model that is bound to appeal to anyone who is serious about digital photography.

Highlights

- 2.1 megapixel resolution is excellent.
- 3x optical zoom.
- High degree of manual control over settings.
- External flash sync.
- Infrared remote control for self-portraits or remote shots.
- Captures to uncompressed TIFF format.

Ricoh RDC-5300

Estimated street price: \$1,399

Tel: 514-338-3838, <http://www.ricohcamera.com>

Ricoh's newest digital camera addresses a number of concerns users had with previous Ricoh cameras, and the new features make this model a nice update indeed. At 2.3 megapixels, the resolution is top-notch, and the camera also features a 3x optical zoom. Although it has a slot for SmartMedia, the camera ships with 8 MB of internal flash memory (which can be copied to removable SmartMedia cards or quickly downloaded via its USB connector). One of the nicest features of the camera, how-



Sony Mavica FD-91

Suggested retail price: \$1,699

Tel: 416-499-1414, <http://www.sony.ca>

Sony's Mavica line of digital cameras has been very popular, largely because they use floppy diskettes for storage. Where both CompactFlash and SmartMedia cards are still relatively expensive, floppies are dirt cheap, and compatible with almost any PC. The

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<p>INTEL</p> <ul style="list-style-type: none"> Celeron 366A PPGA OEM \$85 Celeron 400A OEM SLOT1 \$135 Celeron 400A PPGA Box/OEM \$115/104 Celeron 433A PPGA Box/OEM \$125/118 Celeron 466A PPGA Box/OEM \$160/150 Celeron 500A PPGA Box/OEM \$236/224 Pentium 233MMX \$67 Pentium II 350 / 400 OEM \$212/235 Pentium III 450 / 500 Box \$318/369 Pentium III 550 / 600 Box \$522/706 	<ul style="list-style-type: none"> ACERVIEW 54E 15" 77E 17" 27" \$225/348 ACERVIEW 78C 17" / 99C 19" 26" \$429/625 ADI 4P 15" / VIEWPOINT 17" \$215/310 HANSOL 500A 15" / 710A 17" 28" \$197/299 OPTIQUEST Q711 / Q73 17" \$308/408 OPTIQUEST V73 / V75 17" 26" \$456/478 PROVIEW P560 15" / P579 17" \$192/299 PROVIEW P598 19" \$479 SAMSUNG SE 15" 7E 17" \$245/363 SONY 110GS 15" / 210GS 17" 25" \$319/485 SONY 220GS 17" / 420GS 19" 25" \$659/846 SONY 520GS / 520PS 21" 25" \$1410/1648 TONG YANG TyTron 17" 26" \$299 VIEWSONIC 17" E771 27" / E773 25" \$318/415 VIEWSONIC G5771 / G773 17" \$428/456 VIEWSONIC P5790 19" / P5810 21" \$573/1254

Motherboard	Storage
<ul style="list-style-type: none"> Abit BP6 Dual Socket 370 \$230 Abit BH6 / BE6 BX \$162/205 Abit BM6 BX Socket 370 \$168 Aopen AX59Pro / AX6BC \$135/165 Aopen AX63 Pro \$143 Aopen MX3W S 370 i810 w/Audio & Video \$164 ASUS P5A, 100MHz, ATX \$143 ASUS P3B-F BX, 100MHz, ATX \$189 ASUS P2-99 440ZX, 100MHz, ATX \$189 GA-SAX Socket 7 \$120 GA-6VXE Slot 1 \$120 GA-7IX AMD K7 \$264 	<ul style="list-style-type: none"> Fujitsu 4.3/6.4/8.4/10.8/13G \$140/152/168/195/192 \$206/253 Fujitsu 9.1/ 13.7G 7200rpm \$152/168 Maxtor 6.5/8.7/10.2G \$180/190/288 Quantum CX5400rpm 6.4/10.2G \$164/185 Quantum CX5400rpm 13/20G \$199/280 Quantum KA7200rpm 9.1/13.6/18.2GS2 12/24/32T \$159/169/192/202 WD 7200rpm 9.1/ 18/ 20.5G \$238/347/359 WD 9.1/18G SCSI U2W \$449/755 LS-120 120MB / Iomega 100MB Zip Disk \$15/15 Panasonic 1.44MB/ LS-120 Floppy Drive \$23/109 Panasonic 100MB Zip Drive Int. \$98

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<ul style="list-style-type: none"> 72PIN 16M REG/EDO \$51/50 72PIN 32M REG/EDO \$99/98 Notebook SDRAM 32 / 64M 3.3V \$115/175 SDRAM PC133 64/128 Call SDRAM PC100 32 / 64 / 128 MB Call SDRAM PC100 w/ECC 64 / 128 / 256MB Call Video RAM (SOJ) 1MB \$15 	<ul style="list-style-type: none"> PCTEL ISA/PCI WinModem 56K V.90 \$29 Aopen 565M/56PM 56K V.90 PCI \$43/52 Aopen 56K PCI Dual Standard \$73 GVC 56K PCI V.90 \$55 USR 56K PCI / ISA V.90 Int w/voice \$69/108 D-Link PCMCIA 56K Modem/10BT NIC \$299 GVC PCMCIA V.90 w/Fax \$134 King Max PCMCIA V.90 Fax/Modem \$95

Video Adaptor

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Rage Fury, Rage 128 AGP 32MB TV-Out \$188	Rage Magnum Rage 128 AGP 32MB \$185
Rage II 8M AGP \$76	TV Tuner w/FM Tuner PCI \$135
Xpert 98 / 99 8M \$98/112	Xpert 128 16M/Xpert 2000 32M \$145/164
Xpert@Play 98 AGP 8MB PC2TV \$105	
ASUS	
VooDoo3 3000 16MB \$163	V3400, TNT2 V/U 16MB \$1765
V3800/TVR, TNT2 Video I/O \$269	
Creative	
Graphics Blaster TNT 16MB AGP \$126	Riva TNT2 32MB AGP \$165
AGP 3D Banshee 16MB \$120	
Diamond	
Viper V770 TNT2 ULTRA 32M \$275	Viper V770 TNT2 AGP 32M OEM/Retail \$210/215
Stealth III Savage4 5540 32M AGP \$145	Fire GL1 32M SGRAM Up to 1920x1200 \$1195
Matrox	
Millenium G400 300MHz 16/32MB \$168/239	Millenium G400 32M, 300MHz, Dual Head \$269
Millenium G400 32M, 360MHz, Dual Head \$324	
3dfx	
2000 Voodoo III 16M AGP \$156	3000 Voodoo III 16M AGP w/TV Out \$210
Misc. Video Cards	
CL 3D Blaster Banshee 16M AGP \$97	Intel 1740 AGP 8MB/Trident Blade 3D AGP \$59/\$53
S3 Savage 3D AGP 8MB \$75	

System Upgrade: \$330

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Creative CDRW 8432 IDE Kit Int. \$408	HP9201i CDRW 8432 IDE Kit Int. \$518
Yamaha 6416 CDRW SCSI Int. Value Kit \$328	Sony CDRW 4424 IDE Int. \$268
Ricoh 66424 CDRW IDE Int. \$298	Panasonic 5x/ Pioneer 10x DVD Drive \$129/149
Sony 6x DVD Drive \$115	Adaptec 2906 PCI SCSI Controller Card \$89

Printer/Scanner

Canon BJC 1000/ 1000SE Inkjet Color \$114/106	Canon BJC 2000/ 2000SE Inkjet Color \$162/150
Canon FB 320P Scanner \$79	Acer 320P/ 320U Scanner \$118/129
Acer 620S/ 620P Scanner \$174/145	Epson Stylus 440/640/740 \$204/242/295
Epson Photo 700/750 \$362/365	Epson 610C/ 810 \$166/238
Fujitsu PP10V/ PP16DV \$593/837	Lexmark 3200/ 5700 1200x1200 Color \$227/383
Lexmark OPTRA E310 \$602	Mustek USB Scanner 300dpi \$122

Multimedia

Altec Lansing ACS 44 w/Subwoofer \$108	Altec Lansing ACS 45-1 w/Subwoofer \$116
Aopen AW37 3D/ AW230 PCI \$25/37	Creative Ensoniq PCI \$36
Diamond Monster MX300, Retail/OEM \$155/119	Headphone HD33, Volume on cord \$16
Logitech Quickcam USB \$125	Sound Blaster 16 PnP/AWE 64 PCI \$39/49
Sound Blaster PCI 128/ Live PCI \$55/83	Xwave 3000 128 Yamaha Soft MIDI \$33
ZN 6000 480W Speakers w/Subwoofer \$60	

Misc.

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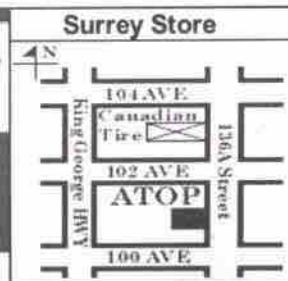


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It's a snap!

Continued from page 95

downside? Floppies store only 1.4 MB of data, which limits the number of shots you can put on one diskette. Despite this limitation, Mavica cameras use good compression formats to fit a lot of pictures and MPEG video onto a single floppy.

The FD-91 is at the top end of the Mavica line. It has a 14x optical zoom and a long-lasting proprietary battery. Like other Mavica models, this is an exceedingly large and heavy unit (mostly due to the lens). Although the LCD-based optical viewfinder is a nice touch, the rubber guard around it makes it awkward to use if you wear glasses. The camera is also quite expensive, especially considering its maximum resolution is 1,024x768 (less than 1 megapixel). Users who really value the floppy disk-based camera may find it worthwhile, but the price tag is a little too high for almost everyone else. At this price point, many users may want instead to take a look at the Sony's Cybershot line, which uses Memory Stick storage media.

Highlights

- 14x optical zoom lens for amazing telephoto range.
- Floppy diskette storage for nearly universal PC compatibility.
- Reasonably good battery life.
- Full-motion video and audio recording.
- LCD-based optical viewfinder shows you exactly what you're shooting, with only a fraction of the battery use of the large LCD panel.



Sony Cybershot DSC-F55
Suggested retail price: \$1,299
Tel: 416-499-1414,
<http://www.sony.ca>
Sony's Cybershot line switches from floppies to the new Memory Stick technology, and what this line

loses in terms of easy-to-transfer media, it more than makes up for it in terms of power. The lack of an optical viewfinder will put off more serious photographers (especially because the LCD viewfinder can be hard to view in bright sunlight), as will the lack of an optical zoom. This is too bad, because the camera's Zeiss optics are of exceptional quality, and the 2.1-megapixel resolution offers high-quality shots. Sony's prominence in the audio/video world also shines through in this camera, which features not only still capture, but MPEG capture with both video and audio. As a multimedia device, this one definitely scores high on the fun meter.

Highlights

- Exceptionally high quality swiveling Zeiss lens.
- 2.1 megapixel resolution.
- MPEG video with audio mode.
- Comes with PC Card adapter for Memory Stick media.



Casio QV-2000UX

It has good resolution, USB connection, movie recording, and uses a Type II CompactFlash slot, which is compatible with higher capacity storage media (including the 340 MB IBM microdrive). It all adds up to a winner.

Epson PhotoPC 800

This tiny little device not only has excellent resolution, it comes with audio capability and a USB connection for faster downloading. Even without a zoom lens, this camera is impressive!

Kodak DC290 Zoom

Although most of Kodak's cameras are top-notch, this one is a heavyweight. It offers excellent picture quality, a huge memory card, can save uncompressed files and offers lots of manual control.

Nikon Coolpix 950

The newer members of Nikon's Coolpix line all have 2.1 megapixel resolution and feature TIFF file storage. The 950, however, gives users a lot more control over the output, and features a swiveling lens section for added versatility. □

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- 107-Key Keyboard
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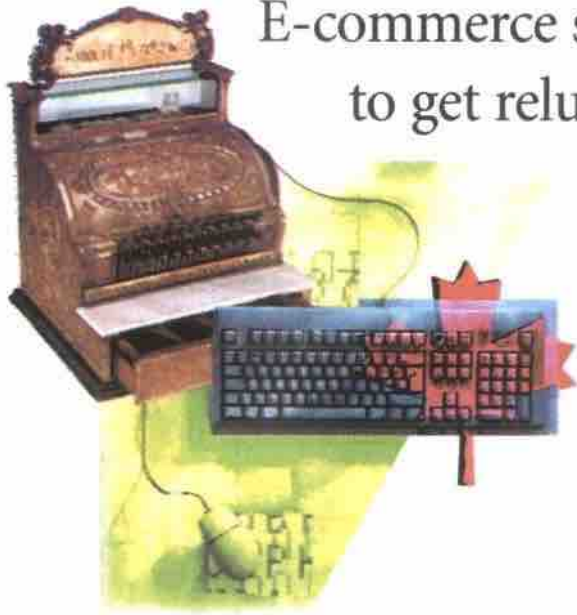
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Selling the electronic storefront

E-commerce solution providers are doing more to get reluctant Canadian companies online



"In the U.S., it helps that because most of the e-commerce technology has been developed in the U.S. there is just a lot more buzz about the industry."

—Brent Halverson,
Multiactive Software

commerce providers, 60 percent of those online dollars went to non-Canadian companies.

Joe Green, director of telecom and Internet research for the Toronto-based International Data Corp. Canada (IDC Canada) says many Canadians want to buy goods or services from Canadian companies, but many simply don't have an online presence.

"The number of businesses in Canada conducting business-to-business e-commerce and the number of business retailers offering business-to-consumer e-commerce is falling," Green adds.

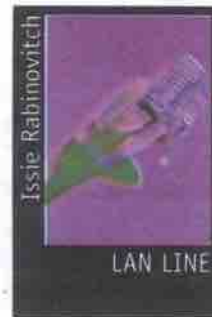
The Retail Council of Canada study also found only 26 percent of Canada's top retailers are selling online, compared to the 50 percent of the top retailers in the U.S. And this reluctance by Canadian companies to launch an online presence may cost them big in this year's Christmas rush. In 1998, U.S. consumers spent nearly US\$3 billion online, and this year, New York-based industry analyst Jupiter Communications predicts Americans will spend US\$6 billion.

So the question must be asked: Why are Canadian businesses reluctant to get online? Some analysts and e-commerce leaders say

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Sharing, rights, and permissions

Back in the early days of the personal computer, spreadsheets were the dominant application, and the primary reason for many computer purchases.



It was quite common for someone to power up a new computer, load Lotus 1-2-3, stare at the blank grid of rows and columns, and wonder what to do next. The situation is similar today for the novice network administrator.

A default installation of a network operation system, such as Windows NT Server, just sits there, of no use to anyone until the administrator performs certain tasks.

Let's assume NT Server 4.0 and all of the relevant hardware have been installed successfully. Our server is the PDC (primary domain controller) and indeed, the only server in the domain. This is the simplest situation possible, chosen so that the basic concepts aren't obscured by extraneous details.

Accounts and groups

The first task is the creation of user accounts, for which we use User Manager for Domains. This is an easy-to-use application, but if the network administrator doesn't have a clear strategy in mind, things can get messy in a hurry.

A consistent login name scheme needs to be developed, usually based on some combination of first and last names that can be up to 20 characters long. The three most common schemes are represented by the following examples: jsmith, janes, and jane.smith. Next, a decision needs to be made concerning the creation of groups. Users acquire the rights, permissions, and capabilities assigned to the groups they join. Being added to a group never subtracts rights. This is an efficient way in which to assign permissions to individuals.

NT Server creates a number of groups by default, such as the powerful Administrators or, at the other end of the scale, the Users group. Members of the Administrators group have the ability to do virtually anything, while members of the Users group have essentially no administrative powers. There are specialized groups, like Print Operators and Backup Operators, which are similar to Users but with the particular rights required to perform the tasks they have been assigned. It is possible for a user to be a member of multiple groups. As mentioned above, if a user is assigned a per-

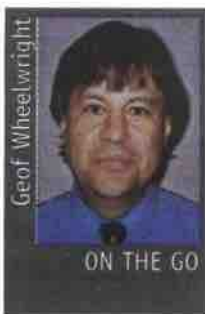
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By Tom Venetis

The slow rate at which Canadian businesses are catching the electronic commerce (e-commerce) wave is causing many home-grown shoppers to send their online dollars down to the United States.

This, at least, is the feeling being expressed increasingly by many analysts and e-commerce solutions companies. According to the Ottawa-based Retail Council of Canada, Canadian online shoppers spent about \$668 million in 1998, a 156 percent increase over the previous year. These shoppers are buying everything from computer equipment and software to music, books, games and even cars. While this is great for e-

Wireless email no longer a fantasy



Wireless email is not merely a product of the new millennium. It has long been a "holy grail" for mobile computer users. For years, we have been inundated with images of people sending email from the beach, from the back of a taxi or from

the top of a mountain. Yet when you looked into the technology required to do any of those things, it was often difficult to use, slow, expensive, unreliable—or not invented yet. I know this to be true from long and bitter experience, having sent my first "email from the beach" back in 1987.

In those days, the closest you could get to a wireless experience was to take a mobile computer and a large, bulky thing called an acoustic coupler, which you latched onto the earpiece and mouthpiece of an equally bulky (and often unreliable) mobile phone.

We have come a long way since then.

Nokia Communicator 9000i

This is probably the oldest self-contained wireless email gadget you'll currently find on the market. It is basically a "smartphone" that includes email functions, a Web browser, text processor, calendar, address book, fax and speakerphone functions.

Probably the best thing about the Communicator 9000i—from a wireless email perspective—is that you can use it with any standard email account. You don't need to sign up for a special wireless email service. If you use a PCS/GSM-compatible service, you just

plug in the phone number of your existing Internet service provider (ISP) along with your incoming and outgoing email details and the Communicator 9000i does the rest for you. File attachments are handled intelligently by "leaving" them on the email server so that when you next log on with a desktop or notebook computer, you can pull them off.

There is, however, one major downside to the Nokia Communicator 9000i: the price. At \$1500, it is probably out of the league of most email users.

Research In Motion Inter@ctive Pager 950

If you want a small device for sending and receiving email, you can't do much better than this. Produced by Waterloo, Ont.-based Research In Motion (RIM), this tiny pager includes a miniature QWERTY keyboard and the ability to send and receive messages of up to 16,000 characters (about 2,700 words). Just how small is it? It is only 1.36x0.97x0.36 cm (3.5x2.5x.93 in.) and weighs a mere 112 g (4 oz.)—even with that tiny QWERTY keyboard, an LCD screen capable of displaying eight

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Selling the electronic storefront

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it's partially due to our much touted conservatism.

"It is a wait-and-see attitude," suggests Brent Halverson, president of Multiactive Software Inc. in Vancouver, B.C. "In the U.S., it helps that because most of the e-commerce technology has been developed in the U.S. there is just a lot more buzz about the industry."

But a more fundamental issue may be one of cost and education. While many have touted the business necessity of getting online, the cost of doing so can be prohibitive to small- and medium-sized businesses.

A recent study conducted by researchers at IDC's U.S. headquarters in Framingham, Mass., found that while the Internet economy will grow to more than US\$1 trillion in 2001, and up to US\$3 trillion by 2003, the key factors for many companies wanting to cash in on this

boom will not just be getting online, but getting the necessary infrastructure in place to do so. And that infrastructure is not cheap or very easy to put into place.

In order to tackle this problem, Vancouver-based Strategic Profits Inc. offers small- and mid-sized businesses a turnkey package that helps them create an online business relatively easily and quickly.

"It is an entry-level product that costs about \$350, and which gives businesses about \$1,600

worth of tools," says Catherine Clarke, president of Strategic Profits.

The tools give a business access to a secure shopping cart or order system, real-time Web payment transaction systems, Internet marketing, and online training and seminars.

Clarke says the seminars are a key component to helping small- and mid-sized business make a successful stab at e-commerce by helping them understand what they should be doing to get there. She says that when she speaks at various e-commerce seminars around the country, she is struck not so much by how many people say they want to get online, but by how few actually know how to do it.

"If they are novices, they need to assess business and marketing strategies based on their objectives and goals," Clarke adds. "When I speak to an audience, what is appalling is only about five percent of the people in the audience have put together a business plan and marketing objectives based on their goals. They really have no clue why they are putting up a Web site."

Spreading the word

Education is now a growing trend in the e-commerce solutions industry. Where a few years ago it was simply enough to create a set of tools for getting a Web storefront up, it is now just as important to teach people what to do after that storefront is up.

Normand Naniel, general manager for the Montreal, Que.-based MetaLink Group Inc. says consulting work is now a big part of his e-commerce business, as he finds more companies trying to understand how to successfully start up and use an e-commerce site.

"What we have done is develop a methodology for creating a Web strategy that will get a consensus between the communications and marketing people, the technology people and the production people," continues Naniel.

The methodology allows a company to clearly identify its objectives for getting online, find out what kind of e-commerce technologies it needs to achieve those ends, and what changes a it may need to make to be more e-commerce savvy.

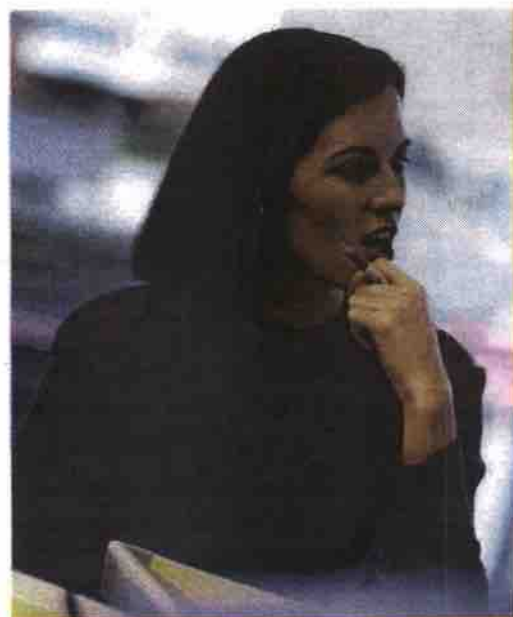
While this kind of examination may sound like something only large corporations can indulge in, Naniel says he deals with many small companies and startups in his consulting practice.

"You need to have a concrete plan that will give benefits back to the shareholder, or corporate bosses, or just the owners," Naniel adds. "That is why you are seeing more [e-commerce] companies not just understanding the technology needs, but also the business needs as well."

The missing links

Certainly that is what Rare Medium Canada Inc. in Toronto offers its small- and mid-sized business clients. Not only does it help clients create a basic storefront, it offers customized solutions that can comprehensively reach a company's vertical markets.

At the same time, Rare Medium tries to bridge an important gap that is often created when a company moves online: the gap between the front-end Web storefront, with its order taking capabilities, and the back-end processes that allow a business to fulfill its orders.



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A joke that often makes the rounds at e-commerce events is of a business that has a flashy Web storefront with all the latest bells and whistles and takes credit card orders, but spits out a piece of paper with information that later has to be typed into the system by some poor soul later in the day.

What Rare Medium does is work with a variety of third parties, developing ways to link a business to a supply chain and distributor so it can better fulfill its orders.

"There are opportunities to work with third parties that can do that," says Greg Rubidge, managing director for Rare Medium. "Our firm acts as a conduit to the other companies in the industry who can make that happen."

Addressing the problems of linking a business's front- and back-ends is one of the goals of Multiactive Software's Entice! Solution. Released in the summer, Entice! is touted by the company as a "customer-centered solution" for the mid-market that organizes all of the storefront activities on an e-commerce site and connects them to the back-end processes, which it also automates.

At the simplest level, Entice! uses the Internet to help a business generate, qualify, distribute and respond to an online customer in much the same way it would deal with a customer who walked through the front door of a physical store looking to buy a good or service.

"Entice! is a solution that is made to transition a business into an e-business by integrating the sales, marketing and service functions onto the Internet," says Multiactive Software's Halverson. "A lot of companies I've talked to have not made that connection, or just don't think it is an important issue to connect the front-end Web storefront to the back-end office and business processes. They still believe that the ultimate sale will be made through traditional means, whether it is a phone call or a face-to-face meeting with a sales representative."

Staying online

But one major stumbling block still remains for many small- and mid-sized companies: a large part of the cost of creating an e-commerce solution is not just getting the various components put together, it is the long-term cost of keeping the solution running. That is why there is a growing trend among many e-commerce solution companies to offer hosting services, in which they not only create the site, but run it on their own servers, taking care of any technical problems that may arise.

"What we are finding is a growing number of requests for site hosting, and we see hosting as a condition for a sale," says MetaLink's Naniel. "In the last two to three years, our relationship with customers often involves hosting their Web sites. That is because a company's IT crew finds that a Web site is something they cannot manage."

Clarke says Strategic Profits also hosts e-commerce sites for the simple reason that clients want to make sure that once they make the leap online they stay there—only shoppers are not very forgiving of outages or poor service due to server problems.

"It's less expensive to outsource the site for a small business than to host a server themselves," Clarke adds.

And certainly that is the proposition SaskTel and Netscape are touting with the recent announcement that SaskTel will be delivering

hosted e-commerce solutions through Netscape's line of enterprise software and professional service organization. The association allows SaskTel to offer services ranging from bill presentment and payment, to secure online ordering to small- and mid-sized businesses.

"So a small business now does not have to go out and buy all of the capital investments and software, and then do all of the integration work," says Jonathan Tice, senior director for

marketing at the Sun-Netscape Alliance in Toronto. "Until recently, most services that were created for small businesses were of a pure technology kind, and they often were not very functionally rich, or [were] too capital intensive and expensive. So many small businesses could not get onto the Web to conduct e-business."

When looking at what e-commerce solution providers are doing to help businesses get online, IDC Canada's Green is optimistic: "It is

not too late and we are going to see, in the next year, a rapid improvement."

"We've seen Chapters, Indigo and Future Shop go online, and the Retail Council of Canada and federal government are really trying to encourage Canadian businesses to adopt an e-commerce way of doing business. And when you say we are falling behind, who are we falling behind? The U.S. But we are ahead of most other places in the world like Europe, Japan and Asia." □

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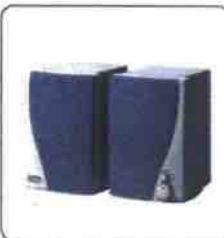
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AMPLIFIER OUTPUT	36 Watts	16 Watts	14 Watts	6 Watts
PEAK POWER(PMP0)	300 Watts	200 Watts	160 Watts	120 Watts
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SPEAKER UNIT	Mid-High frequency 3" Cone Low frequency 5.5" Cone Magnetically Shielded Driver	Full Range 3.5" Kevlar Driver Magnetically Shielded Driver	Full Range 3.25" Cone Magnetically Shielded Driver	Full Range 3" Cone Magnetically Shielded Driver
CONTROLS	Volume, Power, Treble, Bass	Volume, Power, Tone	Volume, Power, Treble, Bass	Volume, Power
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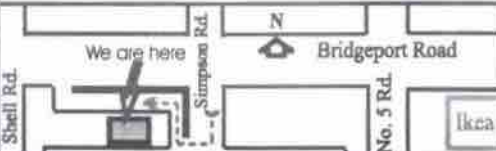
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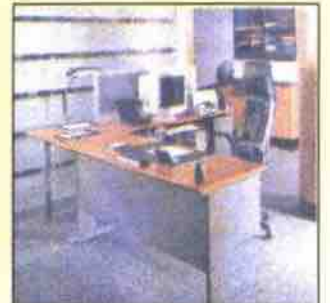


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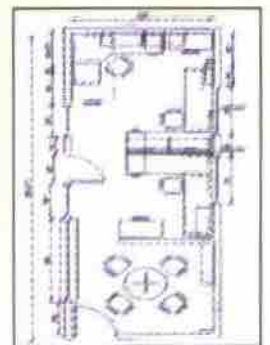


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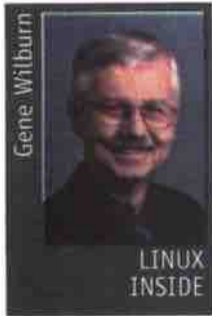
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Platform News

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Canadian open source projects

Marshall McLuhan would have had a field day with the open source movement. Talk about "global village":



Linux was born in Finland. LyX is centred in France. The SuSE distribution of Linux is based in Germany, and TurboLinux was developed in the Far East. FreeBSD, NetBSD and OpenBSD (close relatives to Linux) evolved out of the creative vortex of the University of

California at Berkeley, while Richard Stallman's GNU Project started out life at the Massachusetts Institute of Technology (MIT), near Boston.

Canada is also home to some energetic open-source activities. Ottawa-based Corel Corp. previously released Corel WordPerfect 8 for Linux and has now released an entire Linux distribution called Corel Linux. A Corel associate company, Rebel.com, has introduced small self-contained, easy-to-administer Linux boxes based on the StrongARM processor. A Vancouver, B.C., startup company, Stormix Technologies Inc., has released a distribution of Linux called Storm Linux. And Calgary, Alberta, is the home of OpenBSD, the open-source OS that some security analysts consider the most secure Unix distribution available.

Wine is a Windows compatibility layer that allows users to run selected Windows 16-bit and 32-bit applications directly from their X Window System environment

Corel embraces Linux

Corel (<http://www.corel.com>) endeared itself to the Linux community when it released Corel WordPerfect 8 for Linux and made a basic version (minus extra fonts and graphics) available at no charge. Corel WordPerfect 8 was the first mainstream desktop application available for Linux and it was a success from the instant it hit the wires.

Over a million people downloaded it from the Corel Web site within a few months of its release, and it is now included in nearly every commercial distribution of Linux. Que has already released a book devoted to it: *Using Corel WordPerfect 8 for Linux*, by Roderick W. Smith, 1999 (ISBN: 0-7897-20329, \$59.95).

More recently Corel has released its own distribution of Linux called Corel Linux. Based

on the reliable Debian GNU/Linux (<http://www.debian.org>), Corel Linux adds ease-of-use features aimed at new users. Centred on the KDE interface, Corel Linux includes a graphical installation akin to Caldera OpenLinux 3.2 and Red Hat Linux 6.1. Following the trend of recent commercial distributions, it includes a graphical management tool for configuring and customizing the system, plus a feature for updating the system via the Web.

Corel's involvement with Linux runs deep. Seeing a potential market for its flagship WordPerfect product, as well as its full office suite, Corel has been contributing valuable coding efforts to the open-source Wine project (<http://www.winehq.org>). Wine is a Windows compatibility layer that allows users to run selected Windows 16-bit and 32-bit applications directly from their X Window System environment. The Wine project has been making steady progress through the effort of volunteer programmers, but the Corel input has given the project additional impetus.

What Corel is assisting with in particular is a Wine API layer that will allow Corel's native Windows office suite to run in Linux, without having to maintain separate Windows and Linux development streams. If successful, this could benefit Linux users and Windows developers alike, forming a bridge between Linux and Windows programming.

Linux Netwinder boxes

Corel's involvement with Linux began with a hardware initiative. It developed a small (desk-dictionary size) Linux box built around the StrongARM RISC processor. It created three versions of the box, called the Netwinder: a small-department server, a developer's box, and a thinnish-client end-user version.



Rebel.com's Netwinder

Before bringing it to market, however, Corel sold off its hardware division to an

OS 9 advances the Mac platform

Major OS release embraces Apple's core markets and the Web

By Peter Millburn

Apple's renewed focus and discipline has gestated another major system software release—its second in just two years. Mac OS 9 is the latest milestone offering that has been preceded by various other upgrades and updates labeled as 8.0, 8.1, 8.5, 8.5.1, and 8.6. In an industry where development cycles of more than a few years are the norm, the competition is beginning to sit up and take notice.

Mac OS 9.0

From: Apple Computer Inc.
<http://www.apple.com>

Recommended system requirements: Apple Power Mac with 250 MB free hard disk space, 64 MB RAM
Retail: \$149

Pros: Sherlock 2, multiple users, security, tight network integration with the Internet.

Cons: The look and feel of Sherlock 2, some multiple user traps and loops.

It's no secret that the emergence of the Web has created an opportunity for Apple to continue its explosive growth and make even further significant inroads into the mainstream marketplace. The trick will be to anticipate how consumers will use this new medium, then carefully craft an operating system around those needs. OS 9 seems to have taken the first big step to that end.

Installation

Even though I've never encountered a serious problem during a system upgrade, I always begin the process by doing a complete backup of my hard disk, including the entire System folder. This comes in handy if you discover any extension or application

incompatibilities after the upgrade, allowing you to easily return your hard disk to its previous state. You should get in the habit of checking for third-party extension, control panel and application compliance before you begin an upgrade. Probably the best

two sites to verify these issues are Macintosh (<http://www.macintosh.com>) and MacFixit (<http://www.macfixit.com>), which compile reports and feedback from Apple and the user community before and after each OS release.

If you are a publisher, or own any typefaces from the Adobe library, it is essential that you update Adobe Type Manager and Type Manager Deluxe (which are available for free on Adobe's site at <http://www.adobe.com>). OS 9 safely relocates the incompatible ATM version into the Control Panels (disabled) folder, so don't enable it until

after you have run the updater. The installer CD-ROM also includes updates for StuffIt Expander, DropStuff and AppleWorks. Surprisingly, Final Cut Pro also required an update at the time of OS 9's release, but this should be available for download from Apple's Web site by the time you read this.

FaxSTF 5.04 and Retrospect 4.2 are the latest releases compatible with OS 9. If you still have SpeedDoubler and RAM Doubler kicking around, I'd suggest abandoning them since they're incompatible and aren't really necessary with this OS. If you own a Hewlett-Packard Deskwriter 600 series printer, or an HP DeskJet 600/800 series inkjet printer, you'll have to wait for updates on HP's Web site before migrating to OS 9.

The last step to ensuring that your upgrade goes without a hitch is to choose the Mac OS All set in the Extensions Manager, close its window, insert the OS 9 CD-ROM, then restart your Mac while holding down the "C"

Continued on page 108



Ottawa company called HCC (Hardware Canada Computing). Shortly after, HCC changed its name to Rebel.com (<http://www.rebel.com>), a company that bills its Netwinder product as "hardware with an attitude." Rebel.com's aim is to take Linux and add value for various markets: business, government, schools, etc. Corel still maintains a relationship with Rebel.com.

OpenBSD is the only OS in which nearly every line of code has been audited for security

Running the StrongARM processor, the Rebel.com Netwinders use very little power and generate very little heat. The setup and administration of the pre-loaded Linux takes place via a remote PC running Windows and a Java-based Web browser. Hence you can simply pop them into a corner or into a server rack without a monitor or keyboard attached. The Netwinders have network cards built in (the server has two of them) and you can almost use them as plug and play Linux. These very nifty, inexpensive boxes appear to have a bright future.

Storm Linux

Vancouver startup company Stormix Technologies (<http://www.stormix.com>) is dedicated to Linux and open source solutions for business and home users. The company has released Storm Linux, a distribution based on Debian GNU/Linux. As with Corel Linux, Storm Linux sports a graphical installation procedure (plus the option of a text-based install), and SAS (Storm Administration System), a set of controls for system admin and maintenance. SAS comes in both graphical and text flavours. Storm Linux includes the StarOffice 5.1a suite of office applications as part of the distribution.

The primary goal of the company is to make Linux easier to use. It is contemplating things like tutorials and wizards embedded into the distribution.

What is interesting is that both Corel Linux and Storm Linux are building on the excellent but lesser known Debian GNU/Linux base. Both companies are attempting to make Debian easier to use. Storm was started by three developers: R. Garth Wood, Kevin Lindsay and Atsushi Ikeda.

OpenBSD

If you've been using Linux for a while, you've probably encountered references to the BSD (Berkeley Systems Division) family of open-source operating systems. They bear a strong resemblance to Linux, but their heritage is dif-

ferent. They evolved out of the historically fascinating Unix developments at the University of California at Berkeley, the place where, among other important advances in OS design, the TCP/IP protocol was developed.

There are three open-source members of the BSD family—FreeBSD, NetBSD and OpenBSD—plus a commercially supported release—BSD/OS. All are direct descendants from the original "Berkeley Unix." OpenBSD is the BSD branch that specializes in security. It is the only OS in which nearly every line of code has been audited for security. In addition, it includes strong encryption programs that cannot be legally exported from the U.S. due to the export laws of that country (encryption is considered a military secret). OpenBSD is based in Calgary.

The OpenBSD CD-ROM proudly proclaims "Made in Canada: land of free cryptography." *Continued on page 112*

Canadian Linux Users' Exchange

If you're a serious Linux user in Canada, you should be aware of the Canadian Linux Users' Exchange (CLUE). The goal of CLUE is to promote the use of Linux in Canada and to provide services to Canadian Linux users. Part of its mandate is to support the efforts of local user groups and to "coordinate events, corporate sponsorships, and publicity at a national level."

Joining a local user group (LUG) is one of the fastest ways to progress with Linux. Monthly meetings highlight technical subjects and the implicit peer support is a great way to get help with any problems you're having. And, not least, the Unix tradition is to wrap up each meeting with a trip to the nearest local pub. The CLUE Web site (<http://www.linux.ca>) maintains a national list of local user groups.

In addition to coordinating local user groups, CLUE has undertaken an initiative that may be the first of its kind. CLUE has started a project called Learnix, a Linux educational outreach program. The Centre for Social Entrepreneurship is supplying CLUE with used 486 and low-end Pentium computers. CLUE members are installing Linux and a variety of educational applications, then distributing the computers to underprivileged students and educational organizations.

In conjunction with the Centre for Social Entrepreneurship and Starnix, CLUE has also opened the CLUE Linux Centre in Toronto. It provides a showcase, research centre, and classroom space "for all things Linux." (Photos of the centre and directions for getting there are included on the CLUE Web site.)

CLUE offers two levels of membership—Friends and Full. A non-voting Friends of CLUE membership is free. A full voting membership is \$35 annually, and full members receive the latest version of Caldera OpenLinux, a t-shirt, and various other incentives, including an email address of youname@linux.ca. CLUE provides an excellent way for you to support Linux.

—Gene Wilburn



OpenBSD's Theo de Raadt

ferent. They evolved out of the historically fascinating Unix developments at the University of California at Berkeley, the place where, among other important advances in OS design, the TCP/IP protocol was developed.



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OS 9 advances the Mac platform

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key. This will tell the Mac to use the CD-ROM as a startup disk until the installation is finished. With a few extra options enabled (such as speech recognition), in addition to the default installation choices, it took about eight minutes to upgrade a 300 MHz G3-based PowerMac, and about 20 minutes to upgrade an iBook.

One of the first things I noticed shortly after the upgrades on both machines was that the Apple menu was conspicuously shorter. Closer examination revealed that six items were missing. It seems that the installation process removes older versions of Apple CD Audio Player, Apple DVD Player, Apple Video Player, Graphing Calculator and SimpleSound, placing newer versions in the root of the Applications and Apple Extras folders. To restore all of these items to the Apple menu, you can create aliases and drop them into the Apple Menu Items folder.

One thing I usually check right after an upgrade is how much more system resources (such as hard disk storage and RAM) are consumed. Fortunately, OS 9's requirements—over and above those of OS 8.6—aren't that onerous. Your mileage may vary depending on how your system is set up, but with virtual memory enabled, the size of the System folder only increased by about two percent, while the RAM requirements increased by 13 percent. However, if you do more than word processing, sending email and Web browsing, I'd recommend that you have a minimum of 96 MB of RAM installed. This is especially true if you

have one of the newer Macs with the new ROM-in-RAM architecture.

Sherlock 2

Sherlock made its debut in Mac OS 8.5, where it was an instant hit. Sherlock 2 has tons of enhancements and refinements that make searching your local storage, network volumes and the Internet even faster, easier and more enjoyable.

Apple dropped Sherlock's tabbed folder interface in favor of a row of channel buttons that categorize the type of search you want to perform. Starting from the left side of the row, you can choose to search one or more local or remote volumes for files based on name or content. One really useful new feature is the ability to save complex boolean file searches as a set accessible via a pop-up menu—which means you don't have to recreate the search each time you require it.

Moving to the right, searching the Web has been broken down into a series of channel buttons that define a specific category of search.



Sherlock 2's Shopping channel

In addition to the standard search plug-ins (such as AltaVista, Excite, etc., which are grouped with the standard Internet channel), there are sets of specialty plug-ins grouped with channels labeled People, Shopping, News, Reference and Apple. With Sherlock 2, you can also create your own channels to suit your organizational tastes.

One improvement to Sherlock's user interface is that it no longer opens separate windows for every search result. Instead, it lists hits within the Sherlock window, while at the same time changing the result column headings to reflect the context of the search. For example, the Shopping channel will show pricing and availability, whereas the People channel will display columns for email addresses and phone numbers.

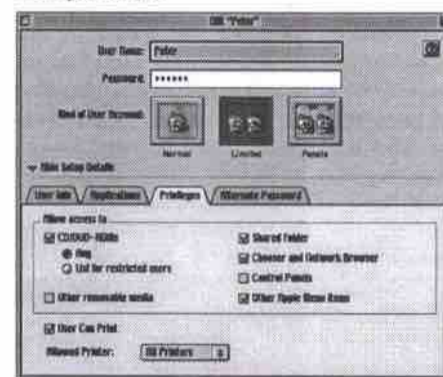
Sherlock 2 has tremendous utility for Web searches, however, it will have to depend on third-party development of additional plug-ins (for channels such as for Shopping, People and Reference) to further its usefulness. For instance, it has only three LDAP server plug-ins (Yahoo, Bigfoot, Four11), which really limits the scope of a People search.

One last criticism of Sherlock pertains to the metallic look and feel (ditto for QuickTime Player while we're at it). I'm not the first person with concerns about the new direction Apple is taking. In fact, there has been a storm of controversy online among users concerned about the interface.

It doesn't take a rocket scientist to see that this new metaphor adoption is threatening one of the Mac's greatest traditional strengths—its consistency and clarity. To begin with, the flat

metallic look of Sherlock and QuickTime makes it hard for the user to quickly and easily distinguish the control elements. For example, the close box and the window-resize handle blend into the overall appearance. These elements should contrast strongly with the rest of the interface so they are immediately recognizable as elements that perform a function. Furthermore, the Sherlock window is missing a zoom box and windowshade control, which are elements found on all other Mac windows. I could go on describing other faults with the interface design but others have already covered this issue in detail. Hopefully, Apple is just going through an experimental phase and will recognize the shortcomings of this new "showcase" approach.

Multiple users



Multiple Users privileges

Back in the early '90s Apple came out with an application called At Ease. This program had a

Continued on page 110



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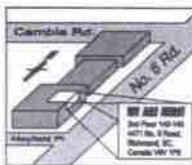
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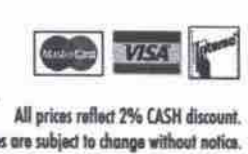
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OS 9 advances the Mac platform

Continued from page 108

simplified but effective way of creating a multi-user environment with security privileges. In situations where one computer is shared by several people, such as at home and in schools, At Ease became a popular utility.

In OS 9, a more sophisticated multi-user capability has been more closely integrated into the system. By default, the multi-user option is turned off after you perform an installation.

The Multiple Users feature breaks down user classes into three basic categories called Normal, Limited and Panels, all of which have checkbox controls that allow an administrator to assign user privileges. Of course, when the control panel is first opened, the machine's owner is presumed to have full access privileges. As you would expect, you can set global user options in addition to specific user permissions that enable (or restrict) access to various system components, local and/or remote volumes, applications, folders and documents. Each user can even customize the system's look-and-feel via the Appearance control panel, so that the desktop design changes depending on who is using the computer.

In addition to typing in a user password, users can access a computer running OS 9 with a voice password. OS 9 steps users through the voice password process by taking four samples of a user-designated spoken phrase. It then biometrically averages the samples to profile their voiceprint. While this feature has a high coolness factor, I found it wasn't 100 percent reliable. Occasionally, I had to say the phrase

several times to gain access to my account. If you use this feature be prepared to resort to your typed password on occasion.

It's interesting to note that Apple designed the password architecture to be modular so third parties could add their own forms of verification through devices such as a retina or fingerprint scanners.

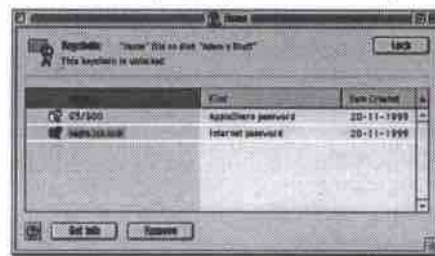
There are some other rough edges to the Multiple Users feature that Apple and other application developers will have to smooth over in upcoming releases. One of the most glaring is the omission of a password verification field in the window for creating new user accounts. Moreover, as you type in the password, each character appears as a bullet, so you can't double check what you've typed in. If you make a typo while creating a new account, you'll have to delete the user and re-specify the privileges unless you can guess what your typo was.

There is also another security loophole in the ability to bypass the Multiple User setup using a startup CD-ROM during the bootup sequence. Also, restricted applications and other files do not become invisible (or gray themselves out) to make it obvious to users that they don't have permission to use them. Instead, users have to try to open a file or application—and get a message declaring that it is forbidden—to find out that they don't have access. Lastly, some applications (such as Adobe Photoshop) don't support the creation of Multiple User preference files.

Keychain and encryption

These two new industrial-strength features

build on the security and privacy issues that will become paramount as the Internet grows in size and influence. The Keychain is an idea recycled from the early '90s PowerTalk days that has been injected into OS 9. The Keychain



Keychain

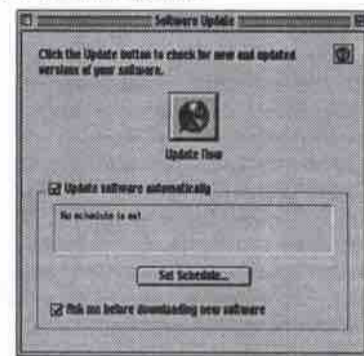
is a master password to which you can attach multiple passwords that you accumulate during the course of your workflow—whether they be digital certificates for servers, applications or Internet resources such as passwords for Web pages. The Keychain control panel uses an interface onto which you can drag items such as URL files and network volumes.

One of the beautiful features of the Keychain is its portability. Conveniently, you can copy it to a disk, or send it via a network to another Mac, so you can access your full set of passwords wherever you are. Since this is a security feature, you'll be doing yourself a favor by clearly understanding how to properly use this powerful tool. It's important to remember that if you happen to leave your Keychain accidentally unlocked, other users will have full access to the areas your passwords protect. However, at no time will

the unauthorized user be able to see the actual passwords on the Keychain. As well, you can specify that your Keychain automatically locks itself after a specified period of time.

Another first for the Mac OS is native system support for file encryption. Using the new Encrypt command under the Finder's File menu automatically launches a new application called Apple File Security. This application uses a 56-bit key to encrypt and compress your files, along with a default option that attaches each password to your Keychain. The only drawback to this feature is that you can only encrypt one file at a time. It would be nice to be able to encrypt a folder full of items at one time.

Software auto update



Software Update window

Like Multiple Users and Keychain, Software Update is also partially implemented as a control panel feature. Currently, this pro-

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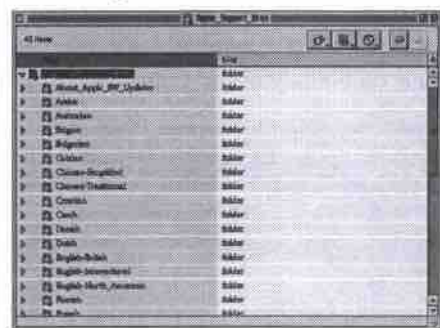
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gram will access the software archives at Apple's Web site and compare version numbers with those installed on your hard disk. If it finds a newer version of a software component, it will either automatically update it or, depending on the options you have chosen, ask your permission.

There has been a great deal of concern about the security of this feature recently on Mac Web. By default, the OS 9 installer disables Software Update. If you do want to use it, I recommend that you uncheck the Auto-Update option and instead select Always Ask Before Updating.

A feature I'd like to see is the option to download the update software to a specified folder so you can install it yourself later. As a test, I manually clicked the Update Now button and the system successfully found and updated the OpenGL drivers on my machine to version 1.1.2.

Networking extraordinaire



Network Browser

The Internet is about extending your computer's boundaries, and Apple has decided to aggressively pursue the strategy of making a connection to the Web as seamless as a connection to a local network. With the overhauled Network Browser, logging onto FTP and Web servers now uses the same metaphor as local file-sharing. If you collaborate with colleagues over the Web you'll also really appreciate TCP/IP file-sharing over the Internet.

And in what is perhaps Apple's biggest powerhouse feature in terms of networking, OS 9 now supports executing Applescript over TCP/IP. This is a big deal for professional publishing houses that have really latched onto Applescript as tool for automating many tedious and repetitive production tasks. At the Fall 1999 Seybold conference Apple's chief executive, Steve Jobs, demonstrated how a Mac based in New York could execute an Applescript that cropped and scaled a series of Photoshop images, then relayed them to a Mac in Los Angeles that used the same Applescript to place these images into a brochure.

Colorsync and FontSync

These are two pivotal technologies that will further help consolidate Apple's dominance in high-end publishing. Colorsync has been upgraded to version 3.0 and has finally added the ability to save different workflow settings—a long-requested feature. The Colorsync control panel is now easier to understand, breaking profiles into the four categories: Input, Display, Output, and Proofer.

FontSync is a new, highly sophisticated technology that ensures type-formatting fidelity when documents are exchanged between different Mac workstations. Many a publisher has learned the hard way that font

XYZ on their workstation is not necessarily identical to font XYZ used by their service bureau. FontSync produces a detailed profile of your typefaces, and ensures that they match the font specifications used on other Macs that may print out your documents. The profile contains all of the font metrics, including information about glyphs and ligatures. The FontSync control panel is not installed by default, so you'll have to retrieve it from Apple Extras folder and drag it on top of your System Folder to install it.

Other improvements

Apple claims OS 9 introduces more than 50 new features to the Mac environment. While we have covered many of the major ones, there are also many other improvements—some subtle, and others more obvious to the end user. Here are just a few:

- Gamesprockets, the game acceleration extensions (development of which almost ceased in 1997), have undergone another performance-tuning update. They are now installed by default in OS 9.
- Error dialogues are now presented in unobtrusive, non-modal floating windows so your workflow is now more gracefully interrupted.
- The Finder's file system now permits you to have up to 8,169 files open simultaneously, up to 32,000 files per folder, and maximum individual file sizes up to a whopping 2 TB (terabytes), an essential requirement for professional digital video editing.

Interestingly, the System folder also contains the latest version of the Carbon API library, software that will help developers easily migrate their classic Mac applications into OS X. It's reasonable to expect that we will see this next important major release by July 2000.

The bottom line

A casual test drive of OS 9 might lead one to believe that nothing much has really changed since OS 8.5. However, a more thorough examination of the release reveals many new features that will have a major impact on Apple's core customers in the publishing and education sectors, and the growing number of recent converts to the Mac environment in the mass consumer market. Tight, easy and seamless integration with the Web, coupled with the meshing of security features into the system, addresses many of the issues that have held consumers back from fully adopting the Internet. If collaboration is part of the normal course of your workflow, then OS 9 will serve you well.

Questionable interface design aside, Sherlock 2 is shaping up (along with QuickTime 4) to be key pivotal Internet technology that enhances a customer's Web experience. While Multiple Users is an admirable attempt at introducing multi-user functionality into the OS, it has the typical shortcomings of a first version. Apple needs to close a few traps and loopholes to make it more bullet-proof.

For the most part, however, OS 9 is a solid and impressive release. It gives a clear indications that Apple is once again prepared to lead the industry, rather than follow, as we shift into the new millennium. ☐

Peter Milburn is with Elite Systems Support in Calgary, Alberta. He can be reached on the Internet at elite.systems@home.com.

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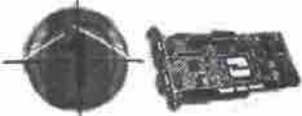
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The 'best' of Comdex a subjective thing

TCP's tech guru scours the halls of Comdex Fall/99 and discovers a difference of opinion

By Jacques Surveyer

The Best of Comdex Awards are hosted by the US publication *PCWeek* magazine. It is a superset of what all Comdex attendees are up to—trying to spot the next best technology in their specific area of expert-



ise. *PCWeek* has a slight advantage, because its parent company, SoftBank, puts on the Comdex show. So it certainly gets the co-operation of exhibitors in providing pre-show help to its test lab staff and board of corporate partners in identifying some of the best hardware and software products on display. Nonetheless, it is interesting to compare *PCWeek*'s picks with my own.

Best networking hardware

PCWeek: Wireless Mountain's SpiderReader SpiderTags for wireless control of physical assets.
Jacques Surveyer: NetGear's Home Phoneline Network Adapter allows Ethernet connection of PCs using existing home telephone wiring and ordinary telephone jacks.

Best desktop, mobile or handheld system

PCW and JS: Aqcess Qbe Computing Tablet combines voice, handwriting, wireless, USB, Ethernet and attachable keyboard in a thick clipboard powered by a 450 MHz Pentium III, and priced at US\$3,500.

Best personal productivity software

PCW: MindMakers DataScope 3.0 data visualization and mining software par excellence.
JBS: Corel Open Linux, which is the easiest

version of Linux to install and use. It now runs Windows programs too.

Best enterprise productivity software

PCW: Multiactive Entice!, a broad Web-based system of customer relationship management (CRM) modules.

JBS: Sun Star Office Suite, a well-rated word processing, spreadsheet, presentation software package that runs on Linux, OS/2, Solaris and Windows 95/98/NT. The kicker is that it's forever free, has a Java portal, and reads Microsoft Office files.

Best new technology

PCW: Mobility Electronic's Split Bridge allows sharing of costly PCI cards among PCs.
JBS: SecureGen's EyeD mouse fingerprint pointing device assures secure PC use.



Aqcess Qbe Computing Tablet

Best networking software

PCW: Novell's Netware 5.1 adds FTP, IBM WebSphere, NDS 8.0, and news services to a top network OS.

Continued on page 114

Canadian open source projects

Continued from page 107

The chief organizer and maintainer of OpenBSD is Theo de Raadt, who serves as the central figure for the OS in the way Linus Torvalds represents Linux. (De Raadt and Michael Cowpland were both recipients of the 1999 Technically Excellent Canadians awards from *TCP*'s sister publication, *Canadian Computer Wholesaler*.)

OpenBSD has been picking up press lately for its solid performance and tough security. Unlike most distributions of Linux, which tend to be a bit careless about security in their out-of-box installations, OpenBSD claims to have not been cracked in an out-of-box installation for over two years.

OpenBSD is finding its way into firewalls, routers and Web servers. In a ringing endorsement, Network Security Technologies Inc., a leading U.S. provider of network security, has decided to offer commercial support for OpenBSD to its customers.

A number of corporate sites are beginning to mix Linux and OpenBSD servers, using OpenBSD for gateways and firewalls. OpenBSD is also popular for creating Virtual Private Networks (VPNs) between sites for corporate extranets. If you use Linux in a corporate environment, you may want to check out what supplementary services OpenBSD can offer your corporation or organization.

I can't help but think that McLuhan would have approved of OpenBSD's highly Canadian profile that tweaks the rigid, outdated encryption export laws of the U.S. In this area at least, Canada is much more in tune with the global village than is the village of Washington, DC. □

Gene Wilburn (njo@interlog.com) is a Toronto-based IT manager, musician and writer who operates a small farm of Linux servers. Back issues of this series are available on his Web site at www.interlog.com/~njo/.

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The 'best' of Comdex a subjective thing

Continued from page 112

JBS: Novell's e-Directory brings NDS 8.0 and LDAP to the Net plus Solaris, NT and Netware.

Best peripheral

PCW: Sony Multiscan SDM-N50 15-inch color LCD monitor is 1.27 cm (0.5-in.) thick and sells for US\$1,499.

JBS: No pick.

Best Web development software

PCW: Ultimus Workflow Suite builds workflow routing and systems with intuitive interface.

JBS: Macromedia's Dreamweaver 3 plus Drumbeat 2000 brings databased Web sites to the masses.

Best utility software

PCW: Cyberlink's Media@Show 2.0 provides AVI, MP3, JPEG and other media in showable EXE format.

JBS: No pick.

Despite extensively traversing both the Sands and the Las Vegas Convention Centres at least twice, I was only able to come up with one pick that matched PCWeek's Best of Comdex selections. In addition, I simply did not have any picks for two categories: best peripheral and best utility software. Finally, four of my picks were not even considered as possible finalists by the PCWeek judges: Corel Open Linux, Novell's e-Directory, Sun's Star Office,

and Macromedia's Dreamweaver 3 plus Drumbeat 2000. I fell far short of even matching the list of finalists.

Of course, this is the fascination and lure of Comdex. Will one be able to spot the technology trends as they emerge at a show that still attracts a wide range of start ups as well as mainline hardware and software firms? It is interesting to note how many of our picks are for coinciding, and not leading-edge technologies.

Only one of my picks (SecureGen EyeD fingerprint mouse) and two PCweek picks (Wireless Mountain's Spider Reader and MultiActive's Entice!) can be thought of as leading-edge, but the rest are major advances in existing hardware or software categories. There were booths featuring wireless, hand-



Corel Linux desktop

held, wearable, and computing appliances along with new-born artificial intelligence (AI)

and emerging mobile software; however, many were prototypes or lacked the polish of category defining products.

Commentary

Microsoft vice-president David Vaskevich has argued, tellingly, that software completes and defines the range of capabilities of hardware, and that the last frontiers of IT software are being settled, solved and developed with the n-tier distributed processing systems of the Internet. After the problems of these systems are resolved, he says, software will reach a plateau awaiting breakthroughs in artificial intelligence, human interfaces, and bio-devices, which in turn will spur a new upswing in software development.

Others argue that software agents and brokering, large-scale modeling and simulations, bio-electronic interfaces plus dynamic optimizing algorithms will provide plenty of grist for software and hardware developers to innovate and work on for the next decade.

This writer tends to favor Vaskevich's arguments. But if tens of thousands of well-intentioned and savvy experts cannot agree on, let alone predict, the impact of Y2K on the world economy, what hope is there for agreement on the pace and direction of commercial hardware and software development. Is the Best of Comdex the best we can hope for? □

Jacques Surveyer is a consultant and writer. He can be contacted at jbsurv@inforamp.net.

Canadians buying more online

Research firm ACNielsen has found that twice as many Canadians (over the age of 12) made an online purchase during the last year compared than did the year before. (12 percent versus six percent). The research company also said 75 percent of those Internet purchases were paid for online, up from 66 percent the previous year.

In the study, called *Internet Planner 2000*, which was released Dec.1, the research company also noted significant changes in the demographics of Internet users. Whereas two years ago, Internet users tended to be male and younger, the latest research shows males and females are almost equally represented. Moreover, ACNielsen notes that people older than 65 represent the fastest growing segment of Internet user.

Among its other findings, the company reports that 30 percent use the Internet for weather information, and 17 percent use it for job searching.

—David Tanaka

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Online banking: how we got here

The Internet has brought together the power of personal finance software and access to real-time information about our money

By Rod Lamirand

The PC has always been about money. Not just because of the profit it has produced for manufacturers but because of its ability to manipulate data, usually in the form of a spreadsheet, and usually to add up digits that begin with dollar signs.

The early PC, in many ways, was a sophisticated calculator used mostly by businesses. It took the arrival of the graphical user interface (GUI), in the form of Windows, OS/2, and the Mac OS to transform the personal computer from a hobbyist's pursuit into an entertainment/productivity tool for the general population. That development set the stage for the arrival of personal financial software.

The first such program was Quicken, from a company called Intuit. Its early products were DOS- and Windows-based programs for users who wanted to track bank accounts, print cheques, budget, and perform other money-related functions. The category of personal financial software grew through the 90s with various players appearing, then disappearing due to acquisitions, mergers or insolvency. For the last year or two, Microsoft's Money has been Quicken's only real competitor.

Discount and win?

Interestingly, while the evolution of Microsoft's product has been swift and profound, the price has always been low. Like many before it, Intuit must lie awake at night,



for clearly Microsoft has expended great effort to build, sell, and even discount a product that is in many ways an equal to Intuit's. Why? Microsoft has scores of products, many of which receive much less attention. As a technology writer I am not privy to what goes on behind the doors of either Microsoft or Intuit; however, by looking at some important developments that have occurred regarding consumers and financial information, it is possible to make some assumptions.

The Web changed everything

Initially, banks saw that customers wanted to use their home computers to see their bank accounts. Some banks and credit unions began to offer software programs that connected via local telephone lines across the country to their private networks.

As the new Net phenomenon developed, everyone saw the opportunity, but there was insufficient security in that access method. Both financial institutions and personal financial software companies saw that they were related but their goals never aligned, and thus banks and credit unions wrote their own shallow computer interfaces with limited functionality and no universality while per-

Continued on page 118

Weaving your own Web site: Part 51

An in-depth look at Cascading Style Sheets: Part 9

By Keith Schengili-Roberts

In this article we conclude our look into Cascading Style Sheet (CSS) properties by looking at the properties VERTICAL-ALIGN, WHITE-SPACE, WIDTH, and WORD-SPACING. One unfortunate thing about almost all of these properties is that they are barely supported under Internet Explorer and Netscape Navigator—the two major Web browsers.

The VERTICAL-ALIGN property

The VERTICAL-ALIGN property is designed to let the Web author align the placement of text on a Web page with respect to the vertical placement of another element on the Web page—most typically an image. It belongs to the text family of CSS properties and its numerous values are equivalent to various positioning values normally associated with text.

It can take any one of eight different values: BASELINE, MIDDLE, SUB, SUPER, TEXT-TOP, TEXT-

BOTTOM, BOTTOM and TOP. BASELINE aligns the baseline of the element to that of the parent element, while MIDDLE aligns the text to the middle of the associated element. SUB and SUPER are the equivalents of subscript and superscript, TEXT-TOP aligns the top of the element to the top of the parent, while TEXT-BOTTOM does the same thing, but to the bottom of the parent element.

The values BOTTOM and TOP are designed to be used in relation to the existing line of text on which the element is situated: TOP aligns the element to the tallest element on that line of text, and bottom does the same for the shortest element on the line of text.

VERTICAL-ALIGN is a good property for aligning text alongside such things as images, and many of its values have direct counterparts to the tag in the HTML 4.0 specification. Unfortunately, this particular property is not well supported. In Internet Explorer, only the SUB and SUPER values work, while it's not supported at all in Netscape Navigator.

The WHITE-SPACE property

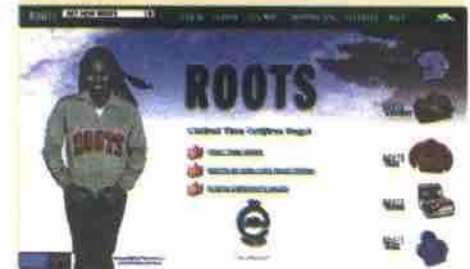
The WHITE-SPACE property is designed to add extra spaces (i.e., "white space") between words. While it seems like it might be related in function to the LETTER-SPACING or WORD-SPACING properties, which use a fixed value to space out separate letters or words, it is in fact more closely related in function to the <PRE> HTML tag.

The <PRE> tag retains the appearance of preformatted text on a Web page, keeping all of the spacing and indents of the original text intact. This is useful for listing samples of programming code on a Web page, for example, where it is necessary to maintain indents, and let a line of text run off the side of the page rather than wrapping around to the next line.

The WHITE-SPACE property seems to be ideal to replace the <PRE> tag. Its three values (NORMAL, NOWRAP and PRE) either incorporate or extend the functionality associated with that tag.

Continued on page 116

Roots retailer digs into the Web



By Tom Venetis

Roots is looking to take its brand image, clothing and accessories onto the Web with the launch of its online store, <http://www.roots.com>.

Working with Markham, Ont.-based IBM Canada Ltd., Roots will offer some 200 different items, including clothing, leather goods and accessories, for sale online. The site will also have Web-based services, such as virtual postcards and an interactive soap opera which was developed using Macromedia's Flash technology.

Don Green, co-founder of Roots, predicts his company's foray into online retailing will be a success, leveraging Roots' history and culture—the latter of which has driven the company since it began in 1973.

"Roots is really lucky in that we think we have a perfectly suited business for the Internet," he adds. "We believe we will be Canada's most successful and important Web site."

Green said he also asked for input from his 17-year-old son and his friends as to what Roots should be doing with the site and what kind of content would appeal to teenagers as "they are part of the audience we are directing this towards as this is a generation that has grown up around computers."

The appeal of an established Canadian brand should be welcomed by Canadian online shoppers. Toronto-based International Data Corp. Canada predicts that by 2003, Internet commerce will grow to \$12.8 billion, representing some 4.6 percent of total retail spending in Canada. However, 63 percent of the dollars currently spent by Canadians online goes to U.S.-based sites because of the lack of major Canadian retail names and Canadian-based services on the Web.

"Roots is a big Canadian retailer and you are now seeing reasonably sized companies starting to take the plunge," adds Jordan Worth, telecommunications analyst for IDC Canada. "But still you see a lot more hesitancy in Canada because it costs a lot of money to put up a Web site

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Weaving your own Web site: Part 51

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The NORMAL value for WHITE-SPACE simply tells the browser to format a line of text as it normally would, by removing excess spaces that appear between words. PRE works exactly like the <PRE> HTML tag, retaining the original spacing and carriage returns between letters and words on a page. The NOWRAP value also retains the original spacing between letters and words, but ignores any carriage returns, so you would have to insert a line break ("
") to insert a carriage return on the Web page. The following example code shows the PRE value in action:

```
<P STYLE="WHITE-SPACE: PRE">
As you will see
the extra white spaces and carriage
returns in this sentence
are all displayed. "as is".
</P>
```

This property is not supported at all within Internet Explorer, and only the PRE and NORMAL values are supported in Netscape Navigator.

The WIDTH Property

The WIDTH property is used to scale an element (most typically an image) to the desired vertical length on a Web page, and is the sibling property to HEIGHT (explored earlier in this series). WIDTH can take one of three different values: a unit of measurement value, a percentage value, and the name value AUTO, which sets the element to its default size.

The AUTO setting, which is the default value, sets the image to its normal size. WIDTH can also take a specific measurement value, which sizes the width of the image to the value desired. It can also take a percentage value that sizes the width of the image in relation to the overall height of the browser window. The following example shows all three values at work:

```
<IMG STYLE="WIDTH: AUTO" SRC="myimage.gif">This
image is set to its natural size (AUTO setting).
<P>
<IMG STYLE="WIDTH: 2IN" SRC="myimage.gif">This
image is set to 2 inches in width.
<P>
<IMG STYLE="WIDTH: 50%" SRC="myimage.gif">This
image is set to 50% of the browser window's width.
```

While WIDTH is really meant to be used with images, unlike HEIGHT, it will have an appreciable effect on other Web elements, such as text, though its use is not recommended in this case as the results can vary. WIDTH is fully supported under Internet Explorer. Netscape Navigator does not support its use with images, but does with text.

The WORD-SPACING Property

WORD-SPACING is very similar in effect to the LETTER-SPACING property, but instead of adding extra space in between all of the individual letters, it adds space between various words. It can take one of two values: NORMAL, which uses the default word spacing values used by the browser; or a unit of measurement. Like the LETTER-SPACING property,

WORD-SPACING is best used for emphasis rather than for use across the complete text on a Web page. The following code provides a good example of how WORD-SPACING should and should not be used on a Web page:

```
<H2 ALIGN="CENTER" STYLE="WORD-SPACING:
0.5CM;">Notice How This Header Stands Out on the
Page</H2>
<P STYLE="WORD-SPACING: 5IN;">
Try not to go overboard when using this property,
because you can take emphasis too far if you don't
watch out.
</P>
```

In this example, you will see a header effectively spread out across the top of the Web page, as each word is spaced out from the other by 0.5 cm. It instantly grabs your attention because it is so different from most of the text in other headers you are likely to run across. However, the words in the paragraph that follow the header are each spaced 5 in. apart, making it hard to read, and likely requiring the reader to scroll down through what is actually a small amount of text. As always, be careful and do not go overboard when using properties like WORD-SPACING or LETTER-SPACING. □

Next time: Units of measurement and colour in CSS. Keith Schengili-Roberts welcomes any comments, suggestions or HTML tips you may have. You can email Keith at: robertsk@wave.home.com. Look for his recent book on HTML, *The Advanced HTML Companion, 2nd Edition*, co-authored by Kim Silk-Copeland (ISBN: 0-12-623542-2).

Roots retailer digs into the Web

Continued from page 115

and unless an organization understands what they want to do with it and how to drive business through it, it can be a very scary experience."

The Roots site is hosted on IBM Global Services' Universal Server Farm. It also uses IBM's Net.Commerce and Global Merchant e-commerce solutions—including credit card processing, sales tax calculation, and coordination of order fulfillment—to process orders.

John Wetmore, general manager for IBM Canada Ltd. says Roots chose IBM because "we understand scalability, security, and reliability."

Scalability is an important issue for Roots, which is expanding its online retail reach into the U.S. in time for the holiday buying season. The Boston-based Boston Consulting Group is predicting online shoppers will have spent an estimated US\$23 million over in 1999 Christmas shopping rush, up from US\$7.5 million for the same period in 1998.

"The idea was to get Canada up and running and see whatever bugs there are and fix them, and find whatever logistics need to be fixed," Green said.

Green hopes to be pulling some \$10 million to \$20 million in sales through the Web site by the end of 2000. Roots, on average, has annual sales of \$200 million through its 120 retail stores. □

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Online banking: how we got here

Continued from page 115

sonal financial software remained mostly disconnected from what consumers could most benefit from—easy maintenance and analysis of their daily transactions.

The result? Many Canadian financial institutions suddenly found themselves considering entering the personal financial software business to build a product that would only

work for their customers, offer limited functionality, likely need constant upgrading, and would never make any money.

The financial institutions didn't want to use a personal financial software program, like Quicken, as their front end for a number of reasons. One was the fact that they would then be seriously constrained by, and have to be dependent on, an independent, free-for-hire, software startup. Fortunately, it turned

out they didn't need to build or buy a front end. A new interface arrived and it was free: the Internet browser.

As the Web matured, its security increased at the same time as browser functionality matured. Over the last three years, the tables have turned such that most home banking is done via the Net. Some institutions have both private network home customer access and Net access, but the former is fading. So

in the end, banks and credit unions have managed to offer customers access to their banking information, while avoiding a hodge-podge of software incompatibilities, expenses, and access problems.

That's not all, folks

The story doesn't end there though. What about personal financial software?

Although the banks offer some limited financial planning/management functions at their respective Web sites, the browser and online functions are no match for a dedicated, money-management program that resides on your computer's hard drive.

In an attempt to begin bridging this divide, an Intuit initiative has finally managed to garner some industry consensus on a standard. The Open Financial Exchange (OFX) specification defines an export and import format for the exchange of information between financial institutions and software programs. After a long battle, many banks, credit unions and others are finally instituting the protocol.

In Canada, 21 institutions currently support OFX—from a number of large, high profile, national banks like CIBC and TD, to provincial or regional credit unions, such as, Credit Unions Atlantic and the Savings and Credit Unions of British Columbia. This development is the last link between consumers and their finances. Now that millions of Canadians have the ability to download their account information into a software program like Money or Quicken, the momentum has arrived to overhaul the way we deal with such institutions.

The whole infrastructure is not completely in place yet: some institutions allow you to download credit card transaction information and/or mortgage data, while others do not. However, the convergence of your personal financial software, your online banking data, and the rapidly growing encyclopedia of money-related information online offers some interesting developments.

Competition breeds innovation

An example of the unforeseeable things that can happen as we go from a world of bank lineups (where we couldn't even see our own accounts but the teller could), to a world where we will know our financial record better than the institution, can be seen by looking at President's Choice Financial. The new financial institution comes to us from a grocery store chain that has contracted the services of CIBC.

The resulting business has all the services most of us need (mortgages, chequing, credit cards, debit cards, and ATM), as well as a grocery store-style customer loyalty "points" program, all tied together with an online banking site that offers no-fee online transactions! If anybody actually finds out about this, look out. The Canadian Intuit Web site (<http://www.quicken.ca>) asks the big question: Will President's Choice Financial's no-online-fee policy survive, and, if so, catch on? Maybe not, but considering the current debate at the federal government level for widespread access to lower fee accounts, it is possible.

One thing is very clear, the swiftly aligning, online financial system infrastructure is empowering consumers and shaking the powers that are providing it. □

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Mapping your data

Whenever you have a need to analyze data based on geographical regions, such as provinces or countries, you'll appreciate the mapping capabilities built into your spreadsheet software.



Helen Bradley

OFFICE SUITE TRAINING

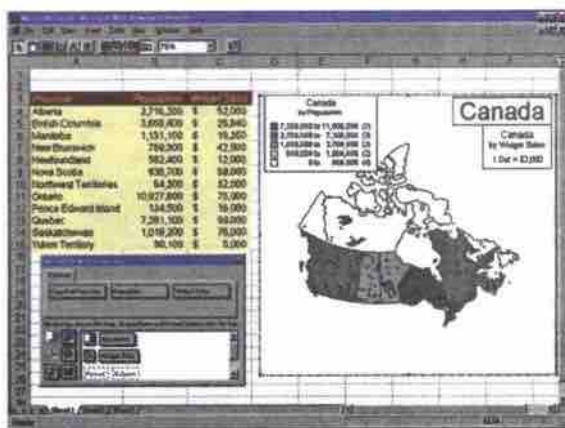
Each of the major spreadsheet packages has maps that allow you to quickly and easily plot data by province or by country.

This month, we'll look at how to create a simple chart for a company selling widgets.

The sales figures will be plotted alongside the population data for the provinces, allowing the company to analyze its sales relative to the population densities. I've given you detailed instructions for Microsoft Excel 97 and 2000, and some starter notes if you're using Lotus 1-2-3 97, or Quattro Pro 8.

You'll need some data to chart in Excel, so begin by creating a sample worksheet. Place the names of the provinces in the far left column of the range you want to plot on a map and make sure the data appropriate to the regions appears in columns to the right of the names.

You should use the region names specified by Excel, as it will make the map easier to create. If you use other shortened forms of the names, Excel may have difficulty finding the correct map to use or the correct area on the map to plot your data.



This Excel map of Canada uses Value Shading and Dot Density to plot population and sales data.

The names Excel recognizes are: Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Northwest Territories, Ontario, Prince Edward Island, Quebec, Saskatchewan, and Yukon Territory.

If you're plotting data for other geographical areas, you'll find a list of country and region names, together with a range of useful demographic information, in the file MAP-STATS.XLS, which is in the directory \Program Files\Common Files\Microsoft Shared\Datamap\data.

Once you've entered your data, highlight everything you want to graph, including the province names and your column headings. Select the Map button on the Standard toolbar,

or select Insert, Map, and click and drag an area on your worksheet for the map to appear.

You may see the Multiple Maps Available dialogue that lists the range of maps covering the regions you've nominated. If you see it, choose a map and click OK.

If you have typed a region name that Excel doesn't recognize, it will display the Resolve Unknown Geographical Data dialogue box and show the name it cannot match. Find a region name in the Suggestions list that corresponds to the region in question, select it and click the Change button. You

will need to repeat this process for all the regions Excel does not recognize.

When the completed map appears, you'll see the Microsoft Map Control dialogue on the screen, and the first column of data will have been plotted on the map (you must manually add the second column later). From here you can customize your map in a number of ways.

Customizing your map

Once your map is created, you can alter the way your first column of data is formatted by dragging one of the six formatting options from the left of the Map Control

Continued on page 126

Linux for Newbies: Part 6

Basic security in Linux



By Gene Wilburn

Last month's installment covered setting up the X Window System. This month we'll focus on basic security. (For any newcomers, this series is based on Red Hat Linux 6.)

If you intend to connect your Linux system to the Internet via telephone, ADSL, cable modem, ISDN or T1, you should give serious consideration to the security of your system. Linux provides a number of built-in security measures, but you need to learn how to make them work. Being proactive about security is smart. Before you get into the bells and whistles of Linux, you should learn good system administration practices.

Good security starts with good passwords. By themselves, good passwords are not enough to keep crackers from gaining control

of your system, but they're a critical first line of defence. After looking at passwords, we'll take a look at services. If Linux has one fault, it is the tendency for distributions to install a number of services you may not need to be running. These can lead to security weaknesses. We'll learn how to turn off unnecessary services.

Root, users, and passwords

The root, or superuser, account is your Linux master account. This account is not only the most important one on your system, it's also the account from which you can do the most shoot-yourself-in-the-foot damage. Here are three strategies for making this account less vulnerable.

First, log in as root *only* to perform administrative tasks. Do not use the account as your general login. Create a standard user account for yourself, with a different password, and use that for all your normal work, even if you're the only user on your workstation. The reason

is simple: as the master account, root can do anything, including anything bad, such as accidentally deleting critical system files.

Second, never include the current directory "." in root's path. Some users add this for convenience but it's a known security risk. (Red Hat treats this correctly. You won't have this security weakness unless you create it yourself.)

Third, if your Linux box is on the Internet or on a LAN, change the root password frequently. And make it a "good password."

Okay, what's a good password? One that can't be easily cracked. It should be at least six characters long and a mix of alphanumeric and special characters. It should not be based on a word or a name. Pet names and names of family members are easily guessed and crackers use dictionaries to try to crack password files.

A "bad password" would be something like *frostie* (a fictitious cat). Even changing it to *fr0st1e*, inserting a zero and a one, is not

Continued on page 124

IT careers series

Web development requires mixed skills

By Jean Allen-Ikeson

Pursuing a career in information technology, particularly anything related to the Web, can seem a bit like roaring off to the gold fields in the last century. Scientifically trained geologists and mining engineers showed up for the Gold Rush, but so did a larger number of average folk looking for opportunity. The same scenario seems to be playing itself out with Web page designers and Web masters, where computer programmers work side by side with others of varied talents.

If you are looking to train for a career in the Web Rush, you will be confronted with a broad range of choices, from intensive courses on a specific brand of Web page software that last only a few days to more general technical college-level certificate programs of several months duration. However, generally, to qualify for a job designing or maintaining Web sites, experience seems to be the biggest prerequisite when paired with some direct training or training in a related area such as design or business.

Multiple skills needed

That being said, liberal arts graduates, including journalists, commercial artists, multimedia creators, or business majors are finding that their skills open the door to working on Web site teams. Increasingly, they are joining more traditional IT graduates, such as programmers.

Carla-anne Oud is part of the team at a relatively new Canadian online auction site, bargoon.com (<http://www.bargoon.com>), which operates out of Halifax, and has many of the features you would find on eBay. This site, however, has regional auctions that take place in 12 Canadian and two U.S. cities. An auction in St. John's, Nfld., for example, will address the local market and allow vendors

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Visual Basic Tutorials



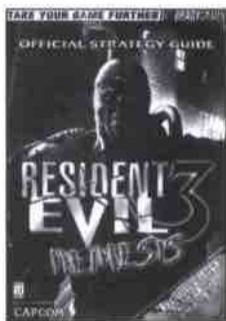
Jacques Surveyer

Our apologies to the many fans of Jacques Surveyer's Visual Basic Tutorials series. Due to some scheduling difficulties, Part 7 was not available in time for this issue. The tutorials will return in the February issue of TCP.

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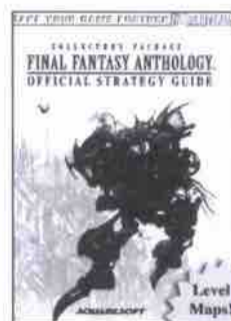
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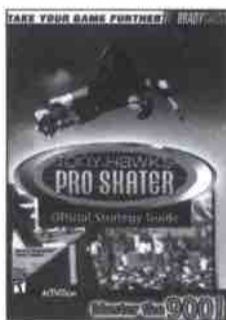
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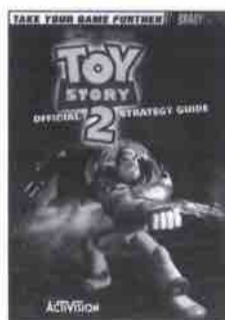
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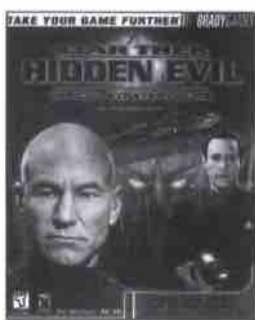
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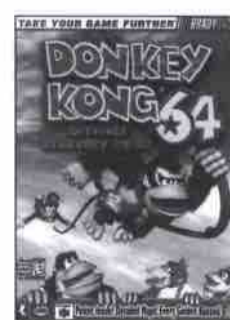


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Basic security in Linux

Continued from page 122

much help. Password cracking algorithms take this simple ploy into account.

Good passwords should be difficult to crack but easy to remember so you're not tempted to write them down. Phrases can supply you with good mnemonics for a good password. For instance, "Frostie eats tuna" can be turned into something like `fr0}et`, a relatively easy to remember seven-character password that is considerably more difficult to crack.

Intruders love to get at your `/etc/passwd` file because it often contains encrypted passwords for your system, which they can run through a password-cracking program to look for accounts they can exploit. To make things more difficult for them, use *shadow passwords*. On Red Hat systems you can enable shadow passwords by typing `/sbin/pwconv` while logged in as root. This moves the encrypted passwords into a separate file that only programs with root access can read.

If your system has more than one user with an account, you may want impose some kind of group-oriented security so that files created by one user cannot be read by another user. Some distributions, such as Red Hat and Debian, use a separate default group for each user, which automatically makes group access more secure. Other distros, such as Caldera and SuSE, lump everyone into a default users group, which is not as secure.

Another thing you can do to protect all users (including root) from themselves is to put "safety bumpers" on some important Linux commands. One of the assumptions Linux

(and Unix) makes is that when you type something at the command line, you mean it. It doesn't prompt you with "do you really want to do this?" type responses.

Consequently it's quite possible make a horrible mistake such as `rm *.txt` (with a space between the * and the .) when you meant to type `rm *.txt` (no space). Linux will happily and instantly delete everything in the directory because of the inadvertent space in the command. Remember that Linux does not have an undelete command. What's gone is gone.

To help prevent this common mishap, add the following lines to either your `/etc/bashrc` or your `/etc/profile` file to make it the default for all users:

```
alias rm='rm -i'
alias cp='cp -i'
alias mv='mv -i'
```

This invokes the delete, copy and move/rename commands in interactive mode, with "y/n" prompts for every overwrite or deletion. This trick has saved my bacon on several occasions. Some Unix purists dislike these safety features, but I prefer to protect myself against the inevitable lapses of concentration that occur during a long programming session. You can override the interactivity by using the "-f" (force) flag when you're absolutely sure of what you're doing.

Apply all recommended updates

For convenience, most of us install Linux from CD-ROMs. The distribution on CD-ROM, however, is seldom as up-to-date as the version

on the distribution Web site. This has security implications.

The open-source community is quick to find, announce and fix security holes that are found in programs. All distributions have an announcement mailing list you can subscribe to, or a Web site page listing security updates. All distributions also maintain Web or ftp sites where updates are stored. If you're using Red Hat Linux, be sure to subscribe to the excellent Red Hat Announce list (low volume) by sending an email to `redhat-announce-list-request@redhat.com` with the single word "subscribe" (without the quotes) in the subject line.

If you're not using Red Hat, learn where these announcement lists are for your particular distribution and become a frequent flyer. Download and apply all security fixes as they're announced. Update any part of your system that your vendor recommends. The majority of the cracked sites on the Internet are those that have been lax about security updates. Don't be naive or lazy about security.

And don't let anyone try to convince you that, because it's open source, Linux is less secure than Windows NT. Microsoft operating systems have had some horrible security holes and the availability of fixes has been slow. All systems that are exposed to the Internet are vulnerable, without exception. Open source programmers tend to more vigilant about watching for exploits and much faster to get fixes into your hands. Take advantage of that.

Turn off unneeded services

Linux distributions typically activate a number of services during installation that you don't

actually need. The Unix tradition is that you, as system administrator, know what you're doing and will adjust your system accordingly. Unfortunately, as a new user, you may not even know yet what's going on under the hood.

For instance, one source of recent system cracks is an older version of `imap4` that was installed by default on most Linux systems. The only reason you'd even be running `imap` is if your Linux box is a mail server for external users and you want them (or you) to be able to get POP mail off your Linux box. You might want to do this in a home network, but if not, why run the service at all? The fewer services you run, the fewer vulnerabilities you introduce.

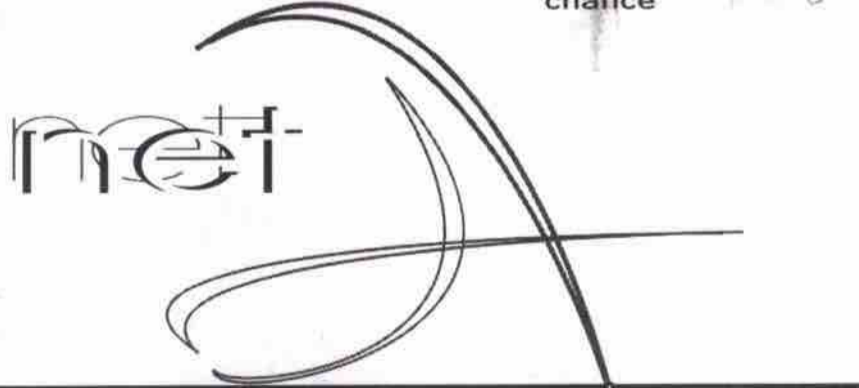
There are other, similar services that are often activated by default. Many of these services are initialized in the file `/etc/inetd.conf`. You can disable services by editing this file (as root) and placing a pound sign (#) at the start of the line that describes the service. Here are some good things to disable if you're not using them. If you're not sure, just comment them out. (You can always uncomment them if you change your mind.)

```
# Shell, login, exec, comsat and talk are BSD protocols.
#
#shell stream ... /usr/sbin/tcpd in.rshd
#login stream ... /usr/sbin/tcpd in.rlogind
#exec stream ... /usr/sbin/tcpd in.rexecd
#comsat dgram ... /usr/sbin/tcpd in.comsat
#talk dgram ... /usr/sbin/tcpd in.talkd
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#dtalk stream ... /usr/sbin/tcpd in.dtalkd
```

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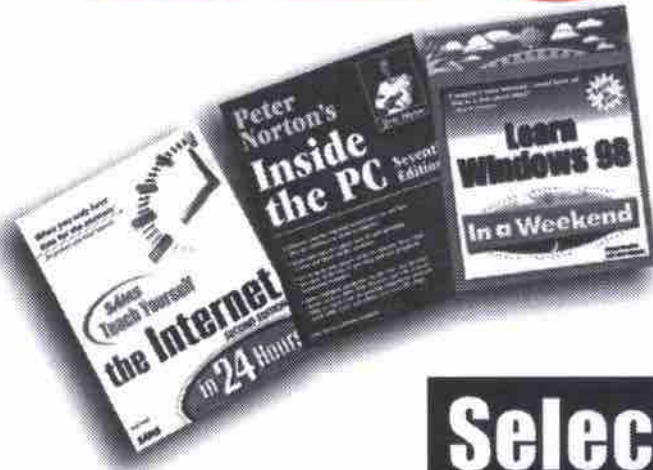
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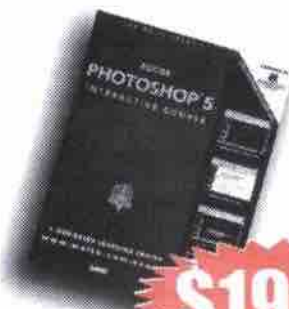


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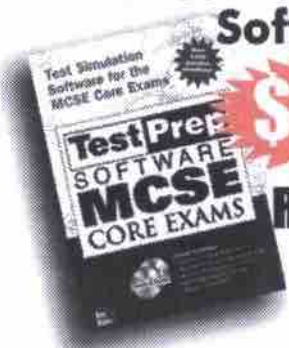


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Mapping your data

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dialogue box and dropping it onto the existing formatting icon. If an option can't be used on the map, you won't be able to drop it; if it can be used the formatting will change to reflect your new choice.

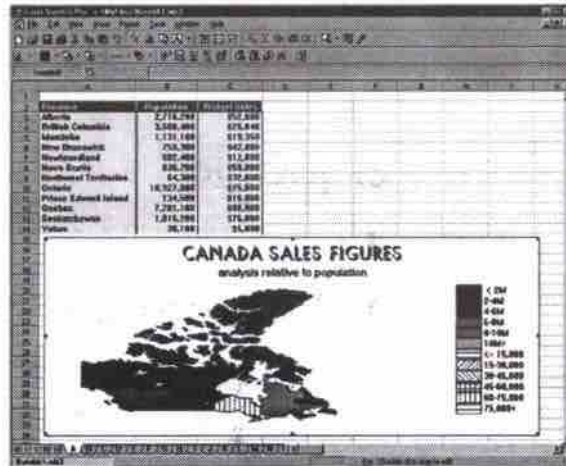
The image of the Excel map, shows the Value Shading format. In it, each province is shaded according to its population, which is the data in the first data column (column B). You can alter this formatting to Category Shading by dragging the Category Shading icon from the left of the dialogue and placing it on top of the Value Shading icon in the box on the screen. The Category Shading format makes each region a different colour.

Other formatting options include Dot Density, which could be used to show the sales figures for each province, with higher dot densities reflecting higher values.

When you have two or more data columns, you can overlay the map with another chart type; either a pie or a column chart. To create a meaningful pie chart you'll need at least two related data columns that, when added together, give you a 100 percent, or whole, piece of data. For example, you could compare the proportion of males and females in a population, because together they represent the total population. Or you could compare the ratio of sales of widgets to existing customers and to new customers—two groups that make up the total

widget customer base. However, comparing population to widget sales would generate meaningless results—the two pieces of data don't add together to give a "whole" anything.

A column chart requires a minimum of one column of data and overlays each state or province with a column showing the value



Quattro Pro's mapping allows you to plot one set of data by colour and another using patterns.

of the data for that region. The Graduated Symbol format shows a variable-sized symbol in each region—the larger the symbol, the larger the value in the data column.

Adding the second data range

To alter the map to show both data ranges, you'll need to add the second data range. To do this, drag the second data range name

from the top of the the Map Control dialogue into the Column area of the box and drag a formatting icon from the left of the dialogue into the Format area next to the name of the second data range.

Not all formats can be used together on a map. If a format cannot be used with an existing choice, the format will appear disabled and you will not be able to select it.

If you make a mistake you can pick up any data name or formatting option and drag it out of the box to discard it. Close the Map Control dialogue when you have selected all the data columns and map formats and return to your spreadsheet by pressing Escape or by selecting a cell outside the map area. As a map is an embedded object, to alter it, simply double-click on it to start up the Microsoft Map application.

Fine tuning your map

Once the basics of your map are complete, you can fine tune colours, patterns and placement by moving the various elements around with your mouse and resizing them using their sizing handles. You can alter colours by selecting the legend, right-clicking it and selecting Edit. You'll find the toolbar that appears when your map is selected has a number of other options for altering and adding to your map, including placing pins in it (to mark points of interests) and adding labels and text.

For example, click the Map Labels button to add province or country names and your cursor will change to a text box containing a label that will change to the correct province name as it moves over your map. Click when you have it in position, then add the next label—press Escape to turn off the label option.

Lotus 1-2-3

To create a map in Lotus, create your data in a similar manner to the instructions for Excel. Lotus's coding of province names is similar to Excel's except that it groups Northwest Territories and Yukon, but you'll find the process of reconciling names is quite simple, so mistakes are easy to fix.

When you have your data, highlight the portions you want to plot (include the region names and the data for these, but don't include the column headings). Select Create, Map and click in your worksheet where the top left corner of the map is to appear.

If Lotus can't determine the map type to use, then the Map Types dialogue box will appear. If this happens, select the map you want to use from the list and click OK.

The region dialogue box will appear every time you use a region name that Lotus does not recognize. You can choose to replace your region name with Lotus' own code for the region or you can add your own name for a region.

Chances are Lotus' names won't be an exact match for the names you use, so, if you find it preferable to use your own descriptions, spend a few minutes creating custom names for the region names you want to use (select the Add As Custom Name For option button and match your name with the appropriate one in Lotus' Known map region list). When you have reconciled all

your region names with the Lotus codes, your map will appear on the screen. You can customize your map by selecting the area to alter and right-clicking it to bring up the shortcut menus.

If the map you want to use isn't installed then you'll need to install it before you can create your map. To do this, insert your original Lotus CD-ROM into your PC and follow the install process to the point where you choose between Default, Minimum and Customize features, and select Customize features. Select 1-2-3 in the Application list and select the Customize button. Select the Map tab and select the checkbox for the map or maps you want to use and continue with the install.

Quattro Pro v 8

Not all the Quattro Pro files you need to map data are installed when you choose a Typical installation, so chances are you'll need to install them. To do this, load your original Quattro Pro CD-ROM and follow the install process to the point where you choose between the Typical, Compact, Custom or Run from CD-ROM installations. Select Custom and make sure that in the Quattro Pro options section you select the Mapping component and continue with the installation.

To create your map in Quattro Pro, create your data as you would for Excel. Quattro Pro recognizes standard province abbreviations as well as full names, so you may use AB, BC, MB, NB, NE, NS, NT, ON, PE, QC, SK and YT.

Select Insert, Graphics, Map and you'll be stepped through the Map Expert. In the first step you'll choose the map you want to use (e.g. Canada by province). In Step 2, select the arrow at the right of the Region Names box and click and drag the highlighting over the region names then click the Maximize button (or press Enter). Then repeat the process for the Colour data that will be the first column of data to plot on the map and repeat it again for the Pattern data, which is the second data column.

When you select Next, Quattro Pro will try to recognize the region names and, if it can't then the Check Regions dialogue will appear and you can match your name to the name Quattro Pro uses. When all regions have been matched, you can proceed through the remainder of the steps in the Expert to add other features to your map. Finally, click and drag an area for your map in your worksheet and the map will appear on the screen.

You can customize your map by selecting the area to alter and right-click to bring up the shortcut menus.

Quattro Pro ships with a number of files containing demographic data for many of its map areas including Canada. You can find this data in your \suite8\programs\DataMaps folder and you'll find Canadian data in the file Canada.wb3. This and the other demographic data files are useful for providing you with the codes that Quattro Pro uses for the regions on its maps. □

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

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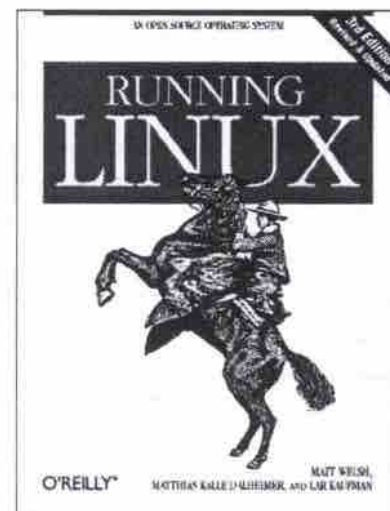
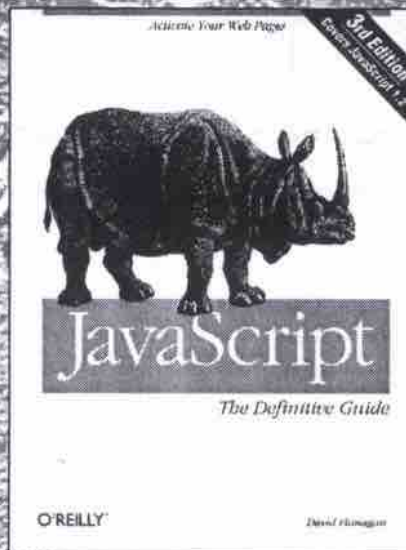
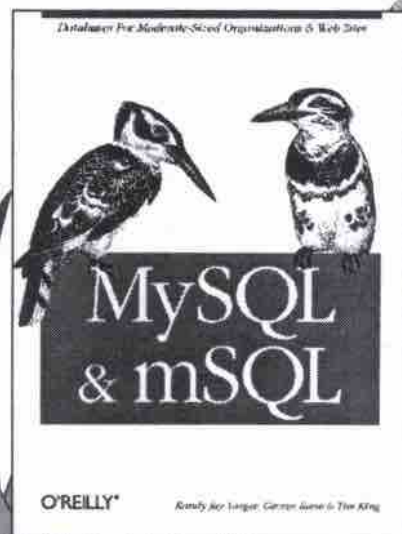
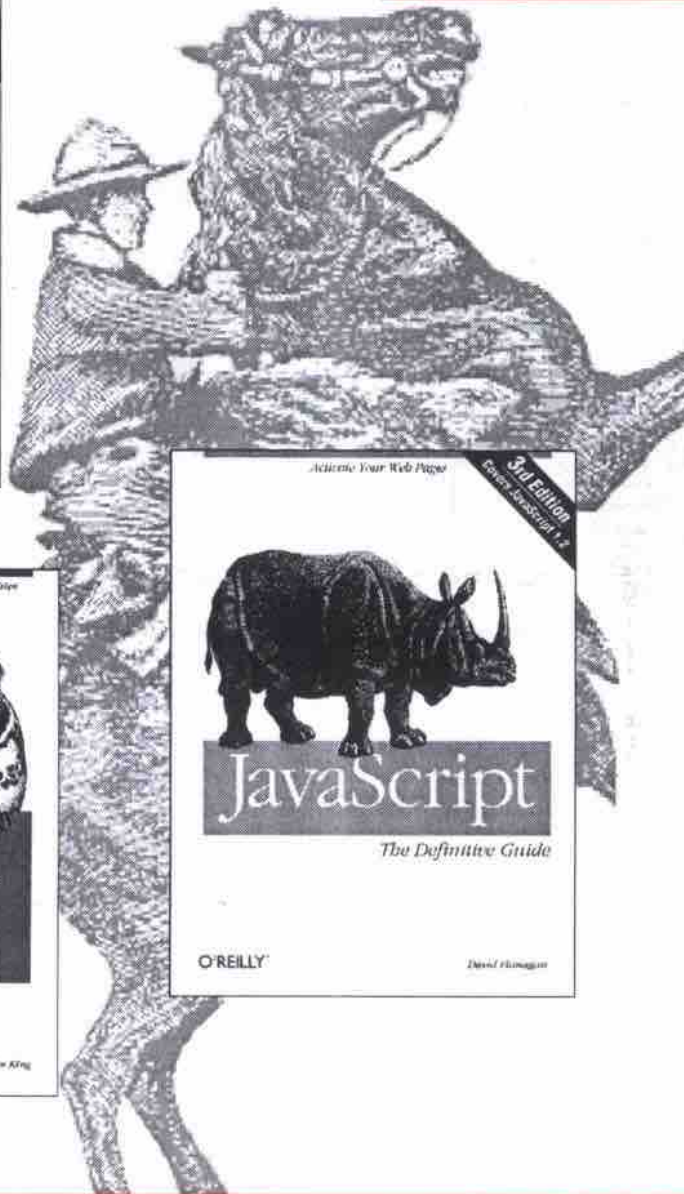
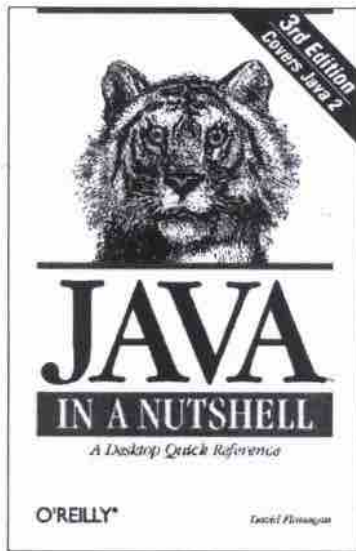
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Top 10 computer books of 1999

By Keith Schengili-Roberts

Over the past year, I received dozens upon dozens of computer books on various different subjects to review. My poor bookshelves only have room for so many, so every few months I head down to the local library with a knapsack brimming full of various computer book titles. Don't get me wrong—many of these are perfectly good books, but there are only a select few that I consider "keepers." These are the books I refer to again and again. Why? It has to do with a combination of the writer's talent for enlightening and engaging the reader on a subject that is otherwise apt to put most people to sleep, and the thoroughness in which a particular subject is covered.

Here, in no real order, are some of the best computer books from the past year.

1. Canadian Internet Handbook: Lightbulbs to Yottabits

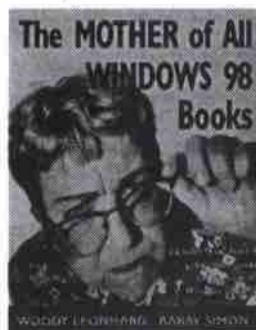
Authors: Jim Carroll and Rick Broadhead
Publisher: Macmillan Canada
Softcover 200 pages
Price: \$21.95

Carroll and Broadhead have managed to reinvent their venerable *Handbook* yet again. As the subtitle *How to Profit by Understanding the Internet of 2005* implies, the focus of this book is on the future of the Internet over the next five years.

So what's a yottabit? It is an extremely large amount of information, but of an order that Carroll and Broadhead predict we will soon be using as available bandwidth on the Internet (and other telecommunications) explodes. Carroll and Broadhead look at how this massive impending change to technology will undoubtedly change individual career paths and the way corporations function. The book is full of fascinating facts and analysis that never seem to go beyond the realm of the plausible. And as always, Carroll and Broadhead make it a compelling read.

2. The Mother of All Windows 98 Books

Authors: Woody Leonhard and Barry Simon
Publisher: Peachpit Press
ISBN: 0-201-43312-5
Softcover 829 pages 1998
Price: \$59.95



The many *Mom* books Leonhard and Simon have produced over the years have their own idiosyncratic approach to technology topics. In this case, the result is a book that looks at the various features of Windows 98, with interjections from Leonhard and Simon on how it ought to work, why things were designed the way they were, and how to change things so that they work more sensibly. If you can imagine an operating system being heckled as its various features are examined, you've got an idea of how this book reads. The result is a highly entertaining and

enlightening guide through this operating system.

3. Selling Online

Authors: Jim Carroll and Rick Broadhead
Publisher: Macmillan Canada
ISBN: 0-7715-7643-9
Softcover 394 pages
Price: \$21.95

The purpose of this book is straightforward: helping you to set up an online store. Sounds simple enough, but Carroll and Broadhead manage to provide the sort of detailed, practical information rarely seen elsewhere. It is an excellent and thorough introduction to the growing field of e-business that is aimed specifically at a Canadian audience.

True to form, Carroll and Broadhead provide sage advice, practical tips on Internet marketing strategies, and ways to encourage repeat visits to your online store. Along the way, they provide numerous examples of existing online merchants who got things right. It also delves into the processes of setting up a merchant's account to process credit card transactions online.

The book is nicely rounded out by interviews with key Canadian businesses that have established a significant online point-of-sale presence, and Carroll and Broadhead's visions of e-commerce in the near future. This is a thorough, practical introduction to e-commerce.

4. The Little iMac Book

Author: Robin Williams
Publisher: Addison-Wesley
ISBN: 0-201-35421-7
Softcover 191 pages
Price: \$26.95



Robin Williams

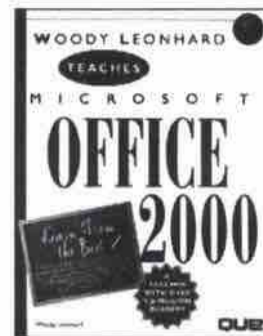
The Little iMac Book is aimed squarely at the iMac owner who is a first-time Macintosh user. It is designed as a desktop companion, to be glanced at while you are work on your iMac. The book assumes nothing;

dealing with how to turn an iMac on, how to use a mouse, what the Macintosh operating system environment looks like, and how it all works. What makes *The Little iMac Book* so good is its friendly, helpful tone that makes learning how to use an iMac fun. If you know any recent iMac converts who have never used a Mac before, this is the book for them.

5. Woody Leonhard Teaches Microsoft Office 2000

Author: Woody Leonhard
Publisher: Que
ISBN: 0-7897-1871-5
Softcover 650 pages
Price: \$29.95

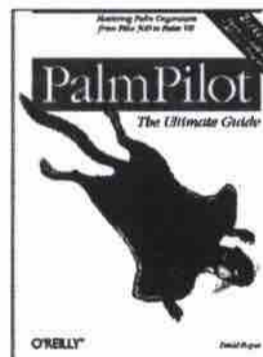
I have to admit a bias here, in that Leonhard has become one of my favourite computer book writers. In this book, he is playing to his natural strengths: as a long-time expert in such



Office 2000 part of the title is something of a misnomer, as Leonhard really only looks at Word, Excel, and PowerPoint in any depth. There is only one small chapter that ties them into the remaining Office 2000 programs. This title is best suited to the reader who has some basic knowledge of these programs, but wants to be taken on a tour of their new features by a true, critical expert.

6. PalmPilot: The Ultimate Guide, 2nd Edition

Author: David Pogue
Publisher: O'Reilly & Associates
ISBN: 1-56592-600-5
Softcover 597 pages
Comes with CD-ROM
Price: \$43.95

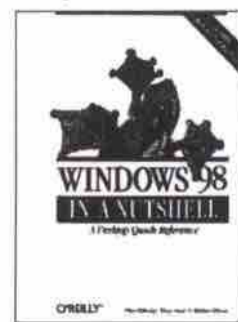


from the original Pilot 1000 to the Palm VII, and is an excellent update to the excellent original edition.

However, if you have a copy of the first edition and own a Palm III or earlier, there is no compelling reason to "upgrade" to this guide. If you have one of the more recent Palm devices, or use a Palm with a Macintosh computer, you will find the new sections devoted to these subjects make the guide a worthwhile buy. If you are a new PalmPilot user and are looking for a book that will prove to be a continually handy reference, this book's for you.

7. Windows 98 in a Nutshell

Authors: Tim O'Reilly, Troy Mott, and Walter Glenn
Publisher: O'Reilly & Associates
ISBN: 1-56592-486-X
Softcover 618 pages
Price: \$36.95



as Word and Excel (going back to the dark days of their DOS versions), he has written extensively about them in the past. He knows the quirks of these programs better than most.

However, the

The PalmPilot, continues to dominate the handheld computing market, despite repeated attempts by other manufacturers to dislodge it from the top. This book covers all of the variations of the Palm devices,

and is an excellent update to the excellent original edition.

Is Windows 98 really just Windows 95-plus? Well, that's what a lot of people thought, but four years of add-ons, utilities, and a Second Edition version later, Windows 98 is beginning to look more and

more removed from its progenitor, Windows 95. This latest edition in the series of venerable *Nutshell* books is a useful reference for the Windows 98 power user. On its back cover, this book even guarantees that it contains more information about using Windows 98 than any other book on the market! It may not make for a scintillating read, but it has more than you'll probably ever need to know about Windows 98.

8. WordPerfect Office 2000: The Official Guide

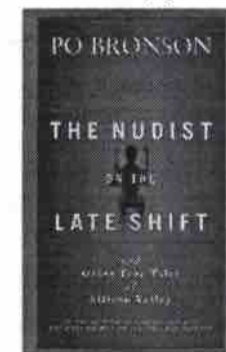
Author: Alan Neibauer
Publisher: Osborne/McGraw Hill
ISBN: 0-07-882569-5
Softcover 849 pages
Price: \$63.95

Microsoft Office 2000 is not the only office suite in town. There's also Corel's WordPerfect Office 2000. This book takes the approach of guiding the reader through each of WordPerfect Office 2000's programs by using their many functions in a real-world environment. So while reading about how to send email, compose a standard business letter, create a chart, presentation or spreadsheet, you learn about the functions and features of the programs comprising the suite.

There's something of a philosophical difference between the two major suites: unlike Microsoft Office, programs in WordPerfect Office are not Wizard-based, and, therefore, lend themselves more to a book like this, which explains all of the functions of the various programs. All in all, this is a good working reference for people using WordPerfect Office 2000 and its many individual applications.

9. The Nudist on the Late Shift: And Other True Tales of Silicon Valley

Author: Po Bronson
Publisher: Random House
Price: \$38
Hardcover 249 pages



last year he released *The First \$20 Million Is Always the Hardest*, which was subtitled *A Silicon Valley Novel*. In this book, he tries to provide a slice-of-life of those who live and work in Silicon Valley.

The Nudist on the Late Shift is a collection of articles, some of which have previously appeared in magazines, such as *Wired*. In the book he presents some interesting stories of the people who brought us such Internet success stories as C|Net and Hotmail, as well as the plight of a salesman trying desperately to make his quota by the end of a quarter. Unfortunately, while the book is long on atmosphere, it is short on analysis. However, it

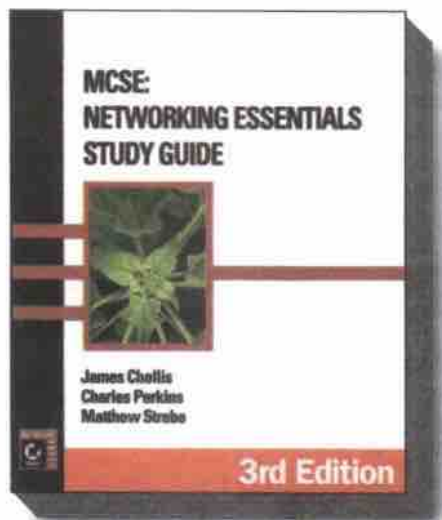
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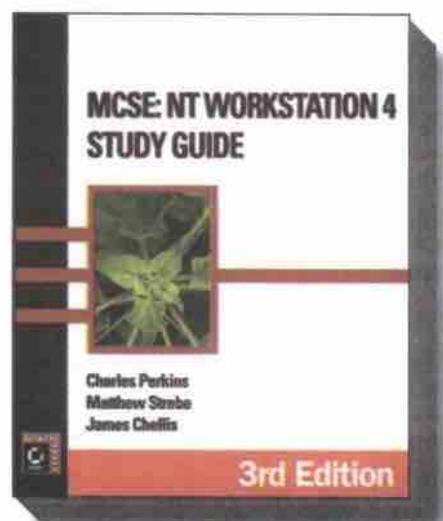
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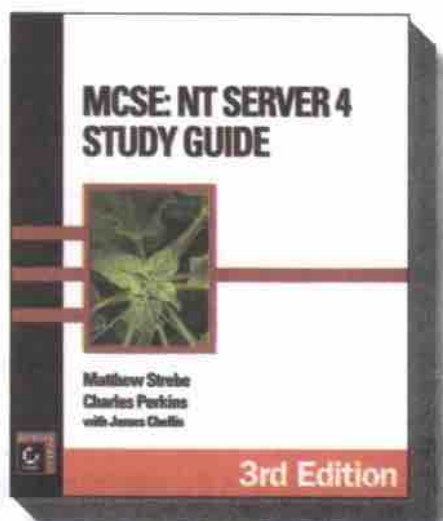
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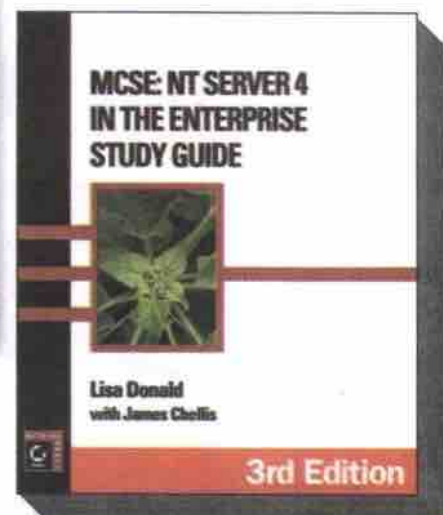
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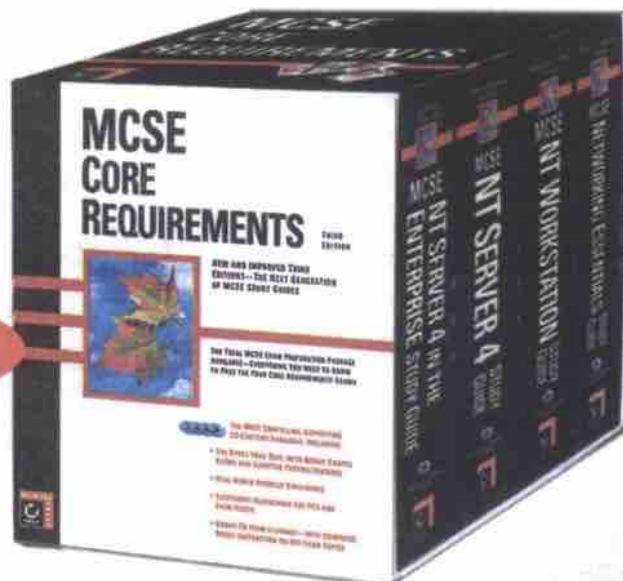
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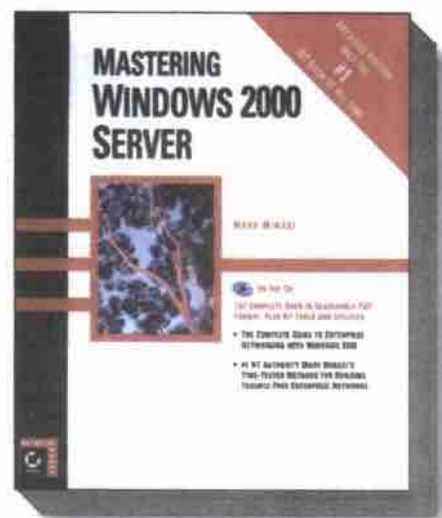
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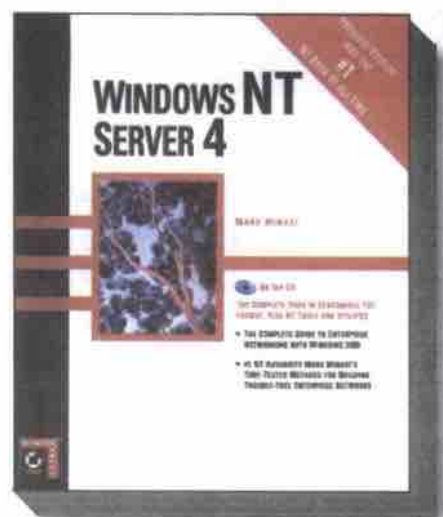
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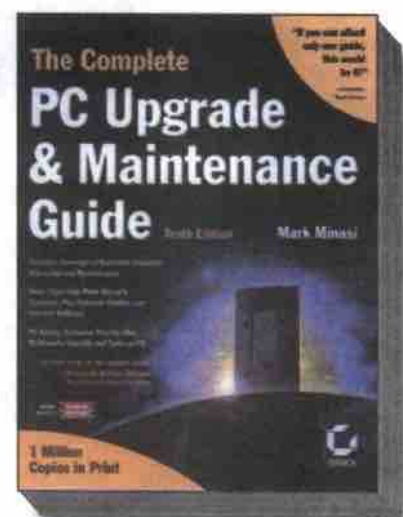


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Web development requires mixed skills

Continued from page 122

or individuals to sell their goods without being concerned about shipping costs or difficulties. Bargoon.com functions like a local buy-and-sell agency or classified ads, except that it is an auction and is supported both by commercial vendors and individuals.

For a Web site, which has so many sub-Web sites and constantly changing content, to be use-

ful to both veteran and new Web surfers, it needs to be well organized and easy and efficient to navigate. This is where Oud, who has a background in journalism, steps in. She oversees writing of the interface and organizing the navigation paths in consultation with the site's producer. She works with a team that includes programmers but each member comes with a bundle of skills and works as jack-of-all-trades. Formal boundaries and titles are tossed aside for a team effort.

While Oud is on the front lines of Web development, Francois Daoust has found opportunities both at the front and in the background. Daoust is employed by ITT (Information Technology and Training) in Langley, B.C., where he designs and implements Web sites, and also teaches others to do so as a certified trainer for SoftQuad's HoT MetaL Pro Web design software. But quite often he also works as a coach for indi-

viduals and small businesses that want the hands-on experience of designing their own site but need a bit of help with the finer points.

He finds that the demand for site designing has mushroomed in the last two years, which should offer continuing employment opportunities. According to Daoust, while most people did not trust the Internet enough to buy online two years ago, lately they "have gone crazy for it." He says there is a push to embrace the new technology. Just as computers have increased productivity at home and for business, the Web, secure limited-access sites, and intranets are doing the same for businesses, academics and individuals.

Most sites are a team effort involving not just Java script or CGI programmers but also people doing graphics, production and writing

Daoust also sees considerable opportunity for business, government or university intranets. Intranets are sites that use Internet structures and technologies like TCP/IP or HTML, but are restricted to a smaller community of users.

As for advice to anyone who wants to get into Web design, Daoust suggests that most sites are, like bargoon.com, a team effort involving not just Java script or CGI programmers but also people doing graphics, production and writing. The teams also need specialists in online security or intranet implementation. Each of these needs basic training in their field.

The point is that you need to be flexible in your training options and bring several skills to the team. Daoust says he is reluctant to tell anyone to train just as a Web designer, because as the industry sorts itself out and stabilizes, a range of flexible skills will be necessary. But the bottom line still seems to be the need for exper-

Continued on page 133

Top 10 computer books of 1999

Continued from page 128

is still a fun glimpse into life and times in the valley in the late 1990s.

10. Beginning Active Server Pages 2.0

Authors: Brian Francis, John Kauffman, Juan T. Llibre, Chris Ullman

Publisher: WROX Press

ISBN: 1-861001-34-7

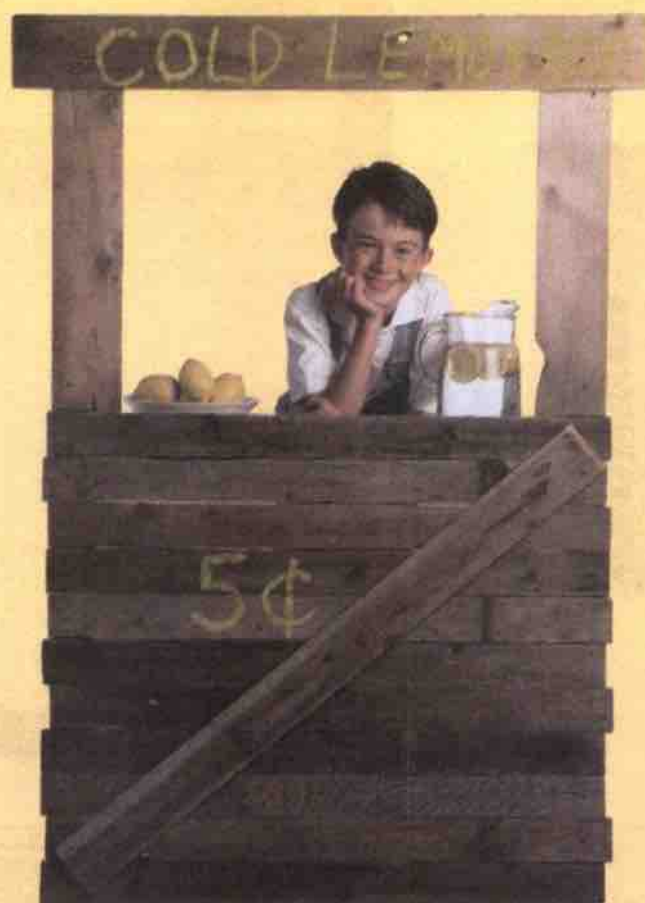
Softcover 652 pages

Price: \$55.95

It's not everyone who can simply leap into a new programming environment without at least some instruction. *Beginning Active Server Pages 2.0* is aimed squarely at the beginning ASP Web programmer, starting from the very basics and working on up to building robust Web applications. It should be pointed out that the subjects covered in this book are very basic—perfect if you have next to no programming knowledge, but it may be a bit on the thin side for those with some experience. On the whole, an excellent guide for the true ASP beginner. □

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Basic security in Linux

Continued from page 124

```
# Pop and imap mail services et al
#
#pop-2 stream ... /usr/sbin/tcpd ipop2d
#pop-3 stream ... /usr/sbin/tcpd ipop3d
#imap stream ... /usr/sbin/tcpd imapd
#
#finger stream ... /usr/sbin/tcpd in.fingerd
#cfinger stream ... /usr/sbin/tcpd in.cfingerd
```

If you haven't yet mastered vi, you can edit this file (on a Red Hat system) by typing:

```
mcedit /etc/inetd.conf
or
pico -w /etc/inetd.conf
```

These are two simple text editors, the first from Midnight Commander (mc) and the other from Pine, a text-based email program. You must be logged in as root to edit the file.

Once the file is edited, you can activate the changes by restarting the Internet services daemon, inetd. On a Red Hat system you can do this, as root, by typing

```
/etc/rc.d/init.d/inetd restart
```

or by typing the more traditional Unix command:

```
killall -HUP inetd
```

Remember, you don't have to reboot a Linux system in order to make a change. Any operating system that would make you have to reboot in order to activate a minor change should be considered brain damaged.

Further study

What we've just covered barely scratches the surface of system security, but if you follow these steps and keep your system current

with security updates, you'll have covered the basics. The basics take you a long way towards keeping your system protected and secure.

To learn more about security, read the Linux Security-HOWTO that should be located in /usr/doc/HOWTO (on Red Hat systems), or read it online at http://www.linux-howto.org. You may also want to check out the Linux Inside column "Ramping up Linux

Security" in the October issue of TCP for a look at more advanced security measures. This is available on The Computer Paper Web site. □

Next time we'll look at Linux editors.

Gene Wilburn (njo@interlog.com) is a Toronto-based IT manager, musician and writer who operates a small farm of Linux servers. Back issues of this series are available on his Web site at www.interlog.com/~njo/.

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Chapters Top 10

The following list was provided by Chapters Books, based on sales in November 1999

10. **Linux: The Complete Reference**
By Richard Petersen, McGraw-Hill Ryerson, ISBN: 0072121645, \$63.95.
9. **FrontPage 2000 For Busy People**
By Christian Crumlish, McGraw-Hill Ryerson, ISBN: 0072119810, \$29.95.
8. **Internet for Dummies, 6th Edition**
By John Levine, CDG Books Canada, ISBN: 0764505068, \$28.99.
7. **Mastering Windows 98 Visually**
By Ruth Maran, CDG Books Canada, ISBN: 0764560344, \$54.99.
6. **Creating Web Pages With HTML Simplified, 2nd Edition**
By Ruth Maran, CDG Books Canada, ISBN: 0764560670, \$32.99.
5. **HTML For the World Wide Web**
By Elizabeth Castro, Pearson Educational, ISBN: 0201696987, \$24.95.
4. **Dictionary of Computer and Internet Terms, 6th Edition**
Douglas Downing, Barrons Educational Series, ISBN: 0764100947, \$14.75.
3. **PCs For Dummies, 7th Edition**
By Dan Gookin, CDG Books Canada, ISBN: 0764505947, \$29.99.
2. **2000 Official Canadian Internet Directory**
Pearson Educational, ISBN: 0130164194, \$29.95
1. **Windows 98 for Dummies**
By Andy Rathbone, CDG Books Canada, ISBN: 0764502611, \$28.99

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The brain drain

Companies need to focus on internal culture to keep talented employees

By Tom Venetis

While debate rages over the scale—and even the existence—of a national brain drain of technology workers to the U.S., Canadian high-tech companies are realizing that they'll experience a brain drain on a corporate level if they don't find better ways to reach out to high-tech graduates and create a challenging, exciting environment for them to work in once they've been hired.

Brain drain debate

While the Toronto-based C.D. Howe Institute blames Canada's tax systems for driving nearly 40 percent of recent graduates in science, medicine and management out of the country (a theme frequently echoed in the popular press and news broadcasts), Statistics Canada suggests highly educated Canadians are not leaving the country in droves, and whatever losses there may be are outweighed by the number of highly educated and technically trained people coming into the country.

"There is little statistical evidence in support of a large scale exodus of knowledge workers from Canada to the United States,"

according to Statistics Canada's Scott Murray, who presented his research at a 1998 forum on whether a brain drain to the U.S. exists.

"When you look at the high-tech industry in Canada as opposed to the States, to say that taxes [are] the reason why American recruiters are taking Canadian high-tech graduates is disingenuous," suggests Seth Klein, director of the B.C. office of the Canadian Centre for Policy Alternatives in Vancouver.

And others suggest if graduates are leaving Canada, it has more to do with the kinds of job environments that U.S. companies are offering Canadians.

Al Nasturzio, regional vice-president for the Toronto-based Information Technology Institute (ITI), says some graduates from his college have been lured to the U.S. by the higher salaries, but more often it is the greater job support and continuous training that is the inducement to move.

"We keep hearing that people are leaving because of the financial benefits and the tax structure in the U.S.," Nasturzio adds. "I don't think that is the whole reason. The environment is absolutely critical: not only the working environment, but who they are working for."

Nasturzio suggests high-tech workers and graduates want to be in environments that are not only challenging but where their contributions are appreciated. Making them feel they are stuck in a back room, or are simply reduced to taking care of a couple of servers or computers, is a sure way to lose them, no matter how much money they are being paid.

Keeping employees interested

Christine Bacinski, associate instructor/consultant for the Toronto Technology Group (TTG), found after graduating from ITI that many employers were not doing enough to attract or keep skilled graduates like herself. Often, she and her classmates were offered unchallenging jobs, or the companies showed little interest in helping those they did hire continue to upgrade their skills as technology changed.

"[Companies] feel, certainly at the introductory level, that we are pretty much a dime a dozen and they don't really have to cater to our needs, and they don't have to appreciate us as much because there will be others coming along," Bacinski adds.

TTG recognized this when it launched less than a year ago. As a startup company that

develops high-end business-to-business and business-to-consumer applications, it knew it could not attract graduates and high-tech workers by offering high salaries. Instead, it offered employees an environment in which they could learn new technologies, and in which mentoring was encouraged to help employees understand new technologies and expand their skills.

Vancouver-based DNA Media Services Inc. similarly encourages its nearly 50 employees to mentor each other in the technologies and projects they do in order to foster an environment where they are constantly challenged. DNA translates computer solutions for foreign markets in Asia and Europe, and knows technology workers are willing to move to a different company if they feel they are not challenged or supported in their work.

"Creating a good working environment is one of our top priorities... and can outweigh how much you are making," says Mike Richards, business development manager for DNA. "We have regular sessions and mini-classes that people put on because it is impossible for everyone in the company to do what everyone else does. But having a

Continued on page 133



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TCP

The brain drain

Continued from page 132

knowledge of what other people's jobs are and how it affects the projects we are working on is important."

Role of educators

If Canadian businesses need to start changing their corporate culture to find and keep valuable employees, Canada's high-tech colleges and training centres also need to start doing more to hook up their graduates with interested firms and opportunities. Too many times, colleges and universities offer little support to graduates once they finish their courses, leaving many struggling to find work.

CDI president Doug Morley says his college recently held a graduation ceremony that featured speakers and attendees from Canada's high-tech sector and was an opportunity for some informal networking. CDI also goes a step further by having 45 employment specialists on staff to help students meet high-tech recruiters and employers.

"I don't know of any college or university having 45 employment specialists working on their students' behalf," Morley adds.

Nasturzio says he is trying to get ITT's grad-

uates and Canadian technology companies together by creating a scholarship program and having companies offer to pay a part of a student's tuition in return for the student doing work for the company.

Maurice de Silva, who works as a network administrator for the Town of Pickering, Ont., suggests companies should also be looking at hiring students while they are still in school in order to foster better relation-

ships and to give them the opportunity to get valuable work experience before they graduate.

"My choice is not to go to the U.S.," de Silva adds. "Employers in Canada could do more to offer training so the person can grow with the company and I think flexible hours and more time off would be good starting points. There are things they can do other than working people to the bone." □

Chinese characters dictionary
NB—This useful Web site allows simultaneous searching of the major Chinese character dictionaries on the Web. It requires a Chinese language Web browser or Chinese fonts loaded.
<http://zhongwen.com/zi.htm>

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Web development requires mixed skills

Continued from page 130

rience with many people "winging it by the seat of their pants."

Programs of study

If you have experience in programming, graphic design, etc., and want to add a "piece of paper" to your resume, there are excellent programs that do not require years of study but offer a balanced curriculum. One place to start your search is at a technical or community college in your area.

For example, Seneca College of Applied Arts and Technology in Toronto offers a 14-week course called Webmaster: Content Certificate Program. Seneca expects that students taking this program will already have a diploma or degree in subjects such as library science, business communications, visual arts, or journalism, and should have basic computer skills. Some experience with HTML, designing a home page, or desktop publishing, is helpful.

The program stresses authoring of interactive multimedia information, how to plan, design and validate effective business sites for both Internet and intranets, and how e-commerce, database transactions, and future Internet technologies will evolve. The course teaches the tools and techniques of the trade using both individual and team projects. "The assumption is that Webmasters are multimedia communicators who learn by doing and by 'hands-on' experience," according to the course brochure.

The curriculum includes information on Web browsers, HTML, Web development tools, graphics, multimedia, applications and project planning and management. Tuition is \$6,250, which includes books, computer and printer use, Internet and email access and parking.

Other colleges offer night courses in Web design, HTML or CGI. Sometimes these lead to a formal certificate like the one graduates of Seneca's program receive, but often they are simply a single or a series of courses to get you started. □

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Guides to ASP

WROX targets beginners, O'Reilly aims for more experienced programmers

By Keith Schengili-Roberts

ASP (Active Server Pages) is a means of delivering Web page content on demand through Microsoft Internet Information Servers. Many professional Web masters are turning to developing sites using ASP-based Web servers—or other, similar systems such as Allaire's ColdFusion—in order to deliver highly customizable and dynamic content to their users. In most Web servers, the client requests a Web page, and a simple "flat" HTML file is sent to the client. With ASP, the server also takes the client request, but adds an interpretive layer, making it possible for the Web master to deliver dynamic, customizable information to the individual client. In this issue we take a look at a couple of books devoted to ASP.

ASP in a Nutshell

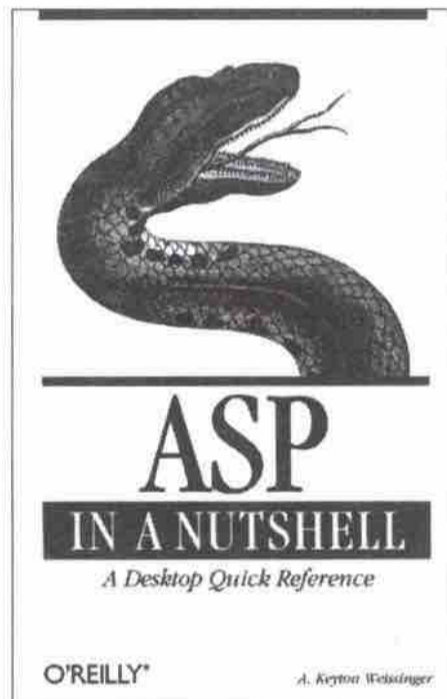
Author: A. Keyton Weissinger
Publisher: O'Reilly & Associates
Tel: 800-998-9938. <http://www.oreilly.com>
ISBN: 1-56592-490-8
Softcover 405 pages 1999
Price: \$36.95
Rating:
Information content: ****
Readability: ****
Intended for: Intermediate/Expert
Overall rating: ****

O'Reilly books are always easy to spot on the bookstore shelves because of their common design—each cover is adorned with a black and white engraving of a different animal. For this book, the animal is, aptly, an asp. Many Web masters will, no doubt, appreciate this snaky metaphor, as dealing with the fundamentals of ASP can be as tricky as wrestling an annoyed python. But as with the majority of O'Reilly's *Nutshell* series of books, *ASP in a Nutshell* is a good reference guide that will help both neophyte and more experienced ASP Web developers.

This book is divided into three major sections: an introduction that looks at ASP fundamentals, an extensive object reference that is handy to have when programming functions into your Web site, and an installable component reference that documents the properties and methods of additional functions you can add to your Web server.

The introductory section is good, laying out the basic principles of ASP in a concise manner, but is only suitable for the beginner who is familiar with the basics of object-oriented programming (or has some knowledge of Visual Basic).

The majority of the book is hard-core reference material: a list of all six objects (including detailed sections on the Application, Request and Session Objects), the methods you can use with each, and typical situations in which you might be expect-



ed to use them. The final section of the book deals with various ASP add-ons, such as the

Ad Rotator component for rotating banner ads on a Web site.

ASP in a Nutshell is packed with solid information that will undoubtedly find a premium spot on the bookshelves of experienced ASP programmers. It does not really have enough material here for the rank beginner, however. If you plan to develop an ASP-driven Web site, this book is worth having.

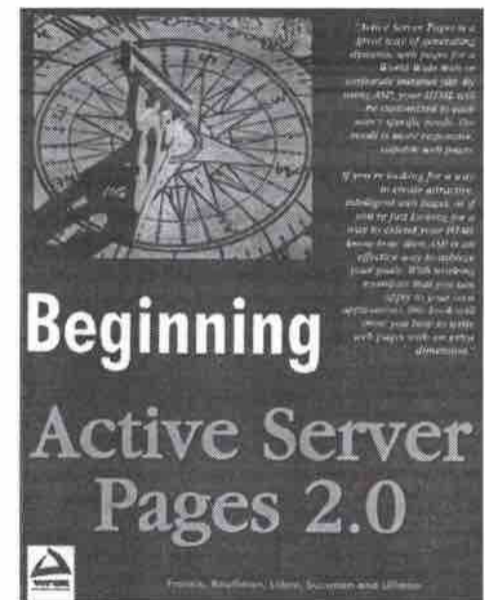
Beginning Active Server Pages 2.0

Authors: Brian Francis, John Kauffman, Juan T. Libre, David Sussman, and Chris Ullman
Publisher: WROX Press
<http://www.wrox.com> (Dist. by Addison-Wesley Longman, Tel: 416-447-5101)
ISBN: 1-861001-34-7
Softcover 652 pages 1999
Price: \$55.95
Rating:
Information content: ****1/2
Readability: ****
Intended for: Beginner
Overall Rating: ****

Wrox Press realizes that not everyone can simply leap into a new programming environment without some instruction. *Beginning Active Server Pages 2.0* is aimed squarely at the new ASP Web programmer. The book starts by teaching readers the very basics and works up to helping them build robust Web applications.

This is a good guide, if you're looking for a relatively easy, step-by-step approach to learning ASP. It doesn't assume the reader has prior programming experience, though it does assume a basic knowledge of HTML. The book outlines the very basics of ASP and how it functions at both the Web client and Web server ends. It then describes how to set up a basic Web server (the free Microsoft Personal Web Server), which is necessary for running the examples provided in the book. After looking at some basic ASP techniques, variables and control structures, it devotes a full chapter to understanding the basics of

object-oriented programming. This chapter is particularly good and provides a thorough and easy-to-understand example of how object-oriented programming works. Further chapters take readers on a tour of the various ASP methods and describe how to build progressively more complicated ASP applications.



Beginning Active Server Pages 2.0 does assume you can install Microsoft Personal Web Server on your system. (Personal Web Server is best suited for systems running Windows 9x.) By concentrating on this particular Web server it also bypasses dealing with arguably more popular servers like the Internet Information Server common to Windows NT servers.

The subjects covered in this book are very basic, which is perfect if you have next to no programming knowledge, but may be a bit on the thin side for those with some experience.

On the whole, *Beginning Active Server Pages 2.0* is an excellent guide for the true ASP beginner. □

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Disney keeps Macs in mind

New Toy Story 2 game, activity titles PC and Mac compatible

Just in time for the launch of the Disney/Pixar animated film, Toy Story 2, Disney Interactive has released two new Toy Story software titles: *Toy Story 2 Activity Centre* and *Toy Story 2 Action Game*.



Activity Centre bundles together several arcade and strategy games with projects designed for children four to eight years of age. Players can create their own "talking" comic book using images and voices of their

favourite *Toy Story 2* characters, and print stickers, posters, and greeting cards.

Disney Interactive describes *Action Game*, which is for children eight years of age and older, as a fast-paced adventure in a high-resolution, 3D environment. In it, players help Buzz Lightyear rescue Woody. Challenges include firing laser weapons at enemy toys, using rocket jet boots to skate at high speeds, using moon-spring boots to access high places, and a variety of other manoeuvres. *Action Game* has 10 levels of play and five "intense battles," according to Disney.

Happily, both releases are available for the Mac platform (no doubt due to the fact that *Toy Story* was animated by Pixar, whose chairman and chief executive is Apple boss Steve Jobs). The Windows/Mac hybrid CD-ROMs are \$39.99 each.

On a PC, *Action Game* requires a minimum of Windows 95, 166 MHz Pentium processor, 32 MB RAM, 60 MB free hard disk space, 4x CD-ROM drive, DirectX-compatible 4 MB video card, DirectSound-compatible sound card, support for Windows-compatible joysticks, support for DirectX and Glide-compatible 3D cards. For the Mac, it needs a minimum of a 233 MHz G3 processor, Mac OS 8.1, 32 MB RAM, 60 MB free hard disk space, and a 24x CD-ROM drive.

Activity Centre requires a PC with a minimum 133 MHz Pentium CPU, Windows 95, 16 MB RAM, 50 MB free hard disk space, a 4x CD-ROM drive, and 16-bit DirectX-compatible video and sound cards. For the Mac, it requires a system with a 133 MHz Power PC processor, System 8.1, 32 MB RAM, 50 MB free hard disk space, and a 4x CD-ROM drive.

And if you can't get enough Regis...

Though not Mac compatible, Disney Interactive has also released a computer game of the TV ratings surprise of the year, *Who Wants to Be a Millionaire*. Like the TV show, players must answer a series of 15 questions posed by host Regis Philbin. Disney says the number of people who can play at one time is only limited by the space available around your computer. The *Who Wants to Be a Millionaire* CD-ROM was designed by the makers of *You Don't Know Jack*, a popular CD-ROM-based trivia game.

The bad news is that you won't win \$1 million playing this game. The good news is that only have to fork out \$19.99 to buy it. Who

Wants to Be a Millionaire requires a minimum of a 133 MHz Pentium processor, Windows 95, 32 MB RAM, 160 MB free hard disk space, a 4x

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—Megan Johnston



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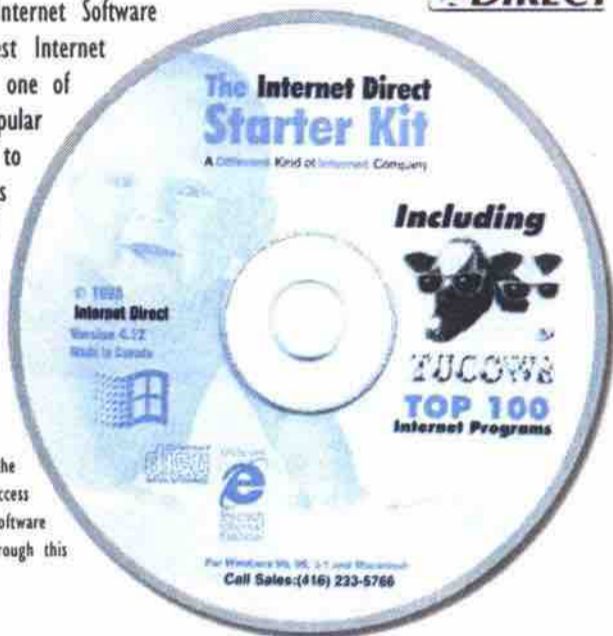
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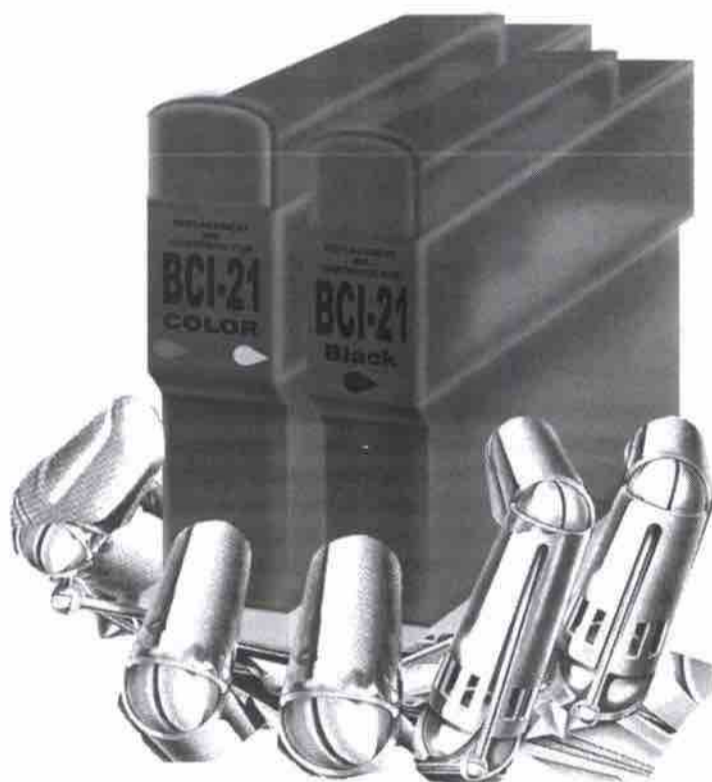
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ATTENTION USER GROUPS: Send in your listing (maximum 120 characters) for the February issue by Friday, January 7, 2000. Submissions runs for one month only in the local edition. The Computer Paper reserves the right not to print submissions which are deemed unsuitable.

ALT.2600 VANCOUVER USER GROUP: Meeting are 1st Friday of each month at Pacific Center Mall by payphones in food court, north of Dunsmuir at Granville 4pm to 9pm. Starts early to catch the evening shift 2600ers. For more information contact Steve via email at <sage@vanbc.wimsey.com> or <sage@ralr-bow.descon.com>

AMIGA USER GROUP (Panorama) For meeting times and place call: Ray Norman 589-7199 or Robert Hardy 942-8364. BBS numbers 270-4561.

APPLES B.C. COMPUTER SOCIETY: A User Group for Macintosh and Apple IIs. Macintosh meetings are on 3rd Wednesday of each month at the York House School in Vancouver at 7 p.m. Novice and other special-interest groups are held mid-month. Apple II meetings are on 1st Monday of each month at 7 p.m. at the Century House in New Westminster. For further information call 437-9935 or 299-9597.

ATARI USERS! Vantari, Vancouver, BC V6B 3Y6. Bill Sutherland 988-1450; Don Hatch 433-8055. 2357 Western Avenue, N.Van B.C. V7M 2L4.

EDI USER GROUP: For more information call 532-8204 (preferred), or voice mail 532-8219.

B.C. WAX/VMS Local Users Group (BCWAXLUG) provides a forum for the professional growth and education of its members through the exchange of solutions, ideas, and opinions. User group meetings are held the 3rd Wednesday of every other month at 6:30 p.m. with location to be advised. For further info please call voicemail 276-6966.

CANADIAN INTERGRAPH USERS GROUP CONFERENCE: September 8-11, 1996. Delta Meadowdale, Mississauga, ON. "Drive The Open Road". Contact Laura Banman, Intergraph, 2912 Memorial Dr. SE, Calgary AB T2A 7R9. Voice: (403) 569-5562 Fax: (403) 569-5801 e-mail: lbanm@ingr.com

CIPS VANCOUVER SECTION: (Canada's largest Association for Computer Professionals). CIPS Members enjoy unparalleled networking and professional development opportunities at our monthly meetings and special events.

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FOXSOFT, EDMONTON'S FOXPRO USERS GROUP: second Tuesday, 7.00 pm, Grant MacEwan City Centre Campus, East Wing, Room C-137/C-135, 10700-104th Ave. Contact: Ken Rayner at 437-0315 or Robin Stuart at 460-3712 (days). Info Bulletins on BBS 457-4105.

INDEPENDENT COMPUTER CONSULTANTS ASSOCIATION OF BC: The ICCA is a non-profit association of consultants who provide services in the field of Information Technology. The objectives of the ICCA are to provide a forum where consultants can network with each other, exchange ideas, and improve their business and computer skills. Monthly meetings with speakers. For further information contact us at: PO Box 820, Bentall Station, Vancouver, BC V6C 2N6 tel: 682-2747 fax: 681-0916 email: icca@mindlink.bc.ca / WWW: http://www.icca-bc.org/icca/

LOTUS NOTES: - see "Pacific Notes User Group"

MACWEST COMPUTER SOCIETY: Meetings for members and visitors include PD copy sessions. General meetings: 2nd Wednesday of each month; Beginner's meetings: 3rd Wednesday of each month. 7:30 p.m. at Surrey Conference Centre. For messages and information call: 268-9530.

MS ACCESS TECHNICAL USER'S GROUP: For those who want to participate in learning more about MS Access. For information call Greg Hind at 454-0262, or refer to www3.telus.net/ghind/msatug.html

MACROMEDIA USERS GROUP: This group is dedicated to networking and shared learning. The products covered include Flash, Dreamweaver, Director, Authorware, and Generator. For additional information please call (604) 873-4464 (evenings) or email Rob at: rob@intargate.bc.ca

OPENSTEP USER SOCIETY (VNUIS): See British Columbia OpenStep Group (B.C.O.G.)

PACIFIC NOTES USER GROUP (PACNUG): Lotus Notes users meet the last Wednesday of each month. 5:15pm at Rosie's on Robson on July 31st. Contact Delores Beler at 988-2141 or delores-b@awoda.com

PC/MAC USER GROUP: Wanted Professional Photography/Graphic Designers to share, network and learn the latest hardware and software programs. If you are interested please contact: B. Hanington at 874-6980 or email me at: rasta@istar.ca for further info.

PORT COQUITLAM COMPUTER CLUB: Commodore, Amiga & IBM. 1st & 3rd Tuesday, 7:30 p.m., Room 104, George Pearkes Jr. Sec. School, 1390 Laurier Ave., Port Coquitlam. For further information contact: Ed Dyer at 942-0954.

POWER BUILDER: User group being formed. Meetings are planned for first Wednesday. To enroll call Perform System Developers at voice mail 604-264-0247.

SQL SERVER: User group being formed. Meetings are planned for first Monday. To enroll call Perform System Developers at voice mail 604-264-0247.

T.I. 99/4A COMPUTER B.C. 99er Users Group: every Thursday 7-10 p.m. For information, call Ron: 522-2598.

TEENS IN VANCOUVER USER GROUP: For teens under the age of 16 interested in doing computer related projects regularly WWW, programming, games, anything! The main goal is to share computer knowledge and to make friends. If there are any homeschoolers interested, that would be great. If interested, please call Orton Mak at 926-2835.

VANCOUVER AUTOCAD USERS SOCIETY: 1st Wed. of the month, 7:30 p.m., B.C.I.T. Bby. Campus Bldg. SW5 Room 1850. Contact: Frank Zander (604) 582-8283.

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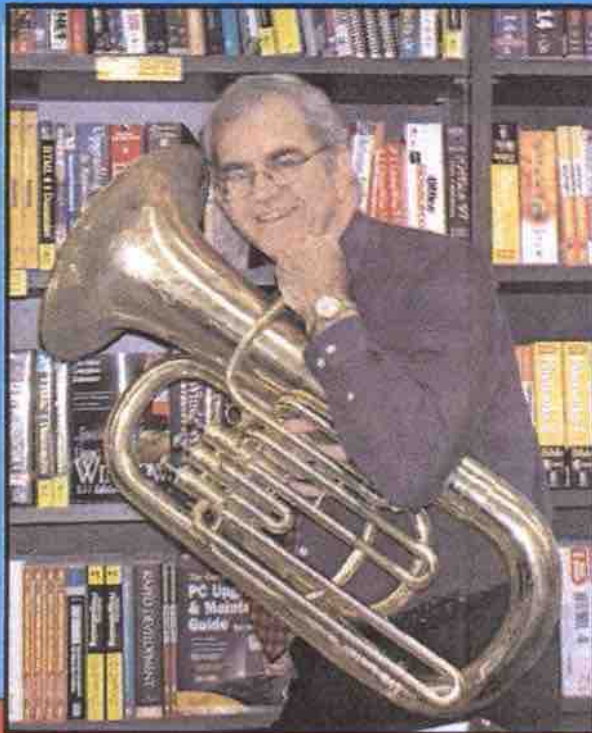
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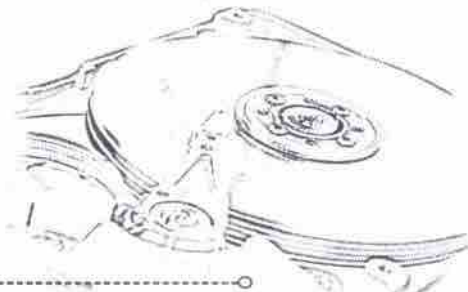
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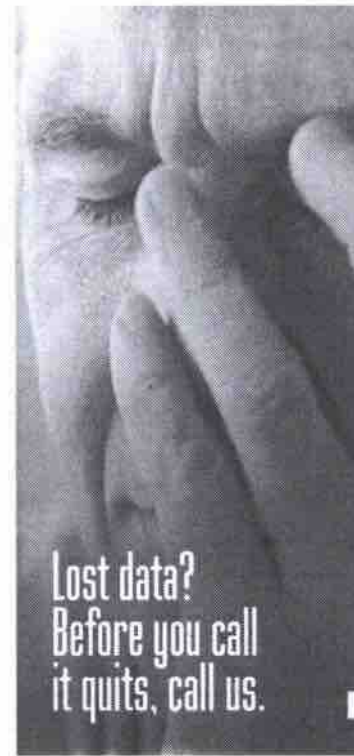
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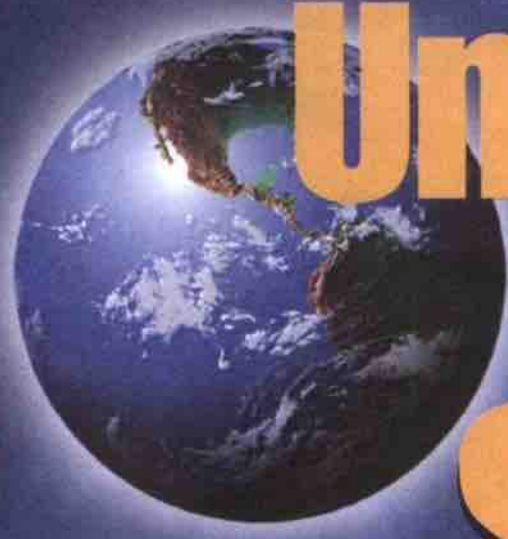
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the second or third Weds of the month. Please check website for details, <http://www.infocan.com/VDDA.htm>. The purpose of the group is to provide a common and regular forum for Delphi developers to get together and discuss Delphi related issues. Admission is free and all notices are sent via e-mail. To have your name added to our distribution list, please send your complete contact information to vdde@infocan.com, Fax: 604-736-5866, contact Maggie U (administrator) at tel: 604-736-5888.

VANCOUVER FOXPRO USER GROUP (VFUG). We meet on the 2nd Tuesday each month. Our group is mainly comprised of developers, who exchange knowledge on working with all versions of Foxpro. Please check our website www.foxpro.org for a schedule and location of our next meeting. For information, please contact Kimberley at bccomp@planeteeer.com or Joy at jaytan@itswebware.com.

VANCOUVER GEOGRAPHIC INFORMATION SYSTEMS USER GROUP. Meetings are held on the 1st Wednesday of each month, September through May, at B.C.I.T. Town Square Room 'C' at 7:30pm. Contact Dwight at 940-1518 for information.

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VANCOUVER NETWARE USERS GROUP (VNUG) is an official user group recognized by the Netware Users' International Assoc. and supported, in part, by Novell. Meetings are held on the third Wednesday of every month at 7 pm at PBSC Computer Training Centre, Hong Kong Bank building 900-885 West Georgia Street. All aspects of the networking environment are discussed and presented with emphasis on the Netware network operating system. The workshop begins at 4:00pm, buffet dinner at 6:00pm, at 7:00pm is a Q&A session followed by a presentation ending at around 8:30pm. Member, no-member and student pricing applies to the workshop and/or dinner-presentation. For further information or meeting topic announcements call our voice mail at 689-VNUG (689-8684) or Fax us at 689-8656.

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THE VANCOUVER SQL Server Users Group is an independent non-profit organization dedicated to providing an information exchange about Microsoft SQL Server. Launching its bi-monthly meetings starting Thursday January 7, 1999 from 6:30pm to 8:30pm. For more information, visit our web site at www.vansql.org. Phone: 899-9434.

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VPCUS Educational Seminars — Members \$5, Non-members \$15. Various topics, times and dates. Contact Gwenda Ellwood, 737-8674.

VPCUS HTML AUTHORIZING SIG - this SIG is a good place to come for informal discussions with other HTML developers or to get advice on building business and personal Web pages. Topics include graphics and HTML, plug-ins, the browser wars, Jamba, connectivity issues and marketing on the internet. Both novice and advanced HTML authors are welcome. We meet on the 2nd Tuesday of each month. Contact Brenda Delaney; bdelaney@interchange.ubc.ca or Virginia Green; virginia@arts.ubc.ca for meeting info and to get our email list.

VPCUS INTERNET SIG - New to the info highway? Get to know the internet and the Web with an experienced guide. Contact Joe Thompson for details, 685-6945.

VPCUS WordPerfect SIG-Participants share tips and troubleshooting for all versions of WordPerfect for Windows and DOS. Contact Holly Rivers at 731-0039, or email: hollyr@dowco.com

VPCUS NETWORKING SIG - This is the place if you are a network administrator and you need a break from beating your head against a wall, or want to relate with people who actually care what you are talking about. Come and share tips, tricks and support ideas. Currently on hiatus, we're looking for volunteers interested in getting this SIG going again. Contact Brenda Delaney; bdelaney@interchange.ubc.ca or fax 224-2143 for more information.

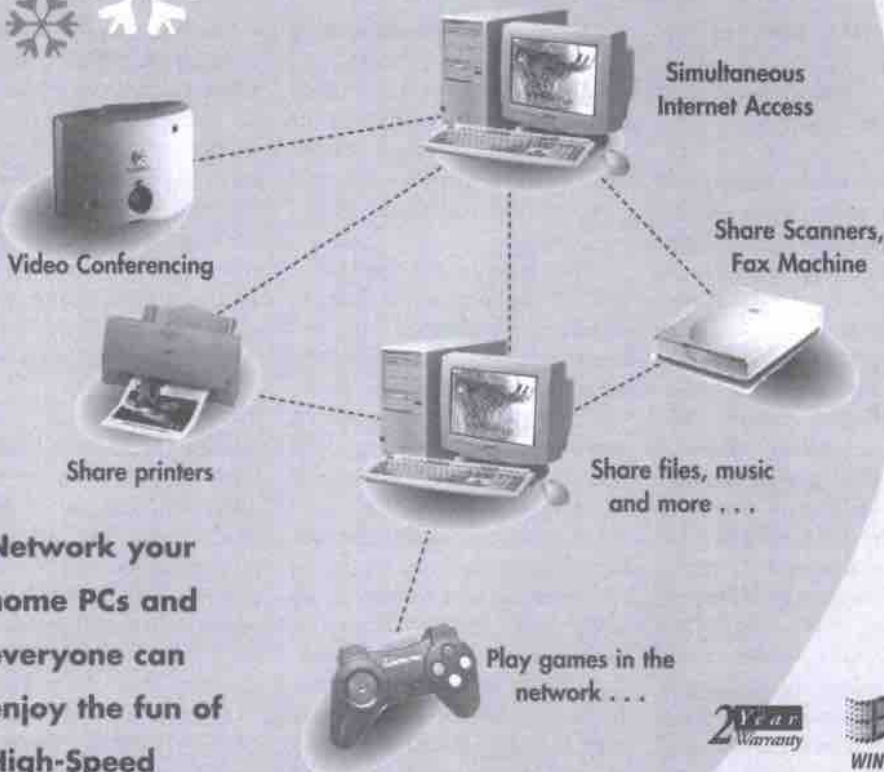
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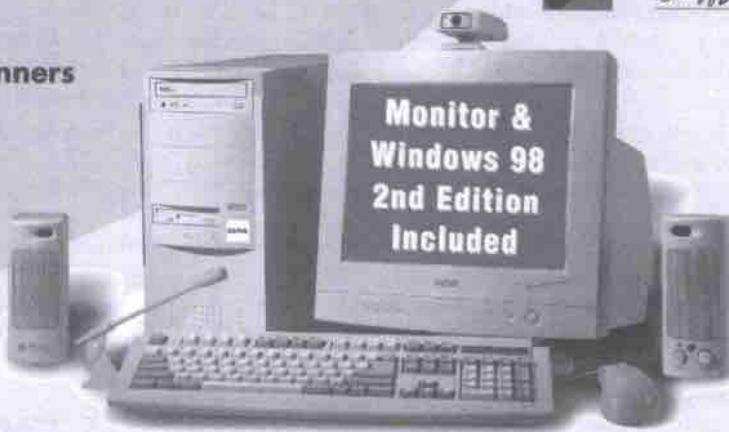
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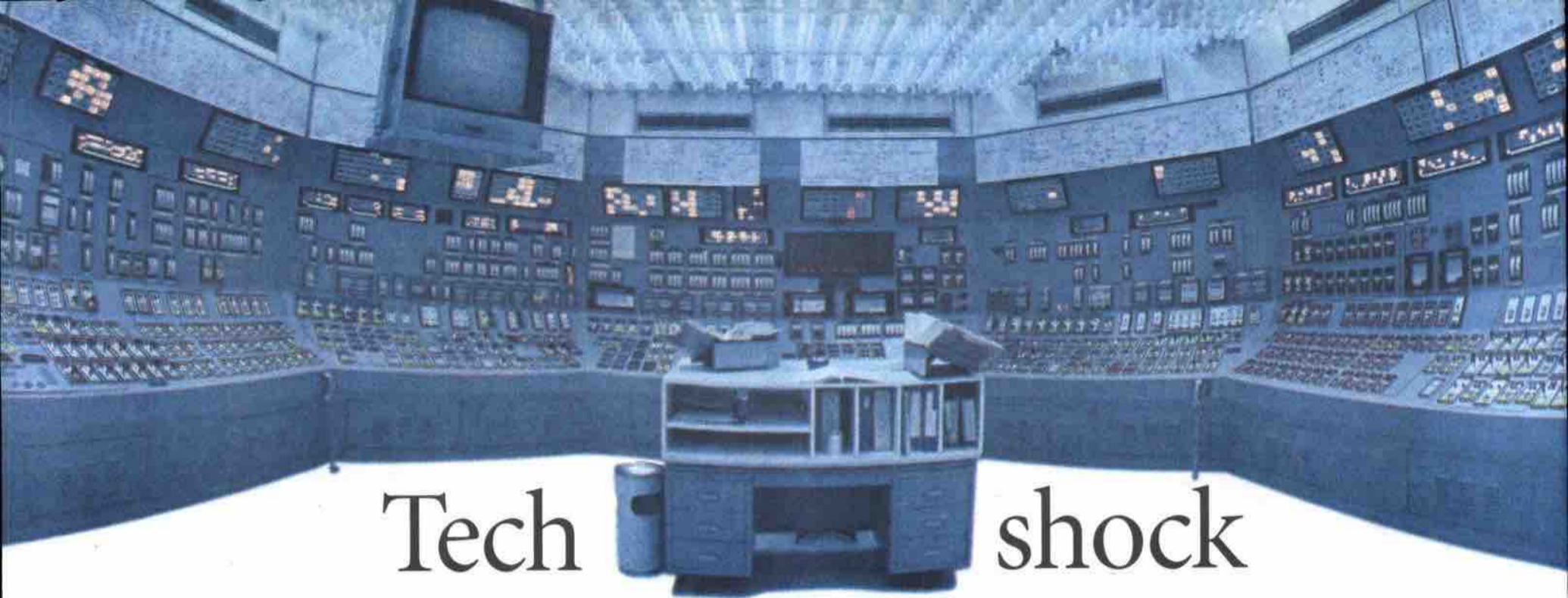
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Tech shock

Y2K is upon us and I have no idea what's going to happen

I rarely watch TV, but I did force myself to sit down on Nov. 21 to watch the made-for-TV movie Y2K. I regarded it as homework, in the sense that this was the only large-scale year 2000 (Y2K) drama that was going to be released before the year 2000 actually happens. Apparently, most producers figured that any Y2K disaster movies would only be of interest, briefly, right before the rollover to 2000, and would be of no interest at all afterwards. Most passed on the chance to make feature films with such a rigid "best-before" date.

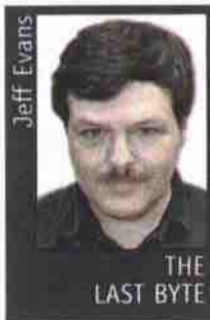
I thought the Y2K movie was a lousy production, and it enormously oversimplified and dumbed down a very complex issue. In particular, it quickly moved to a U.S.-centric view, and focused on one big technical threat (a breakdown at a U.S. nuclear plant), pretty much ignoring every other possible consequence of Y2K. The movie also ended about three hours into 2000, local time, which didn't provide much insight as to possible longer-term consequences of the Y2K problem.

Mutatis mutandi

The old Latin saying, *mutatis mutandi*, translates into "everything affects everything else," and this especially applies to Y2K.

According to hearings before the U.S. Senate in October (<http://www.senate.gov/~y2k/hearings/991013/>), expert witnesses on Y2K claimed that the spectacular failures featured in sensational, media and entertainment coverage are less likely to occur than a more complex phenomenon: the decline of economies over an extended period due to the "drag" imposed by many, individually non-critical Y2K failures.

As Bruce McConnell of the International Y2K Cooperation Center put it, "In reality, the most significant risk Y2K poses is not localized technology failure, but a degradation in the performance of the connected relationships among electronic devices, procedures, people, and organizations that together make modern life workable and efficient."



THE LAST BYTE

I think this global systems approach to Y2K may give us a better hint of what's going to happen come the new year. To put it simply, I think the can of worms that opens up on New Year's Day could be big and very messy, even if it isn't the kind of apocalypse that the gun-happy survivalists and end-of-the-worlders are predicting. I think the event will be significant globally, and possibly have effects that last for months.

Will Y2K's effects be catastrophic, serious, embarrassing, mildly irritating, or trivial? I hope I'm wrong, but I think in some instances it will quite seriously affect people's daily work and home lives. If we're lucky, many of the breakdowns can be fixed quickly, and collectively will be no more than a blip that doesn't generate long-term damage. If we're unlucky, some parts of the world, and the global economy generally, could take a significant hit.

Even if we avoid most of the disaster scenarios—nuclear plant meltdowns, nuclear weapon malfunctions, power, gas and telecom grid shutdowns, mass small business bankruptcies—I would be surprised if our faith in computers doesn't take a considerable hit.

Location, location, location

How Y2K really affects you or me will depend to a large degree on

where we live. In Canada, we have one of the most advanced, and most computer-dependent societies on earth. As another recent U.S. government report pointed out, Canada is therefore, theoretically, highly vulnerable to Y2K disruptions.

However, as a result of spending tens of billions of dollars to address the problem in the last three years, Canada is one of the most Y2K-ready countries in the world. Nevertheless, if anything goes wrong, it will go wrong at the worst possible time—in the middle of the Canadian winter.

In terms of the global money religion, Canada's temples, the banks and other financial institution, are highly Y2K ready. Not too far behind are the government agencies, public utilities and *Fortune* 1,000 companies that have generally done a pretty thorough job preparing for Y2K, and which now claim they will only face minor internal issues related to the Y2K problem.

At the local level, however, Canada's small to medium businesses, which represent the bulk of employment and new economic growth in Canada, are mostly Y2K-unready. In a great many cases, companies and individuals have decided, either deliberately or by simply avoiding this issue, to "test by failure." Many of us will simply wait it out and see what stops working after New Year's Eve, and then try to get someone to fix it.

According to Al Aubrey, IBM Canada's head of Y2K preparations, one of the most vulnerable parts of the infrastructure is the HVAC (heating, ventilation, air conditioning) category. Many modern buildings risk going dead this winter if their computerized temperature control, pumps, fans, transformers, alarms, power regulators and other equipment has not been completely checked and made Y2K-proof.

Think globally...

Outside the 20 or so most industrialized countries, government attention, and funds for Y2K remediation, have generally been grossly insufficient. We may see test by failure for whole countries where government and infrastructure Y2K readiness is at the miserably low level of Canadian small businesses. A U.S. government advisory to pull diplomatic staff out of former East Bloc countries is an indication of the high probability of trouble in that region.

... Act locally

If Y2K turns out to be just another bizarre bout of mass hysteria, along the lines of other end-of-the-world panics, great. I'll be the first to laugh at my own nervousness. However, just in case, I'll have taken the following precautions before Dec. 31:

- Checked and updated the BIOS on the family business's main PC (a 1998 Dell desktop).

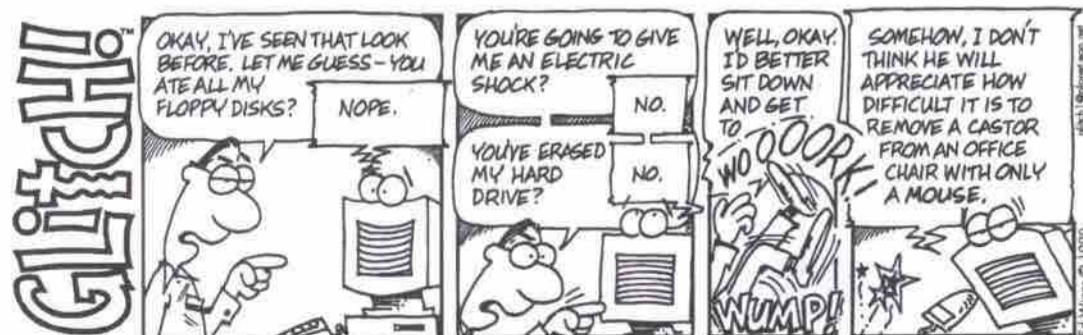
- Backed up all the business data on the hard drive on Zip cartridges and CD-ROMs.
- Downloaded the Microsoft Y2K testing software, checked and fixed all the critical business-related database, spreadsheet and word processed files.
- Ensured that if power does go down for any length of time, our extended family has made arrangements for "winter camping" in our houses for at least a few days.

However Y2K turns out, I've had my own tech shock by degrees over the last three years. I have developed a very skeptical attitude towards our reliance on computer technology, which won't go away, no matter how the next 30 days go.

Ironically, I'm writing this article on a commuter train in Toronto, which has been sitting about a mile short of the station for the last hour, due to a power failure to the track signals. I've been trapped on the train, with my notebook's batteries running down, watching the computer's clock as I become increasingly late for a meeting with Microsoft and Hewlett-Packard.

Faith in technology? Not me. For the next little while at least, I'm going to be a true believer in Murphy's Law: "If it can go wrong, it will—and at the worst possible time."

Happy new year! ☐



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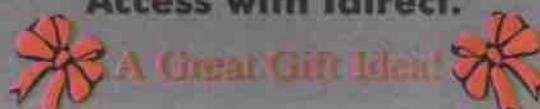
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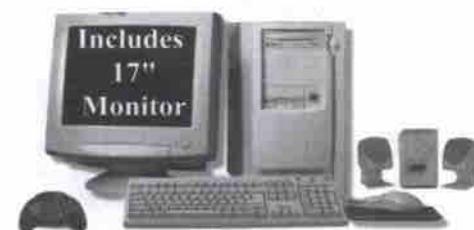
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