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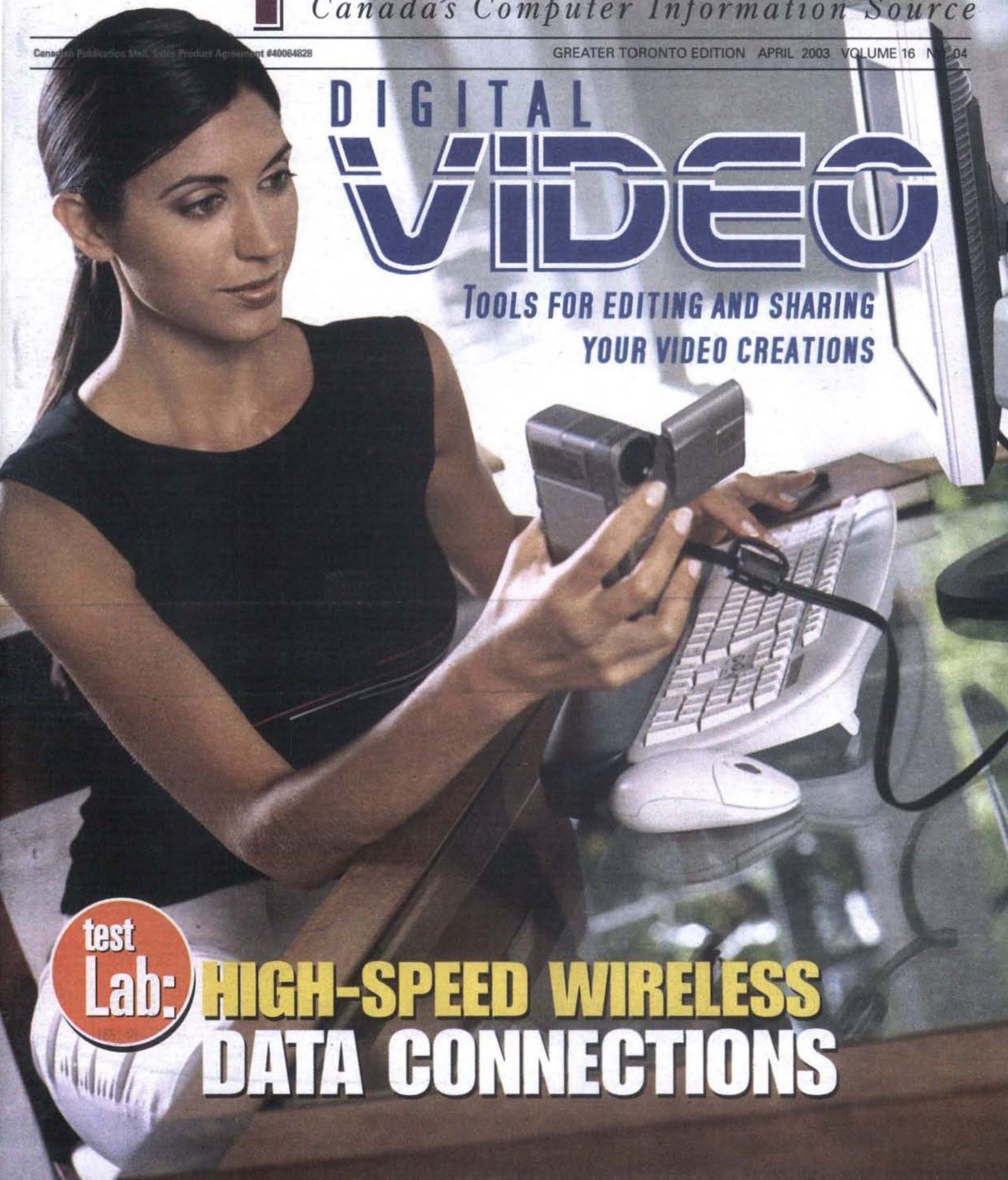
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GREATER TORONTO EDITION APRIL 2003 VOLUME 16 No. 04

DIGITAL VIDEO

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The Computer PAPER

1988-2003 15th Anniversary



Toronto
Edition
April 2003

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May 2003

Cover Story: Wireless
Lab Test: Digital Audio

Ad booking deadline Tuesday, Mar. 25
Distribution begins Wednesday, April 8

June 2003

Cover Story: Computing on the Go
Lab Test: Flat-Panel, Plasma Displays

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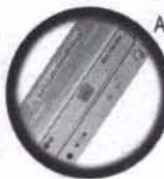
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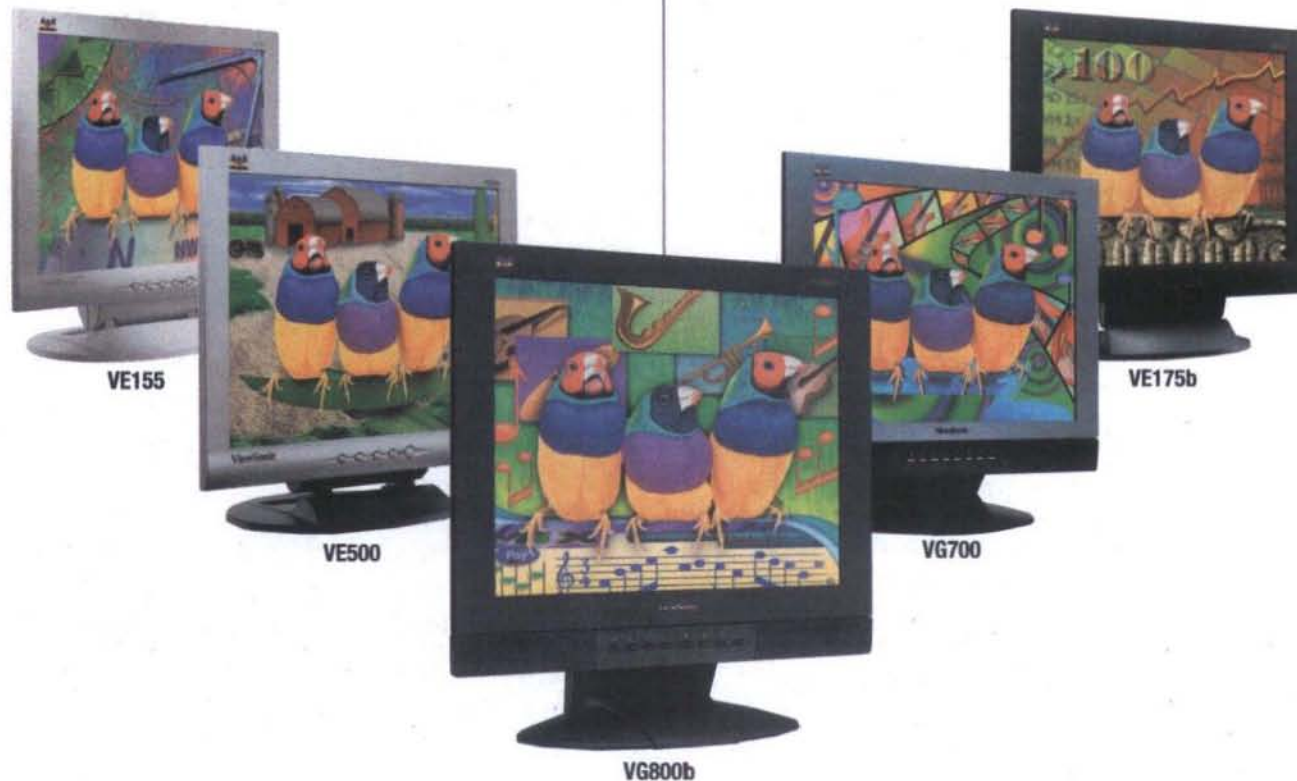


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Tangled up in wireless



Megan Johnston

FROM THE EDITOR

In discussions about this month's Lab Test on high-speed wireless data connections with Senior Product Review Editor, Sean Carruthers, I asked if he had included options for the Mac platform. The question was asked more out of self interest than editorial thoroughness. Since we began covering the new CDMA and GPRS networks, I'd harboured a dream of stretching out long weekends over the summer at the family's tech-free cabin (no phone, no TV, no stereo). I could stay on the island longer if I got some work done during the three ferry rides—and three ferry lineups—it takes to get to Texada Island from Vancouver. I needed to be able to check email, transfer files, and access the Web.

Sounds easy, but the hitch to all this is doing it on a Mac. As Sean details in the Test Lab, there is a full range of services and hardware offerings for Windows PCs, as well as Pocket PC- and Palm OS-based handhelds, available from national and regional carriers. Try to find a Mac connection—and one I could use with my Motorola phone, CDMA network, and G4 PowerBook running Mac OS 9.2—was a little more difficult. A Web search turned up a hodgepodge of "solutions"—each of which was unsuitable in its own way.

A phone cable/software kit for Macs, from California-based Susteen, was now a couple of years out of date so would not be compatible with new phones and networks offering the faster data transfer rates. A representative said they expect to have an updated Mac version by summer, but it would be OS X only. I found a number of do-it-yourself sites, like Ross Barkman's (www.tani-wha.org.uk), that have scripts and hacks for a range of phones from a variety of manufacturers for CDMA and

GPRS networks and Mac OS 8.6 and later. However, these really are do-it-yourself—as in figure it out yourself. There are a few comments, but no directions. I did find one option for those who don't want to tinker with scripts. A German company, Nova Media (www.novamedia.de), makes the Globetrotter, a Type II PC Card that runs on GPRS networks (a list of which includes Canadian carriers, Fido and Rogers AT&T), and has phone cable/software kits that are CDMA compatible—and both are Mac OS 9 and X friendly. The price of admission, however, is high in the case of the Globetrotter: about \$800 (before shipping). The USB cable kit is more affordable, about \$200, but in my case, did not support the phone I already have.

After failing to find the perfect solution, I thought I'd talk to the carriers themselves. First call, Microcell, whose representative, Rebecca Cately showed me the door—the backdoor, that is, to connecting my Mac to the Web wirelessly. She said there are two Mac-friendly options available through Microcell's Fido network: a phone/data cable solution, which she had tested herself, and a PC Card modem, which she was sending me to try.

The PC Card modem is the Merlin G100 from Novatel Wireless, which has published a setup guide for Macs. There is scripting involved, but it can be copied and pasted from a PDF version of the guide. After following the setup instructions, I was unable to get the card to connect to the network. After an hour or so of troubleshooting, I took a closer look at the system requirements, and noticed "G3 processor" and the disclaimer "not guaranteed to

work on all Apple computers." A trip to Tucows (www.tucows.com), however, pointed me to the GPRS Script Generator from Macron Software (www.macronsoft.com). By selecting a few presets, I was able to create a new script. Using it and Novatel's setup guide, I configured my laptop and was downloading email and surfing the Web wirelessly in under 15 minutes.

Fido doesn't provide service support for the PC Card used with a Mac, but Novatel's guide and scripting software together do take some of the challenge out of the setup. The only glitch left? Fido's footprint doesn't cover Texada Island.

Work IT debuts

This month, Canada Computer Paper Inc. launches Work IT, an online job board for technology professionals: www.CanadaComputes.com/WorkIT. CanadaComputes.com Editor, Jessica Malone, stresses that the job listings are "Canadian specific and IT specific." Job seekers can search the listing by province and by keyword. They can also post their resumés on the Web site at no charge. Resumés can then be reviewed by employers. A fee is charged to organizations advertising vacant positions. For more information on rates and contacts, see the Work IT promo in this issue.

Megan Johnston, Editor



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The Computer PAPER
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VOL. 16, NO. 4, APRIL 2003

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Access to information

This article ["Web accessibility hits the mainstream" TCP February] was excellent and I'm familiar with a few assistive tech-



nology devices that are accessible to persons' with disabilities and this equals the playing field when looking for self-employment or employment. I work at the Disability Resource Centre in Duncan, B.C. as a career counselor. This type of information is

very useful and I would like more information on computerized adaptive technology for persons with disabilities. Is there a user-friendly magazine/book that promotes good software and computer devices that you are aware of in Canada or the U.S.? This would be very useful for reference material and a good learning tool to assist clients with.

Sincerely, Mark Bhopal
Jeff Horne replies: While there are currently few, if any, magazines focused solely on accessibility, there is a wealth of information available in books. An excellent resource outlining available computer tech-

nologies for disabled users is Computer and Web Resources for People with Disabilities by Alliance for Technology Access (ISBN 0897933001). This book provides information and resource references on making use of conventional and assistive technologies including state-of-the-art computer technology. For further details on how to make your Web site accessible, a great starting point is Maximum Accessibility: Making Your Web Site More Usable for Everyone by John Slatin and Sharron Rush (ISBN: 0201774224).

CD-R capacity alive and growing

[Senior Product Review Editor, Sean Carruthers] made a little mistake when he declared that the Zip drive's 750 MB capacity exceeds that of the largest CDs by 50 MB in your March 2003 issue ["Zip drive alive and well"]. The largest CDs are not 700 MB as Sean implies, but (have been for a while) at least 800 MB, or 90 minutes. That takes away one of the Zip drive's few major selling points, I'm afraid. Keep up the good work on the rest of TCP, though. :)

Andrew Krupowicz
Sean Carruthers replies: Thanks for the note. The Zip article was actually held back from a previous issue, and unfortunately

that wasn't updated. Oops! Actually, there's already 870 MB CD-R media available, good for 99 minutes. The bad news is that anything beyond 700 MB may not be compatible with all CD burners (including some of the major brands) or component CD audio players, for that matter.

Inkjet economics

Your recent computer printer review, like others I have seen, misses a most important point: Is the printer cartridge refillable, and how many times can the cartridges be refilled before collapsing? As anyone who does significant computer printing... can attest, over the printer's lifespan, the user will pay more for ink than the original cost of the printer. And multiple refillability of cartridges is the key to economical computer printing.

Best regards, Ian Harrison
Sean Carruthers replies: Thanks for the note. The issue of refilling is a bit contentious, as you might imagine. None of the inkjet manufacturers recommends refilling your cartridges—of course they would, you might say, since they make money from cartridge sales. There are a number of key reasons why you may not want to refill your cartridges, however:

- The manufacturers have often formulated

the ink specifically to work with their paper and with their printing process; by using ink that may not be specific to that printer, your results will almost certainly be substandard when compared to the manufacturer's original cartridge.

- With new inkjet cartridges, the resolution is very fine and nozzles are microscopic. Ink that isn't specifically designed to flow through those nozzles may cause clogging or not eject properly, again resulting in substandard printing.
- You mention "collapsing" and that's one of the key problems with the issue of refilling: most cartridges aren't meant to be pried apart and refilled. Once it's open for refilling, the chances of it leaking are greatly increased, which not only poses a threat to your printed output, it could damage the printer itself. It's worth pointing out that while using a refilled cartridge in and of itself doesn't void your warranty, if a refilled cartridge is determined to be the cause of printer damage, the manufacturer has every right to not honour the warranty.

Unfortunately, for those users who are planning to print a lot of text documents, the best solution to the issue of cost per page is the same one it's been all along: switching to a monochrome laser printer. □

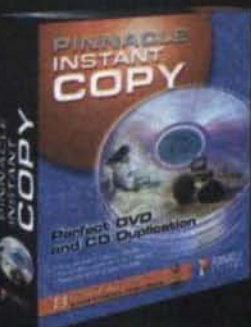
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WHAT'S NEW

By TCP Staff



and at its advertised 1 kg (2.2 lb.), isn't much heavier than a book.

The VersaLite Pad measures 29.7x1.5 cm (11.7x0.6 in.) and offers a 10.4-inch wide-angle display. It's equipped with a 933 MHz Intel Ultra-Low Voltage Mobile Pentium III Processor and 256 MB RAM, as well as 802.11a and 802.11b wireless LAN capability. Bundled software includes Alias|Wavefront Sketchbook Pro, Colligo Networks Personal Edition, Corel Graphigo, FranklinCovey TabletPlanner, and Microsoft Office XP Service Pack for Tablet PC.

For those who do have a desk, the unit comes with a USB keyboard and mouse. Pricing starts at US\$2,399, and of course that doesn't include a desk. Or even running shoes.

Office furniture manufacturers never saw it coming: new pen-based computers running Windows XP Tablet PC Edition are marketed as the perfect tool for "corridor warriors" or "grab-and-go professionals," by keeping them running rather than tied to a desk. NEC's new VersaLite Pad is the latest incarnation,

Spotlight

Print on the go

Hewlett-Packard (www.hp.com/go/mobileprinting) and Nokia (www.nokia.ca) are developing a Bluetooth printing application for Nokia's Series 60 phones, that the companies say will allow users to point, shoot, and print.

The application is still in development at HP, but the company hopes to enable users of Series 60 phones to send photos, multimedia message service (MMS) messages with images, email, short message service (SMS) messages, notepad files, contacts, and calendar items from their phones to HP Bluetooth-enabled printers.

Nokia's Series 60 phones include the 7650 and the 3650 models. Both are imaging phones that have integrated cameras and are infrared and Bluetooth-enabled. Currently, both allow the user to combine picture, text and voice clips that can be sent by MMS or email to a phone or PC; the 3650 has the added feature of video capture and playback.



Freedom Scientific (www.freedomscientific.com) and Canada's own Frontier Computing (www.frontiercomputing.com) have announced the PAC Mate handheld computer, which they claim is the "world's first and only accessible Pocket PC." The PAC Mate is designed to allow the visually impaired to interact more naturally with the Pocket PC handheld computing platform in a couple of key ways. The "display" on the PAC Mate is actually provided by speech synthesis: instead of displaying on a screen, the handheld will take what would usually appear on the screen and reads it out loud, either via the built-in speaker or through a headset.

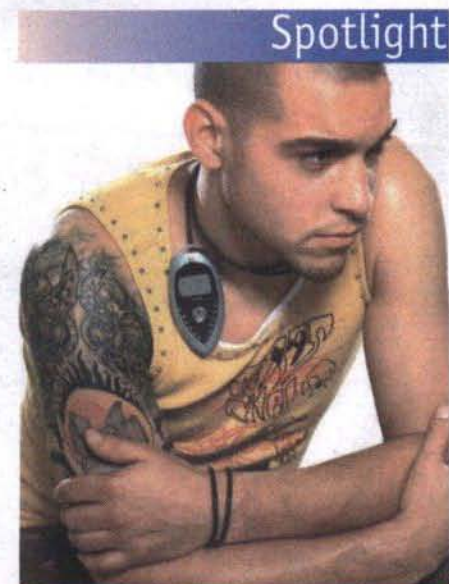
The PAC Mate does pretty much anything any other Pocket PC machine will do, including synchronizing with a PC (via serial or USB), accepting CompactFlash and even PC Card devices like memory cards and modems.

At the time of launch the PAC Mate was available with an eight-dot Braille keyboard, and a QWERTY-keyboard version was expected to follow. A version with Braille output is currently in the works, and may be available before the end of the year. Because it's so specialized, the PAC Mate comes at a premium: the units will initially cost \$3,900, and because they are so new, they may not be eligible for government assistance until they've been on the market for at least one year.

Those-who-don't-like-to-sit-still are the apple of the tech industry eye lately, with developers betting their on-the-move philosophy makes them more willing and able to pay for gadgets they can take with them. Panasonic (www.panasonic.ca) is no exception, and has introduced a new 990 g (2.2 lb.) notebook with a 10.4-inch screen and optional wireless capabilities.



The CFR1 measures up at 24x18.3 cm and a thickness of 2.35 cm at the back and 3.72 cm at the front. Its case is magnesium alloy and the hard drive is shock-dampened to protect it from drops,



Spotlight

Siemens' spring collection

With mobile phones becoming thinner and lighter every year, it seems it was only a matter of time before someone made the connection with the paragon of thinness and lightness: the fashion industry. Siemens has stepped up to the runway, announcing a new line of phones under the Xelibri brand name that will be marketed as fashion accessories through department stores and fashion retailers. The line will produce two collections per year—one for spring/summer and one for fall/winter—in the hopes that those who simply must have the latest handbag will also snap up the latest phone to drop inside, or even keep several phones to "wear" on different occasions or with different outfits.

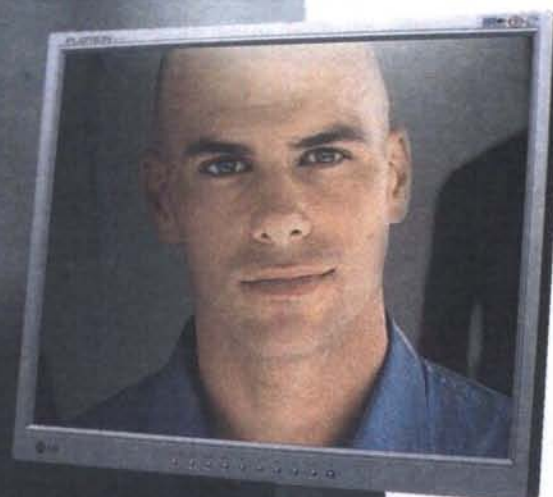
The company says the phones will come in unusual shapes and designs, and focus on fancy appearance instead of fancy functions, offering simple voice functionality. They will be available only in limited quantities and only for 12 months.

Sadly, Canada doesn't seem to be on the list of fashionable markets for these phones. The first collection will be rolled out in April in the U.K., China, Hong Kong, France, Germany, Italy, Singapore, and Spain. More markets are expected to be announced for the fall collection.

according to Panasonic. It carries an 866 MHz Intel Pentium III Processor-M and 256 MB SDRAM. With a three-year warranty, the suggested retail price is \$2,875. □

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Digital video editing for the masses!

A look at two budget editing packages for beginner directors

By Emru Townsend

I've said it in these pages before, and it's still true: with a digital video (DV) camera, a computer, and the right software, you can make a video or DVD with all the editing razzmatazz of a Hollywood production.

Pinnacle Studio 8

From: Pinnacle Systems, www.pinnaclesys.com

For: Windows 98 SE/Me/2000/XP

Street price: \$129

Ulead VideoStudio 7

From: Ulead Systems, www.ulead.com

For: Windows 98 SE/Me/2000/XP

Street price: \$135



But if you're one of the many people who doesn't need to make Hollywood productions, why pay Hollywood prices? I looked at two under-\$150 packages that claim to keep things simple.

Ulead's VideoStudio 7 and Pinnacle's Studio 8 both promise to make video editing fun, and allow you to drag and drop clips from your DV camera or hard drive onto a simple storyboard or timeline, add transition effects and audio, then output your masterpiece to your medium of choice.

The interfaces of both programs have the same basic elements, like many video editors: a preview window, an area where you can see your library of video and audio clips, and a work area at the bottom where you can see how your clips are arranged. The work area can either be in storyboard mode (your work is represented in a strip with

thumbnails of each clip in sequence) or timeline (you see the layers of your work as concurrently running video and audio tracks; each clip is a rectangular area that spans its running time).

Both programs wisely start off in storyboard mode, which is easier for beginners to understand, but make it easy to switch to and from the timeline for more advanced operations.

Both programs also sport a feature I've never been fond of: menu bars or headings that promote a certain approach to working—capture footage; edit; add effects, overlays, titles and audio; save or burn your video. This isn't uncommon in consumer-level editing

software, but I have to wonder why interface designers keep doing this when they know the software is going to (sensibly) drop users right into the editing stage when the program starts, rather than in the "first" step, capture. Besides, isn't the whole point of using editing software that you can jump around and add or change elements as you require?

Peeves notwithstanding, the interfaces were clear enough that I could get right to work. I started with VideoStudio 7, dragging the thumbnail of my original clip and dropping it onto the storyboard. Then I used the sliders on the preview window to select the exact start and end frames for the first part of my

one-minute test video—a movie trailer using footage from a two-hour AVI file. When I dropped a second thumbnail onto the storyboard, I got a surprise: the program automatically inserted a dissolve transition between the two. I soon realized that by default, VideoStudio 7 inserts a random transition effect whenever you add a new clip, no doubt in an effort to make things interesting for beginners. I cringed at the thought of one of almost 200 random transitions being inserted between each clip without any thought to aesthetics, and I immediately went into the preferences and turned this questionable feature off.

Beyond that, the experience was remarkably straightforward, and quite friendly for people new to the world of video editing. I easily built my video step by step: add a clip, trim it with the sliders, move on to the next. New clips could easily be inserted by dropping them between two thumbnails. Deleting a clip was a matter of clicking its thumbnail and pressing Delete. At every step, available options were all presented clearly to the left of the preview area.

When I was done, I had the option of creating a video file in one of six formats (with plenty of compression, streaming and resolution options), outputting to videotape or burning my masterpiece to Video CD, Super Video CD, or DVD. Like other Ulead products, the burning option provides menu creation capabilities and preview options.

VideoStudio 7 does have a few blun-
Continued on page 11



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Hercules offers easy entry to video making

By David Tanaka

The Hercules DV Action! Pro, from Montreal-based Guillemot Corp., is a tidy package of hardware and software that's complete enough to ease most budding videographers into the world of video production. The hardware components include a three-port IEEE 1394 (FireWire) PCI card and an innovative editing controller called the Shuttle Pro (made by Contour Design) that connects through the PC's USB port.



Hercules DV Action! Pro

From: Guillemot Corp., www.hercules.com
Estimated street price: \$280
Pro: Complete starter package with hardware/software, excellent value.
Con: Brief manual (26 pages) may not be enough for beginners (although online manuals also available).

Software included with the product is Ulead Media Studio Pro, Video Edition, Cool 3D (for titling), and Adorage Magic (transition effects). DV Action! Pro is good value: the full version of Media Studio Pro (albeit with more bells and whistles) sells for more than the entire

Hercules bundle, and as a separate product the Contour Shuttle Pro sells for around US\$99.

Love that Shuttle Pro

We installed the FireWire card into an empty slot on our dual-Athlon PC, and Windows 2000 recognized the card without the need for any drivers. Virtually all digital video camcorders connect to the computer through a FireWire port, so such a card is a basic necessity for video editing. (Note: If you are using an analogue format such as VHS or Hi8, you will likely need another piece of equipment called a video capture card, which takes the analogue signal from the camera and converts it to digital format.)

Just as a joystick is a specialized input device for games, the Shuttle Pro is designed specifically for video editing, with 13 buttons and a jog and shuttle dial. Nine buttons on the upper part of the device have clear keycaps, and included in the package are 144 punch-out label inserts (half are printed with words or icons, half are blank) that you can place under the keycaps to correctly identify the function that you've programmed into the key. Below those keys are a couple of dials. The outer dial is spring-loaded. You can rotate it a little less than 90 degrees both clockwise or counterclockwise, but when you let it go, it snaps back to the "zero" position. Nested within that is another dial that you can rotate freely. It's marked with 10 click-stops per revolution.

Here's how it works in action. Suppose you have a raw video segment that you want to edit into shorter clips with precise start and stop points. With the video file loaded, you rotate the outer dial clockwise to advance (counterclockwise to reverse) to the approximate spot, the further you crank the dial, the faster the video goes. As soon as you let go, the dial snaps back to the zero position and the video stops. Turning the inner dial in either direction advances or reverses the video one frame at a time, allowing you to find the exact spot you're looking for. The default setting for the top row of programmable buttons includes "mark in" and "mark out," so right out of the box, the Shuttle Pro contributes a lot to an efficient editing workflow.

Editing the Ulead way

The Shuttle Pro controls are well integrated with Ulead Media Studio Pro software. Media Studio Pro has three modules: a capture utility for bringing video from your camcorder to the computer; a video editor; and an audio editor. Also included in the package are a titling package called Cool 3D and a transition effects generator called Adorage Magic.

The basic workflow with this package is to define the project parameters according to the final format of your project (your basic choices are AVI or MPEG), capture your video segments from your DV camcorder using the FireWire connection and the capture software, edit and assemble your video, add audio and transitions

in Media Studio Pro, and then prepare and export the finished package as a DVD, Video CD, or back out to the camcorder in DV format (from which you can copy to VHS tape, for example, using the camcorder as a playback deck connected to a standard VCR).



The video editing portion of Media Studio Pro uses a timeline, along which you assemble your video clips into a movie. The main section has two video tracks (Va and Vb), with a transition track separating them. The basic method is to alternately drop your segments into Va and Vb, and insert any transition effects between them. Media Studio includes a variety of transitions, such as dissolves, wipes, etc., but the Adorage Magic effects are integrated into the effects palette, so you can use them too without leaving Media Studio. This is not the case with Cool 3D—you need to first make your titles in that application, then import

Continued on page 21

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And for the masses with Macs...

Tips and tools for making movies on the digital video-friendly platform

By Justin Siemens

When you're getting into digital video editing, be it on the Mac or Windows platform, the first thing you need to consider is your source. Any digital video camcorder on the market today that uses the miniDV standard will include a FireWire port (also known as iLink or IEEE 1394). If you're using a Mac you do need to beware of some new video cameras, mostly by Sony, that use a microMV format. It's not true DV and thus will not work at all on the Mac, but the cameras look so similar it's a good idea to check the packaging for the miniDV logo before purchasing.

In conjunction with a miniDV camcorder, any Mac currently available or sold in the last two years will include built-in FireWire, so if you're dealing with camcorders and computers made in the last couple of years, there should

be no problems. If you have an older G3 or G4 upgraded Mac, the easiest solution is simply to add a FireWire card, which requires just one free PCI slot and can be purchased for around \$100.

If you have an iMac without FireWire there's really no alternative but to upgrade to a newer model, which works out OK since a non-FireWire iMac has neither the CPU speed nor the hard disk space for video editing. It's worth noting that even Macs with built-in FireWire, such as the iMac DV, may find working with digital video to be very slow. Adding RAM and a fast 7,200 rpm hard disk will help, but you really need a G4 processor to get decent speed in most editing software.

If you have an older camera, say a High8 or Compact VHS model, there are now products available to import that footage into your digital video system. Perhaps the most popular is the Formac (www.formac.com) Studio DV, essentially an



analogue video-to-FireWire bridge. It works seamlessly with iMovie and Final Cut Express, although the camera can't

be controlled from the Mac when going through the bridge.

Continued on page 22

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Digital video editing for the masses!*Continued from page 12*

ders. The transitions are grouped into different categories, but try selecting the right one when all of them are demonstrated simultaneously; I was squinting so hard it felt like I was trying to read the lettering on a light bulb that was turned on. And once a transition is selected an icon is placed in the storyboard—but the icons can be ambiguous, and there's no way to see the transition name unless you switch to the timeline view and zoom in. Finally, one outright bug: VideoStudio 7 kept losing mark-in and mark-out points on some clips, which meant I wasted time repeatedly double-checking them.

Before I talk about Studio 8, I should mention at the outset that I liked it overall. Really, I did. We just got off on the wrong foot when it came to importing video files, starting with scene detection.

If you're unfamiliar with the term, scene detection is a fairly standard feature that breaks up a large video clip into many smaller fragments by looking at where the image changes suddenly—that is, where a cut most likely implies a scene change. Of course, this adds some extra time when you're loading a clip from the hard drive, depending on the length of the clip.

Did I mention that my original video file was two hours long? How about the many quick cuts in my test footage,

which resulted in over 600 individual scenes, each one inexplicably without a thumbnail? (To be fair, subsequent tests with other video files did generate thumbnails properly.) And why oh why does Studio 8 import every video file in a selected directory, obliterating any other imported files from the album?

Once I got past that, I was able to enjoy much of everything else Studio 8 had to offer. I was happy to discover I could rename individual scenes with more memorable titles. "Bedside conversation" works much better than "Scene 24," when you think about it.

Studio 8's storyboard/timeline area takes up about half the screen, which gives the timeline plenty of breathing room but gives the storyboard far too much room on more modest projects. Otherwise, space is used fairly well; the section that displays your libraries of clips (albums, in Studio 8 parlance) is tabbed so you can flip between video, audio, still images and functions like titling and transitions. When you decide to edit the audio or video of a clip, a control panel pops up, obscuring the now-unnecessary album area and leaving the preview screen available so you can see what you're doing.

(I should mention that, in addition to the storyboard and timeline, there's a third mode: the edit list. This is a text listing of where each cut starts and stops,

along with notes detailing transitions and changes to video or audio. It's too bad you can't print the edit list; it would make a nice backup tool.)

Studio 8's audio tools do far better than VideoStudio 7's in some areas, but stumble in others. In VideoStudio 7, you can adjust the volume of each clip's original soundtrack independently, but the audio stays constant for each clip, aside from automatic fades at the beginning or end. Studio 8 provides control of the audio at any point in the soundtrack, even across several clips, through the timeline. However, the audio portion of the timeline is so small that fine control of volume levels is nearly impossible. Also, there's no one-click option for muting a selected clip.

In the end, I put together a video that was almost identical to the one I created in VideoStudio 7, and was again given plenty of options for creating a video file, going straight to video, or burning a disc. (In case you're wondering, the only format absent from Studio 8 but present in VideoStudio 7 is QuickTime.)

For all intents and purposes, the final product from both programs was virtually identical, which makes deciding on a favourite all the harder. Studio 8 provided more options without significantly increasing complexity, but overall I felt more frustrated working with it than VideoStudio 7—with an important

caveat about speed.

I have to admit that my test computer, a 733 MHz Pentium III Windows XP system with 768 MB of RAM, is underpowered by current standards, but it's proven to be quite reliable and a reasonable performer for all kinds of video editing projects. I also considered it to be a realistic test system based on unscientific polling of other home computer owners who seem to be the target audience for this kind of editing software. As a result, I was taken aback by the difference in minimum CPU requirements: VideoStudio 7 requires an 800 MHz Pentium III, whereas Studio 8 is happy with 500 MHz.

When working with a large video file—I did mention mine was two hours long, right?—VideoStudio 7's delays were unbearably long. I experienced a few pauses in finding frames and previewing on Studio 8, but the wait was much shorter. Both packages cheerfully proclaim that they take advantage of the Pentium 4, though only VideoStudio 7 explicitly mentions hyperthreading and dual processors, and offers a real-time preview system if your processor is beefy enough. But if you're one of the many people who have decided not to bother upgrading in the last year or two, you may want to lean toward Studio 8. □
Emru Townsend (emru@pobox.com) ought to be in pictures. Really.

Hercules offers easy entry*Continued from page 14*

them into Media Studio Pro.

We found it very easy to get into the basic workflow, and the timeline provides a visual gauge of how the shots are coming together. The software will handle additional video tracks (up to 99), which you can use for titles or other visual

effects. Likewise, the audio portion is divided into Aa and Ab, but you can use up to 99 separate audio tracks.

The audio editor is a separate application, but it is quite easy to use and has a decent number of features. We brought in a couple of music cuts from a record album (yes the old-fashioned vinyl format) and were able to clean up the tracks

by applying a noise filter (not as good as a true scratch-and-pop filter designed specifically for cleaning up old vinyl), and a "normalize" filter that maximizes the loudest sound then expands the other levels proportionally. You can save your WAV file at 32 kHz, 44.1 kHz (CD standard), or 48 kHz (DV standard) sampling, in either mono or stereo. You can magnify the visu-

al representation of the audio track, which makes it easier to mark precise points in the track.

Once you have your final creation, you can save it in DVD format on your hard drive and view it if you have DVD viewing software, or package it for recording to DVD or Video CD media, or record it back to your camcorder in DV format. □

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And for the masses with Macs...

Continued from page 18

The Studio DV includes both standard composite video and S-video inputs, so you simply feed your camera into the Studio DV and it feeds the video into your Mac as if it were DV footage.

The resulting image will be a perfect digital copy of your analogue film, which is to say that while the Studio DV does not add any artefacts to the image, the quality will be limited to the quality of your source tape. It's also a great way to take old home movies off VHS and back them up to your computer to create VCD or DVD copies.

Once you have the camcorder interfacing with your computer you need to get the video into a program where it can be manipulated. At this point you'd likely be using iMovie 3 or Final Cut Express. iMovie 3 is free for Mac OS X 10.2 users, and Final Cut Express also runs only under OS X 10.2, but it costs \$449.

We were hoping to have a review of Final Cut Express for this issue, but we were not able to get a review copy in time. Look for it in an upcoming issue.

What is the difference between iMovie and Final Cut Express? Basically, everything. Final Cut Express is actually Final Cut Pro with the High Definition support and Batch Capture mode removed. There are a few other changes like the removal of the offline RT format but otherwise Final Cut Express is Final Cut Pro 3 for about \$1,100 less.

The Final Cut interface is much more daunting to first time editors, although those who have used Avid systems will feel right at home. Final Cut Express features some nice improvements over iMovie, such as real-time transitions and effects, real-time colour correction, and unlimited layers of video with built-in blue screening capability.

If you're interested in video editing and want to get serious about it, Final Cut Express is a good step up from iMovie without having to shell out \$1,550 for full, professional package. As long as you're working exclusively with DV footage, there's no need to step up to the full Final Cut Pro suite. A full list of the differences between Final Cut Express and Final Cut Pro, is available at www.apple.com/finalcut/.

iMovie 3 overview

iMovie was one of the first programs on

Continued on page 25

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And for the masses with Macs...

Continued from page 22

any platform to bring digital video editing to the home user. The advantage of making a program that works only with DV video is that no extra hardware is required other than a Mac with a built-in FireWire port.

Before iMovie, video editing required much more expensive software, with hardware capture cards to do compression and effects. iMovie allowed home users to take hours of DV tape and use their creativity to turn them into something more interesting. Although Apple has added many features along the way, iMovie is still very much focused on the home user.

Key improvements in the latest version are a new batch of video effects, the ability to change audio levels in the timeline, and a revised user interface. When iMovie was first released it was available only with the purchase of a new iMac, then for a short time it became available for US\$50 as a download from Apple's Web site, and with the release of Mac OS X, iMovie 2 became free bundled with the operating system (along with iTunes and eventually iPhoto).

iMovie 3 is still free as a download, but if you want a boxed copy it's also available in the iLife suite, which retails for \$79. Even at \$79, iMovie 3 represents great value to the home user or casual video editor. It's been on the market for several years but remains one of the best video editing suites in the consumer space, and the new features take it up another notch.

Also, if you're lucky enough to have a DVD burner in your Mac, you'll appreciate the integration between iMovie 3 and iDVD 3, another program that is included in the iLife suite.

The most striking feature when you launch iMovie 3 for the first time is that the interface no longer takes over your entire screen. This is a huge improvement. As screen sizes continue to increase, there is really no need to have the iMovie interface fill a 17-inch or 20-inch monitor. Apple has also simplified the interface, redesigning all the icons and removing a lot of clutter. Overall it manages to look a lot cleaner than previous versions, while simultaneously packing a lot more power.

This new version of iMovie is completely integrated with the rest of the iApps so you can take your video from

the camcorder, splice in stills from iPhoto and overlay a soundtrack of your favourite music straight out of iTunes, all without leaving iMovie. The integration is great because it makes it much easier to bring all your music and media together, plus the integration with iPhoto is simply amazing.

iPhoto integration is achieved through a new iMovie 3 effect called the Ken Burns Effect—an homage to the famous American documentarian. It allows you to pan and zoom around a still image as if you are controlling a virtual camera hovering above the image. The finished result looks very slick, and the quality is almost on par with what you would find in a professionally edited documentary. For example, say you have video footage from a vacation, but you also have stills from a digital camera. You can use the Ken Burns effect to intersplice the video with motion renders of your images all perfectly synced up with your soundtrack.

Other new features include some impressive rain and lightning effects, as well as at least a dozen other new or improved effects. iMovie also allows you to access all the standard transitions that are built into QuickTime 6, giving you access to cross dissolves, fades, and washes between clips.

The revised timeline in iMovie 3 now allows you to edit your audio levels in real time, a much requested feature that migrated from Final Cut. Simply check the audio level toggle and a line appears through your entire movie on the timeline representing the default volume level. By clicking at any point on the line you can raise or lower the volume in any segment, and the change in volume can be as gradual as you wish.

Once you have completed a project in iMovie, you have several exporting options. Your first option is to push the video back out through the FireWire port, allowing you to put it back onto a DV tape, or a regular VHS tape if you're using a digital video bridge. You can also send the video over to iDVD if you have a SuperDrive-equipped Mac, in which case it will automatically create menus and chapter stops if your project contains them. Finally, you can choose to save the project as in QuickTime format, which gives you a choice of any QuickTime codec on your system. The standard options will allow you to save out a movie that's suitable for the Web

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< DIGITAL VIDEO >

QuickTime apps expand digital video format, delivery options

Both LiveStage Pro (www.totallyhip.com) and eZedia QTI (www.ezedia.com) are QuickTime authoring environments, which means they can be used to create multimedia projects using any file type QuickTime supports. You can use these programs to create kiosk software, Web content, CD-ROM multimedia, or any other combination of video and graphics.

The eZedia QTI product is geared mostly toward Web content. When you save a project out of eZedia QTI it includes all the HTML files and resource files that go with it. This makes it extremely easy to post on the Web without additional coding, you can simply drop the QTI generated HTML code into an existing page and it will work seamlessly.

When we last looked at an eZedia product it was eZedia MX 3.0, which is closer to LiveStage Pro in functionality, but which had no Web export functions, a big turn off for a multimedia authoring tool these days. EZedia QTI does the Web export functions with aplomb, but it doesn't have all the authoring options that eZedia MX does for non-Web content. It seems eZedia has decided to create two separate programs, one for Web content (QTI) and one for everything else (MX). The only downside to this strategy is that a customer wanting the most flexibility with their projects would need both programs.

LiveStage Pro 4 is capable of both Web and standalone development in one package, although it's considerably higher end than the eZedia products (the former is US\$900, while the latter is \$99 for QTI and \$169 for MX). LiveStage is definitely aimed at the DreamWeaver or Director crowd, while eZedia QTI is easy enough to be used for home projects, a perfect companion to iMovie 3.

More than merely a difference in price, the LiveStage Pro interface is significantly more complex to master than the eZedia QTI layout. In fairness, the eZedia product is aimed at home and education use, while LiveStage is for full-fledged design use, think of LiveStage Pro as the QuarkXPress of multimedia.

LiveStage Pro 4 has undergone significant changes in the interface from the previous version, one of the most important modifications being the integration of the object stage and timeline into one

window making it easier to track both at once. It also features full support for QuickTime 6, with all the new features that entails, including MPEG-4 and Flash 5 support.

The timeline interface in LiveStage Pro works very much like iMovie or Final Cut Pro. You can set in and out points in your media that can be linked to different actions or buttons. The program includes dozens of standard actions, and you can also write your own code using Qscript or AppleScript.

EZedia QTI works with any format that QuickTime will work with, which in QuickTime 6 includes Flash 5 and MPEG-4. The output format in eZedia QTI is a combination of QuickTime media and HTML, which means that it's both Windows and Mac compatible in any Web browser that can play QuickTime files. In the eZedia MX product there is a special eZedia player that needs to be installed before the project can be played. This makes eZedia QTI great for Web banners, animated navigation, and streaming video, but it lacks some of the complexity that the eZedia player allowed.

Still, if you have a home movie that you want to put on your Web page, eZedia QTI will allow you to design a custom skin around your movie and add additional controls and buttons that can link to other pictures sounds and text. EZedia QTI is available for both Mac and Windows and retails for \$99.

Also of interest to iMovie users are a series of eZedia plug-in effects for iMovie, including a recent addition, eZedia Motion for iMovie. It lets you overlay up to 10 layers of graphics and text over your DV footage, allowing users to create elaborate animated sequences in existing iMovie projects.

LiveStage Professional 4.0

LiveStage Pro has undergone a few changes since we last look at version 3.0 back in 2002. The core functionality is the same, but improvements have been made to both the interface and the scripting capabilities.

One feature that will be a definite time saver is the new built-in FastTracks. It consists of shortcuts for the most popular types of presentations. There are

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Microsoft beefs up free audio, video editing tools

"Whoever controls the media—the images—controls the culture."

—Allen Ginsberg

By Emru Townsend

I'm always wary when Microsoft comes late to a party. Just look at what happened with Netscape. Microsoft released Internet Explorer so hurriedly it looked like a cake that had been rushed out of the oven 10 minutes early—and it was about as appealing.

Windows Media Player 9

Version reviewed: Release Candidate 1
From: Microsoft, www.microsoft.com
Price: Free

Movie Maker 2

Version reviewed: Beta
From: Microsoft, www.microsoft.com
Price: Free

But time, persistence, and convenient bundling with the dominant operating

system gave the company the space it needed to release a browser that was, for a time, the best one around, and that was all the foothold Microsoft needed.

The same thing could be said of Windows Media Player. Microsoft seemed to be looking the other way when the MP3 revolution hit, but as Windows Media Player gradually picked up some features here and some polish there, you could see that the folks at Real and Apple were going to have their work cut out for them.

Did I say "were?" I meant "are." I tried the first release candidate of the Windows XP version of the awkwardly named Windows Media Player 9 Series (the final version of which has now been released), and I have to be honest: it made me weak in the knees.

In gearing up for its push into the living room with Windows XP Media Center Edition release, Microsoft no doubt realized that its fates rested on early adopters and media junkies, two overlapping groups who are notoriously

picky. Microsoft's solution was to do what it does best: layer on the features. (Or at least, layer them on for XP users; the Windows Media Player 9 Series supports older versions of the OS back to Windows 98, but the best features are largely reserved for Windows XP.)

Audiophiles come out the big winners with this release. I've always felt that the Windows Media family's big advantage was the Windows Media Audio (WMA) codec, which gets better-sounding audio at lower bit rates than MP3. The new Windows Media 9 (WM9) codec squeezes even better sound out of smaller files, and provides options for variable bit rate (VBR) encoding and a lossless compressed format.

I encoded a track from the *Gladiator* soundtrack in all these formats, as well as at 64Kbps in WM8 as an uncompressed WAV file. Using earphones on my digital audio player, I listened to the 64Kbps files and the VBR file (which came out to 84Kbps) in random order. Although the differences between the WM8 and WM9

files were subtle, I was able to figure out which file was which fairly easily. The lossless file came in at 933Kbps and almost exactly two-thirds the size of the WAV—but it wouldn't play on my player.

Unfortunately, I didn't have time to test the lossless WM9 file on a Panasonic RV-3x series DVD player, which handles WMA files; I'd like to know if it would have worked. Other encoding features include 5.1 and 7.1 surround-sound, 24-bit sampling, and 96 kHz sampling rates.

For those fond of making playlists or mixed CDs from various sources, there's also a very welcome volume-levelling feature, which keeps selected tracks within a certain dynamic range—without altering the original sound files. Another similar feature, called Quiet Mode, reduces dynamic range so listening to music late at night or through headphones won't cause any unpleasant surprises. Both functions only work with WM9 files, which can currently only be

Continued on page 38

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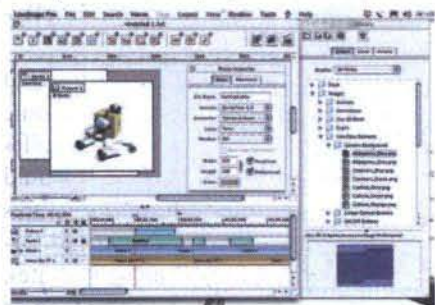
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QuickTime apps expand digital video...

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FastTracks included for different media controllers and skins, which means if all you want to do is add a movie to your site using a custom controller, you can use the FastTrack rather than spend the time creating all the item properties from scratch.



Also new in version 4.0 is full support for AppleScript under OS X, a feature not available in the Windows version. Using AppleScript, designers can record a set of commonly performed actions and save them as a script without having to write any code. The recorded scripts can then be saved and run in the future to simplify large projects.

Also, because LiveStage Pro is designed with CD-ROM export in mind it supports a new QuickStart function. When you export a project to CD, the QuickStart engine will automatically be included in the CD. QuickStart is a standard QuickTime launcher that will check to see if the user has the required QuickTime player and components and if not install them before running the presentation. This can all be set to happen automatically the first time the end user loads the CD in their computer. LiveStage Pro 4.0 costs \$900. An upgrade for users running LiveStage 3.0 is \$250. □

And for the masses with Macs...

Continued from page 25

or you can customize your own settings of bitrate and codec to meet your needs.

This QuickTime export function is extensible so that if you have, for example, Toast 5 Titanium, you will have an option called Toast Video CD export, which allows you to save the project out in MPEG-1 format. This MPEG-1 movie file can then be burnt in Toast to create a VCD that will play in almost any set top DVD player, a perfect option for those without a SuperDrive. Of course once you have your footage edited and saved out in QuickTime format you can use it in all sorts of other projects using software such as eZedia QTI, eZedia MX, or Live Stage Pro. □

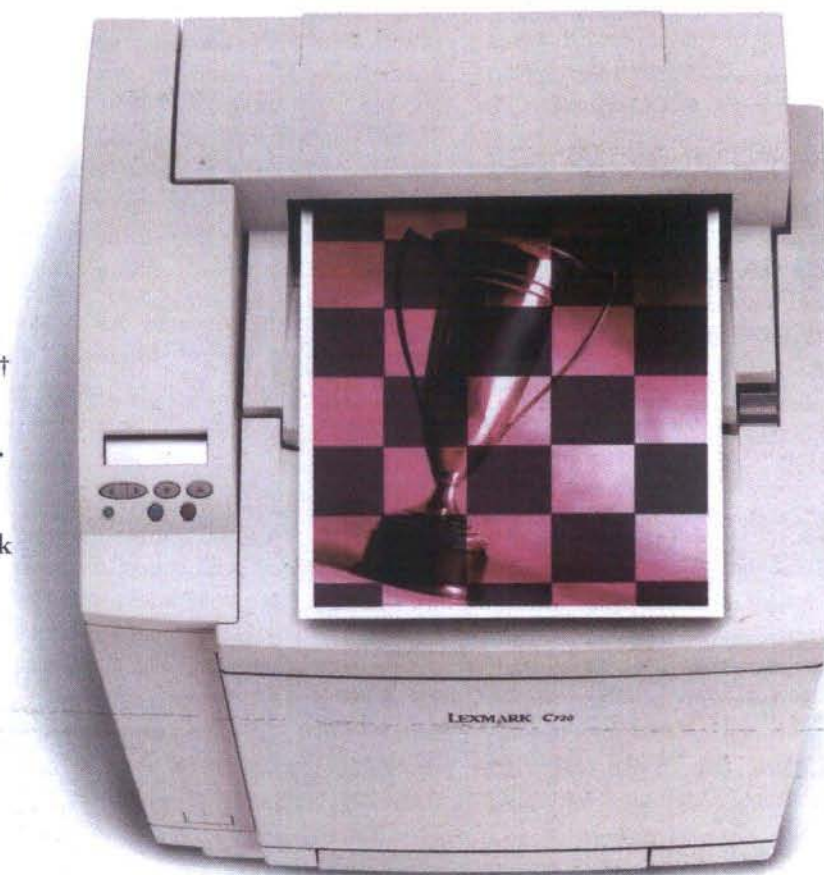
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LEXMARK

Still/video camera hybrid a workable compromise

By David Tanaka

Digital still cameras can be used to capture video clips in a limited way, and camcorders can take still photos in a limited way. With the FinePix M603, Fujifilm is attempting to bridge that gap by offering no-compromise stills and movies. Our overall assessment is that the M603 is a very nifty product, and takes the hybrid concept to another level. It is still a compromise solution; however, it's a compromise that many could probably live with.

This camera uses a 3.2-megapixel SuperCCD sensor that will create six-megapixel still images and VGA-resolution (640x480 pixels) motion video at 30 frames per second. The amount of video is limited only by the size of your storage card. The camera supports two types of media: xD Picture cards; and Type I or II CompactFlash cards, including 1 GB microdrives. Using a 1 GB microdrive, you would be able to record about 15 minutes (including audio) of video at the highest frame rate.

Ergonomics

At 6.5x9.3x3.2 cm (2.5x3.7x1.2 in.) and weighing 240 g (8.5 oz.), the M603 is pocket-camera sized, which makes it positively tiny as a camcorder. It has an upright orientation (taller than wide), with plastic bumps on the front and a contoured thumb grip on the back that allow a reasonably secure grasp with just

one hand. Indeed, the whole thing seems to be designed for single-handed operation: the shutter and zoom controls can be activated by your index finger as you grasp the body between your middle finger and thumb. While this may not result in the best still photos, the design lends itself to one-handed camcorder mode.

The unit has no optical viewfinder, but a large portion of the back is devoted to a big and bright LCD viewscreen. An included flip-out screen shade can be attached to make the screen more viewable in bright light—a very nice touch. Also included is a pistol grip that screws into the tripod socket.

The 2X optical zoom lens is balanced to give some wide angle and some telephoto coverage (equivalent to 38 mm to 76 mm in 35 mm film camera terms). The camera also has a 4.4X digital zooming, which maintains good quality for video.

As a still camera

The still image quality is typical of what you would expect from a good-quality three-megapixel camera, easily making 8x10-inch prints on an inkjet printer. Most three-megapixel digital cameras come with at least a 3X optical zoom, so the 2X zoom on the M603 is less versatile. As well, it is primarily a point-and-shoot camera, with a limited manual mode that allows you to adjust exposure compensation, sensitivity (ISO), and white balance. In auto or manual mode you can also select from several image quality options,



FinePix M603
From: Fujifilm, www.fujifilm.ca
Street price: \$1,000
Pro: Good digital still and digital video output. Tiny proportions make it easy to carry everywhere.
Con: Storage costs for video are very high and limited to about 15 minutes with current technology.

and there are dedicated buttons for flash and close-up mode.

As a camcorder

The image and the audio are both quite decent. The camera's small size and weight means it is easy to jostle during shooting, however. The camera has an AV-out jack, and the consensus amongst the product editors was that the playback on a TV set was at least VHS quality. We could see it as being a quite satisfactory way to look at vacation videos or other family events. The camera saves video files in

Motion JPEG format, and we found it pretty easy to move the files onto the PC's hard drive, and edit and assemble them into a movie using Ulead video editing software. The camera supports limited in-camera editing, where you can specify the start and end points of a video clip to within one second. The edited clip is saved as a new movie and the original is preserved.

The M603 is a hybrid product that does both stills and video quite well. The still camera, while not best of breed amongst three-megapixel units, is a very respectable point-and-shoot camera. The camcorder is harder to assess because there isn't much to compare it to. It isn't as good as a DV camcorder, but better than what we've been used to getting as video capability on a still camera.

Storage is a limiting factor, both for capacity and cost: a 1 GB microdrive (which would be good for about 15 minutes of video at the highest quality) still costs \$600. Add that to the \$1,000 price tag of the camera and it's a serious chunk of change for most people.

In terms of value, you could probably buy a comparable three-megapixel camera and a better camcorder for the same or less money. Or you might even be able to dispense with the still camera altogether, since the still photo capabilities of camcorders have improved too. But try sticking any of those alternatives in a pocket or purse without making a big bulge! □

A handbook for doing video like a pro



Real World Digital Video
Authors: Pete Shaner, Gerald E. Jones
Publisher: Peachpit Press
ISBN 0-321-12729-3
Softcover 2002 434 pages
Price: \$77.99

If you're interested in making professional (i.e., commercial) video productions, you'll find that *Real World Digital Video* contains a lot of good, basic information along with a ton of useful tips. Lead author, Pete Shaner, is a writer-director who also teaches movie production in California. The book is sprinkled with little hints and insights that sound like they are from people who've actually

gone through a few productions, so reading this book is somewhat like listening to insiders talk broadly about the subject.

Given that it tries to cover the entire field of video production in fewer than 500 pages (and an included DVD with video examples), it is necessarily encyclopedic in its approach. A separate book or books could be written on each of the subjects covered in its dozen chapters. But as guidance to the beginning videographer on what's important to know—or as a reminder to the more experienced of what not to forget—this is a useful volume.

That the book is aimed at commercial (or corporate) production is evident early on. In Chapter 2, for example, the authors

talk about professional and consumer camcorders, but what they use as an example of the "consumer" camera is the \$7,000 Canon XL1. Right away, you can see where their level of discussion is set.

Their distinction is an important technical one: a camcorder can be called "professional" if it meets TV broadcasting specifications (they say why the XL1 does not). But that's not to say that the XL1 can't be used for commercial video production, and this illustrates an important theme running throughout the book: the type of video you want to create will influence your choices in equipment, as well as technique.

Each chapter covers one aspect of video production, and the book is logically

arranged to roughly match the stages one would go through in an actual project. Information about equipment is in the front, pre-production and production issues are in the middle, and post production and distribution are covered at the end. Chapter 7, Preproduction, is geared to the business aspects of video production. It covers topics such as hiring and salary requirements for a shooting crew, equipment rental, casting, production scheduling, and overall budgeting.

The overall lesson I took from the book is that equipment is important, but planning, technique, and execution are crucial. If you want to go pro, this book will be a useful guide.

—David Tanaka

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< DIGITAL VIDEO >

Streaming soon to a TV near you: video on demand

By Geof Wheelwright

Video on demand (VoD) has been the "holy grail" on the home entertainment industry for more than a decade. Ever since cable TV companies started pumping movies into people's homes in large numbers through specialist movie channels, the threatened next step was always to allow people to have an alternative to the video store through VoD.

Instead, what most people got was PPV (pay per view)—a service that offers scheduled viewing of a variety of movies, but not one that replicates the experiences of watching a video or DVD. Well, Shaw Cable is finally changing all of that with a true VoD service that allows you to order movies from a Web site using your cable modem-connected PC and then watch them on your TV using your digital set-top box.

The system is currently being pilot-tested in Vancouver and Calgary—and I was one of the lucky people to be selected to test the system. It's only been two weeks, but I already have a pretty good idea about its strengths and weaknesses.

The strength of this solution is that it does mean you can get access to recently released movies—when and how you want them—and be able to control your viewing of those movies (with fast forward, rewind, and pause capabilities) from your PC or your remote control without having to go to the video store.

Within the pilot test Web site, you can select video from four different categories: Movies, TV Series, Adult, and Music Videos. The categories look to be works in progress, but each—in turn—is broken down into sub-categories called Genres. If you look in the Genres section of the Movies category, for example, you see the categorization you'd typically find in the aisles of your local video store (comedy, horror, romance, etc.).

The TV Series category, at least at the moment, consists largely of cartoons—although it is clear from the listed Genres that Shaw intends a lot more to

be available within this section.

The Adult section, however, is fully featured and offers no scarcity of content. It offers lots of warnings against young kids going into this section of the site (Warning: All Adult movies on Shaw On Demand are rated Adult (A). Adult movies contain scenes of explicit sexuality, nudity and coarse language and are intended for adult audiences only). Yet, any child who knows your Shaw On Demand password and ID could pretty easily find his or her way into the adult area.

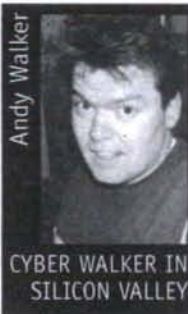
If you have young children—or just want to ensure that no one starts displaying pornographic movies on the family TV set—you should probably log onto the secure Web site that Shaw offers for managing the viewing of content. This is a good idea because if someone in your house rented an adult movie, it stays rented for 24 hours. In addition, it appears on the list of video "orders" throughout that time and can be viewed and reviewed by anyone who logs onto the Shaw On Demand Web page in your house.

To put the system to the test, I used Shaw On Demand to order an adult movie (something that called itself *A Witch's Tail*), allowed it to play for a couple of minutes and then tried to cancel it. It stayed on the Order list until 4 p.m. the next day. Even after pressing Cancel, it was still there—with an option to resume viewing at any point.

For many, this whole discussion will be moot. The only reason I mention it is that since the control of *what* you watch with Shaw on Demand is via your computer—and the display of the content happens on your TV—a mischievous member of your family could play havoc with an evenings' entertainment. If you were innocently watching a Disney movie with your younger children, for example, and an older member of the family decided it would be fun to shock you, they could pick and order an adult movie (if you hadn't used the secure site to block such orders), then have it displayed immediately on the TV!

Continued on page 34

Displaying the future



Andy Walker
CYBER WALKER IN SILICON VALLEY

You've seen CB radios give way to cellular phones. You've banished your Betamax to the cottage and have similar plans for your VHS videocassette recorder because DVD is the future. Now prepare to dig a hole for your CRT—that's cathode ray tube, the porky computer monitor that graces your desktop today—because flat-panel LCDs (liquid crystal displays) are the future, at least in the near term.

These flat screens have dropped below the \$1,000 threshold in the last two years and now you can get a 15-inch LCD for under \$500. By 2008, the monitors will drop below \$300.

"This is the visual decade. This is when it will all happen. It was always predicted but never really happened.



The display will finally cross the digital chasm," Marc McConnaughey, senior vice-president of advanced technologies at ViewSonic, told me earlier this year as I was researching a book about future

technologies.

McConnaughey believes LCD monitors will start to outsell CRT monitors in 2004. The standard LCD monitor today is 15 inches, measured horizontally.

However, they are going to get much bigger. "We believe the desktop LCD monitor will go to 30 inches. It will also get wider and will be built in a 16x19 format," predicted McConnaughey.

That will allow you to truly multi-task. "It will be crisp and bright and will look almost like a magazine," he said. "I also believe you will be able to flip through on-screen contents like you do in a book. So the user interface will change to accommodate that."

Displays will also be multi-purpose. They won't just connect to your PC, they will act as a TV screen as well as a display for your personal computer or any device that needs to display content in a large format.

Resolution will also go up. "You will be able to display what you capture," said McConnaughey.

That's not the case today. For example, images have to be reduced in size and quality to be displayed on a monitor.

Continued on page 35

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Streaming soon to a TV near you

Continued from page 32

OK, enough of the dire warnings. The quality of the digital content was pretty good, although on our pilot system we did see a little of the "blocky" blurring of scenes that sometimes happens when a digital signal is delayed on a digital set-top box.

We watched several entertaining first run movies including Austin Powers: Goldmember, The Importance of Being

Earnest, and Men with Brooms.

This was an admittedly eclectic mix of movies, which is largely due to the fact that Shaw is still securing agreements with a number of major movie distributors and until that happens the content offered via Shaw On Demand will be limited.

As for pricing, Shaw is offering the system to pilot users for free for 30 days—with the promise that final pricing will start at around \$1.99 per video

and will generally aim to be a dollar or two cheaper than the rental cost of the same movie at the video store.

If I had any real gripes, it would be that the system requires you to use your computer to order movies. I know that the plan is eventually to offer the service directly via the digital set-top box. But for now, you have to sit in front of the computer to order the movies, then go over to the TV to watch them. When we initially installed the system, I had the

computer in the basement and the TV upstairs—which was good exercise, but a little silly in terms of watching VoD.

Overall, however, I think this is the way of the future: no late charges, no wasting gas driving to the video store, and no going there and finding that all the copies of the movies you want are unavailable.

It just makes a great deal of sense and I'll be very interested in the service when it's fully up and running. □

Infonec Computers advertisement featuring four computer configurations (Office 304, Supreme 304, Home 304, Xtreme 304) and various accessories like motherboards, hard drives, video cards, multi-media, monitors, printers, CPU & RAM, controllers, modems, speakers, scanners, and UPS. Includes contact information for Markham and Mississauga locations.

Displaying the future

Continued from page 33

That's why an image printed on paper and the same image on a screen are different sizes. Between 2006 and 2008, screens will start to have near film resolution.

The other display technology that will appear in the next five years is called OLED or Organic Light Emitting Device. OLEDs use a carbon-based material similar in chemical composition to dyes used to colour fabric. While LCDs contain a liquid, OLED displays are more like a film, similar to the coating on a car's windscreen.

OLED displays are also very thin. They are about 1/10,000th the thickness of a human hair. When electricity is applied to this substance it expands, then as it relaxes, it emits light.

When LCD screens are touched they distort because of the liquid inside them. However, OLED displays are harder and don't distort when you put your fingers on them. They are also less susceptible to breakage, so manufacturers will eventually be able to create flexible displays.

In future, it will be very simple to create a rollout display. This will be useful for handheld devices. Imagine a device that is similar to a cigar tube with a screen that rolls in and out like a blind.

"We're working with Sony to develop OLED Trinitron," said Janice Mahon, vice-president of technology commercialization at Universal Display Corp. "OLED will offer visual performance of a very high-end Trinitron screen in a flat package."

Sony has already created a 13-inch diagonal OLED display, while Samsung has developed a 15-inch diagonal OLED screen.

Don't get out your credit card yet, however. OLED displays won't likely be a retail item until 2004, the experts say.

Beyond desktops, OLED screens are highly scalable. It's foreseeable that one day we could see the displays that cover a wall.

Once manufacturers find a way to use plastic as a backplane for these displays it's feasible that they could be rolled on like wallpaper. In fact don't be surprised if, one day in the near future, you see a tractor trailer trundle down the highway with a massive OLED display on its side.

Then there's the idea of paper-like displays.

Continued on page 36

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Displaying the future
Continued from page 35

Paper is one of the best data display mediums in the world. It's crisp, has great contrast, and good resolution. So why not make screens out of paper? Well, surprise! People are, however the technology won't be used for computer monitors. These will be displays on gadgets.

Two companies are leading the development of this technology. E Ink Corp. came out of the Massachusetts Institute

of Technology (MIT). Gyricon Media is a Xerox spin-off.

The idea is to use paper or plastic to create a screen that is cheap to manufacture. These companies have found a way to put tiny microcapsules on a sheet. At a microscopic level, they look like tiny translucent ping pong balls. Inside these are even smaller balls. E Ink floats or sinks black or white balls in the microcapsule. When the black balls float a tiny pixel appears on the page. When the white balls float the area of the page

looks blank.

Gyricon's technique is to use a single ball painted black on one side and white on the other. When the black side is rotated up, it appears as a pixel on the page.

The balls are manipulated by running an electronic charge through the page. Both companies see the potential to put a control circuit on the sheet that can be applied using a silk screening technique, not dissimilar to the way custom-printed T-shirts are made.

The downside to the technology is that the display cannot be refreshed at the same rate as CRTs, LCDs or OLEDs. However, electronic paper technology can be used as low cost displays in gadgets and as retail signage.

"We will soon be creating high resolution displays for electronic books, and other kinds of portable information devices including handhelds and cellular phones," said Russ Wilcox, E Ink's vice-president and general manager.

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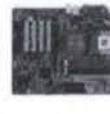
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Microsoft beefs up free audio, video

Continued from page 28

created by encoding through Windows Media Player—the free Microsoft encoding utility isn't available yet.

A few other features are worth noting, as well. Windows Media Player can now play Video CDs as well as DVDs; there's a handy new "mini Toolbar" mode that shrinks the player and squeezes it into the taskbar; and, keeping an eye to the future, support is built in for services like pressplay and video on demand.

I'm pretty sure my RealOne player is getting nervous.

**"Don't hate the media...
become the media!"**

—Jello Biafra

Another Microsoft media product being overhauled is Movie Maker, which comes installed with Windows XP. The first release of Movie Maker was justly seen as an anemic response to Apple's popular iMovie, a simple yet powerful video-editing package included with Macintosh computers. In contrast, Movie Maker was just, well, simple. It

offered video capture, very basic editing (you couldn't even crossfade between video clips, for crying out loud!) and could only export full-frame, digital-video AVI, Advanced Streaming Format (ASF), or Windows Media Video (WMV) files. The former voraciously consumed disk space; the other two, while good for streaming, weren't supported by many programs other than Windows Media Player. To put it bluntly, I resented that the program took up hard disk space I could be using for something else.

Windows Movie Maker 2 (the beta version of which has been reviewed here) is a marked improvement over its predecessor. I'm still not a fan, but it's viable for people who want to quickly edit video. Though, overall, I wouldn't recommend it beyond that, there are a few surprises in there that are worth keeping an eye on.

The most striking thing about Movie Maker 2 is that the whole interface has been given an overhaul to make it resemble Windows XP, including a task-pane sidebar. This should be a good thing. It's not. First of all, the different procedures are numbered in sequence:

Capture Video, Edit Video, and Finish—as if video editing has ever been a linear process. (To be fair, this isn't strictly a Microsoft flaw; I've complained about this in other packages as well.) I was pleased that I could turn the task pane off, but overall I found navigation between tasks to be just a little more convoluted than it needed to be.

New to Movie Maker is a collection of transitions to provide more variety in how one scene flows into the next. There's also a function for creating titles and credits with enough options and presets to cover just about any kind of video project I could think of. I really enjoyed this feature, because it was simple and moderately powerful in a way that I haven't seen in other editing programs. But strangely enough, there's no way to adjust the timing of the titles—or, for that matter, the transitions. If I wanted a slow fade to a new scene or a rapid-fire title sequence, I'd be out of luck.

The same problem afflicts the new collection of video effects. You can add effects like fading to or from black (or white!), increasing and decreasing brightness, or simulating film grain with

drag-and-drop ease; you can even combine effects; but you can't control the intensity or duration of the effects. I understand that the developers want to keep the program simple, but the option should at least be there for people who want to spread their wings a little.

The biggest surprise for me was a collection of five video effects: three that rotate the image, and two that mirror it. I once filmed my son when he was still crawling around, and I had to do it holding the camera sideways because of the obstacle course he was navigating in the living room. I spent months trying to find an application that could rotate the image to its proper orientation, and had to settle for splitting the video into individual frames, rotating them in Photoshop, then recompositing everything and marrying the new clip to the original soundtrack—a tedious task that Movie Maker has now reduced to a single click. It's because of useful ideas like that I'll be keeping an eye on Movie Maker; but for now, I'll stick with the other inexpensive tools. □

Emru Townsend (emru@pobox.com) is a self-described media sponge. He only asks that you don't squeeze him too hard.

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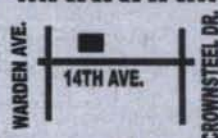
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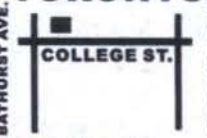
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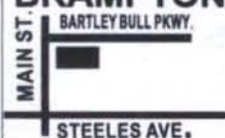


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How to find your family history online

By Christine Walewski

Whether you are interested in doing a quick search or launching an ongoing project to trace your family history, online genealogy resources offer a wealth of options. Some genealogy sites will walk a first time user through the process of building a family tree, while others serve as access points to genealogical data. Site databases are continuously updated and many span across countries, so what starts out as mild curiosity can easily turn into an extensive project. Some archives are free and others are subscription-based; prices depend on the amount of data and features a user wants access to and for how long.

According to a poll conducted by Nielsen NetRatings, genealogy is the most popular lifestyle category on the Internet for older adults.

Paul Muehlmann, director of strategic partnerships at Genealogy.com, says that although online genealogy was initially an American hobby, he's noticed a

surge of Canadian interest. He attributes its success to a couple of factors.

"The Internet has allowed an explosion of genealogy research. You spend a fraction of the money to do research because of its availability online," he said. "Also, the baby boomer generation, now in their 50s and 60s, are stepping back and realizing that family is really what's most important."

The features offered on U.S.-based Genealogy.com are a light version of the company's software, Family Tree Maker. The intent of the online version is to get someone started in creating a simple family tree to be searched against the site's databases. The file can be saved and transferred into the offline software, where the information can be searched against a more extensive database, allowing for more in depth research.

Tips for getting started

- Talk to family members. "Any method of genealogy starts by talking to family members," Muehlmann said. "The typical problem is the lack of informa-

tion on the next generation. It is critical for people to get information while they can and preserve it while they can." He advises gathering as much information as possible from family members, then seeking an online resource to enter what data you have.

- Try before you buy. Before making a commitment to a subscription-based site, look for ones that allow you to try the service first. OneGreatFamily.com and Ancestry.com offer a seven-day free trial and Genealogy.com offers a 14-day trial period.
- Make use of census data. "Census material is the single most important source of genealogical data. It is the only database available that purportedly lists every single person at any given time and it's the easiest to compile because it's on the national level," Muehlmann said. Canada most recently released the 1901 census online but census records before 1901 are only available on microfilm. Other types of data, such as immigration and church records, can be found

scattered throughout the Web when using a search engine. Genealogy.com and Ancestry.com allow access to US censuses from 1790 through 1930.

- Look for sites that offer additional features. For example, Myfamily.com allows you to create your own family Web site.
- Some sites offer tutorials on how to organize your data and interview your sources. Genealogy.com's Learning Center offers free genealogy classes for the beginner. Muehlmann says these are supplemental to doing an online search. "I don't think a person should be intimidated by the process," he said. "You could get started on a site, put in names that you have, hit a button to search and you could have instant success, without knowing anything about genealogy."
- Look for genealogy sites with message boards, which allow you to look for missing information by posting comments that people in other countries can view and respond to.

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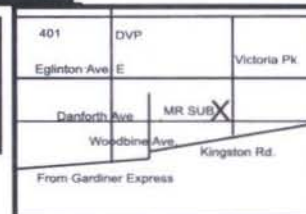
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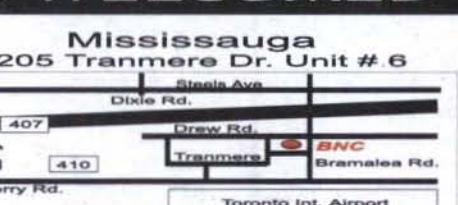
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Tired of being an anonymous Hotmail or Yahoo user? Ready to claim your own domain on the Web? SoftCom's Myhosting.com (www.myhosting.com) is now offering an email hosting service. The company is aiming the entry-level service at individuals and small businesses, giving them the opportunity to set up email accounts with their own domain name. It includes 50 MB of disk space and five email accounts, and is offered at US\$2.95/month.

The company is also offering a file hosting service for US\$4.95/month. The service allows for the creation and storage of an online photo album and is meant for the less sophisticated user. The company says the service is also ideal for online auctioneers who need somewhere to house their images. No domain name is required and 100 MB disk space, one email account, and a domain or vanity domain are provided. Features include a Web Album and File Manager tool. □

Displaying the future

Continued from page 36

The E Ink displays are about 1 mm thick, but in the lab, company scientists have demonstrated displays that are 0.3 mm thick.

Both Gyricon Media and E Ink see their product in future e-book products. Wilcox said an e-book created with the technology would weigh less than a paperback and would be five times brighter with three times the contrast of e-books shipped in 2002.

The technology also uses very little power. Two AA batteries could provide 200 hours of usage—that's about 10,000 pages of reading.

In time, colour screens could be created. Flexible displays are also possible. E Ink has demonstrated flexible displays in its labs. That means that the technology will likely be available to consumers between 2005 and 2007.

In the meantime, put your CRT in the basement, save up for an LCD, and dream of displaying the future using new technologies. □

Canadian writer Andy Walker is based in Berkeley, Calif., and runs the technology advice Web site at www.cyberwalker.com

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Symantec reports on cyber attack trends

By Christine Walewski

According to Symantec's third Internet Security Threat Report, the level of cyber attack activity has fallen for the first time, showing a decrease of six percent in the second half of 2002. This excludes worm and blended threat activity,

However, an 81.5 percent increase was shown in the number of vulnerabilities documented since 2001.

New IT product vulnerabilities showed an increase over the past year and approximately 60 percent of the documented vulnerabilities were easily exploitable either because sophisticated

tools were widely available or because exploit tools were not required at all. Specifically, Web client vulnerabilities, such as Microsoft's Internet Explorer, increased substantially over the past year.

Blended threats, such as Klez and Bugbear—worms that multiply quickly and use multiple vectors for infection—were found to be the greatest risk to the Web, accounting for nearly 80 percent of malicious code submissions in the past six months. The company concluded that high-impact, blended threats were one of the greatest future risks to the Internet. Symantec says that because past blended threats were able to suc-

cessfully exploit vulnerabilities that were known for several months, "many recently discovered vulnerabilities remain highly viable targets for future threats."

Malicious code that steals confidential information from users has increased substantially over the past year, resulting in what the company says is the potential for exposing trade secrets and sensitive financial information.

Self-replicating mass mailers experienced a sharp increase in volume, with eight of the top 50 reported threats over the past six months classified as self-

replicating mass mailers, compared to only one out of the top 50 during the same six-month period in 2001.

Malicious code that steals confidential information from users has increased substantially over the past year, resulting in what the company says is the potential for exposing trade secrets and sensitive financial information.

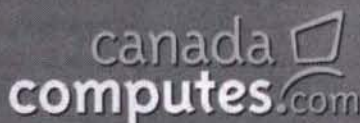
Newer technologies expected to experience an increase in usage, such as mobile devices, are considered to be future targets. Symantec says that because these devices often employ weak security measures they will appeal to malicious code writers.

Also believed to be targets are the increasing unauthorized use of instant messaging and peer-to-peer applications.

The two previous reports were released in July 2002 and January 2002.

—CanadaComputes.com

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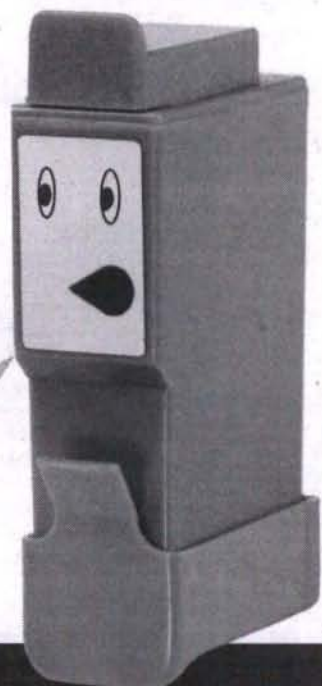
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Going mobile

TCP Lab tests high-speed wireless connections

By Sean Carruthers

In our pages we've talked a lot about handhelds, notebook computers, and other items designed to facilitate the mobile lifestyle. One thing that inevitably brings the road warrior crashing back down to earth is the need to connect to the Internet: until recently, people who wanted to get connected while traveling have had to tie themselves to a land line (often using a special dial-up account that allows roaming across the continent), or suffer through slow cellular connection speeds that topped out at 14Kbps maximum.

Enter high-speed wireless data connections, via your cellular phone. The two major types of network battling it out for supremacy in the Canadian marketplace are CDMA (favoured by Bell and Telus) and GSM (the choice of Rogers and Fido). These companies have recently upgraded their networks and handsets to new higher speed protocols to accommodate both better voice capabilities and faster data transfer.

The CDMA networks have been upgraded to the new CDMA2000 standard, also known as 1xRTT or 1x. The GSM networks have been upgraded to accommodate the new GPRS standard. For those who care about such terms, neither of these networks represents the 3G (third generation) standard that has been talked about for years; instead, they've been dubbed 2.5G because they're roughly halfway there.

No matter which way you connect, it's

not going to be as fast as using your broadband connection from home or your corporate network.

While both networks offer a theoretical throughput of over 100Kbps, in the real world GPRS connections top out at about 56Kbps, and 1x CDMA networks realistically offer between 60 and 90Kbps. In other words, your connection will be about the same speed as a 56Kbps modem dial-up connection—a touch faster if you're lucky. It's like going back to the good old days, except you'll be able to connect from nearly anywhere, as long as you're in a digital high-speed coverage area.

That last point is important to keep in mind: before you rush out to the store to buy any high-speed-capable hardware to use with your notebook or PDA, make sure you're in an area with high-speed coverage, especially if you live outside an urban centre.

The high-speed coverage areas are being expanded fairly regularly, but there are still areas that are only served by an analogue network or the older (and slower) digital networks.

Get it at the store, get on-site training!

One of the biggest problems with mobile connectivity products is actually figuring out how to make them work with your notebook or handheld. The best tip we can offer is to get it at a retail location where you can actually speak to a client representative; someone at the store should be able to take you through the steps necessary to get connected while

you're on the go. Even though most of the installation packages are pretty straightforward, it never hurts to be sure.

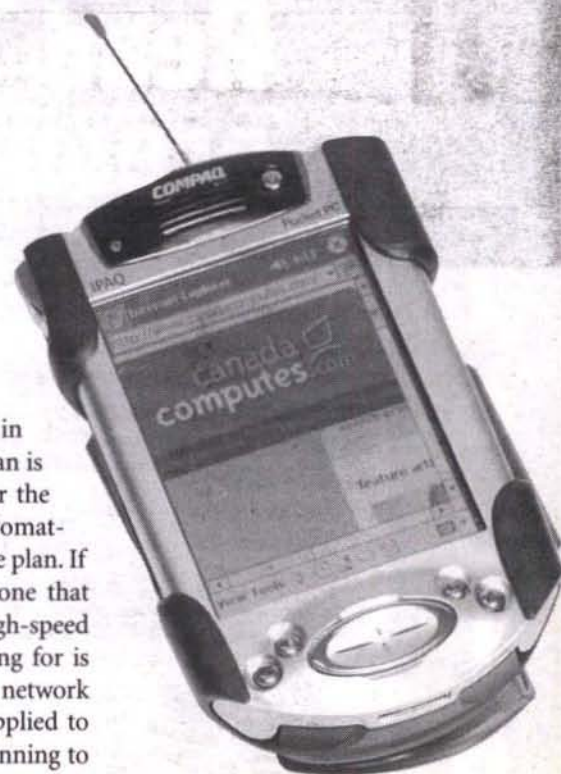
What do the plans cost?

One important thing to keep in mind with a high-speed data plan is that you'll have to pay extra for the data service, because it's not automatically bundled in with your voice plan. If you already have a cellular phone that you can use to connect to a high-speed network, all you'll have to spring for is the data plan (because your network access charge will already be applied to the voice account). If you're planning to use a PC Card modem with your notebook or PDA, you'll have to pay for the data plan and the network access charge. If you're also going to activate a phone number and voice capabilities on your PC Card modem, you'll have to pay for a voice plan, data plan, and network access charge.

We've included a list of high-speed wireless data plans from each of the carriers we looked at this month. Keep in mind that these plans were current at the time of writing and are subject to change without notice; special promotions may also be available, such as unlimited access for the first few months, and again these promotions are subject to change. Check the carriers' Web sites for up-to-date pricing.

Connecting with a PC Card modem

If you have a notebook, one of the easiest



and cleanest ways to connect to a wireless data network is using a PC Card solution. Canada's own Sierra Wireless (www.sierrawireless.com) is one of the leaders in this field, with AirCard products available for both CDMA 1x and GPRS networks; Novatel Wireless (www.novatelwireless.com) also offers PC Card products. We say "cleanest" because when you insert a PC Card, all of the electronics are hidden inside your notebook, with only the antenna-portion of the card sticking out; compare this to a solution that requires an external USB adapter or a phone/cable combination and it's clearly less cumbersome. It comes at a price, however: the cards themselves typically cost \$500 or more all by themselves, and then your monthly plan will cost extra.

Setting up the software is fairly easy—
Continued on page 48

WAYS TO CONNECT

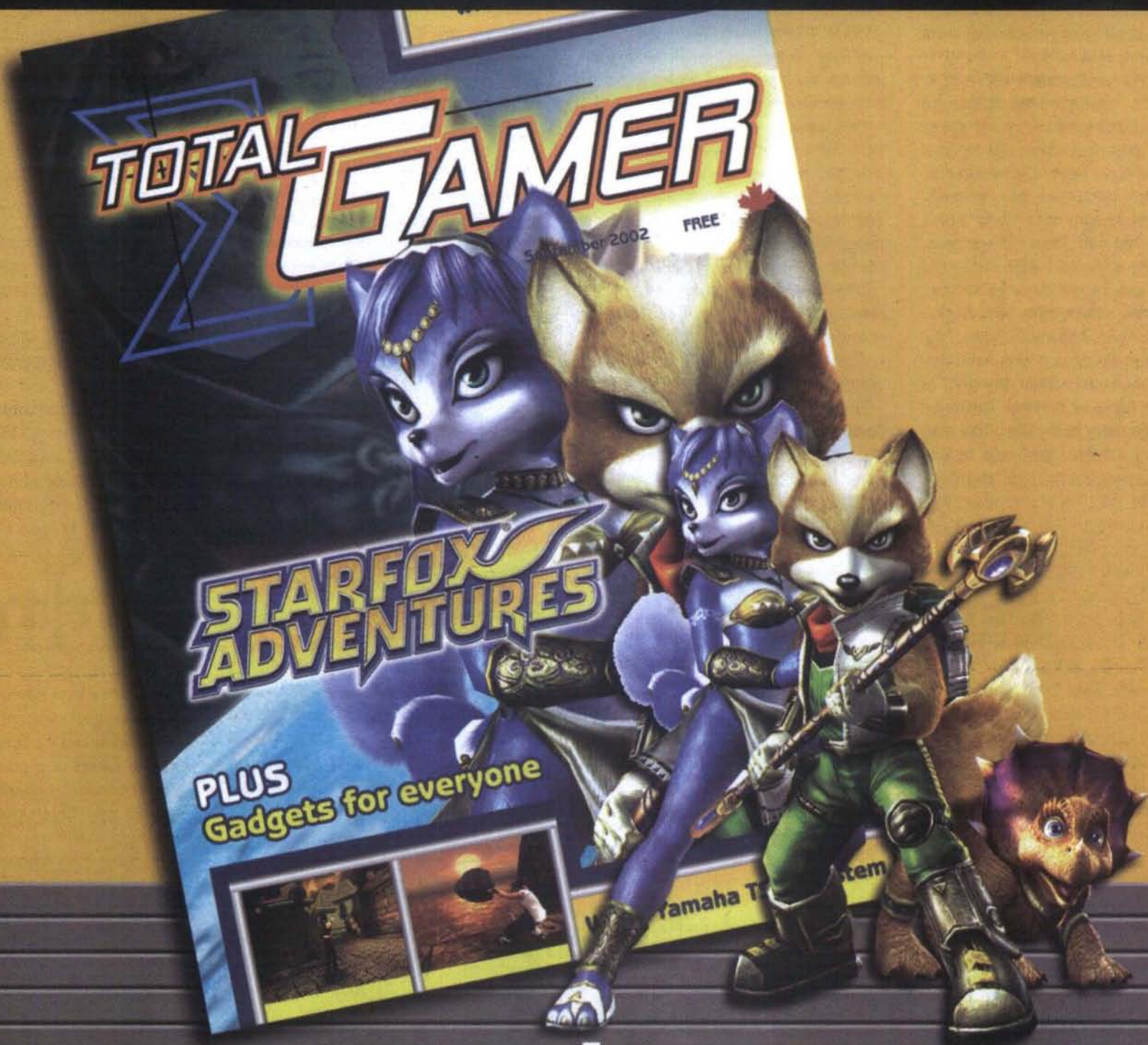


Bluetooth: A Pocket PC PDA with Bluetooth card (left) and laptop with Bluetooth dongle and Bluetooth phone (right).

PC Card modem: With laptop (above) and Pocket PC PDA (main illustration).

Phone/cable link: Phone with cable and serial adapter (left) and with USB connector (right).

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Going mobile

Continued from page 46

when you buy your card from a cellular provider, it comes with setup software that installs a client onto your notebook and requires very little in the way of additional setup: most of the necessary information is already preloaded into the ROM found on a CDMA card; with a GPRS card, all relevant information is set up on your SIM card.

Using a PC Card modem with a PDA isn't quite so straightforward, because most PDAs don't have a PC Card slot as standard equipment. Before going this route, you'll have to ensure your handheld supports a PC Card adapter module, typically known as a "sled." These sleds slide onto the back of the unit, which often doubles the thickness of your PDA; also, because they often come with an extra rechargeable battery (PC Card modems are notorious for sucking back the battery power) they will also add to the overall weight. Instead of installing the connection software directly onto the handheld (like you would with a notebook), you will have to sync the software onto the handheld from your PC.

After you have the client software loaded onto your handheld, though, using it is a breeze. As on the notebook, the majority of the information you need to get connected is already set up on either your PC Card modem or the SIM card. One note: users of a Compaq iPaq 3900 series handheld may have problems using the Sierra Wireless AirCard 555 series PC Cards, thanks to a slight incompatibility. There is a workaround available at the Sierra Wireless Web site (www.sierrawireless.com), however.

One bonus, depending on what type of PC Card modem you choose, is that you may also be able to use the card to make and receive cellular voice calls. (This is definitely more convenient when you're using a PDA, which is only a little bigger than many current cell phones.

You can make voice calls with a notebook, too.) The only kicker: to make voice calls, you may also have to subscribe to a voice plan, which will cost you extra.

Connecting with a phone and cable

Though connecting your PDA or notebook to a cellular phone isn't quite as tidy as a PC Card solution, it does have

its advantages. First, if you already own a cellular phone with high-speed data capabilities, it's a heck of a lot less expensive to buy a cable and software solution than a dedicated modem (under \$150 compared to \$500 or \$600). Even if you don't already have a phone, it can still be less expensive to get the cable and the phone, as many high-speed enabled phones cost less than \$200. The added advantage is that you'll have a cell phone you can use when you don't want to haul around your notebook or PDA.

The important thing to pay attention to with this type of solution is compatibility, both in terms of your phone and whether you're planning to use a notebook or PDA. Because the cables are phone-specific, make sure there's a version available for your phone before you do anything else.

Also very important: some of these cable packages are available specifically for notebook computers, not PDAs, so before you buy a phone and cable, make sure your PDA is compatible.

Another downside is that while you have an active data connection, your voice capabilities will be disabled; to dial out, you will have to either disconnect

the data connection or wait until it goes dormant if you want to avoid interrupting your data connection. Additionally, you may be unable to receive incoming calls until you've shut down your data connection completely, so you'll have to be sure to disconnect if you're expecting a call—again, just like the old days with a dial-up modem!

When purchasing a data cable connection for your phone, remember that if you don't buy the cable from your cell phone provider, you'll probably have to phone your carrier's tech support department to get all of the settings necessary to make a data connection manually.

Connecting with a phone via Bluetooth

If you want to use a cellular phone for your mobile data connection but don't want to have to carry cables around, Bluetooth may be the answer. While we've had experiences with Bluetooth that varied from excellent to absolutely horrendous, connecting your Bluetooth-enabled computer or handheld to the Internet using a Bluetooth-enabled high-speed-capable phone may well be

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Going mobile

Continued from page 48

the technology's killer app.

There are Bluetooth-enabled cell phones currently available from the major cell phone manufacturers, including Motorola, Nokia, Samsung, and Sony-Ericsson. This month we received a Nokia 6310i phone from Rogers (www.rogers.com) and a Sony Ericsson T68i from Fido (www.fido.ca), and both seemed to work just fine with our portable devices, after all of the configuration was completed.

It's true that there aren't currently a lot of mobile computing devices with integrated Bluetooth, but now that Palm has integrated the technology into its Tungsten line of handhelds, it's possible that the catalogue will start to grow. In the meantime, you can add Bluetooth to your notebook using a USB dongle or PC Card solution—there are a number of manufacturers offering such products, including 3Com, Belkin, TDK, Bluegear, and Gigabyte.

This month we used the Palm Tungsten T (www.palm.com) with built-in Bluetooth. We also used the Gigabyte Bluetooth USB adapter (www.giga-

byte.com) with our notebook computer, and Belkin's Bluetooth PDA Adapter (www.belkin.com) in the CompactFlash slot of our Dell Axim Pocket PC (www.dell.ca).

The biggest problem with the Bluetooth products, as always, is configuring them to work with each other. In some cases it was very easy and in others we were pulling our hair out. (Surf to our online archive at www.canadacomputes.com and check out the November 2002 issue for more on Bluetooth's growing pains, and our experience testing the technology in the Test Lab.) It's important to get your phone and mobile computing device paired up properly if you want to avoid having to reconfigure the connection every time you want to hook up to the Net; a bit of time setting it up properly right off the bat will save you a lot of frustration down the road.

1x networks

1x is the shorthand name for 1xRTT, which is the cryptic name given to the already cryptic CDMA2000 network. CDMA, which stands for Code Division Multiple Access, seems to have the edge

in the North American space, even while GSM/GPRS rules the rest of the world. With 1x, you are billed by the amount of data you transfer, not by how long you stay connected.

Bell Data to Go

From: Bell Canada, www.bell.ca

Plan	Occasional	\$25	\$50	\$75	\$80
Data limit (MB/mo.)	none	4	10	40	100
Additional data	\$0.01/KB	\$10/MB	\$6/MB	\$5/MB	\$3/MB
15-95 minutes	none	200	500	500	500
Network charge/mo.	\$6.95	\$6.95	\$6.95	\$6.95	\$6.95

The Bell Data to Go service comes in two different versions. The PC Card version features a Sierra Wireless AirCard 555 that is capable of both data and voice connections, and because it's dual-band, it works on both 800 MHz and 1.9 GHz networks. The software installation for the card was pretty painless: during the setup process the software pulled necessary data straight off of the PC Card's programming, and the rest of it was pre-programmed in Bell's version of the installer. Within a few minutes of starting the process, we were surfing the Net, both with our notebook (it's compatible with Windows 95, 98, NT, 2000, Me, and XP) and our Pocket PC (it's compatible with Windows CE 3.0, Pocket PC, and

Pocket PC 2002). The card costs \$599 with a 30-day contract or \$499 with a two-year contract. There is a \$6.95 monthly charge for network access, whether you have a data-only plan, or both data and voice.

Bell also offers a startup kit for subscribers who already have a high-speed ready cell phone. The kit is available for both USB and serial connections; the USB version of the kit is compatible with Windows-based notebooks (Windows 98, Me, 2000, and XP), while the serial version also adds compatibility with Pocket PC handhelds (3.0 and higher) and Palm OS (3.3 and higher). Our installation of the kit was also reasonably easy using the serial version, though it took longer than we thought it would for the software to detect our phone. The cables vary in price: USB cables for the Kyocera 2255 and the Samsung N370 run \$100, while the serial cable for the Kyocera 2255 is \$120. There will also be USB cables available for the Audiovox 8500 and the Samsung A460 and A500 models, as well as a serial cable for the Audiovox 8500; pricing for these is to be determined.

Because Bell's 1x CDMA network is

Continued on page 54

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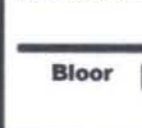
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Going mobile

Continued from page 50

still expanding, Bell has made it possible for users to connect to the older, slower IS-95 network when they are in areas not covered by 1x. The \$25 plan comes with 200 free minutes of connection time per month on the IS-95 network, and higher-priced plans come with 500 minutes per month.

Telus Velocity Wireless

From: Telus Mobility, www.telusmobility.com

Table with 3 columns: Plan, Price, Features. Rows include Monthly rate, Data allowance, Additional data, Network charge, and Voice calls.

There are two different versions of the Velocity Wireless package. The first is the PC Card version, which comes with a dual-band Sierra Wireless AirCard 555 inside the box. We tried the card out for both data and voice capabilities, and had no problems: software installation went smoothly and we were on Telus' wireless network fairly quickly without having to worry about most aspects of the configuration. The installation program pulled most of the relevant data off the PC Card itself and configured the network access information automatically. The card is compatible with Windows 95, 98, NT, 2000, Me, and XP, as well as Windows CE 3.0, Pocket PC, and Pocket PC 2002. The PC Card version of Velocity Wireless costs \$600 for the card by itself, \$530 with a one-year term, and only \$480 with a two-year term.

Telus also offers a data cable version of the Velocity Wireless, for users with 1x-enabled phones. The package comes

with the cable for your specific phone, so make sure your phone is both 1x-capable and Velocity Wireless-compatible. Telus loaned us the Audiovox CDM-8300 and the appropriate USB cable for our testing this month, and the whole process was almost without incident: the software installation went smoothly and the configuration was as quick and easy as with the PC Card version. About the only issue we had was that it didn't always work if we plugged the cable into a different USB port, which was easily fixed by plugging it into the same port we used during installation. The cable and software bundle costs \$130 and is currently available for LG's TM520 model, and the Audiovox 8150 and 8300, with forthcoming versions for Samsung's A540 and A520 and for Motorola phones.

GPRS networks

In most of the world, GSM has been the standard for cellular phone connectivity—what else would you expect from a technology whose name stands for Global Standard for Mobile communications? GPRS, or General Packet Radio Service, is the next generation of the GSM standard, featuring theoretical data transmission speeds up to 115Kbps (though most North American carriers state 56Kbps maximum).

One of the nice things about GPRS devices is the fact that they all use a SIM card. This is a small slice of plastic with a data strip on one side that contains all of the data necessary for a phone to connect to the network; in other words, all you have to do is drop your SIM card

into a device, and it will immediately have your phone number and account information. A nice side benefit of this is that you can use the same card for more than one device—just swap as necessary (but keep in mind that you won't be able to use both at the same time).

With GPRS data connections, you are billed by the data you transfer, not by the time you stay connected.

Fido Data Services & Internet Access

From: Microcell Telecommunications Inc., www.fido.ca

Table with 4 columns: Plan, Pay Per Use, \$25, \$45, \$50. Rows include Data limit, Additional data, System charge, and Phone/PC Card.

As with the other carriers, Fido offers a PC Card connectivity option, in this case Novatel Wireless Merlin G100 card. The card itself is compatible with Windows 98, Me, NT 4.0, 2000, and XP, as well as Pocket PC 3.0 and 2002. The antenna portion is connected to the card along one of its sides, which means you need to remove the card when you stow your notebook, as it can't be rotated into the same orientation as a closed notebook; it's also awkward in a PDA when not in use. That said, the software install was very straightforward, and we were quickly connected to the network, using both the notebook and the Pocket PC. The card costs \$525 from Fido, which is a bit cheaper than the Sierra Wireless cards, but take note: the card does not have voice capability.

Though we didn't test any of them this month, a number of the phones you can purchase from Fido also have data cables

available (or in some cases, like the Motorola V66, they are included in the box). The cables are available separately—no special Fido software bundle to automatically set up your connection—which means you'll have to do some manual setup to get connected to the network, but you'll also save some money. (Some of the cables we saw on the Fido site were available at half the price of the packages offered by the other carriers).

We also used one of Fido's Bluetooth-enabled handsets, the Sony Ericsson T68i, to connect wirelessly to the network. First we paired the phone with our Palm Tungsten T handheld; later we also used the phone to connect from our notebook computer, which had a USB Bluetooth adapter installed. In both cases, we were able to get hooked up and surfing, but we had to do some manual configuration first. With the Tungsten T that was especially disappointing, because the Phone Link Updater software called onto many networks in the U.S. and Canada—but not Fido. Once we called tech support and got everything into place, though, it worked like a charm, even when the cell phone was tucked away in a pocket.

Rogers Data Access

From: Rogers Communications Inc., www.rogers.com

Table with 6 columns: Plan, Price, Features. Rows include Data limit, Additional data, System charge.

Rogers allows you to connect to its high-speed network. Continued on page 57

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Dell's Axim X5 PDA shines on performance, price

By David Tanaka

A couple of generations separate my HP Jornada 540 Pocket PC from the Dell Axim X5, and (damn, there goes techno lust again) the difference is significant. The Axim is superior in just about every respect: faster and smoother performance, more capable applications (Pocket Word now has a spelling checker and a word counter, for example), more memory, better screen, more expansion options, better battery life and smaller price tag. You'd expect that comparing it to an older product, but even against today's field of improved Pocket PCs, the Axim X5 should have no problem holding its own.

Dell is offering two Axim X5 models, differing mainly in processor speed and memory. Both use the Intel X-Scale processor; the top model uses a 400 MHz version with 64 MB of RAM (also used in the premium Compaq and Toshiba models), the other a 300 MHz processor and 32 MB of RAM. At 8x13x1.8 cm (3.25x5x0.75 in.) and 210 g (7.4 oz.), it's one of the larger Pocket PC designs (the ultraslim Toshiba e330 is 0.5 cm thinner and 60 g lighter) but nonetheless is comfortable enough in a jacket pocket.

The 320x240-pixel transreflective TFT screen is illuminated, but in a well-lit room or outdoors the lighting can be turned off and the screen is still viewable,

actually becoming brighter as the ambient light increases. One nice touch on the Axim is a removable battery. The X5 lends itself to expansion through CompactFlash and SecureDigital card slots. Some cards increase battery consumption (for example, we loaded a microdrive with MP3s and the low battery warning came on after 2 hours and 35 minutes of continuous playback), so it's very handy to be able to change to a fresh battery in the field if necessary (a spare is \$89 or \$209, depending on capacity). The Axim also has an easily accessible button battery to keep the memory content alive when you swap main batteries.

Continued on page 58



Dell Axim X5 Pocket PC

From: Dell, www.dell.ca
 Price: \$549 (400 MHz, model tested), \$379 (300 MHz), plus \$25 shipping (both models)
 Pros: Competitive price. Removable battery. CompactFlash II and SecureDigital slots.
 Cons: Flat, skinny stylus uncomfortable for extended use. Unit is on large side.

A wireless twist in handheld keyboards

Most handheld computers have an infrared port, so wouldn't it be great to exploit it for a wireless keyboard? Here's the challenge: the infrared port on a handheld is usually on top, a keyboard typically sits at the foot of a handheld, and infrared ports need a direct line of sight to communicate.

Vancouver, B.C.-based Pocketop Computer Corp.'s solution is a keyboard with an IR port that points upward, and a PDA stand with an adjustable mirror. Correctly positioned, the mirror bounces the keyboard's signals back down to the handheld's IR port. You need to install a keyboard driver on the handheld, and most Pocket PC and Palm devices are supported (we used the Pocketop with a Dell Axim X5). A keyboard utility allows you to rotate the screen display left, right, or even upside down (you need to soft-reset the handheld with each change).

The stand's clever design is compact

(only about 0.6 cm thick) and stores flat against the closed keyboard for transport. Set up is a little involved however: you need to pull or flip out the computer shelf, support easel, and mirror; place the handheld on the shelf; then align the ports. Also, some parts of the stand look fragile compared to the keyboard itself, which feels quite solid. Nevertheless, the stand accommodated even a relatively large handheld like the Axim X5.

The keyboard is powered by one AAA battery, and to establish a connection we just moved the keyboard and handheld around until we found the sweet spot. The positioning is quite flexible, and we were able to maintain contact within a zone of about 20 cm (8 in.) left and right of centre, and with the keyboard up to 30 cm (1 ft.) or more from the handheld.

The keyboard feels very solid, although smaller than normal (1.5 cm versus 1.9 cm for full-size keys), which may be trouble-

some for some people. Plus, only the home row of keys is square, the others are oblong. The Pocketop lacks a number row, so most keys have two and even three functions, accessed by function key combinations. It's a compromise, but it works well enough, and also rids the unit of an entire row of keys.

The back of the keyboard has rubber accents that keep the small unit from moving around, and also give it a solid but slightly cushioned feel. It's quite comfortable given the constrained size.

Overall, we liked this keyboard a lot. It is more efficient than a thumb keyboard, or a built-in handwriting recognition system. Our main complaint is the fiddly nature of the stand, but that can be bypassed altogether for impromptu note taking by simply pointing the handheld's IR port at the keyboard—and you can even rotate the screen appropriately if you don't like reading sideways or upside down



Pocketop Wireless Keyboard

From: Pocketop Computer Corp., www.pocketop.net
 Price: US\$99 (from company's Web site)
 Pros: Infrared means no specialized serial connector. Drivers for many handhelds. Display rotation utility. Solid feel despite being very small and light.
 Cons: Keys not full size. PDA stand set up fiddly.

as you type. We found we could get a connection even with the keyboard and handheld lying flat on a table if we positioned the IR ports just so.

—David Tanaka

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Going mobile

Continued from page 54

speed data network using either your handset or a PC Card. Rogers' PC Card solution is the Sierra Wireless AirCard 750, which allows both data and voice functionality. Installation was pretty basic, with the software pulling most of the data it needed off the SIM card, which fits into a slot located beside the antenna connector. After installation, we were on the network pretty quickly using both our notebook and our Pocket PC.

The card is available for \$599 with a one-year term.

If you're looking for a cable solution, Rogers has the Portage Plus kit, which at present is compatible with Motorola phones (the 280, V60, V66, and Timeport 7382i models). It's available in both serial and USB versions. The serial version of the kit is compatible with Windows (95, 98, Me, NT, 2000, and XP), Windows CE, Pocket PC, and Palm OS 3.3 and higher. Installation of the software was pretty straightforward. If

you prefer, you can also install Motorola's version of the software, which requires a few more manual steps but also includes TrueSync software (for exchanging data between your phone and computer). The Portage Plus Getting Started Kit costs \$130.

Rogers also loaned us the Bluetooth-enabled Nokia 6310i handset, and we quickly paired it up with our demo Palm Tungsten T and got it onto the network. We had trouble getting the phone talking to the USB adapter on our notebook

for some reason (such is the nature of Bluetooth) but after a bit of tweaking we were on our way.

The only real problem we had with the Nokia phone was that, even after pairing the phone with our mobile computing device, it consistently put up a dialogue asking for permission every time an outgoing connection was trying to be established.

If you want to skip that headache, Rogers offers the Sony Ericsson T68i, which is also Bluetooth-enabled. □



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Palm-based word processor handy but pricey hybrid tool

By Geoff Hart

As much as I love my PowerBook, packing it for travel is hardly an impulse decision. In contrast, my Palm PDA is as portable as it gets, but a writer's tool it's not—even with an external keyboard. I want a Reese's peanut butter cup: two great tastes, together.



AlphaSmart Dana

From: AlphaSmart Inc., www.flydana.com
Estimated price: US\$399

Enter Alphasmart's Dana, a Palm OS 4.1-based PDA the size of a sheet of paper and weighing less than 900 g (2 lb.). The full-sized keyboard is as good as any laptop

keyboard: proper key spacing, full key travel, a lovely solid feel with quiet clicking, and an inverted-T cursor key layout.

Disadvantages? Well, you can out-type the display while inserting text in mid-paragraph—but no data is lost, and Dana kept up with me handily otherwise. The keyboard provides Mac-style Command and Option keys plus Windows-style Control and Alt keys that support familiar keyboard commands (e.g., boldfacing, copy-paste, moving between words, and "undo"), avoiding the need to rewire your finger habits.

Like all PDAs, Dana wakes at the touch of a key so you can start typing where you left off. To hit the road, unplug the power supply and toss the Dana in your backpack.

The polycarbonate plastic shell seems sturdy enough, but hang onto the bubble wrap; you'll eventually damage the screen or keyboard working this way. You may also accidentally depress the power key, and drain the batteries. Fortunately, the battery recharges in four hours with the AC adapter, or eight hours via your com-

puter's USB port (also used for synchronization, instead of a cradle).

Dana's horizontal screen is both its glory and its biggest drawback. At 3.5 times the width of a typical PDA screen (it has a screen resolution of 560x160 pixels), there's finally enough space to see what you're writing. The default font displays nine lines of text simultaneously at the width of a typical printed page. Better yet, a control panel rotates the display 90 degrees and the software instantly adapts. You can't touch-type in this orientation unless you have ultra-flexible wrists, but reading e-books finally becomes practical, and you can still use the stylus for most tasks, including using Graffiti handwriting-recognition. Unfortunately, the screen isn't particularly readable without the backlight, a tradeoff that provides a claimed 25 to 30 hours of battery life. The backlight significantly decreases battery life, but improves readability. Contrast is still on the low side in a dim room, and long editing sessions can be hard on the eyes.

Dana is marketed to students and educators, and includes Dana Admin software

for teachers, which lets you disable beeps to keep the classroom quiet, quickly configure student Danas by beaming, or lock out beaming during tests.

The Dana seems perfect for this market, except for its price: US\$399 direct, with a \$30 educational discount and volume pricing. Wonderful though Dana is, that's too steep for student budgets and compares unfavourably with a used laptop (at a similar price) or a used PDA with an external keyboard (about half that price). In exchange, however, you get generous expandability: an IrDA port for beaming, MultiMediaCard and Secure Digital card expansion slots, and two USB ports.

Dana is a marvelous tool for anyone who needs more than a PDA, but without the complexity of a laptop. Unfortunately, wonderful products won't always justify high prices. At half the price, the Dana would become an easy impulse buy, but as it stands it may be too pricey to compete with basic PDAs, and just not functional enough to replace a laptop. □

Dell's Axim X5 PCDA shines

Continued from page 56

The Intel X-Scale processor gives the computer sparkling performance: menu access is snappy and applications load quickly. In the interests of energy efficiency, the processor will operate at either 400 MHz or 200 MHz, and an "auto" selection allows the computer to pick the appropriate clock speed according to the load.

Microsoft's Windows for Pocket PC provides a common denominator of functionality, so irrespective of the brand, Pocket PCs come with the same suite of applications:

Pocket PC versions of Word, Excel, Internet Explorer, Outlook-compatible inbox, tasks and calendar, MSN Messenger, Microsoft Reader for e-books, a memo voice recorder, Media Player (the Axim has a stereo headphone jack and mono microphone), and, of course, Solitaire. You also get a task switcher that sits in the upper menu bar, a backup utility; and on the CD a variety of free or trial versions of productivity applications, utilities, and games.

This version of Windows includes curative handwriting recognition app called Transcriber. It's similar to, but not as robust as, the handwriting app that comes

with Tablet PCs using Windows XP, but we found we could achieve about 75 percent accuracy in casual use. Other input methods include a character recognizer and an on-screen QWERTY keyboard. For any serious typing however, we'd recommend a separate keyboard. We had a wireless model from Pocketop that we used with the Axim, and most of this review was written on the Axim using the Pocketop.

Conclusion

Handheld devices using the Palm operating system have typically outsold Windows CE and Pocket PC devices by a

wide margin (estimates from market research companies give Palm devices anywhere from 65 percent to 80 percent market share).

Pocket PCs seem to improve with each generation, however, and the Axim X5 delivers a modern Pocket PC experience at an attractive price.

When Dell introduced the line last fall, its pricing was very aggressive. Since then, other Pocket PC makers (and Palm-powered handheld makers) have lowered price tags on new or existing products, making it an interesting time to shop for a handheld. □

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< HANDS ON >

Olympus puts five megapixels in pocket camera

By David Tanaka

Last year, Olympus managed to squeeze a four-megapixel sensor into a shirt-pocket digicam and the C-40 was born. The C-50 follows the same philosophy, this time with a five-megapixel sensor—which means images from this camera can make really big prints, or at least a standard-size print of decent clarity from a portion of the image.



Camedia C-50 Zoom

From: Olympus, www.Olympus.com

Estimated price: \$900

Pros: Five-megapixel sensor. Very small, yet feels substantial (all metal body).

Cons: Slow processing of TIFF images.

The C-50 isn't just a C-40 with a bigger sensor: it's a new design, more rectangular than the squarish C-40. Overall it's quite attractive, while feeling durable, with a combination of brushed and satin metal, and bright detailing on the case. It uses a sliding lens cover that also serves as a power switch, and is small enough to rest comfortably in the palm of your hand.

Just how small is it? A credit card is 8.5x5.5 cm, and this camera can almost hide behind one—it's about 10x5.9x4.2 cm (3.9x2.3x1.6 in) and 194 g (6.4 oz.).

The C-50 uses a new storage medium called xD-Picture Card (jointly developed by Olympus and FujiFilm, and also used in some new FujiFilm cameras). An xD card is about half the size of a SmartMedia Card, but has much greater storage potential. The C-50 ships with a 32 MB card, enough for 13 high quality JPEG images or two uncompressed TIFFs.

The C-50 can be slipped into a jacket pocket or a handbag and carried everywhere. The exposure and menu controls are clustered on the right side on the camera back, while the shutter button and zoom lever (it has a 3X optical and 4X digital zoom) sit on top. Held in your right hand, you can use your index finger to control the zoom lever or hit the shutter button. The wrist strap lug is also on the right side.

This is primarily a point-and-shoot camera, but it offers a high level of manual control, including shutter priority, aperture priority, manual exposure settings, exposure compensation, and various flash modes. Right now Olympus has the bragging rights for the highest pixel count in the smallest package, but that wouldn't mean much if the image quality was below par. We're happy to report that images are excellent for a camera in this category. It can save images as uncompressed TIFFs at the full five-megapixel dimension (2,560x1,920 pixels) or you can select one of four JPEG settings at various image dimensions.

We compared TIFF and high quality JPEG samples, and frankly, we wouldn't

bother with TIFF on this camera. With the supplied 32 MB memory card, you can save just two TIFF images, and it takes nearly 20 seconds for the camera to process and store each one, during which time you can't take another picture. Using the best-quality JPEG setting (SHQ), you can save 13 images at maximum dimensions on that same card, and the camera is ready to use again in under five seconds—and image quality is, in most circumstances, indistinguishable from the uncompressed TIFFs. JPEGs at this resolution make really good looking 8x10-inch prints from a photo inkjet. By saving to a smaller image dimension—1,600x1,200 pixels, for example—you can squeeze even more pictures on the card and make decent 4x6-inch prints.

Olympus has developed a technology called TruPic that uses all the pixels in the camera's sensor to make the image, even if the camera setting calls for a smaller image size. Thus, in this case, a 1,600x1,200 image would have been processed from the full five-megapixel sensor data then downsized, instead of just taking a 1,600x1,200 section of the sensor to make the image. Olympus claims this leads to better pictures at all sizes, although we're not convinced of any superiority here.

One thing Olympus can be commended for across all its digital cameras is auto-connect USB: no special drivers required (if your computer's OS supports USB natively, of course). Simply plug the camera in and the computer sees it as a removable USB drive—slick.

The camera ships with Mac and Windows versions of Camedia Master 4.0 image software. □

Program to swap cell phones for food

Until the end of March, the Canadian Association of Food Banks, Petro Canada, and Purolator are asking people to donate cell phones they no longer use to the Phones for Food (www.phonesforfood.com) campaign. The program recycles the old cell phones, diverting them from landfills, and generates funds for food banks.

According to an annual survey of Canadian food banks, their use has doubled in the last 10 years. There are food banks in 620 Canadian communities.

Phones for Food organizers say that 800 million people around the world currently use cell phones, and users change handsets an average of every 18 months. The turn over results in the disposal of about 130 million cell phones annually—about 65,000 tons of waste in the U.S. alone. Toxic elements in cell phones include arsenic, lead, mercury, and nickel-cadmium from the batteries.

People can either drop-off their used cell phone at a public drop off location or register their organization as a private

collection site. Organizations interested in participating can sign up at the Phones for Food Web site. Those who register will receive a collection kit that includes flyers, posters, and a box for collecting the phones. When the box is full it can be shipped back at no cost. Participants can continue collecting after the end of the March campaign.

The drop-off sites are meant for those who only have one or two phones to donate.

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Phaser 4400N simplifies network printer setup

By Dave Chappelle

If you've been considering a small laser printer for your home or small business network, the Phaser 4400 may be what you're looking for. It comes standard with parallel and USB connectivity, but several models in this series—including the 4400N tested—can be connected to an Ethernet network.

Xerox has really done a good job of making this unit easy to set up and maintain. In addition to a setup and quick reference guide, networking services and warranty manuals, there is an installation chart and three-minute setup video. As well, there is an animated setup guide and a PDF available in nine languages on the interactive documentation CD.

We set up the printer and connected it to our network via the controls and the 5.7x3 cm LCD on the top of the printer. During a print job the LCD indicates



Xerox Phaser 4400N
From: Xerox Corp., www.xerox.ca
Estimated price: \$2,399
Cartridge cost: \$269, \$306 (high capacity)

page completion, and warns users when the paper is running out.

As networks become more complex, system administrators seek more control over resources. Rather than connect the

4400 to the network and let the DHCP server assign an IP address, we received an assigned IP address, gateway, and subnet mask from a network sys admin. If that sounds too confusing, don't worry: there are step-by-step instructions for this on the setup disc. There are thorough instructions for almost any setup method, though, including automatic DHCP.

Included are drivers and networking instructions for using the 4400 with most flavours of Windows, Mac Ethertalk, Unix, Linux, and Novell Netware.

The 4400 didn't jam during normal use, so we simulated a jam with a sheet of folded paper in the input tray. To fix the jam, we only had to remove the top two pages and this Phaser was humming along once again. When a paper jam occurs, a window opens on the source workstation, displaying a diagram of the printer with the area of the jam highlighted.

The Phaser 4400 will print at resolutions of 600 or 1,200 dpi on the usual list of media: paper, envelopes, labels, card, and transparencies.

Xerox claims an output speed of 26 pages per minute (ppm), with 11 seconds to the first page. We found that after waking and warming up, it never took longer than 13 seconds to generate the first page, and often hit the 11-second mark. A 32-page PDF document

printed in 1 minute, 12 seconds. From a standing start, a 25-page PDF document completed in 1 minute, six seconds. Both were printed directly from a Web page, and across a network.

All versions of the Phaser 3300 have one-year warranties, and options extended warranties. Replacement cartridges are \$269 for standard (rated at 10,000 pages) and \$306 for high-capacity (rated for 15,000 pages) cartridges.

The many faces of the Phaser 4400

The Phaser 4400 comes in a wide range of configurations. Following is a list of models, their features, and estimated retail prices.

- Phaser 4400B: 26 ppm; 600 dpi resolution; 32 MB memory; parallel and USB connectivity; one 550-sheet letter/legal input tray; \$1,799.
- Phaser 4400N: 26 ppm; 1,200 dpi; 64 MB memory; Ethernet, parallel, and USB connectivity; one 550-sheet letter/legal input tray; \$2,399.
- Phaser 4400DT: 26 ppm; 1,200 dpi; 64 MB memory; Ethernet, parallel, and USB connectivity; two 550-sheet letter/legal input trays; two-sided (duplex) printing; \$3,449.
- Phaser 4400DX: 26 ppm; 1,200 dpi; 64 MB memory; Ethernet, parallel, and USB connectivity; two 550-sheet letter/legal input trays; two-sided (duplex) printing; hard disk; stacker; \$4,649. □

WWW.

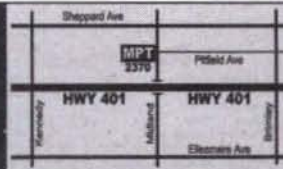
TCP—If you worry that your PC may be playing host to some type of spyware (any software that covertly gathers information through a user's Internet connection without his or her knowledge, usually for advertising purposes), you can check out a utility from Lavasoft. The company says Ad-aware is a free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

www.lavasoftusa.com/

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Sun's new chief exec examines Canada's high-tech role

By Geof Wheelwright

Sun Microsystems has a high profile as a major U.S. technology company, with its developments in the Java programming language and its popular line of servers. Add to that the fact that Sun has the always voluble Scott McNealy as its chairman, president, and chief executive, and you have a company that gets some attention.

However, Sun is not just making inroads in the U.S. There is a stronger connection between Sun and Canada than the mere fact that McNealy enjoys playing hockey. According to Stéphane Boisvert, president of Sun Microsystems of Canada, Sun is highly aware of the unique nature of the Canadian market and is making changes to tailor its Canadian operations to that uniqueness.

Boisvert, an IBM veteran who has only been in the Sun Canada top job since late 2002, says the geography and a vibrant small business sector are just two of the elements that make the Canadian market unique for his company. Another element of uniqueness is Sun's relationship with government agencies, which is

typified by the work the company undertook in helping to provide the technology infrastructure underpinning the Virtual Museum of Canada (www.virtualmuseum.ca).

The Web site is powered by three Sun servers—one Sun EnterpriseTM 420 and two Sun Enterprise 450 servers—all running Sun's Solaris Operating Environment. Meanwhile, two Ultra II servers support both images and databases. Since its debut on the Web in March 2001, the Virtual Museum of Canada has won several awards. It's well worth a look.

Boisvert says many Canadians may also be unaware of the level of "Canadian content" in many high technology products. He says a significant number of Nortel products, for example, could bear a "Sun Inside" logo if Sun were to borrow a marketing trick from Intel.

He said one of the most exciting opportunities in the Canadian market has been working with Research in Motion (RIM) as that company develops corporate wireless solutions using Sun's J2ME (mobile Java) technology.

"The number of Java programmers right now is growing annually at a rate four percent," said Boisvert. "And we are seeing big growth in the use of Java in phones, PDAs, and devices such as the RIM BlackBerry."

He says it makes Java a strong rival to Microsoft development environments in Canada.

"If you look at a recent IDC study about the momentum of Java applications implemented in Canada for the last four years, there is a nice balance between them," said Boisvert. "It also means there are large numbers of COBOL programmers who now no longer need to retire and can transform themselves."

Canadians can take particular pride in the work of University of Calgary graduate James Gosling, who is credited with inventing Java. Boisvert says Gosling has recently been working on helping develop controls for the robotic Mars lander, due to touch down on the red planet in 2009. He says controls for the robot are being based on the Java instruction set and Gosling has been "coding" the vehicle. □

Cross-border text messaging announced

Canadian and U.S. wireless subscribers can now exchange text messages regardless of their service providers. A new service, announced by the Canadian Wireless Telecommunications Association (CWTA) and the Cellular Telecommunications & Internet Association (CTIA), allows users to address their text messages to a recipient's 10-digit wireless phone number in Canada or the U.S.

"Canadians have overwhelmingly embraced text messaging with more than 21 million messages sent in the month of December alone—a monthly increase of 110 percent since the introduction of the Canadian inter-carrier service in April 2002," Peter Barnes, president and chief executive of CWTA said in a release.

The CTIA agrees that the expansion is a result of the tremendous growth experi-

enced by wireless carriers in their domestic markets. The service will be offered by the four national service providers: Bell Mobility, Microcell Solutions (Fido), Rogers AT&T Wireless, and Telus Mobility. Also included are regional carriers Aliant Mobility, Manitoba Telecom Services, and Sasktel Mobility.

North America's first inter-carrier text messaging network was launched last year by the Canada's four wireless carriers (above). Prior to the launch of this network in 2002, wireless subscribers could only send text messages to other members of the same wireless carrier. The release of this new service means that the range has now been expanded to include U.S. subscribers as well. U.S. carriers currently participating are AT&T Wireless, Cingular Wireless, Nextel Communications Inc., Sprint, T-Mobile, and Verizon Wireless. The

individual service providers will determine pricing and offerings for their plans, either per-message or flat-rate bundles.

One example is Verizon's plan to encourage cross-border conversation. Verizon customers who sign up for TXT Messaging, Verizon Wireless' short text messaging service, up until March 31, 2003 will receive unlimited text messages and alerts for US\$2.99 per month until June 30. After, customers will be allowed 100 messages for US\$2.99 per month, with any additional messages costing US\$0.02 received and US\$0.10 sent.

Clients of Verizon's Canadian partner, Telus Mobility, can send text messages for \$0.10 per message, receive text messages sent from a wireless phone for free, and send up to 100 messages for \$5 per month (free to receive messages sent from a wireless phone).

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CRM for your small business

Email, organizer tool can help you manage customer contacts

By Geof Wheelwright

Customer relationship management (CRM) isn't the first thing that leaps to mind when small business owners list what is key to running their operations. Typically issues such as cashflow, inventory management, and spurring sales get a much higher priority.

What is CRM and why do you need it?

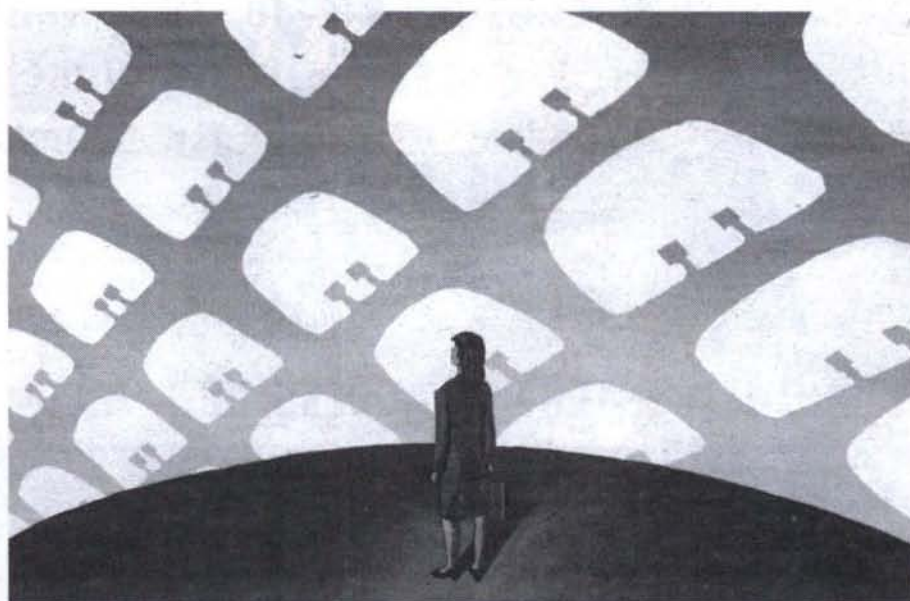
But as retail business gets ever more competitive in a tough economic environment, CRM probably deserves a little more attention from the average business than it has traditionally received. Simply put, CRM is a way of coordinating all elements of a company's relationship with its customers.

It means you keep all of the information about customers in one place. When you call that customer—or they call you—you don't have to fumble about for it, or even worse, ask the customer to repeat it. CRM is all about helping you “know what you know” about your customers.

This means that if a customer calls with a query about an invoice, you can not only lay your hands on the invoice immediately, you also know what the invoice is for, when it was sent to the customer, and you have information on any quality or follow-up issues that may have arisen in the supply of goods or services—and how those issues were resolved.

Likewise, if you are going to make a sales call to a customer you haven't spoken to in a while, you should be able to quickly refresh yourself about all the information you already know before the call.

It means that instead of leaving yourself an undated sticky note that says “Call Joe back in six months,” you have a set of detailed on-screen notes attached to an automated reminder that pops up the day before you need to make the call to Joe—and gives you access to a detailed file with information about everything Joe said he needed, when he needed it, what he was prepared to pay, and what you told him at the time. You can then review that information and be



ready to make the call to Joe when you said you would.

CRM is for you

“Sure,” I hear you saying, “that would be great if I could afford it—but I don't have the money for an expensive CRM system from big hitters such as IBM, Siebel, PeopleSoft, Onyx, or Pivotal. I'll just have to make do.”

All of that may be true, but making do is not such a bad thing. If you are like most small businesses, chances are you already have at least some of the technological components you need to at least start yourself with a rudimentary CRM solution.

The key to CRM is not really software—it is a function of organization and process. If you can find ways to inter-relate all the information you hold about a given customer—and easily pull all that information together quickly—it is not hard to maintain all the basic elements of a CRM system without buying a specific CRM solution.

Do it yourself with Office

Probably the best place to start creating your own CRM solution is Microsoft Outlook, the personal information management application that comes with Microsoft Office. Outlook not only includes a tightly integrated calendar, address book, email, note-taking, and to-do list application, it's also designed

to work well with the other applications in Microsoft Office.

This means that if, as many small businesses do, you already issue invoices using Excel, create background documents for customers in Word, presentations for customers in PowerPoint—and make appointments with them using Outlook—you're already in good shape to build your own CRM solution.

One way to do it

Within Microsoft Office XP, for example, there are seven standard icons: Outlook Today, Inbox, Calendar, Contacts, Tasks, Notes, and Deleted Items. For the purposes of creating a modest CRM solution from within Outlook, the most important of these is the Contacts button.

If you already have contacts stored within Outlook, you'll notice that there are a number of additional “tabs” to the Contact screen over and above the standard “General” tab where all your basic information, such as phone number, address, email address, and so on is held. These additional tabs—entitled Details, Activities, Certificates, and All Fields can provide you with further links to bring together customer information.

By simply moving through some of the key fields within just the first main screen, you can start building something quite useful. To start with, make sure that you not only have contact informa-

tion for each individual you deal with—but also each company. In fact, one way to start is by creating a master Company Contact record for each company you deal with. You certainly don't have to do it this way, but it can't hurt.

If, for example, you do regular business with “Joe's Company,” you just create a contact record that is solely designed to hold everything about the company. It might have entries that go something like this:

Full name: Joe's Company Master Record
Job Title: Regular buyer of plain stationery
Company: Joe's Company
File As: Joe's Company
Address: 123 Anywhere St
Anytown, AnyProvince
Canada A1A 1A1

This is the mailing address [Tick box]

Then fill in the fields for phone numbers, fax numbers, and insert the email address of the main person you contact at the company under E-mail. Under Display As, just put the name that will help you most easily identify the corporate contact. The Web page address and IM (Instant Messenger) Address are self-explanatory. Meanwhile, the Contacts button will allow you to add all the contacts from Joe's Company that you want to be associated with the master record. And if they fall into an existing or self-created category (a field that is used for To Do lists), you can also associate the company with that category. (An example in this case might be: customers for paper—since that is primarily what defines the relationship with Joe's Company).

Additionally, in the large, blank space above Contacts and Categories, you can insert general notes about the customer—or insert files that you want to become part of the master record of the customer. These files can be Excel files with invoices, Word files with customer quotes, PowerPoint files, and so on—anything you like.

Depending on how much information you want to store about your customer, however, it may make sense to leave that field blank and use another feature of Outlook to achieve something a little more organized—and you'll soon see

Continued on page 68



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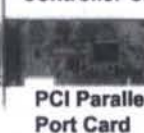


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Continued from page 66

why. The top menu items within a record field in Outlook are: File, Edit, View, Insert, Format, Tools, Actions, and Help.

The one known as Actions is key. Like all commands in Office XP, it doesn't show you all its options when you first click on it—so make sure you move your mouse all the way down the menu list to see if there is a small arrow at the bottom. If there is, click on it and it will show you the rest of the menu list.

You'll see that from this menu, you

can create all kinds of new documents for your contact that can be associated with his or her record—including writing a New Letter to the contact, creating a new email message to them, and so on. For the purposes of this discussion, however, there are two key items I would draw your attention to: New Journal Entry for Contact and Link.

New Journal Entry for Contact allows you to enter details of any and all discussions you have had with that contact, while Link allows you to link any files created as a result of those discussions to

the contact. Both are vital if you want to keep proper track of your interactions with the company.

The final place I would draw your attention to is Activities—which will search Outlook for all the documents you have associated with the Contact—including any emails to or from the primary contact or anyone else you put in the Contacts field on the General tab of the opening Contact record screen. It will also show any To Do items that are associated with the Category to which you linked the company, as well as

Journal entries and linked documents.

Lots of ways to create a solution

There are lots of different ways to create a basic CRM solution within Outlook. The things I have talked about are merely a way to expose you to the features within Outlook so you can create something for yourself. It is certainly not my intent to suggest that they are anything other than that.

But give it a try and have fun. Hopefully it will be worth it for both yourself and your customers. □

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Outlook: Cleaning house



Outlook is unusual among email and contact management programs because it stores all its data in one file. Most other programs use a series of folders and multiple files within those folders. The downside of having all your data in one file is that it can become very large and if, for any reason, you can't open it one day, all your information will be lost.

In addition, a large data file takes room in your computer's memory and ultimately slows your computer down, particularly if you use several programs at once.

For this reason, you should regularly back up your Outlook data and periodically empty old items from your data file to keep it to a manageable size.



Once you've set up AutoArchive, you can customize settings for each folder.

If you've been using Outlook for a time, you'll find you have plenty of data already stored that you no longer need to access instantly. For example, do you really need your calendar information from two weeks ago, or month-old email? If the answer is no, why not archive that information to remove it from your Outlook file.

To do this, you write the data to a special archive file before it is deleted from your Outlook data file. This way the information won't be lost and you can easily retrieve it from the archive if you need it.

Global archive settings

Archiving is a two step process: you first specify some global settings for the archive process, then you fine tune it by specifying settings for different folders and types of data. Because of its ongoing nature, contact data is never archived so none of these settings will affect it.

To view the global archive settings choose Tools, Options, select the Other tab, then click AutoArchive. If it is not already enabled, select Archive Every NN Days, and set the number of days to, say, 30 (you have the option of one to 60 days).

In the Default archive file area, type the name for your archive file if you

want to specify an alternate one to that indicated.

If you want to be prompted before an archive takes place, click the Prompt Before AutoArchive checkbox. When you're done, click OK.

The second step is to fine tune the AutoArchive settings for each folder. To do this, choose the folder name in the Folders list, right-click it, choose Properties, then select the AutoArchive tab. Here you can set longer periods of time than 60 days for certain items.

For example, to clean out year-old Calendar items, right-click the Calendar folder, choose Properties, then AutoArchive. Enable the Clean Out Items Older Than checkbox and set the number to 12 and the time frame to Months (you can choose Days, Weeks, or Months). The largest number you can use is 999, so you can specify a time-frame to suit any need.

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Outlook: Cleaning house

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Next, choose the destination for those items you're archiving. You can write them to the file you specified earlier, another file, or you can simply delete them altogether. If there is any possibility that you may need these items for reference in the future, you should archive them. If space on your hard disk is limited, periodically move the archive file onto a Zip cartridge or CD to free the space. To archive the entries, choose the Move Old Items To option and set the file you want to write them to. To delete the entries without writing a copy of the file, choose the Permanently delete old items option.

If you try this with the contacts folder, you will see there is no AutoArchive tab for this folder as these entries cannot be archived. You probably won't want to archive the email in your Deleted items folder, so you can choose to permanently remove it at an interval that suits you (every 10 to 14 days, for example).

You may find that the AutoArchive option for your Inbox is not enabled. This is because, by default, the contents of the Inbox are not set to be archived. To alter this, select the checkbox and set a timeframe within which emails should be archived along with your other Outlook data.



You can drag and drop items to and from your archive file, which will appear in your Folders list.

Another folder you probably won't want to archive is the one containing email templates. If you're using them

regularly, you won't want them removed from your Outlook program.

If you've set up Outlook so you're notified before archiving, you'll see a prompt appear whenever you start Outlook and when archiving is due to occur. When prompted, you can choose either to proceed with the archiving or to cancel that occurrence until another time. You continue to work in Outlook while it is archiving data and see details of the process in the status bar.

Special situations

In some cases, an item may be so important you don't want to archive it even when it reaches a certain age. If this is the case, change the property for this item so it won't be archived. To do this, open the item—a Calendar entry, for example—and choose File, Properties, and the General tab when the item is open in its dialog. Enable the Do Not AutoArchive This Item checkbox and click OK.

You should note that archiving

Outlook data is a process of removing old items from your main Outlook data file and to either permanently delete them or write them to another file. When you have done this, you can move the archive file to another disk or make a backup copy. However, because nothing is done to your current data, you should take care to back up your Outlook data file regularly so you have a copy of it should anything happen to the file.

To back up your Outlook file, first locate the file to back up. The file will have the extension ".pst" and is probably called outlook.pst. The easiest way to find it is to choose Start, Find, Files or Folders, and search your hard drive for files matching *.pst. When you locate the file, add it to your list of files to back up using your backup software, or simply copy it to a CD or Zip cartridge (it will be too large to copy to a floppy disk).

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time set before items are archived, you can manually archive the folder at any time. To do this, click the folder in the Folder list to select it, choose File, then Archive.

When the dialogue appears, choose the folder you want to archive and an age for the items to be archived, based on their date. For example, you can choose to archive all items dated prior to Dec. 31, 2002 by typing the date in dialogue or by selecting it from the calendar that

appears when you click the down arrow beside it.

You can also use Outlook's natural language interface. To archive all items that are six months or older with this method, type six months ago and Outlook will calculate which date that represents.

You can also select to archive items that have been marked Do Not AutoArchive and which cannot be archived any other way. Choose an archive file and click OK to archive the

folder you've selected.

Inside your archive file, a folder structure similar to the one you are using in Outlook is created automatically. So, if you archive a folder that appears inside your Inbox folder but choose not to archive your Inbox, the Inbox folder will be created inside your archive file as well as the folder you've chosen to archive. However, the Inbox folder won't contain any email because you haven't set Inbox emails to be archived. The subfolder

you've chosen to archive will contain archived emails.

If you choose to archive a folder and the result of the archive process is that the original folder no longer contains any data, the folder will remain in your Outlook file.

It isn't possible to automatically remove an empty folder when the archive process is complete and you will need to do this manually if desired.

Continued on page 74

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Outlook: Cleaning house

Continued from page 73

Getting it back

Once you've archived your data, it will no longer appear in your Outlook data file, so your data file will be smaller because it contains less data. You may also find your computer runs faster as a result. However, there is always the possibility that you will need to access data from an archive at a later date.

Say, for example, you've chosen to archive email from your Inbox that is older than 12 months and, a few months down the track, you need to access one of these emails. To do this, you have two choices: you can import the archive file to recover the data, or you can open the archive file itself to retrieve the data.

If you choose to import the archive file, you can either move all the items you have archived back into your Outlook file into the folders they were in when they were archived, or choose a different folder. If you want only one or two emails back, recovering an entire folder's worth of data is probably

overkill. The alternative is to simply open the archive folder so it appears as a folder in your folder list. You can then copy items from one folder to another. This is quick and easy.

To open the archive file to recover an item from it, choose File, Open, then click Personal Folders File (.pst). Now locate the folder you chose to write your archived items to. If you can't remember what it was, close this dialogue, choose Tools, Options, Other tab, click AutoArchive, and read the filename and its location. Now return and open the archive file. You'll notice an Archive Folders entry appearing in the folder list alongside your Personal Folders. You can open any Archive folder and display its contents to retrieve data. Locate the item and drag and drop it from the folder in the Archive Folders file to the appropriate folder in the Personal Folders file.

When you are done, right-click the Archive Folders entry in the Folders list and choose Close Archive Folders.

If you need to recover a lot of data from an archive, you can do this by

choosing File, Import and Export, Import From Another Program or File, and click Next. Choose Personal Folder File (*.pst) and click Next. Click Browse and locate the archive file to recover (if you're unsure what it is called or its location, see the instructions above for finding this information).

Select your preferred option for handling duplicates. In most instances you'll probably want to choose Do Not Import Duplicates and click Next. Now choose the folders you want to import and, whether you want to import them into the currently selected folder or the folder they were originally in (the latter is the one you'll most likely want to use).

You can also choose Filter and specify a filter to import only a subset of matching records from the archive file. Click Finish when you're done and the items you've selected will be imported from the archive folder into the location you've specified.

This may take some time, depending on how much data you've chosen to recover.

Finally, there is an important difference to note between the notion of using Import and Export and Archiving data. When you Import or Export data, the original source file is unchanged so the data you import from the file remains unaltered in the original file. However, when you archive data, it is removed from the original file and moved to the archive file so it no longer appears in the original file.

So, if you retrieve an archived item by opening the archive file and moving the item from the Archive Folders to the Personal Folders there is no duplicate of the item in the archive folders any longer (unless you copy rather than drag and drop).

On the other hand, if you import data from an archive file, the data remains in the archive file and only a copy of it is retrieved into your Personal Folders. □

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

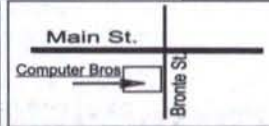
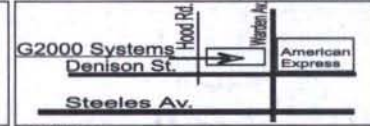
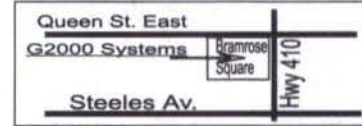


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Quick Tips

Word selection techniques

Select a block of text • To select a block of text—such as a column of numbers or a vertical line of text in a document—click where you want the top-left of the selection to be. Hold the Alt key and drag with your mouse (horizontally and vertically) to select the block. You can now copy or cut it as desired.

Quick paragraph move • Quickly move a paragraph by clicking inside it and holding the Shift and Alt keys as you click with the down and up arrow keys. You can do this with more than one paragraph if you select them before you begin.

Text selection • To select a word, double-click it with your mouse. If you triple-click you'll select the current paragraph. If you'd prefer to use the keyboard, place your cursor in the word and press F8 twice. Press F8 a third time and you'll select the current sentence. Press it a fourth time to select the paragraph, and a fifth to select the current document if it contains only one

section (if not, this will select the current section and you must press F8 a sixth time to select the whole document).

Other selection tricks • To select a line, position the mouse pointer in the left margin opposite the line and click once. To select more than one line, do the same thing and then drag down to select the line below. To select from the cursor position to the end of the line, hold Shift and press the End key. To select from the cursor position to the beginning of the line, hold Shift and press the Home key. To select from the cursor position to the beginning of the document, hold Shift and Control and press the Home key (to select from the cursor to the bottom, use Shift + Control + End).

Select by formatting • To select text that is formatted similarly to the current text, right-click the text and choose Select Text With Similar Formatting. In Word 2002 you can also select text according to its

format by opening the Styles and Formatting task pane and right-clicking the style to locate it (don't click it, just right-click). From the menu, choose Select All NN Instances.

Selecting big quantities of text • When you're selecting big lots of text, it can be difficult to drag over all the text or hold the Shift key as you move around. Instead, click once with your mouse at the start of the text to select, then move to the end (the scroll bars are handy for this). Hold Shift as you click—all the text between the first click and the Shift + Click will be selected.

Select and select some more • When you've selected a piece of text and then realise you need to select more, hold the Shift key down and click at the new end point. Or, if you'd rather use the keyboard, double-click the EXT marker on the Status Bar to select it and use keyboard keys to add extra text to the selection.

Select the entire document • To select an entire document, choose Edit, Select All or press Control + A (this also works to select text in a browser window). Alternately, you can triple-click in the left margin of the document with your mouse when the pointer looks like an inward pointing arrow.

Table text • Tables pose different selection problems. To select a row of a table, place your cursor in the left margin opposite the row and click once, then, to select more rows, drag downwards. To select a column, place your mouse pointer over the top border line of that column until the cursor turns into a down arrow and click once. To extend this to more than one column, drag horizontally. To select a single cell in a table, hold your mouse pointer over the bottom left corner of the table until it turns into a solid arrow pointing upwards into the table cell, then click once. You can then drag down or across to select more cells.

—Helen Bradley

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Centering in on Centrino

TCP test drives Acer TravelMate 800 with Intel's new mobile-friendly technology

By Sean Carruthers

Intel has formally launched its new Centrino line of products. Unlike many other brand launches, Centrino isn't one specific product, but a grouping of new technologies designed to work together to improve the mobile computing experience.

The first, and most notable, of these technologies is a new mobile processor, known as the Pentium M. This is teamed with the Intel 855 mobile chipset and the new "Calexico" 802.11b wireless component. These three components are Intel-designed and Intel-manufactured, and work together to conserve power—which is key in the world of mobile computing.

As processors get faster they generate more heat, especially when they're running at full performance. With a notebook computer that's a real problem,

because the processor is installed in a confined space. In order to facilitate proper heat dissipation, the outer notebook casing has to increase in size. Over the last year, this has led to a gradual increase of the size and weight of the highest-performance notebook computers; users who wanted a slim and light notebook often had to settle for slower or older technology.

The power spec of the Pentium M processor is lower than the mobile Pentium 4 processor, though, and that has more than one immediate result: First, the processor generates much less heat, which allows for a much slimmer case design. Second, the lower power requirement means much longer battery life—up to eight hours with certain configurations (those with smaller screen sizes, notably).

The lower power requirement is also good news for those interested in wire-

less networking, because wireless cards tend to use a lot of power as well. By conserving power in other parts of the machine, you can still use wireless without having to worry as much about the battery life.

Currently, the Calexico wireless module supports 802.11b wireless networking, but a dual-mode 802.11a/b option is expected later in 2003.

As with the other parts of the Centrino package, Calexico is also designed for power efficiency. One method it uses for conserving power is in the polling.

Even when you're not connected to a wireless network, your wireless component polls regularly for available networks; Calexico saves battery power by polling less and less frequently whenever it discovers that there are no wireless networks available.

(It's actually a fairly logical assumption:

if you leave an office building where wireless is prevalent there's a pretty good probability that you're heading off into the world at large, where wireless networks aren't as common. In the end, less polling means less radio transmission, which means less power expended.)

Though it doesn't have much effect on the battery life, another interesting feature of the Calexico component is that it uses signal-to-noise instead of raw signal strength as the criteria for switching between access points as you move around in an area with multiple wireless nodes; a lower-strength signal may actually provide more clarity than one that is coming in strong, and the wireless component here is smart enough to select the wireless node that is providing the best connectivity.

While getting ready to launch Centrino, Intel has worked with a num-

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ber of ISPs and businesses to ensure that there will be a number of Centrino-ready "hot spots" where users can go for wireless connectivity.



Acer TravelMate 800

From: Acer America Corp., www.acer.ca

Estimated price: \$4,259

MobileMark 2002 Performance rating: 193

Battery life (minutes): 265

Intel has worked with ISPs to ensure that the hotspots not only support 802.11b but VPN (Virtual Private Networking) and other things a business user needs. Intel has also been working

with both Verisign and Checkpoint to ensure VPN security for users of Centrino.

We had the opportunity to get a sneak peek of one Centrino-based notebook from Acer, but keep your eyes on this space over the upcoming months: notebook computers with Centrino technology onboard are expected from many other vendors, including Dell, Fujitsu, IBM, MDG, and Toshiba.

We got a first look at Acer's new Centrino-based TravelMate model, the TM800. It comes in at least three different flavours at the time of launch; we got our mitts on the TM803LCi, which uses the 1.6 GHz Pentium M, comes with 512 MB of onboard memory, a 60 GB hard drive, and a 15-inch TFT screen capable of 1,400x1,050 screen resolution. That resolution is delivered by ATI's 64 MB M9 mobile graphics processor, which is also capable of handling a second independent monitor.

All models of the TM800 come with integrated 802.11b wireless networking, in addition to 10/100 Ethernet and a 56 Kbps v.90 modem. The chassis is only 3.175 cm (1.25 in.) thick with the screen

closed, but the TM800 still manages to fit a DVD/CD-RW combo drive inside, as well as four USB 2.0 ports and a FireWire port. There's only one PC Card slot onboard, but there's a SmartCard slot underneath it, for added functionality. The version we tested weighs in at only 2.5 kg (5.7 lb.).

One nice feature about the TM800 is that the DVD/CD-RW combo drive comes in a hotswap-enabled bay: just remove it and replace it while your TravelMate is still running. Though the battery life on this model is already pretty impressive (4 hours, 25 minutes), a second battery in this bay boosts your runtime even longer.

The industrial design of the notebook strikes a nice balance between style and functionality. It's very sleek and attractive. The keyboard component looks quite nice, especially with its gently curving key layout, which also makes it easier to use in tight spaces, allowing your elbows to fall naturally beside your body without straining your wrists.

Acer is so confident in the quality of these new notebooks and the Centrino advantage that it's putting its money

where its mouth is: each model in the TravelMate 800 series comes with a three-year warranty, instead of the usual one year.

As for the performance, we were very impressed. On MadOnion.com's PCMark 2002 benchmark, it scored very well on both CPU and memory testing (5,274 CPU and 4,917 memory, which is actually very good when you consider that our 3.06 GHz Pentium 4 desktop machine only scored 7,122 and 7,169, respectively).

Likewise, the MobileMark 2002 rating the unit achieved was substantially higher than most of the other notebook machines we've seen, even those running Pentium 4 processors of a similar speed.

- Other versions of the TM800 include:
- TM800Xci: 1.3 GHz Pentium M; 256 MB RAM; 30 GB hard drive; DVD/CD-RW; 14.1-inch TFT screen; 2.43 kg (5.4 lb.); \$2,739.
 - TM800LCi: 1.3 GHz Pentium M; 256 MB RAM; 40 GB hard drive; DVD/CD-RW; 15-inch TFT screen; 2.43 kg (5.4 lb.); \$2,899. □

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Apple goes on hardware upgrade spree



Justin Siemens
APPLE NEWS

Apple has been on a bit of a spree lately, with three major product introductions in three weeks. First it unveiled new Power Mac G4 towers and a new Cinema Display in late January; the following week brought new iMacs and a price cut for eMacs; and then new XServes and the Xserve RAID were introduced Feb. 10.

The only products left to be upgraded this year are the iPod and the iBook—which we expect will happen in March for the iPod, and sometime closer to summer for the iBooks.

New Power Macs
They just can't seem to make up their

minds in Cupertino. In 2000, the two top models in this line were powered by dual-G4 processors, while there was only one dual-processor model in the next few generations of the Power Mac G4 lineup. In the most recent generation, the entire line had dual processors, which we had assumed would now be the status quo. However, the latest speed bump sees the re-introduction of a single-processor model to the line—which is very disappointing, but at least includes a price drop.

The new lineup, which includes price reductions of between \$300 and \$900, includes a single 1 GHz G4 processor model, dual 1.25 GHz G4s, and top of the line dual 1.42 GHz G4 model. The base model now costs \$2,399, down \$300, and includes the same RAM and hard disk as the previous low-end model—minus one processor. A single 1 GHz versus a dual



867 MHz will be slower running Mac OS X almost every time. For audio or video work it will be much slower, and for most other tasks the single processor will bog down sooner than the dual. The single 1 GHz would be a bit faster under Mac OS 9, but these new G4s are the first towers that will only run OS X, which makes the switch back to a single CPU all the more strange.

The dual 1.25 GHz and 1.42 GHz models don't include many surprises. The SuperDrive is gone from the 1.25 GHz model, but the price is \$3,199—down \$700 from the previous mid-line configuration. The dual 1.42 GHz still includes the SuperDrive, and its price is \$4,299—down \$900 from the former top-of-the-line model.

All three of the new models include an 800 Mbps FireWire port, and are Bluetooth and AirPort Extreme ready. Here is a full breakdown of the new specs and prices: \$2,399 buys a single 1 GHz G4, 1 MB Level-3 cache, 256 MB RAM, 60 GB hard

drive, Combo drive, and a 64 MB GeForce 4MX. Notable changes here are the increase to 64 MB VRAM. For \$3,199 you can buy a dual 1.25 GHz model with 1 MB Level-3 cache for each processor, 256 MB RAM, 80 GB hard drive, Combo drive, and a 64 MB Radeon 9000 Pro. The only change here is the omission of the SuperDrive, plus the old dual 1.25 GHz had 2 MB cache per CPU. However, the old dual 1.25 GHz cost \$5,199, so we'll call it a fair trade. On the high end, \$4,299 buys a dual 1.42 GHz G4 tower with 2 MB Level-3 cache per CPU, 512 MB RAM, 120 GB hard drive, SuperDrive, and a 64 MB Radeon 9000 Pro. Other than the speed boost and FireWire 800, this is almost the same machine as the previous high end, but with a price cut.

Overall the latest G4 tower lineup is solid, and represents good value for the professional market. The extra grunt in the mid-end model will help with video compression and graphics work, and the dual 1.42 GHz is the best value Apple has offered in a long time.

New Cinema Displays

At the same time it updates its G4 towers, Apple has introduced new Pro monitors. The 17-inch Studio Display and 23-inch Cinema HD Display both survived the transition, but the 15-inch Studio Display and 22-inch Cinema Display did not. Replacing the 22-inch Cinema Display is a new 20-inch model that sports a slightly higher resolution and a brighter screen in a smaller display. The new model has a max-

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imum resolution of 1,680x1,050 pixels, sports the same 16:10 aspect ratio, and uses the same Apple Display Connector,



which results in amazing clarity. It also has built-in power and a pair of USB ports. If you have a PowerBook with DVI, you'll be pleased to know the price of the DVI-to-ADC converter has been reduced to \$149 from \$259.

The other displays that survived the transition have been reduced in price drastically. The 17-inch Studio Display is \$1,099 (a \$450 price cut), and the 23-inch Cinema HD Display is \$3,199 (down \$2,301). These models remain unchanged, and don't benefit from the increased brightness and contrast of the new 20-inch Cinema Display.

The new 20-inch Cinema Display sells for \$2,049, which compares favourably to the old price of the 22-inch model—about \$3,500. All Apple displays continue to include just a one-year warranty, whereas other flat-panel makers—including

Formac and Samsung—offer three-year warranties on their displays. You'd think Apple would be able to match them considering the similarity in pricing.

Overall though, the new prices put Apple in line with the rest of the industry: a digital 17-inch display from Samsung or Sony retails for between \$900 and \$1,000, so \$1,099 for the 17-inch Studio Display is not out of the ballpark, considering it is designed specifically for the Mac and features two USB ports.

iMac line simplified

With the flat-panel G4 iMac having celebrated its first birthday, Apple has injected a shot of life into the series without making any major changes. The old line-up had four models ranging in price from \$1,849 to \$3,149, while the new has been trimmed to two models: a \$1,999 15-inch model and a \$2,799 17-inch model. Both include Apple Pro speakers and all the same ports as the previous generation—which means no FireWire 800.

The new 15-inch model has an 800 MHz G4 with 256 MB RAM, a 60 GB hard drive, Combo drive, and a 32 MB GeForce 2MX. It is basically the same as the previous \$2,299 Combo drive model, but with a faster processor. It will still boot to OS 9, unlike the new 17-inch iMac, which is OS X-only.

The 17-inch model gets all the new stuff, including a faster, 133 MHz system bus, DDR RAM, 64 MB video RAM, and optional built-in Bluetooth and AirPort Extreme. It also gains a 1 GHz G4 process but neither of the new models has any Level-3 cache. This model sports a 4X SuperDrive—which is twice as fast as the

drive in the previous model and is the same SuperDrive found in the 1.42 GHz tower. Overall the faster bus, DDR RAM, and increased video RAM will make it a great machine for games, or even light video editing.



Compared to the base model tower, the 1 GHz iMac costs about \$400 more, but includes a 17-inch widescreen LCD, the same amount of RAM and video RAM, a larger hard drive (80 GB), and faster

SuperDrive. Considering that both are single-CPU models, the iMac is a better value, although the lack of Level-3 cache will make it up to 15 percent slower than the base tower. Another consideration is that the tower can hold four hard drives internally to the iMac's one, and up to 2 GB RAM to the iMac's 1 GB limit. For most home, education, and small business users, however, the iMac would be more than adequate. If you're a power user who needs more expansion, you might as well opt for the dual 1.25 GHz tower and get the extra processor and better video card.

The full configuration on the 17-inch iMac is: 17-inch widescreen LCD (16:10 aspect ratio and 1,440x900 maximum resolution), 256 MB DDR2100 RAM, 80 GB hard drive, 64 MB GeForce 4MX video, optional Bluetooth module and AirPort Extreme, 10/100 Ethernet, and 56Kbps modem. At \$2,799, it's \$250 less than the old 17-inch model, and will perform about

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Canadians, government paying attention to open source



In a time when many governments are declaring their official policies regarding open source, Canada is finally getting serious about looking into the issue. Perhaps part of the reason for this move

is the growing number of open source-related conferences happening within Canada, not to mention the fact that there are already a number of government agencies quietly using open source behind the scenes.

Canada studies open source possibilities

A collection of Canadian government agencies (Industry Canada, Public Works and Government Services Canada, and the Treasury Board Secretariat) have begun an official study to "investigate open source business opportunities and challenges for the Canadian information and communications industry sector and what implica-

tions there may be in terms of public policy."

This study incorporates the key issues and concerns regarding open source for both business and government entities. The spirit of open source drives how this study will be conducted, in everything from seeking input far and wide, to using open source "scenarios," which are hypotheses of what it might take to reach various future results.

Why should you care? Take a peek around the world at all of the governments that are looking into open source. In some cases, the problem is bureaucratic, believe it or not. There's just not always the proper paperwork to fill out in order to select the non-commercial software you want. Or someone with the power to override a decision isn't sure about this whole "open source" thing and isn't willing to take a risk.

In other cases, government offices might require documents to be submitted in proprietary formats, and you may not be able to afford the software to do so. There's also the little problem of security.

In the case of governments, which are handling lots of data that you really don't want leaked to the world (like your last few tax statements), some people are uncomfortable being forced to trust software companies that might have included back doors, or shoddy security practices.

Local governments are often the first to experiment with creative solutions. If your town's in serious need of a systems and software upgrade, then using a free operating system and mostly free tools can be a great way to help trim the budget—though don't forget about little things like paying someone to manage and set up the systems.

From a business perspective, most small and home offices have a pretty limited software budget. Much business software caters to companies with fatter wallets, so open source has helped create a situation where even the smallest business can typically afford the software they need if they're willing to sidestep the more expensive alternatives. A growing number of companies is also finding ways to spin open source into income, mostly through

offering services and add-ons related to free or inexpensive packages.

Whatever your reasons for liking open source, you can learn more about this study at www.e-cology.ca/canfloss/. Even if you don't like open source, every community benefits from constructive discussion of things that could be done better.

Canadian Linux and open source events

There are a number of open source and open source-related conferences happening in Canada in 2003. Some of them have already passed, but we've focused on annual events, so watch their Web sites for next year's offerings.

- **BOSS (Business of Open Source):** RA Centre, Ottawa, Jan. 25-26, 2003. oclug.on.ca/boss/
- **Conférence PHP:** École Polytechnique, Montréal, Mar. 21-22, 2003. phpconf.phpquebec.com/
- **Government on the Net:** Ottawa Congress Centre and The Government Conference Centre, April 14-17, 2003. govnet.nrc-cnrc.gc.ca/govnet03/

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Apple News

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20 percent faster, plus for iDVD use the drive will burn twice as fast, which should yield a full DVD in 15 minutes (after encoding).

For home users who still need to boot to OS 9 occasionally (and not just Classic), the 15-inch iMac is a good value, but you'll be missing out on the new technologies such as AirPort Extreme and DDR RAM. On the plus side, PC133 RAM is available for half the cost, and Bluetooth can still be added externally with a USB adapter.

EMac prices cut

Apple has also taken the shears to the price of its eMac line—but without updating any specs. This means eMacs will still be able to boot to OS 9, which was probably necessary to accommodate educational users, many of whom have not yet switched to OS X. The eMac was after all created for education first and home use second.

The 700 MHz eMac now sells for \$1,549 and the 800 MHz model with SuperDrive

sells for \$1,999. It's amazing to see a SuperDrive-equipped G4 Mac for under \$2,000. It wasn't long ago that SuperDrives were only available in \$3,000-plus systems. However, considering there has been no improvement in this line's specs, it might be wise to consider an iMac if you can afford it. The 800 MHz eMac and iMac are about the price, but the latter comes with an LCD screen. Unless you need a SuperDrive for burning DVDs, the 800 MHz iMac is probably the best value in the consumer desktop line at this point in time.

XServe updated, XServe RAID debuts

The XServe was the first Mac to feature a 167 MHz bus speed and DDR RAM, so with the introduction of FireWire 800 and 1.42 GHz CPUs to the Power Mac line, it was only a matter of time before the XServe was updated. The 1.42 GHz G4 runs a bit too hot to be used in the thin 1U enclosure, so the new XServe models are available with either a single or dual 1.33 GHz G4 chips, each with 2 MB of Level-3 cache. Each XServe unit can hold up to 2 GB of DDR2700 RAM and up to four 180

GB hard drives.

The standard configurations are as follows: \$4,299 for a single 1.33 GHz G4, 2 MB Level-3 cache, 256 MB RAM (DDR2700), 60 GB hard drive, two 10/100/1000 Ethernet ports, slot-load CD-ROM drive, and 32 MB ATI card. The dual-processor XServe sells for \$5,899 and includes all the same specs but boosts the RAM to 512 MB.

All XServe units include an unlimited client licence of Mac OS X 10.2 Server, and can be configured to order with any combination of drives and expansion cards. An OS X-powered XServe is perfect as a mail, file, and web server for small to medium size companies. Larger companies would probably require several XServes in a cluster, which is also an option.

Apple is trying to position the XServe as a replacement for a Windows 2000 or Linux server, but with the ease of use of the Mac OS interface. So far, the XServe has seen moderate success, although it will probably never have the sales success of cheaper Windows 2000 boxes by Dell or Hewlett-Packard. The XServe is ideal for a mixed platform office: it features built-in

support for Linux, Windows, and Mac file sharing, as well as all the standard TCP/IP services, including FTP, Web DAV, POP, IMAP, DNS, and DHCP services.

One new option for the XServe is the XServe RAID product, something Apple



talked about when the first XServe was announced, but which is only now available. The XServe RAID holds up to 14 drives in a RAID level 0, 1, 3, 5 or 0+1 configuration, with up to 2.52 terabytes of data. The XServe RAID includes dual hardware RAID controllers with two 128 MB caches and is capable of transfer rates up to 400 Mbps over fibre channel Ethernet—which is eight times faster than the limit of a single FireWire interface. Contact your local authorized reseller for more information. The XServe has so many different configurations that each customer really needs to build their own unit. □

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<p>SOUND CARD CREATIVE SB PCI 128 \$23 CREATIVE SB LIVE 5.1 \$45 CREATIVE SB AUDIGY \$87 CREATIVE EXTIGY \$205 C-MEDIA PCI 5.1 \$16</p>		<p>SPEAKERS Platinum Sound 3pcs \$49 EB960 3pcs 1000W \$35 EB990 3pcs 520W \$25 Altec Lansing AVS200 \$20 Altec Lansing AVS300 \$35 Altec Lansing AVS500 \$59</p>	
<p>* means integrated on the motherboard All prices are subject to change without notice, and already 3% cash discount</p>			

Hardware compatibility homework can pay off

By Emru Townsend

“You’re a switcher! You’re a switcher! A-ha-ha-ha!” These were the emailed words of my good buddy, former roommate, and Mac guru Marc after I confirmed that I was indeed replacing my Toshiba Satellite Pro with a super-cool Macintosh iBook.

I chuckled at his words—not just because I imagined him rubbing his hands and cackling with glee, but because I remembered us a decade earlier, when we were two of three students sharing an apartment. There were five computers between the three of us back then: two Amigas, a 486 running Windows 3.1, and two Macs. A regular challenge was shuffling data back and forth, or even figuring out how to use hardware between the different platforms.

There was also his choice of words. He was of course referring to Apple’s “Switch” campaign, with its TV, print, and online ads featuring real people who have decided to dump their Windows machines and embrace the Macintosh side of the Force.

However, if you pay close attention to the ads, they largely talk about the easy stuff—being able to work with Microsoft Office documents, using iTunes, using a digital camera. But if you’ve accumulated all kinds of hardware and software over the years and want to minimize new purchases—or if you still need a PC and want the com-

I’ve got boxes full of software and hardware, gigabytes of data... The ultimate goal is to be able to work with anything using one of my PCs or the iBook with few headaches—or, preferably, none.

puters to work together—forget it. No one mentions the tough stuff, because it doesn’t make for good advertising copy. Apple’s Web site does have a FAQ on making the switch, but it also glosses over some of the nitty-gritty questions.

In case you haven’t guessed, I’m one of those people. I’ve got boxes full of software and hardware, gigabytes of data, and any number of projects to regularly attend to, and now I have to find a way to make it all work with a Mac. The ultimate goal is to be able to work with anything using one of my PCs or the iBook with few headaches—or, preferably, none.

It’s a return to those crazy student days, but on a grander scale (and maybe a few less ramen noodles). Over the next few months I’ll be combining what I’ve learned from Internet resources, vendors, and, of course, my varied Mac-addict friends to provide a guide to making the switch as painless as possible. Stick around; it’ll be a bumpy but educational ride.



Swinging both ways

The first question on my mind—and on the minds of PC users I polled—was “Which PC hardware can I reuse?”

That used to be a harder question to answer. Even in the old days, PCs and Macs could share a reasonable amount of equipment—modems, printers, and SCSI devices were the most common—provided you had the right adapter cables and/or software. The advent of USB and FireWire has done away with a lot of the physical restrictions, but there are still some issues to keep in mind. There are also some pleasant surprises.

Hard drives and RAM

It used to be that the delineation was clear: Macs used SCSI drives, as did a tiny minority of PC users. For the most part, the PC world used MFM, RLL, and later ATA (IDE) drives. If you have some unused ATA drives lying around, rejoice: you can happily pop them into a Mac and reformat them. Similarly, Macs now use the same DDR SDRAM and SO-DIMM modules as PCs.

PCI, AGP, and PCMCIA cards

This can be a little tricky. Desktop Macs now have PCI and AGP slots and PowerBooks have PCMCIA slots, but that doesn’t mean that every card made for a PC desktop or laptop will work. Verify with the manufacturer that drivers exist for your card first.

Monitors

Aside from the all-in-one iMac and eMac models, all Macs use the Apple Display Connector (ADC) to connect to Apple monitors. There are options if you have a monitor you’d rather not part with, though. DVI and VGA connectors are standard or available for a little extra, depending on the Mac model. Either way, it’s not a big issue.

Printers

In a perfect world, any USB printer would work on a Macintosh, provided a driver was available. In many cases this is true, though some vendors are still catching up when it comes to creating drivers for Mac OS X. But if you were to take a look at Hewlett-Packard’s Web page, you’d find one or two USB printers that aren’t considered Mac-compatible at all. Be sure to do your homework beforehand.

Keyboards and mice

There was a time when, between home and work, I would switch between a Macintosh, one of two PCs, and an Amiga several times throughout the day.

Continued on page 92

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Removing the roadblocks

Continued from page 83

HTML markup, a simple table (Fig. 1) providing a list of upcoming courses can be rendered unintelligible to a blind user employing screen reader software.

By design, screen reader software simply "reads" out the contents, links, and graphics on every page visited. When programmed using typical HTML markup, this table would be read from left to right and top to bottom—resulting in the following sequential string of words being read by the screen reader:

Course Number, Course Name, Duration, Locations, Beginner Courses, 562-A, WWW Fundamentals, 1 day, Toronto, 567-A, HTML 101, 2 days, Ottawa Vancouver, Intermediate Courses, 598-B, SQL Primer, 3 days, Montreal, 602-B, Learning XML, 2 days, Ottawa

Clearly, the non-visual representation of this information lacks the clarity and organization of its on-screen counterpart. Ultimately, this could lead to much confusion and frustration for a vision-impaired user. Fortunately, with a few simple additions to the HTML code (below), a screen reader can interpret the table properly—resulting in a much

more user-friendly audio rendition.

```
<table border="1" summary="Categorized list of web development courses">
```

```
<caption>Course information by category</caption>
```

```
<tr>
<th id="a1" axis="courses">Course Number</th>
```

```
<th id="a2" axis="courses">Course Name</th>
```

```
<th id="a3" axis="courses">Duration</th>
```

```
<th id="a4" axis="courses">Location</th>
```

```
</tr>
```

```
<tr>
```

```
<th id="a5" axis="category" colspan="4">Beginner Courses</th>
```

```
</tr>
```

```
<tr>
```

```
<td headers="a5 a1">562-A</td>
```

```
<td headers="a5 a2">WWW Fundamentals</td>
```

```
<td headers="a5 a3">1 day</td>
```

```
<td headers="a5 a4">Toronto</td>
```

```
</tr>
```

```
<tr>
```

```
<td headers="a5 a1">567-A</td>
```

```
<td headers="a5 a2">HTML 101</td>
```

```
<td headers="a5 a3">2 days</td>
```

```
<td headers="a5 a4">Ottawa<br>Vancouver</td>
```

```
</tr>
```

```
<tr>
```

```
<td headers="a5 a1">567-A</td>
```

```
<td headers="a5 a2">HTML 101</td>
```

```
<td headers="a5 a3">2 days</td>
```

```
<td headers="a5 a4">Ottawa<br>Vancouver</td>
```

```
</tr>
```

```
</table>
```

The addition of summary, caption, id, axis, and header tags forces the screen reader to interpret the table like this:

Summary: Categorized list of Web development courses

Caption: Course information by category

Table Header: Course Number

Table Header: Course Name

Table Header: Duration

Table Header: Location

Category: Beginner Courses

Course Number: 562-A

Course Name: WWW Fundamentals

Duration: 1 day

Location: Toronto

...

Ultimately, a user presented with this information will be able to clearly understand the tabular content, resulting in a positive online experience.

Making an online purchase

According to BizRate (www.bizrate.com), in 2002, e-commerce sites racked up a total of US\$48 billion in online transactions—a 34 percent increase over 2001. This jump was attributed primarily to

the perceived value and convenience of shopping online. Unfortunately, for some disabled users successfully navigating through the e-checkout line on many e-commerce sites can be decidedly inconvenient.

The usual culprits are HTML-based forms (figure 4) that use complex on-screen layouts, inconsistent label positioning and/or a capricious use of check boxes and radio buttons. This setup can cause major issues for disabled users that employ voice recognition software to navigate the Web.

Voice recognition software uses voice commands as an input device. For example, to direct an on-screen pointer (i.e. a mouse) to a specific location, the user's screen is divided into a series of logical grids. Each grid panel can be referenced via voice commands to position the pointer on the screen. Using this system, it can be very difficult to direct the pointer to small targets (such as check boxes).

Our sample form (Fig. 2) suffers from inconsistent field labelling, which makes it difficult to determine which fields relate to which label. Moving from field

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17480 Yonge St.
Unit B3
Tel: 905-853-1628
Fax: 905-853-1723
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Sat: 9:30-18:00
Sun: 11:00-17:00
Mon: Close

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1550 Upper James St.
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to field using the tab key (or equivalent voice command) can also be a problem caused by layout complexities. In this example, the tab function would move from top to bottom in the left column and then jump from top to bottom in the right column—an illogical process given how the form is visually organized.

Fig. 2

These problems can be easily eliminated by altering the visual layout and HTML code of the table using the TABINDEX and LABEL attributes:

```
<form action="process.cgi" method="post">
<p>Shipping and Handling:<br>
<select name="shipping" tabindex="1"><option
value="1">Standard Service
$5.00</option></select></p>
<p><input id="a1" type="checkbox"
name="same_address" value="1"
tabindex="2"><br><label for="a1">Use my billing
address as my shipping address</label></p>
<p>First Name:<br>
<input type="text" name="first_name" size="20"
value="" maxlength="50" tabindex="3"></p>
</form>
```

The addition of these attributes will make the "clickable" areas of the checkboxes larger and place a logical order when tabbing through the form.

Viewing rich media

With broadband consumer and business access to the Internet becoming more affordable and more widely adopted,

many Web sites are incorporating rich media as part of their information offerings.

Good examples of this practice are news-oriented Web sites offering video footage and sports/entertainment sites providing nightly highlights or event coverage. While video may be an excellent visual—and audio—based vehicle for passing on a large amount of information quickly, it can also be problematic for hearing impaired users who would only be able to see what was being presented.

The simple solution? Add captioning into every video posted to your Web site (Fig. 3). Captioning is supported in all three of the popular streaming media players (Microsoft Windows Media Player, RealNetworks RealPlayer and Apple's QuickTime Player).



Fig. 3

Using assistive software applications such as MAGpie (the Media Access Generator from the National Center for Accessible Media), rich media develop-

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letters@tcp.ca

ers can quickly and easily include captioning in all online video productions.

Incorporating accessibility standards into Web sites makes sense for a variety of reasons. First and foremost—as shown in the three examples in this article—accessibility guidelines are easy and inexpensive to implement, especially for new online initiatives. Policy has also been developed by Canadian and U.S. federal governments making it clear that accessibility will remain an integral part

of the Internet usability mainstream. Finally, universal accessibility makes good business sense and opens the door to a group of users with an estimated US\$175 billion in purchasing power. □ Todd Coopee and Jeff Horne are principals at Industrial Media Inc. (www.industrialmedia.ca) and specialize in building online presence for organizations in public, private, and not-for-profit sectors. Todd can be contacted at tcoopee@industrialmedia.ca; Jeff can be contacted at jhorne@industrialmedia.ca.

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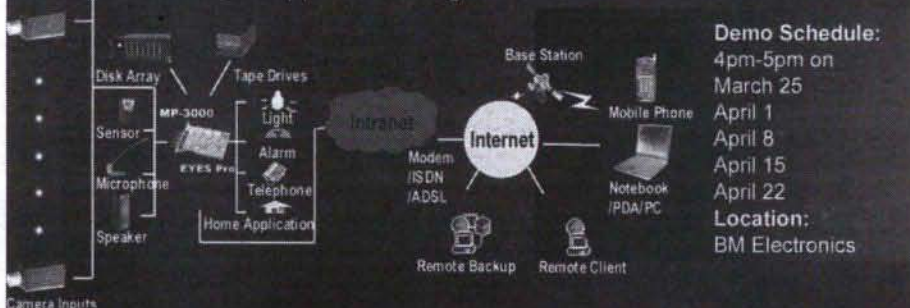
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Contribute for Webmasters with control issues

By Emru Townsend

I've never been a big fan of referring to software or hardware as "solutions"—it carries a whiff of marketing-speak that I'm not comfortable with, as if I spend my days furrowing my brow with concern until the right company comes along with the answer to all my problems.



Contribute 1.0

From: Macromedia, www.macromedia.com
For: Windows 98SE/NT4.0 and up (Mac OS X version available later in 2003)
Street price: \$149

But as it turns out, I recently had been furrowing my brow, with (admittedly moderate) despair. I maintain a handful of Web sites, one of which relies heavily on content from other people. For the most part, updates to the site don't need to be handled by me, except when the contributors don't know or care to work with HTML. Since I'd rather be working on code than pouring text into its HTML container, the situation can get a

little frustrating.

And so, Macromedia came along with—I admit it—a solution. The idea behind Contribute is that it lets Webmasters hand off content updates to others, freeing them up to actually take care of their administrative chores.

It sounds crazy, I know. To a control-freak Webmaster (like, er, me), the idea of giving someone else the keys to the castle seems like heresy, a sure recipe for disaster. Contribute's designers seem to realize this, which may explain why the publicity for this product lavishes readers with assurances that the application won't mess around with underlying source code, and that a site administrator can control what is maintained and how.

First, the Webmaster fills in some basic server and password information for the site. Then he or she restricts access to specific folders—including the all-important ability to delete files within those folders—on a group-by-group basis. (By default, there are two groups: Administrators and Users. Custom groups can be created, each with its own privileges.)

Aside from deciding who can play with what, another concern is code integrity. For many years, Macromedia's claim to fame with Dreamweaver has been that someone can edit a page visually without the original code being disturbed, in direct opposition to Microsoft FrontPage. The tradition is carried on here, with Contribute promising to

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avoid inserting extraneous code. Furthermore, among the administrative settings are controls for how new content will be inserted—using CSS tags or not, allowing multiple spaces, the type of line breaks, and even size limits for graphics. Again, these can be different from one group to another.

Once all of this is in place, the site can be modified visually through the Contribute interface as easily as in any word processing program. Text can be edited; graphics resized and positioned; and tables inserted, removed, or edited. A nice touch is the ability to drag and drop Word and Excel documents onto a page. When I tried this feature, Contribute inserted text from Word flawlessly, preserving my boldface, italics, hyperlinks, and graphics while ignoring the original column definitions.

Excel spreadsheets became tables as expected, but I'd have appreciated the option to select a specific range rather than having everything appear. (I could have used cut and paste, but it would have been nice to be able to do this without leaving Contribute.)

Once the changes have been completed, the page can be published to the server, or saved as a draft. Another nice touch: the draft page can be emailed to collaborators (including, no doubt, a nervous Webmaster) for approval before publishing.

After trying all these features, I decid-

ed to see how good a job Contribute did at leaving my original code unscathed. Sure enough, the original structure was left intact—mostly. The position of some tags was altered, though not their order (for example, a tag was moved from the beginning of one line to the end of the one above it); <p> tags with some inline CSS code were added for new lines of text that I'd entered; and while my code remained indented, it went from increments of three spaces to two. In the absolute scheme of things that's no big deal, but because I use site-wide search and replace for redesigns and large-scale updates, it's a cause for concern.

Although my motto is to avoid the first release of software like the plague, there's the occasional 1.0 release that's polished enough for me to ignore that rule. Contribute can take its place among those select few titles, though it could force a change in a few work habits with its slight code changes. I'd also like to see two other functions that would help keep administrators happy: some kind of automatic notification that a page has been changed, and a means of synchronizing changes made on the server with copies on a local drive. Either one of these would help anxious Webmasters loosen their vise-like grip on their precious pages. I know it would make me less antsy. □

Emru Townsend's Web sites can be accessed from <http://5x5media.com>.

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CSS selectors: Part 3

By Keith Schengili-Roberts

The last couple of articles have looked at CSS selectors that have been implemented in the major browsers, primarily in Mozilla and Opera, and less regularly in Internet Explorer. These selectors allow for a greatly enhanced range of selective formatting, allowing you to do such things as format specific tags based on matches to the names of their attributes, as well as more basic selector types including contextual, child, and adjacent sibling selectors.

The people at the World Wide Web Consortium (W3C, now more often called W3) clearly think that selectors are important, as they have expanded the range of selector types in the latest draft of their Cascading Style Sheets 3.0 (CSS3) module dealing with selectors. Since CSS3 as a whole is still uncon-

firmed, what follows can really only be considered a "heads up," though even if selector names and functions differ when they finally come to pass, chances are strong that you will be able to use selector types like this in the near future.

New attribute selectors under CSS3

The currently proposed CSS3 module dealing with selectors further extended the types of selectors available to Web authors. These include new attribute selectors as well as a set of structural pseudo-classes. Three new attribute selectors are being proposed (see table).

This is a modest extension to the existing attribute selectors introduced under the CSS2 specification, providing still greater control over how selectors can be activated when the browser matches them against certain strings of text.

The "[^=]" selector is useful in those

cases where you want to exactly match the attributes to a given string. For example, the following piece of code would work only with a div element that uses only the string "prev"; "previous" and "previously" would not match.

```
div[rel^="prev"]
```

The "\$=" selector is for when you want to match up an element that exactly equals the end of a string value contained within the quotes. So, for example, the following code would only work with a div element that ends with "ing"—"missing" and "hitting" would be a match, whereas "inglenook" wouldn't.

```
div[rel$="ing"]
```

The "*=" selector works by looking for any match at all to the string contained within quotes. This is a much broader selector than the other two introduced under CSS3—it is essentially a slightly refined universal selector. The following code sample also looks for the string

"ing", but in addition to formatting such obvious matches as "missing", "hitting" covered by the previous selector it would also match "inglenook", "singer", or "bingo".

New structural pseudo-classes

Despite the many different types of selectors that already exist, there are still situations they do not cover, such as selecting against information based upon a Web page's document structure—which is where the new CSS3 structural pseudo-classes come in.

These allow Web authors to do such things as apply different formatting to successive paragraphs or other elements on a Web page, the first child element (whatever it may be) that follows under a parent element, and so forth. (See the table for currently proposed CSS3 structural pseudo-class types.)

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formatting only to the root of a document. For a Web page, this is always the <html> element. So this selector comes into play primarily when used with XML documents, as it can set the specific formatting applicable to different sub-types of XML documents (of which XHTML is one).

The :nth-child(n) pseudo-class selector can be used to set different formatting to elements in sequence. In addition to a numeric value (which sets the repeat pattern), it can also take the named values odd and even. The following piece of code allows you to set different formatting values to odd and evenly numbered

rows in successive table rows:

tr:nth-child(odd) {color: white}

tr:nth-child(even) {color: aqua}

The next code snippet does exactly the same thing as the first, except that it uses numeric values instead; "(2n+1)" is the equivalent of "(odd)" and "(2n)" is the equivalent of "(even)".

tr:nth-child(2n+1) {color: white}

tr:nth-child(2n) {color: aqua}

The :nth-last-child(n) pseudo-class selector works in a similar fashion to :nth-child(n) except that it counts from the last child element or elements of a parent. For example, the following code snippet selects the final row of a table and colours it yellow:

tr:nth-last-child(-n+1) {color: yellow}

The :nth-of-type(n) pseudo-class selector operates by working with sibling elements and applies formatting based on either a numeric value or by using odd and even values. So the following code snippet could be used to alternate the position of floated tables:

table:nth-of-type(2n+1) {float: right}

table:nth-of-type(2n) {float: left}

The :nth-last-of-type(n) pseudo-class selector looks for the nth sibling of its

type. This allows you to do some interesting things, such as selecting to format the first and last elements on a Web page. The following example shows how you could use this to select the first and last paragraphs on a page and then set their background colour to blue:

body > p:nth-of-type(n+2):nth-last-of-type(n+2) {background-color: blue}

If you just want to select the very last child element, you can use the :last-child pseudo-class selector. So if you wanted to selectively format the final row of a table, you could use the following code:

table > tr:last-child {background-color: black; color: white}

There are twin first-of-type and last-of-type pseudo-property selectors, useful for selecting the first and last child elements in relation to a given parent. For example, the following code snippet selects the very first and very last table data elements in a table.

tr > td:first-of-type {background-color: black; color: white}

tr > td:last-of-type {background-color: white; color: black}

There are two "only" types of pseudo-
Continued on page 91

Proposed attribute selectors under CSS3

Name	Description
element [attribute^="value"]	Where an element whose "attribute" value begins exactly with the string "value"
element [attribute\$="value"]	Where an element whose "attribute" value ends exactly with the string "value"
element [attribute*="value"]	Where an element whose "attribute" value contains the substring "value"

New structural pseudo-classes

Name	Description
:root	An element that is root of the document.
:nth-child(n)	An element that is the nth child of its parent.
:nth-last-child(n)	An element that is the nth child of its parent, counting from the last one.
:nth-of-type(n)	An element that is the nth sibling of its type.
:nth-last-of-type(n)	An element that is the nth sibling of its type, counting from the last one.
:last-child	An element that is the last child of its parent.
:first-of-type	An element that is the first sibling of its type.
:last-of-type	An element that is the last sibling of its type.
:only-child	An element that is the only child of its parent.
:only-of-type	An element that is the only sibling of its type.
:empty	An element that has no children (including text nodes).

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In review: Tips for Windows XP and the argument for open source

Preventative maintenance for your Windows XP machine



Windows XP Annoyances

Authors: David A. Karp
Publisher: O'Reilly & Associates, www.oreilly.com
ISBN: 0-596-00416-8
Softcover 2002 564 pages
Price: \$46.95

Rating (out of ★★★★★)	
Information content	★★★★ 1/2
Readability	★★★★
Overall rating	★★★★

Intended for beginner/intermediate

The morning prior to having this book land on my desk, my Windows XP User Profile was corrupted. I tried burning a CD-R and the program locked up the system tight. I switched off the system, and that's when a string of error messages appeared, saying that Windows XP had forgotten all of my personal settings. Ugh! So, I was hoping I'd find a solution to my problem in this book, the latest in

O'Reilly's *Annoyances* series. But as any good doctor will tell you, preventative medicine is cheaper than curing the disease. That's roughly the approach this book takes—a tips-and-tricks approach to improving performance and reducing the overall number of annoyances you are likely to run into.

Let's face it, Windows XP is rather like the ugly frog on the cover of this book: it is fast and you can easily hop from task to task on your machine, but few people would call it a thing of beauty. More often than not, it is the things that are supposedly designed to make things easy that end up driving most people up the wall—the cutesy large icons used everywhere in Explorer, or the animated character that turns up whenever you want to search for a file. Annoying to be sure, but in addition to telling you how to customize or otherwise get rid of these specific annoyances, the book delves much deeper into the heart of the operating system, teaching you not only how to make it speedier but how to prevent annoyances you have not even encountered yet.

The book is divided into 10 chapters, looking at such things as coping with Explorer, how to use the Registry Editor and other tinkering techniques, maximizing performance, user accounts, scripting, networking, troubleshooting and—oddly enough—at the end of the book, installation. There's plenty of useful reading here: I counted over a dozen dog-eared pages in my review copy after I had finished with it, ranging from topics as simple as customizing file views to several performance tweaks, working with Remote Desktop, and plenty of good troubleshooting tips.

The author has gone to some trouble to go "under the hood," looking at how to alter the "skins" Windows XP clothes its GUI in to the list of files you can get rid of (and those you shouldn't touch) in the name of seeking better performance.

My only real problem with this book is its approach means you are less likely to turn to it when something does go seriously wrong. For example, the trouble I ran into with my User Profile does not have a simple fix, though the chapter dealing with user accounts showed me

ways to I can (hopefully) prevent it from happening again. The depth of material is substantial. It's aimed primarily at would-be power-users or sysadmins who are already comfortable with such things as editing registry entries, though to Karp's credit it shouldn't scare away a determined beginner.

It may not solve all your XP problems, but it will definitely solve a lot of its annoyances.

Tip: For a glimpse at the sort of material you can expect to find in the book, see the excellent Web site www.annoyances.org.

Is open source your source for business profits?

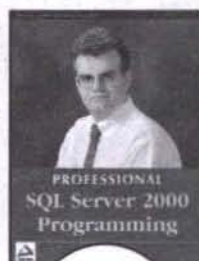
When I read this book's title, I couldn't help but think about how often you see the business case being made for using Microsoft products in the workplace. The answer to that question is "never." Or at least, not specifically—let's face it, there is no lack of books on Microsoft software that do their best to

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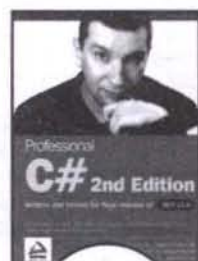
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convince the reader, after having bought a particular program, that it was a wise move. And when it comes to operating systems, unless you are running a high-end workstation, your options tend to fall into one of two camps: a flavour of Windows or a Macintosh OS.

it has made great strides in recent years and has become the first choice for an ever-growing base of technical users. In addition to Linux, there are also a number of open source software programs available for many platforms that are becoming real competitors to commercial software products, ranging from the Mozilla browser to OpenOffice's productivity programs to GIMP for professional image manipulation.

Aimed primarily at managers who are interested in investigating the possible benefits of moving towards open source software, this book neatly lays out the strengths—and a few weaknesses—behind switching to Linux at the business level. It also serves as a good, in depth introduction to the subject and culture of open source development.

After the initial crash course in open source lingo, this book looks at the world of open source software, delving into such topics as the development cycle for the

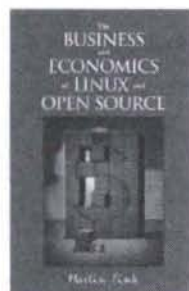
Linux OS, the myriad communities and organizations developing popular open source software, and some of the differences between the many flavours of Linux, such as Red Hat (most popular in North America), SuSE (most popular in Europe) and many others. Martin Fink also does a good job of wading through and distinguishing the implications between the legal agreements behind the types of open source licensing systems out there—which are important to understand, as many oblige users to post improvements they make to the open source software they are using.

The author then makes a serious business case for using open source software, looking at the costs of using Linux, including deployment, development, support, and training. From there, he makes a compelling, if rather dry, case for how businesses can operate at a profit not only by using open source software, but also by developing it. This is something

Fink knows well, being the general manager for Hewlett-Packard's Linux division. He also looks at how (and more importantly, when) open source software can enhance a business model, and how to best realize the benefits of open source development.

While all of its arguments are sound, and there is plenty of information for IT managers and those higher up in a company, only rarely does this text touch on anything concrete. There are many convincing economic charts and comparisons to other industry models out there, but while these provide a glimpse at how businesses can work with and develop open source programs to enhance their bottom line, more case studies or even end-user anecdotes would have brought these points alive. Still, if you are seriously interested in moving towards open source in the workplace, this book is a must.

—Keith Schengili-Roberts



The Business and Economics of Linux and Open Source

Author: Martin Fink
 Publisher: Prentice Hall
 ISBN: 0-13-047677-3
 Softcover 2003 242 pages
 Price: \$46.99

Rating (out of * * * * *)	
Information content	* * * *
Readability	* * * *
Overall rating	* * * *

Intended for beginner/intermediate

Increasingly, there is a third alternative out there: Linux. As an operating system,

Canadians, government paying attention
Continued from page 80

- **Real World Linux Conference & Expo:** Metro Toronto Convention Centre, April 28-30, 2003. www.realworldlinux.com
- **GCC Developers Summit:** Ottawa, May 2003 (venue and dates to be announced). www.gccsummit.org/
- **YAPC (Yet Another Perl Conference):** Carleton University, Ottawa, May 15-16, 2003. www.yapc.ca
- **Ottawa Linux Symposium:** Ottawa Congress Centre, July 23-26, 2003. www.linuxsymposium.org/2003/

These are just the most open source-centric conferences. For a full list of what's going on in Canada and elsewhere, check out linuxcalendar.com/.

Canadian open source talk

Interested in discussing open source issues with other Canadians? Head over to CanOpenER (www.canopener.ca) and join the "discuss" mailing list.

It's a great place to hear about conferences, learn what's happening with open source on the government and business fronts, and connect in general with Canadian open source advocates. The focus here is broader than Linux, and includes all aspects of open source and free (as in "freedom," not "free beer") software. □

Dee-Ann LeBlanc has written more than 10 computer books, many articles, and taught classes mostly involving Linux and its programs. You can reach her at dee@renaissoft.com.

CSS selectors: Part 3

Continued from page 89

property selectors: `:only-child` and `:only-of-type`. The first represents an element that has no siblings, the second represents an element with no siblings that have the same element name. The first is equivalent to `:first-child:last-child` and the second to `:first-of-type:last-of-type`, although both "only" pseudo-property selectors are lower in specificity (and hence, lower in the cascading order).

The final pseudo-property selector is `:empty`, which represents an element that does not have any children. This is unlikely to be applied to such things as `<html>` or `<body>`, for example.

Again, it should be repeated that as of

yet, none of these selectors have been confirmed by the W3, never mind being implemented in any of the major browsers. Still, this should give you a better idea as to what is possible with the bevy of new selector types you can expect to see in a browser near you in the future. □

Next time: A new way of looking at colour with CSS3. Keith Schengili-Roberts welcomes any comments, questions, suggestions, or HTML tips you may have. Email Keith at: robertsk@rogers.com. He teaches a course on CSS and Dynamic HTML at the University of Toronto's Faculty of Information Science (www.fis.utoronto.ca), and his latest book on CSS, *Core CSS, 2nd Edition*, is due out in 2003.

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Hardware compatibility homework

Continued from page 82

The hardest part was convincing my brain to rewire my fingers to understand four different keyboards. My solution was to buy a one-of-a-kind keyboard that worked on PCs and Amigas, so that at least 75 percent of my computer usage wouldn't result in bizarre typos and keyboard shortcuts that didn't work.

It isn't quite so hard to do the same thing with a PC and Mac. In fact, although you won't find "Macintosh" anywhere in its product description, my Microsoft Natural Keyboard Pro works nearly flawlessly on the Mac. Some keyboard remappings are to be expected: the Windows key becomes the Command key and Alt becomes Option.

Some things are more surprising: Page Up and Page Down require the Control key to perform as you'd expect, and Home and End only work in conjunction with the Shift key, for selecting text from the insert point to the start or end of the document. Curiously, the Delete key performs exactly as it does on the PC, despite the fact that there's no equiv-

alent key on the Mac. Ah, but here's the rub: one of the Natural Keyboard Pro's features is its array of specialized (and programmable) shortcut keys for Internet, multimedia, and Windows functions. On the Mac, they're nothing but useless plastic nubbins.

The hardest part was convincing my brain to rewire my fingers to understand four different keyboards. My solution was to buy a one-of-a-kind keyboard that worked on PCs and Amigas, so that at least 75 percent of my computer usage wouldn't result in bizarre typos and keyboard shortcuts that didn't work.

Your best bet (short of buying two identical USB keyboards) is to get a keyboard specifically tailored for both platforms. Two such setups I tried were the

Logitech Cordless Comfort Duo and Cordless Navigator Duo, two wireless keyboard/optical mouse combinations.

The two most significant differences are that the Comfort keyboard is a split-style keyboard, and the Navigator keyboard has a few more shortcut keys (but neither has as many as the Natural Keyboard Pro, alas). Both of the keyboards helpfully have keycaps with descriptions for both operating systems, so you don't have to remember which key is Option and which is Command, for instance.

The important thing is that with the included driver software you can configure a keyboard to behave almost identically on both platforms—"almost" because the Logitech Control Center on OS X isn't quite as flexible as iTouch, its Windows analogue.

Once everything is set up, you can disconnect the USB receiver from one computer and plug it into the other and get right to work. Of course, you can get a wired keyboard instead, but I prefer the flexibility of wireless on my cluttered desktop.

The mouse was similarly trouble-free, and I was able to configure the buttons almost identically on both platforms (there was no automatic Internet Back function in the Logitech Control Center; I settled for the Internet Explorer-specific keyboard equivalent.) There's a convenient aspect to this: because Macintosh mice have only one button you would have to hold down the Option key while clicking to get the right-click Windows users are used to. By configuring the right mouse button in the Logitech Control Center, you have one method for both systems.

As a side note, my curiosity compelled me to try setting up three wireless mice—two of the same model—and two wireless keyboards between three computers, all in the same room. They happily worked together, with none of the interference I feared.

Once I got my hardware happy, there was the little matter of software. We'll begin that odyssey next month. □ Emru Townsend (emru@pobox.com) considers himself platform-agnostic, but he still pines for the days of AmigaDOS.

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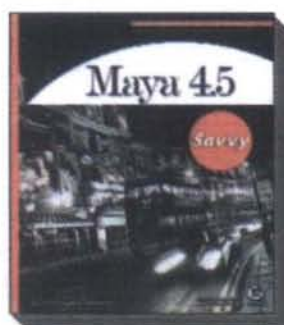
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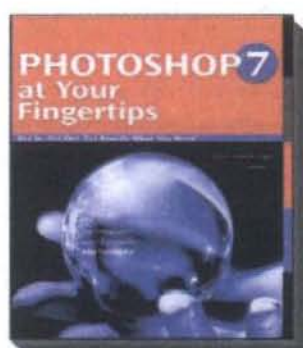
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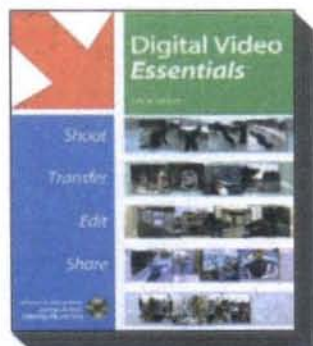
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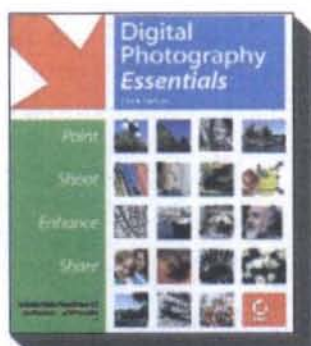
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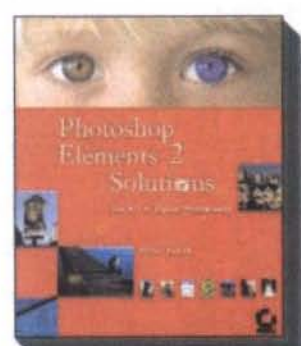
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Computer recycler offers support...

Continued from page 64

"The biggest challenge we face would clearly be getting quality equipment in," Scott Glass says. "It is a constant struggle to maintain a solid inventory. Pentium II class systems and anything above is literally gold to us, we are always in desperate need. To date we have never completely run out of such equipment but we could always use more. Also laptops are in high demand in the non-profit community, we find it very difficult to get any portables as well."

ReBoot's "win-win" philosophy provides corporations with secure solutions to data destruction and equipment removal, and in turn offers community organizations the information technology and support they desperately need. Working in corporate IT sales, Glass found that most of his customers were throwing out old equipment, or donating old equipment that had been poorly formatted, missing drives and vital parts.

There were some tentative efforts made at organized computer recycling, but there was no technical support or training offered. This was clearly a great

disadvantage to those organizations who needed help most, organizations not already familiar with computers. So in addition to equipment donations, ReBoot offers a network of technicians who help charities and schools set up and maintain the equipment it provides.

"I think all of us at ReBoot Quebec would agree that the greatest reward is seeing our equipment being used in the community," Glass says. "There is a lot of work before equipment is ready, to be able to visit a recipient site and see a community project up and running thanks to ReBoot computers is the reason we all come to work everyday."

To qualify to receive equipment from ReBoot you must be a non-profit organization, charity or public educational centre. In Quebec you can apply to receive or to donate equipment by calling 514-822-1001 or e-mailing Scott Glass at sglass@rebootquebec.org.

By May 2002, Reboot Canada (www.rebootcanada.ca) had redistributed more than 20,000 computers. In December 2002, ReBoot Canada representatives and supporters received the Queen's Golden Jubilee Medals during a ceremony.

Computers for Schools

Computers for Schools (dfs-ope.ic.gc.ca/), co-founded in 1993 by Industry Canada and the Telephone Pioneers, is a similar volunteer-based computer recycling initiative launched in 1994. There are four repair centres in the Lower Mainland of British Columbia, staffed by volunteers and students.

Students need computers in order to learn the skills they will depend on to compete in the global information economy, but cash-strapped school boards often struggle to keep up with the demand for workstations. Computers for Schools assists schools by recycling computers and redistributing them fairly in the local community. Every computer provided by Computers for Schools is "classroom ready", including the operating software and basic peripherals (mouse, keyboard, and cables) needed for operation.

High schools and community who partner with Computers for Schools can also establish a computer repair centre or computer club. Repair centres and computer clubs help Computers for Schools stretch school dollars, improving the

quality and quantity of the equipment made available, and helping to build and reinforce the technological skills and knowledge that students need to make the most of their education.

Connecting Canadians

Connecting Canadians (www.connect.gc.ca) is a federal government initiative that is designed to make Canada the most connected country in the world. Canada needs to become a world leader in the development and use of advanced information and communications technologies in order to compete globally in the information economy.

Connecting Canadians offers resource and information exchanges, funds Canadian content initiatives, develops Canadian government information for online delivery, and formulates policies that are designed to foster stronger connections between Canadian technology initiatives. Connecting Canadians supports a variety of programs, including Computers for Schools, Schoolnet (www.schoolnet.ca) and CANARIE (www.canarie.ca), Canada's Internet development organization. □

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IBM looks for new business markets for grid computing

Up until now, grid computing has been used primarily for research purposes. In an effort to push grid computing (www.ibm.com/grid/) into the business realm, IBM has released 10 new products. The products will target financial, life sciences, automotive and aerospace industries, as well as the government. IBM says the technology will increase computing power while decreasing the cost of computing.

Grid computing is a group of Internet-linked servers and computers that allow

processing power to be available "on tap." Through the technology, all computers and storage would be combined into a single pool of resources that individual members of the network can draw from.

IBM's focus this year will be on providing grid products for five business functions for the target industries: research and development, engineering and design, business analytics, enterprise optimization and government development.

For the financial industry, IBM will offer the Analytics Acceleration Grid to improve

trading analytics and an IT Optimization Grid, to allow organizations to make use of underused storage and computing resources. For life sciences, IBM plans to offer an Analytics Acceleration Grid which is geared towards drug discovery and will help to increase the number of calculations processed. The Information Accessibility Grid will offer unified access to queries. For the automotive and aerospace industries, IBM will provide Engineering Design and Design Collaboration grids to manage costs and

distribute work flow. For governments, IBM will provide information access grids for unified data and file access.

IBM will also offer Grid Innovation Workshops to provide enterprises with customized training and education on how grid computing could benefit their organization. IBM has also partnered with five companies to develop grid computing software: Platform Computing, DataSynapse, Avaki, Entropia and United Devices.

—CanadaComputes.com

Ideazon to release customized keyboards

Ideazon's (www.ideazon.com) new Zboard promises to "revolutionize interaction with the keyboard" and the company says it is the prime time to launch its idea. According to IDC, the market for keyboards and keypads is expected to grow to US\$2.2 billion in 2004. Ideazon hopes serious gamers, or those who use a particular application extensively, will want to purchase a customized keyboard for that specific purpose.

The Zboard is a two-piece interchangeable keyboard. The user buys the base, then purchase separate interfaces that snap into the base. Interface designs are application-specific and incorporate customized commands and colour coding to program in shortcuts and links, which are stored on a chip embedded in the board.

The keyboard setup is meant to streamline the number of keystrokes required to perform certain operations within games

and applications. The base requires a one-time installation and the interfaces just need to be dropped into place—the base automatically detects and identifies the interface. When an interface is dropped in, a pop-up window appears to confirm the launch of the application. The user also has the option of setting it to launch automatically when the interface is dropped in place. When the interface is detached the connection severs.

For gaming, macro keys are built-in to replace multiple keystroke and keys are enlarged for ease of use. For applications, hot link buttons across the top of the keyboard can be programmed to launch files, applications or the Web; programming requires holding the button down for two seconds until a "beep" is heard. Instead of a Help menu, a user activates Key Tips, which pop up to describe a key's function.

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Gimme that ole time gaming

By Emru Townsend

As much as I'm impressed by Warcraft's intricacy or Medal of Honor Allied Assault's sense-shredding level of immersion, I'm more of an old-school gamer. I came of age during the heyday of the Atari VCS (later called the 2600), Apple II, handheld Mattel electronic games, and quirky arcade games like I, Robot. More than anything else, I adored my Commodore 64. Archon, Choplifter, and Lode Runner are more my speed. The last truly great gaming moment for me came when Lemmings arrived on the Amiga.

I'm not the only person who feels this way. Retro gaming has been a thriving subculture since, well, before it was considered retro. Do a search for "retro games" and you'll find thousands of Web pages devoted to the games of yesteryear. Some well-known companies have been releasing CD-ROMs of old games that perfectly mimic the originals—for a while, I became re-addicted to Millipede—but there's a lot more out there. More, in fact, than I could list here. But this modest

collection of software Web sites and should get you started. Some are free, none are expensive, some will only cost you time. All of them are worth it.

Midway Games

www.midway.com

Bally/Midway and Williams were both known for pinball games, and entered the video game arena in the early 1980s with games like Robotron, Joust, and Spy Hunter. Like Sega, Nintendo, and Namco, they've produced classics that still resonate in with modern audiences. Unlike the other companies, which barely even mention their old games, Midway (the result of a merger between Bally/Midway and Williams) keeps a strong link to its roots by making several of its old games freely available on its Web site. Click on the "Play Classic Games" link and you can play Shockwave versions of Bubbles, Defender, Defender II, Joust, Rampage, Robotron, Satan's Hollow, Sinistar, Spy Hunter, and Tapper. They're so faithful to the originals you get the original opening screens and high score displays. You even have to click on quarters to get credits.

The Jumpman Lounge

www.classicgaming.com/jlounge/

In 1983, Epyx released Randy Glover's Jumpman, and instantly far too many young Atari 800, Commodore 64, and IBM PC users became addicted. Inspired by Donkey Kong, Jumpman climbed ladders, shimmed up and down ropes, and of course jumped from place to place in an effort to defuse bombs sprinkled throughout Jupiter Command Headquarters. In 1994, the rights to Jumpman reverted from now-defunct Epyx to Glover, and there are several versions in existence (including one for the Palm OS!). The Jumpman Lounge gives you the whole story and enough downloads to keep Jumpmaniacs occupied for a long time.

Infocom

http://infocom.gerf.org/

Zork

www.thcnet.net/error/index.php

Hitchhiker's Guide to the Galaxy

www.douglasadams.com/creations/infocomjava.html

Owing to its DEC system origins, Infocom's Zork was a completely text-based fantasy game. When you ran it, you

got a blank screen with a few words on it: "You are in an open field, west of a big white house with a boarded front door. There is a small mailbox here." Underneath was a blinking cursor, and that was the extent of your instructions. Typing "help" revealed how it worked: you got things using simple sentences like "Open mailbox" or "Walk north," which would provide more descriptions for you to work with.

It didn't take long before people discovered Zork's rich world, and several sequels followed, as well as detective and science-fiction games (including one based on Douglas Adams's *Hitchhiker's Guide to the Galaxy* books), for a total of 35 games that didn't spare a single pixel to graphics and relentlessly challenged imaginations and puzzle-solving skills.

Activision eventually acquired the rights to Infocom's games, and released them on CD-ROM. They're long out of print and consequently hard to find, but you can kill time during your search by downloading the free versions of the first three Zorks they released (now hosted on the unofficial Infocom page). If you'd prefer,

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you can play Zork or Hitchhiker's Guide to the Galaxy online.

Atari Anniversary Edition Atari Revival

us.infogrames.com

Price: \$25 each

When kids start getting uppity about their fancy-pants PlayStation 2s, GameCubes, and Xboxes, I like to remind them that there was a time when Atari ruled the video game universe. That's about the time they decide to start ignoring me and I can play Missile Command without interruption, thanks to Infogrames. Its Atari Anniversary Edition replicates a dozen of Atari's time-tested classics in all their blocky glory. If you're not so much of a purist or are allergic to low resolution, there's a tarted-up, true-colour version of each game included. Not that it matters; after all, the game's the thing, and these feel so much like the arcade originals I have to stop myself from reaching for another quarter when a missile wipes out my last city.

Atari Revival has only three games, but a few extra features: Missile Command and Warlords can be played via modem, over a LAN, or over the Internet, and offers updated versions of the games as well.

(Turning the tables and launching my own missile strike? Very cool.) It also includes the Atari VCS game Combat. The downside: there's no Mac version. The upside: each CD-ROM costs less than what I used to spend in arcades in a month.

Intellivision Lives! Intellivision Rocks!

www.intellivisionlives.com

Price: \$29.95 US each

For some die-hard Atari fanatics, Mattel's Intellivision was just an upstart platform that couldn't touch our beloved game system—not that we didn't sneak in a couple of games of Space Battle when no one was looking.

Don't ask me how, but a company named Intellivision Productions got its hands on the rights to the Intellivision software titles created by Mattel, Activision, and Imagic (that is to say, just about all of them). The end result is Intellivision Lives! and Intellivision Rocks! for Windows and Macintosh computers, which include over 90 games between the two of them, many of which had never been previously released. Even of the games are available for free as part of three Intellipacks, downloadable from the site.

LEDhead

www.peterhirschberg.com/handheld/ledhead/

Speaking of Mattel, it should be mentioned that in the late 1970s, long before Game Boy, Mattel dominated the handheld game market. They weren't video games in the strictest sense, but small single-game units that used LEDs to signify football players, submarines, tanks, and other game characters in simple but oddly engrossing games. Programmer Peter Hirschberg has recreated 12 for Windows, Palm OS, and PocketPC. I'm sure the irony of using equipment costing hundreds or thousands of dollars to replicate \$20 handheld games isn't lost on him.

MAME

www.mame.net

MAME32

www.classicgaming.com/mame32qa/

The only drawback to otherwise excellent compilations of old favourites is that they tend to stick to recognizable classics. More offbeat cult favourites like Quantum, Black Widow, or the aforementioned I, Robot tend to get ignored. Necessity—or at least the desire for a low-resolution adrenalin fix—being the mother of invention, many coders have taken up the challenge and found ways to make old

favourites available to nostalgic gamers.

Supporting a staggering 2,045 games, MAME is the most ambitious of all the programs mentioned here, and also the most problematic. Short for multiple arcade machine emulator, MAME is an open-source project to provide a platform for arcade games that would otherwise be extinct. MAME has been ported to Mac OS, Unix/Linux, OS/2, Amiga, and more—even some digital cameras!

Here's where things get tricky: like most emulators, MAME requires a copy of the original ROM to play a game, and like any other software, copying a game ROM you don't own without the copyright holder's consent is illegal. For a while, it was pretty easy to find and download ROMs for just about any arcade game, but they've become incredibly scarce as copyright holders crack down. Some legal ROMs are available, but they're few and far between.

MAME is made by geeks for geeks—don't expect a nice InstallShield wizard to set everything up for you. If you'd rather not read through docs and fiddle with command line parameters there's always the Windows-only MAME32, which sports a moderately polished GUI. □ Emru Townsend (emru@pobox.com) admits that he still sees Sinistar in his nightmares.

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What's New

Continued from page 10

Hopefully coming soon to a bookstore shelf near you: *Pixel Math for Dummies*. Once reasonably straightforward—as in, the more pixels, the better—the digital camera market now deals not only in pixels and megapixels, but “effective pixels,” based on the idea that newer capturing technology means not all pixels are created equal.

the camera is aimed to please the first-time digital camera owner, according to the company.



Both cameras can record video clips with sound and come with a 16 MB xD-Picture Card and connect to a PC via USB.



With up to 200-odd channels on TV these days, the CBC often sits neglected at the bottom of the heap—telling solid Canadian stories, but struggling to be heard above the din. So the company is trying a new approach, trying to get your attention while you're at your computer instead. CBC has launched **Home Delivery** (www.cbchomedelivery.com), a free weekly subscription service that delivers multimedia content from CBC shows like *The Fifth Estate*, *The National*, *Canada Now*, *The Nature of Things*, *Ideas*, *Dispatches*, *The World This Weekend*, and *Outpost* to the desktop PC for anytime viewing.

And now Fujifilm (www.fujifilm.ca) has gone one step further, dividing its effective pixels into S-pixels and R-pixels. The company's newly announced **FinePix F700** is touted as the first consumer 6.2 megapixel digital camera, with 6.2 million effective pixels comprising 3.1 million S-pixels, which are said to be larger and more sensitive to light, and 3.1 million R-pixels, which the company says are smaller and less sensitive to light. According to Fujifilm, pictures captured with this camera approach the quality of film, with 2,832x2,128 (6.03) recorded pixels. Got that?

The F700 also offers on-demand continuous auto-focus, three colour modes, 3X optical zoom, manual functions, and a 1.2-second startup time, one of the fastest on the market, according to the company. It's expected to ship this May at an estimated street price of \$899.

Fujifilm has also unveiled the **FinePix F410**, with 3.1 million effective pixels, which the company says can produce high-resolution images with 2,816x2,120 (six million) recorded pixels. The estimated price is somewhat lower, at \$649, and

The service uses a software client, which subscribers install, to download fresh audio, video, and text content each week while users are connected to the Internet but not using their computer, according to CBC. Once a new issue has been delivered, the user is notified that it is available for viewing.

The 10-week trial runs until April 17, and a sample issue is available at the Web site. Unfortunately, the software is not Mac compatible, though Mac users can view the online archives.

Continued on page 100

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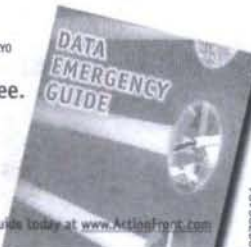
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What's New

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While attention to detail is always important to those working with graphics, it is doubly so for those working with technical drawings such as installation instructions or engineering diagrams, where even slight errors could be costly or dangerous. So **Corel** makes a software package just for technical graphics professionals.

Now available in version 10, Corel says **Designer** offers new Precision Snapping capabilities for better accuracy, a new Transformation Docker to help users manipulate views more easily, thousands of industry-standard symbols, better compatibility and support for more than 60 import/export filters, and included Visual Basic for Applications.

The package is priced at US\$469, or US\$229 for the upgrade.

It may not be considered "push technology" by the W3C, but the name fits, nonetheless: the **Independence iGlide Manual Assist Wheelchair** uses microprocessors and sensors to automatically adjust the level of power assistance to its user, making all terrain feel like it is flat and smooth, according to the manufacturer, **Independence Technology** (www.indetech.com).

Users move the wheelchair by pushing the handrims, just like on a conventional manual wheelchair. The manufacturer says that the built-in technology monitors the users' input and the chair's movement to determine the appropriate level of added power in order to provide a similar feel even when moving over grass or up ramps, and that each wheel is adjusted separately so the results are consistent even when the wheels are on two different terrains at the same time—grass and concrete, for

example, as on the edge of a sidewalk.



The chair weighs only 24.75 kg (55 lb.), and is designed to fold up, making it easier to transport than fully powered chairs. The power unit fits in under the seat.

The company, a subsidiary of **Johnson & Johnson**, offers the chair through its Web site (www.independencenow.com), for a retail price of US\$7,900.

If you've been dreaming of making your 3D art jump off the screen, **Caligari** (www.caligari.com) wants you to pay attention. The company has released version 6.5 of its **trueSpace** multimedia authoring software, and says the best thing about it is its new animation engine, which allows non-linear animations using clips of motion sequences.



Other features of the software include
Continued on page 102

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< NEW & NOTABLE >

What's New

Continued from page 10

improved Inverse Kinematics, enhancements to the core modeling environment, a new surface healing tool, expanded support for the X and DXF file formats, and support for the DWG exchange file format for AutoCAD users, according to Caligari.

TrueSpace 6.5 is priced at \$595. If you shell out for the software, check out the animation competition the company is running for users—one of the judges is Ralph Guggenheim, producer of *Toy Story* and *Toy Story 2*. Further information is available on the company's Web site.

If visions of flat-panel LCDs regularly dance through your head, prepare yourself for a restless night. IBM has announced a new line of **ThinkVision** monitors, kicking off the party with the release of the **L200p**, a 20.1-inch model that runs at 1,600x1,200 optimum resolution. The monitor offers 250 candela per square metre brightness, 400:1 contrast ratio, and 170-degree horizontal and vertical viewing angles, according to IBM.



The device comes with a cantilever stand that allows it to swivel 135 degrees in either direction, according to the company, and offers height adjustments of up to 8 cm (3.1 in.). It offers attachments to both analogue and digital systems, with cables for both included, and with dual input, could be attached to two systems at once. The company says setup and adjustments have been made easier and more intuitive, with one-button access to frequently used functions.

But with a price of \$2,199, you might want to reconsider the simple, innocent, and relatively inexpensive sugar plum.

Type the words "Italian restaurant" into Google, and you're likely to be served a screenload of dining choices from across the continent, most of them too far away to consider for dinner

tonight. Victoria, B.C.-based **Metamend** is trying to change that. The company, which specializes in search engine optimization, has introduced new technology that it says can extract geographical information from a Web site (the restaurant's address, for example) and code the corresponding Geographic Information Systems (GIS) data into the site's source code. This would allow search engine results to be sorted by location, thereby allowing you to indulge your craving for manicotti without taking out travel insurance.

Metamend is rolling the technology out in its service packages this spring, but it will likely be a while longer before surfers see the results—there are currently no search engines poised to take advantage of the new information tags. But Richard Zwicky, the company's chief executive officer, says the feedback from search engine companies has been positive.

"Based on feedback I received, I expect that the search engines will need to offer some means of factoring proximity into their search results within the year, as more and more cell phone and i-capable PDA users come online and upgrade to newer devices with connectivity capabilities built in."

Just when you thought you could get away from the office, it reels you back in, thanks to a collaborative effort between **Rogers AT&T Wireless** and **Microsoft**. A new desktop PC extension for business users will allow wireless access to all Microsoft Office applications.

Using Microsoft's **Pocket PC Phone Edition** and **Smartphone 2002** operating systems on Rogers AT&T Wireless' GSM/GPRS network, this new extension will allow users to synchronize their calendar, email, contacts and notes on their Rogers wireless device. They can also send, receive and view files created in Microsoft Word, Excel and PowerPoint.

The Smartphone allows Rogers customers to choose their method of wireless communication: voice, email, MSN Messenger or SMS. The user also has wireless access to their account in Microsoft Outlook and wireless Web access through Microsoft's Pocket Explorer Web browser.

The Siemens SX56 will be the first Pocket PC Phone Edition device from Rogers and is set for release this month.

Of course, getting away from the office is still possible. You just have to leave your phone on your desk. But don't tell them I told you that. □

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