

marketnews

lifestyle technology made easy!

# here's how!

vol.9 no.2

## SHARP'S QUATTRON HDTV

Do yellow pixels make  
a difference?

## APPLE iPad First impressions

## PUT ON YOUR GLASSES!

3D TVs from Samsung  
and Panasonic  
put to the test

## BLUETOOTH AUDIOPHILE HEADPHONES Freedom at last!

- The Future of Reading
- Gear for Cyclists
- Ultra-Close-up Photography



SAMSUNG

FULL HD

Samsung **3D** The ultimate

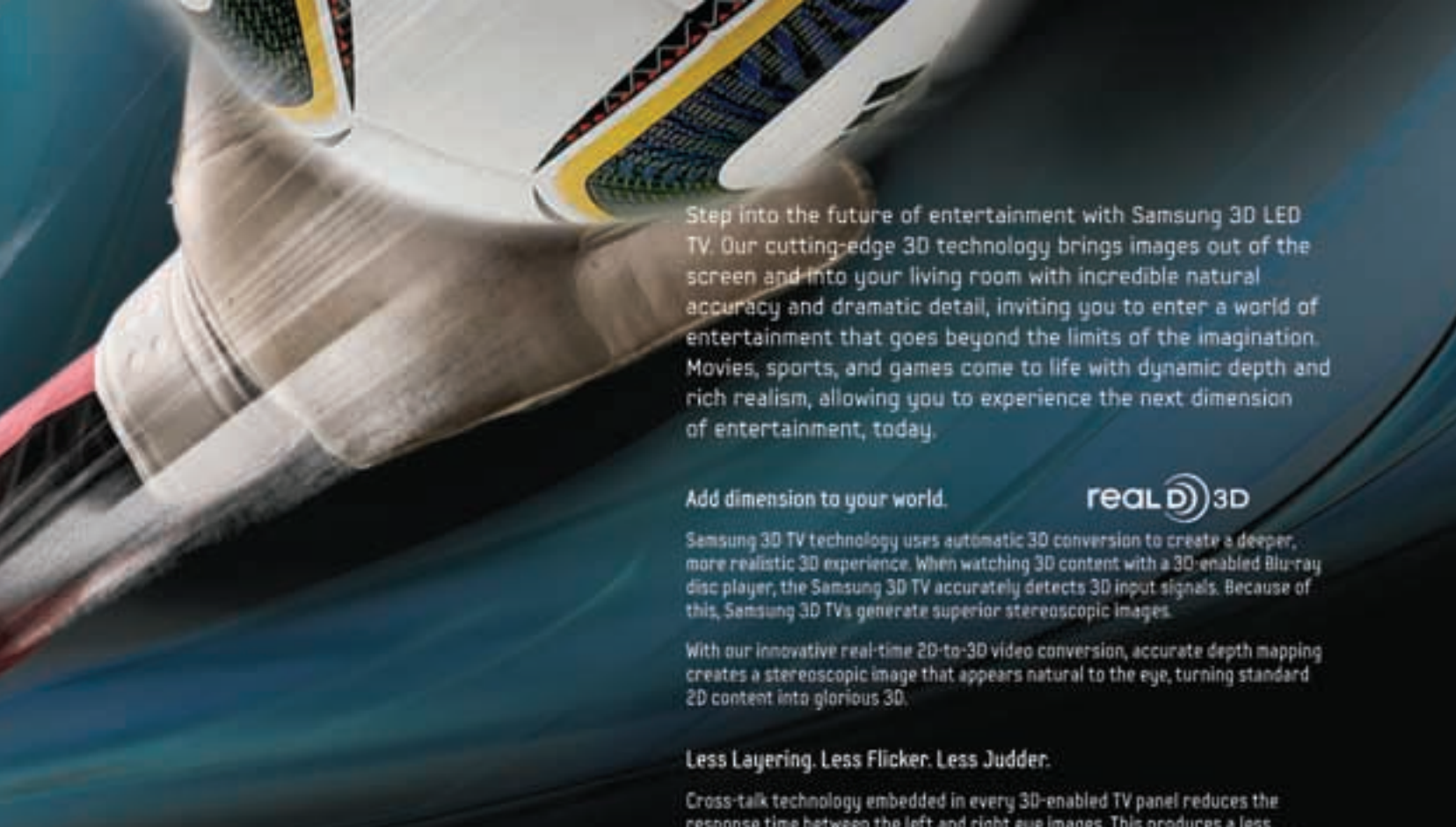
SAMSUNG



Get the star treatment when you purchase a Samsung TV

Purchase any Samsung television 37" or larger and you're eligible for Samsung's exclusive Star Service Program. For information and registration visit [www.samsung.com/starservice](http://www.samsung.com/starservice)





Step into the future of entertainment with Samsung 3D LED TV. Our cutting-edge 3D technology brings images out of the screen and into your living room with incredible natural accuracy and dramatic detail, inviting you to enter a world of entertainment that goes beyond the limits of the imagination. Movies, sports, and games come to life with dynamic depth and rich realism, allowing you to experience the next dimension of entertainment, today.

Add dimension to your world.

realD 3D

Samsung 3D TV technology uses automatic 3D conversion to create a deeper, more realistic 3D experience. When watching 3D content with a 3D-enabled Blu-ray disc player, the Samsung 3D TV accurately detects 3D input signals. Because of this, Samsung 3D TVs generate superior stereoscopic images.

With our innovative real-time 2D-to-3D video conversion, accurate depth mapping creates a stereoscopic image that appears natural to the eye, turning standard 2D content into glorious 3D.

Less Layering. Less Flicker. Less Judder.


Cross-talk technology embedded in every 3D-enabled TV panel reduces the response time between the left and right eye images. This produces a less layered image and amazingly clear images. To produce even clearer and smoother 3D images, Samsung's advanced flicker-reducing algorithm and Motion Judder Cancelling technology lead the way. By inserting additional frames into fast-moving scenes blurring and juddering are greatly reduced. From sports to action movies, now you can enjoy the highest picture quality, no matter how fast the images are moving.

Ultimate Comfort. Ultimate Reality.

Samsung 3D Active Glasses create a uniquely realistic 3D viewing experience. As the image is split into left and right eye signals on-screen, the 3D Active Glasses alternately darken in perfect synchronization with the TV's refresh rate. This generates a pure 3D image that is free from ghosting and visual distortion.



# reality show





**Lifestyle technology  
made easy!**

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**First to Know**

We live in an age that insists upon immediacy. When we want to know something, we want to know *now*. That expectation certainly applies to technology, which is why we're making some changes in the way we review products in our magazine and on our Website.

Since our launch in 2002, *here's how!* has published large review features in which we compare the performance of similar products. We'll continue to do that, because we see value in assessing competing models in one article. That's exactly what consumers do every time they make a purchase. Typically, we break up these features and publish discrete reviews on our Website after the issue appears.

There's a downside to our traditional approach. Sometimes, we have to wait to review a hot new product so we can fit it into a review feature planned for a subsequent issue. Even worse, sometimes a hot product comes out just after we've published a feature where we could have covered it – which means we have to wait even longer to review it.

For those reasons, we're shifting course. Henceforth, we'll review groundbreaking products as soon as we can get on hands (and ears and eyes) on them. As soon as we've finished our tests, we'll post the reviews at www.hereshow.ca. When appropriate, we'll assemble our reviews into a major feature for the magazine. That way, readers get information as soon as it's available, followed by a comparative assessment of competing products.

In a nutshell, we're trying to use different media to their best purpose: our Websites for immediacy, our magazines for context. You can see our new approach in this issue.

In April, www.hereshow.ca was proud to publish the first Canadian reviews of 3D televisions and Blu-ray players from Samsung and Panasonic (our reviews were also among the first in the world). In this issue, you'll find a review feature ("A New Dimension") where we assess these products, and give our opinions of their relative strengths.

Similarly, in "Small and Mighty," Peter Burian compares two interchangeable-lens cameras that will hit the market in June. That feature is adapted from reviews (again, the first to be published in Canada, and among the first in the world) on our Website.

The two media have other overlapping advantages.

The Web is perfect for archiving evergreen content: information that never goes out of date. So we're keeping how-to articles from this magazine on our Website. Our experts' tips on travel photography and room acoustics are as relevant today as when we published them, so you'll always be able to find them on [www.hereshow.ca](http://www.hereshow.ca).

But print is great for inspiring and creating a mood; and we're hoping this issue puts you in the mood for spring and summer. We've got lots of content for the season: Peter Burian's feature on close-up nature photography ("Bug's Eye View"), a look at mobile entertainment and communications technology ("Mobile Media") and a spread on nifty bike accessories ("Gadgets for Cyclists").

We're grappling the same questions as publishers everywhere. What's the place of print in a world where more and more people consume content online? How do new devices like Apple's iPad shift the equation? For a thought-provoking examination of those questions, check out "The Future of Reading" by Gerry Blackwell in this issue.

Enjoy the issue, and enjoy our Website! [www.hereshow.ca](http://www.hereshow.ca)



# SHARP

## just add Yellow



 Quattron

New Quattron™ Quad Pixel Technology. It's 4 colours, not three.

Introducing Quattron™ – the breakthrough colour technology from Sharp. By adding a fourth colour – yellow – to the standard RGB colour system, we've created colours that cannot be displayed on TVs with 3-colour technology. Experience colours never before seen on TV. **You have to see it, to see it.**

**AQUOS™ LED**

THE EVOLUTION OF LCD TV CONTINUES.

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New technology is zooming onto the market in 2010. Sharp's groundbreaking Quattron HDTVs can produce over a trillion colours. Do two million yellow pixels mean a better picture? To get our take, see "Mellow Yellow" on page 24. 3D HDTV is now available in Canada, and we review two models in "A New Dimension," starting on page 14. In "Gadgets for Cyclists" on page 66, road racers can feed their need for speed.



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### Online Only

You'll find more great technology coverage at [www.hereshow.ca](http://www.hereshow.ca)

#### Hot Hardware

Never-before-published reviews of hot new wireless, audio, video and imaging products, including a Pioneer AV receiver that you can control with an iPhone, and an LG Blu-ray player with built-in music server. Plus archived reviews from past issues

#### Honourable Mentions

Must-see photographs that just missed being prize-winners in our 36th Photo Opportunity Contest

#### Ultimate How-to

Comprehensive imaging guides from past issues, covering subjects such as travel photography and printing

**Plus:** The Gadget Talk Blog, breaking news, product announcements and much, much more!

# Short Bits



## NETWORK TELEVISION

Toshiba's Regza UX600 series of LED-backlit LCD televisions are Digital Living Network Alliance (DLNA) certified, allowing users to stream video, photos and music to their home theatres from other DLNA devices, such as Windows 7 PCs and Xbox 360 game consoles. The series includes 40-, 46- and 55-inch models, priced respectively at \$1,700, \$2,000 and \$2,600. All come with WPA Wi-Fi adapters that use an automated setup process. Built-in NET TV applications include Facebook, Twitter, YouTube and Flickr clients, as well as news services such as the New York Times, CNN and MSNBC. All three models are less than two inches deep, and feature Toshiba's stylish Air Lagoon cosmetics.

[www.toshiba.ca](http://www.toshiba.ca)

It took Apple only 28 days to sell a **million iPads**. By comparison, the millionth iPhone was sold after 74 days on the market

*Apple Inc.*



## SONIC BOOM

JVC's RV-NB50 sound system looks like one of those boomboxes from the 1990s, but it's got a new-millennium digital twist: a built-in iPod dock, which is covered to protect it when there's no iPod attached, and a USB connector for playing music stored on a thumb drive. Like the original JVC Kaboom, the new digital version has a cylindrical shape with a woofer on either end. The new Kaboom will also play CDs (including discs with MP3 and WMA tracks) and has an FM radio. Rated power is 40 watts. Priced at \$399, the RV-NB50 comes with a remote control and shoulder strap, and weighs 15 pounds. [www.jvc.ca](http://www.jvc.ca)

## LOOK 'EM IN THE EYE

What do viewers like about 3D TV and cinema? Do they like it better than 2D? A researcher at Ryerson University in Toronto hopes to find the answers to these questions. Richard Grunberg, a professor in Ryerson's School of Radio and Television Arts, believes the truth behind viewers' perceptions of 3D media is in their faces and eyes.

Grunberg is assessing viewers' responses to four image formats: 4K (extreme high definition), 4K 3D, 4K 2D and 2K 2D (still high definition, but with lower resolution). He hopes to discover how viewers react to the technical aspects of images, including resolution, noise, compression, motion artifacts, colourimetry and dynamic range.

It's important to study viewers' responses, says Grunberg, given the rebirth of 3D technology and the growing availability of 4K digital cinema. "We're trying to analyze how people perceive the difference in formats and then quantify it. For example, do people react 20 per cent more to an image that's shown in 4K high-definition? Do they really have a greater response to 3D images and to what degree? It's all about making sure the producers, and the audiences, get the most bang for their buck."

Grunberg launched his research by shooting a children's television show in Ryerson's digital cinema lab using different image formats. A number of 3D experts, as well as directors and directors of photography from several Canadian kids' TV programs, were invited to participate in the shoot.

Grunberg's team is now recruiting volunteers who will watch the program while their facial and eye movements are monitored by sophisticated tracking equipment. Where do audience members look during specific onscreen moments? Which effects garner the most favourable reactions? How do different age groups respond to various image formats and screen sizes?

"We're also trying to identify the parameters of 3D technology," Grunberg says. "For instance, if a 3D hand is shown on a 42-inch screen, at what point does it become disconcerting to the viewer?"

Grunberg's preliminary research attracted attention at the 2010 National Association of Broadcasters' show, which was held in Las Vegas in April. Ultimately, production and post-production companies could, with the help of Grunberg's findings, custom-design 3D films, taking into account both different screen sizes and the unique preferences of certain viewer groups, such as children.





## Short Bits

The worldwide market for 3D-capable TVs will grow from **2.5 million** units in 2010 to **27 million** in 2013

*DisplaySearch*

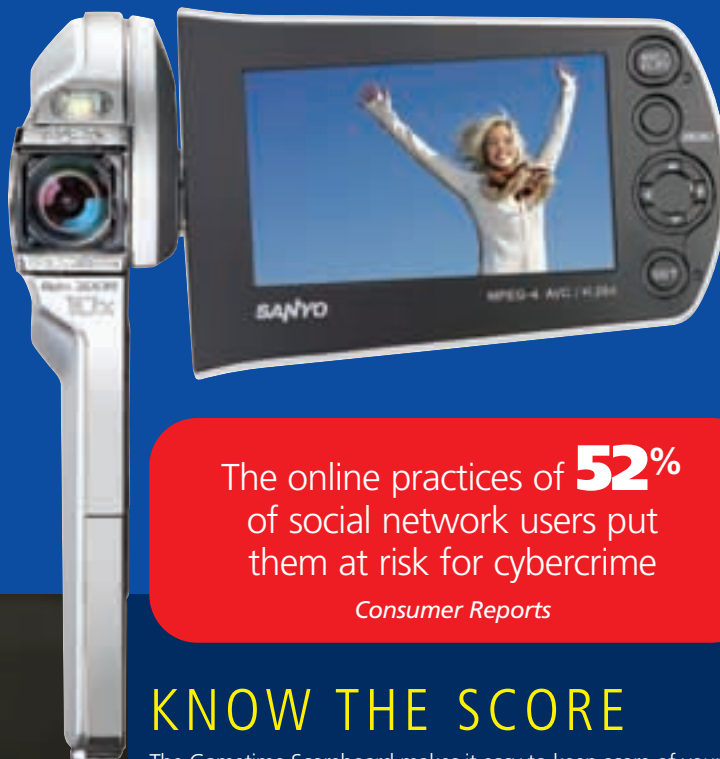


## THE WHOLE PACKAGE

Denon's S-5BD combines a Blu-ray player and 5.1-channel AV receiver rated at 5x75 watts in one stylish component. The S-5BD supports high-resolution surround-sound formats, including Dolby TrueHD and DTS-HD Master Audio. It also has Dolby Pro Logic IIz processing (for producing height information with the addition of an extra amplifier and elevated front speakers) and Dolby Virtual Speaker (for producing surround effects with only two front speakers). And it employs Audyssey's MultiEQ room-correction system, which automatically measures and adjusts key audio parameters such as speaker type and equalization. Another Audyssey feature, Dynamic Volume, smoothes out disruptive changes in volume levels, for example when a TV program goes to commercial. Audyssey Dynamic EQ corrects frequency response, so that the sound remains rich even at low volume levels. The S-5BD also has an SD/SDHC memory-card slot, and a USB port with full support for iPod connectivity. \$1,999 [www.denon.ca](http://www.denon.ca)

## SMALL WONDER

Sanyo's VPC-CS1 Dual Camera is only an inch thick, and can capture full-high-definition 1080/60i video and eight-megapixel stills (native resolution is 3.3MP) onto SD and SDHC memory cards. Like all of Sanyo's 2010 Dual cameras, it features face-detection and tracking autofocus. Video can be played directly with Windows Media Player and edited in Windows Live Movie Maker. Another new feature is Photo Stabilizer. When this feature is activated, the camera records two images: one at a slow shutter speed and low ISO, and another at a fast shutter speed with higher ISO. It then blends the two files into a single image to minimize noise and motion blur. Available in silver and pink finishes, the VPC-CS1 features Sound Zoom, which lets users record audio with wide stereo separation, focus on the sound coming from the front, or change the audio-recording pattern based on the zoom-lens setting. The optical zoom range is 9x with photos and 10x with video. \$439 [www.sanyo.ca](http://www.sanyo.ca)



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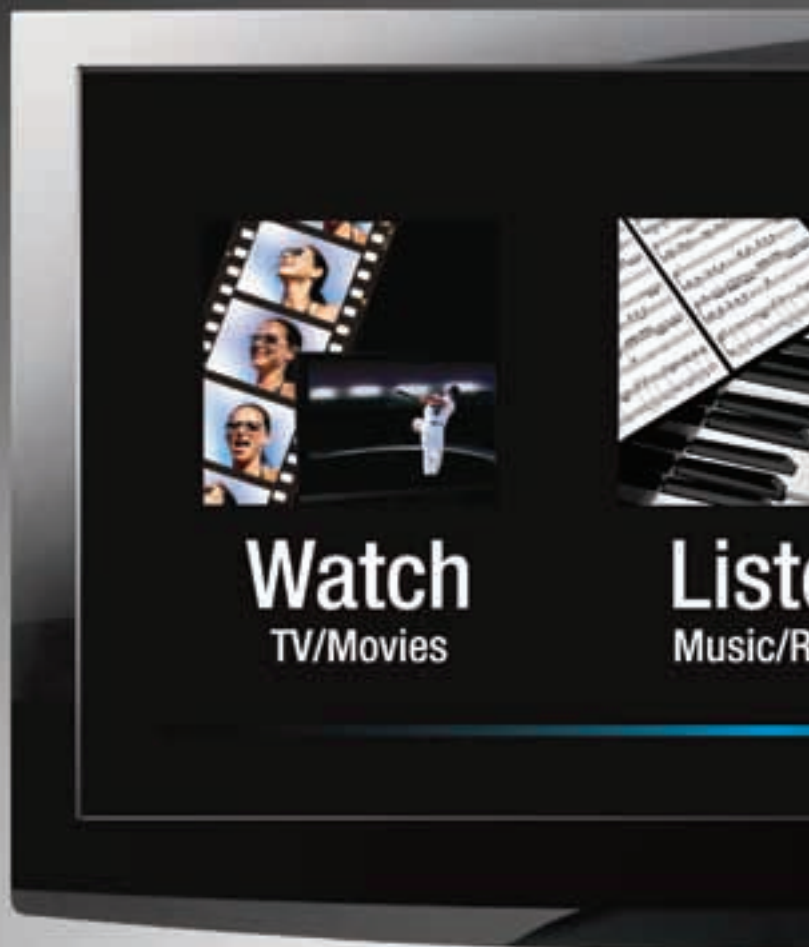
The online practices of **52%** of social network users put them at risk for cybercrime

*Consumer Reports*

## KNOW THE SCORE

The Gametime Scoreboard makes it easy to keep score of your street-hockey or beach volleyball game. Shaped like an '80s boom-box, it displays scores on LED panels on either side: one for the home team and the other for away (or whatever you want to call your teams; the nameplates are removable). When a team scores, add the point via buttons on the unit, or use the supplied remote. If you're playing a timed sport, program the timer to a desired length, and even set the number of periods. There's an input for connecting an MP3 player to listen to music while you play. The Gametime Scoreboard has built-in sound effects, such as cheering and booing crowds. Announcers can use the supplied microphone to call out plays. Using the USB input, you can also play tunes from a flash drive, and control them via dedicated buttons. \$190



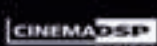
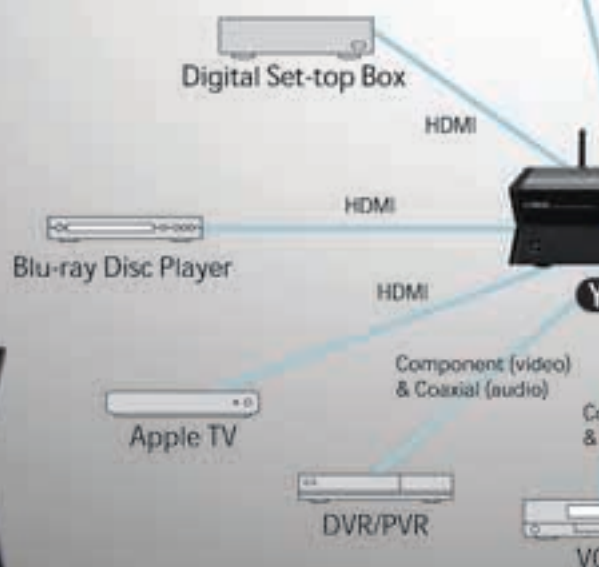


## Control All Your A/V Sources

Featuring advanced HD surround decoding including 5.1 channel surround sound, as well as 2.1 channel Air Surround Xtreme for total media enjoyment.



Also available in model YMC-500 (non WiFi ready)





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Play  
Photos/Games

neoHD  
MEDIA CONTROLLER

ONE remote  
COMPLETE control  
IMMERSIVE sound  
ENDLESS enjoyment



BEFORE  
Hard to control.  
Too many remotes and buttons



NOW  
one simple neoHD remote  
Controls All



Visit [yamaha.ca](http://yamaha.ca) for details.

## GET IN THE GAME

Optoma says its GameTime DLP front projectors are "designed from the ground up" for gaming enthusiasts. Designed for Nintendo's Wii console, the GT360 (\$699) has 800x600-pixel (SVGA) resolution. The GT720 (\$799) offers a native widescreen WXGA (1,280x800 pixels) resolution, and is designed to reproduce the widescreen output of such major gaming consoles as Xbox and Sony PlayStation. Both models employ a short-throw lens to create large images in smaller rooms. They're PC- and Mac-compatible, and can accept computer and video inputs with resolution up to 1,920x1,080 pixels. They weigh in at 6.5 lbs., allowing gamers to take the big-screen experience with them wherever they go.

[www.optoma.ca](http://www.optoma.ca)



## TURN TO THE DARK SIDE

Drivers who dream about journeying to galaxies far, far away can get some help from *Star Wars* characters. Owners of TomTom GPS navigation systems can download the voice of Sith Lord Darth Vader for US\$12.95. His ominous tone combined with his incessant breathing can guide you, turn-by-turn, to your destination, with instructions like, "Bear left, to the dark side." Should you miss a turn, he'll admonish, "Turn around when possible. I find your lack of faith disturbing." If you're driving through a roundabout, he'll note that the "circle is now complete," once you've finished.

Additionally, there are original sound effects, like lightsaber noises and TIE fighter flybys. TomTom will add the voice of C-3PO in June, Yoda in July, and Hans Solo in August.

[www.tomtom.com/starwars](http://www.tomtom.com/starwars)



**77%** of Canadian CEOs believe that consumers consider a company's environmental practices before making a purchase, compared to 64% of global CEOs

*PricewaterhouseCoopers LLP*

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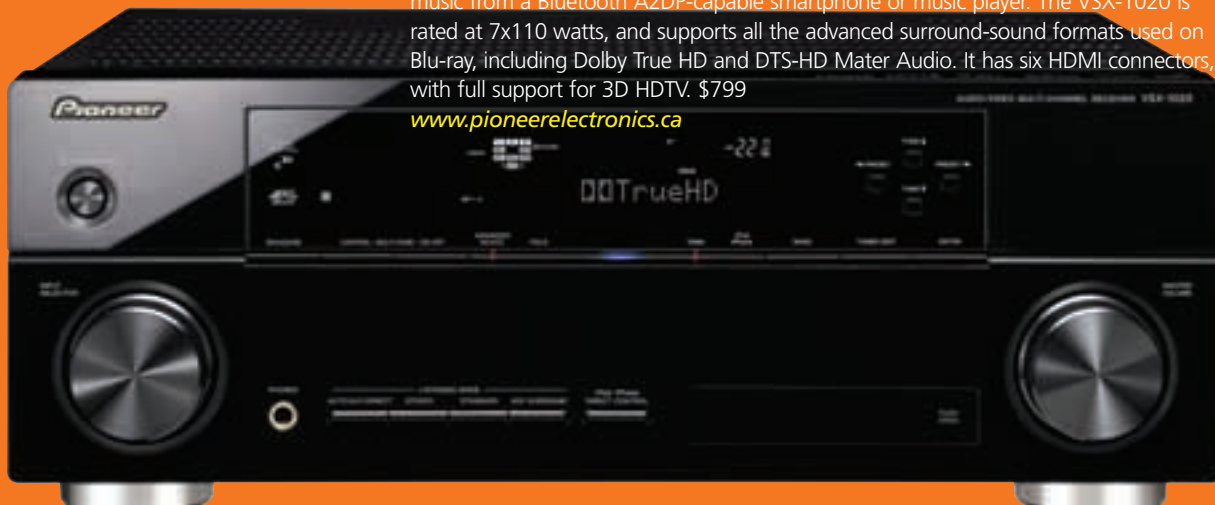
**72%** of Americans aged 12-17 use text messaging, and the average youth sends and receives 1,500 texts per month

*Pew Research Center*

## TOTAL CONTROL

Pioneer's VSX-1020 AV receiver can be controlled with an iPhone or iPod Touch over a home network using the company's iControl AVR app, which is available as a free download. You can also play music from an iPod connected to the front-panel USB input, and view album art on your TV. An optional Bluetooth adapter lets you stream music from a Bluetooth A2DP-capable smartphone or music player. The VSX-1020 is rated at 7x110 watts, and supports all the advanced surround-sound formats used on Blu-ray, including Dolby True HD and DTS-HD Master Audio. It has six HDMI connectors, with full support for 3D HDTV. \$799

[www.pioneerelectronics.ca](http://www.pioneerelectronics.ca)







## GET THE SKINNY

Definitive Technology says its Mythos XTR-50 is the world's thinnest speaker. Designed to complement ultra-thin flat panel TVs, the new on-wall speaker is only 1.5 inches deep. Each aluminum enclosure houses four anodized aluminum bass drivers and a centre-mounted aluminum dome tweeter. The XTR-50 is supplied with a slim wall-mounting bracket that can be used in horizontal or vertical orientation; and a stand for tabletop use. \$849 each.

[www.definitivetech.com](http://www.definitivetech.com)

## Short Bits

### THE GIFT OF GAB

Samsung's Messenger phone is aimed at teens and young adults who want to use instant-message and social-networking services wherever they are. Available through Bell Mobility and Rogers Wireless, the Messenger has a built-in QWERTY keyboard, 2.6-inch LCD screen, Web browser and 3.2-megapixel camera; and comes with Windows Live Messenger and Hotmail clients pre-installed. The Messenger is equipped with Wi-Fi, so users can surf, instant message and check Facebook without using up their data plan and airtime minutes when they have access to a Wi-Fi network.

[www.samsung.ca](http://www.samsung.ca)



During the first quarter of 2010, **294.9 million** mobile phones were shipped worldwide, 21.7% more than shipments in the first quarter of 2009

IDC

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## SAFE AND SOUND

The Quiver from Montreal-based Dew Motion fits over your shoulder. Instead of arrows, the water-repellant accessory holds your iPhone or iPod safely inside a zippered pocket. Internal wire management connects the player to earphones that emerge from the top. Users can control their music with buttons on the exterior. \$89.95 [www.dewmotion.com](http://www.dewmotion.com)



## RESCUE ME!

The Spot II Satellite GPS Messenger gives outdoor enthusiasts a link with the world when they're in areas not covered by cellular service. The compact device uses satellite communications to send SMS messages and/or e-mails to pre-programmed contacts, and (when needed) an emergency response centre. Users can send an SOS/911 message, complete with GPS location, in an emergency; or use the Help option to let contacts know about a non-life-threatening emergency. Other functions include Check-in/OK, to give contacts your current coordinates and let them know all is well; and Track Progress, to let you and your contacts follow your adventure using Google Maps. The device costs \$170; and the annual fee is \$100.

[www.findmespot.com](http://www.findmespot.com)



# A NEW



p14

by Gordon Brockhouse

The 3D HDTV era in Canada officially kicked off on March 26, when Samsung's C7000-series of 3D-capable flat panels arrived on retailers' shelves. But Samsung won't have the 3D market to itself for long. Panasonic, LG and Sony all plan to introduce 3D televisions during the spring and summer, and Sharp and Toshiba will enter the third dimension in the fall.

I had an opportunity to test a Samsung 55-inch 3D LCD and Panasonic 54-inch 3D plasma for a few days in mid-April. The two companies also provided their first 3D-capable Blu-ray players, so that I could actually watch some 3D programming.

**Content:** When any new video format arrives, most viewers' first question is, "What can I watch on it?" If you're thinking 3D, the answer right now is, "not much." But the situation is improving. In early April, Shaw Cable carried part of the Masters golf tournament in 3D. Shaw, Bell TV

and Rogers Cable all plan to launch 3D demo channels this year. Most likely, they'll offer a combination of nature documentaries, sports events and the odd movie in 3D. ESPN has already stated that it plans to shoot 25 matches in this summer's FIFA World Cup of Soccer in 3D HDTV. This year's Major League Baseball All-Star game is also being captured in 3D. Hopefully, these events will be available in Canada.

From early reports, it appears that current HD satellite receivers and cable boxes will be able to deliver 3D HDTV, though they may require a firmware update to do so.

The other source for 3D content will be Blu-ray movies. To accompany their new 3D HDTVs, electronics manufacturers are introducing 3D-capable Blu-ray players. Unfortunately, the number of 3D titles on Blu-ray will be very limited for a while. At presstime, the only commercially available 3D Blu-ray title was DreamWorks' *Monsters vs. Aliens*. *Avatar*, the biggest 3D blockbuster of them all, came out on Blu-ray in late April, but in 2D only. Fox Home Video has stated that there will not be a 3D Blu-ray



# DIMENSION



## 3D HDTVs and Blu-ray players put to the test

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version of *Avatar* until 2011. Over the next couple of years, we can expect a steady stream of new 3D releases, not just recent titles like Tim Burton's *Alice in Wonderland*, but re-releases of DreamWorks and Disney/Pixar animated features from the last few years, as these were created in 3D.

The situation is a bit like the launch of HDTV in the late 1990s. At first, the amount of HDTV programming was very limited, so most of the time, owners of new HDTV sets were still watching standard-def content. But there's a difference. Most early HDTVs looked pretty crappy when displaying standard-def content. New 3D HDTVs deliver stunning picture quality with 2D HDTV content; the models I've seen are quite simply the best TVs available, whether they're conveying two dimensions or three.

**Eyewear:** The big bugaboo about 3D is glasses, and yes, you do need to wear them. They're different from the 3D glasses you get at the theatre. All the 3D HDTVs coming to market this year employ *active-shutter* liquid-crystal glasses. In 3D operation, the TV shows a rapid alternating

sequence of images intended for the left and right eyes. At the same time, a small transmitter on the TV sends commands to the glasses, synchronizing their lenses to the sequence of images on the screen. When a left-eye image is being shown, liquid-crystal shutters in the right lens of the glasses twist shut, while those in the left lens twist open; and the pattern reverses when a right-eye image is on the screen. That way, each eye sees only images intended for it; and the eye-brain integrates this rapid sequence into a three-dimensional image. Different TV manufacturers are using different control protocols, which means that you have to use 3D glasses designed for your particular 3D TV (however, XpanD says it plans to introduce multi-brand 3D glasses).

**Connectivity:** To send 3D HDTV signals to a 3D TV from a 3D-capable Blu-ray player, cable box or satellite, you use an HDMI (High-Definition Multimedia Interface) cable. HDMI can also carry multi-channel digital surround sound and remote-control commands, and the latest version can also transmit Ethernet computer-network data. For 3D, all compo-



The same innovations that distinguish VIERA® VT-Series Plasma as our



Whether you're watching a high definition sports broadcast or a 3D movie on Blu-ray, the essentials of picture quality remain the same: contrast, clarity and colour. VIERA VT-Series innovations in all three areas translate into Full HD 3D that's simply out of this world. Advances like 5,000,000 : 1 native contrast, improved luminosity, crosstalk reduction and 600 hz sub-field drive. These key plasma features dramatically enhance sequential frame technology for a 3D experience considered among the industry's best. But seeing is believing. Step into the 3D world with VIERA VT-Series plasma and Panasonic Full HD 3D Blu-ray and discover a new frontier of immersive entertainment. Find out more at [www.panasonic.ca](http://www.panasonic.ca)

# VIERA



# Step into the 3D World.™

best HDTV picture ever, deliver a Full HD 3D experience beyond compare.



**Panasonic ideas for life**



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**Samsung UN55C7000:** “*Monsters vs. Aliens* on 3D Blu-ray was a wonderful romp. The 3D effects in many scenes were spectacularly effective, adding tremendously to the fun of watching this DreamWorks animated feature.”

nents need to support the latest iteration of the HDMI spec: Version 1.4. Among other things, HDMI 1.4 supports the higher speeds necessary for 3D: with 3D, the source component is transmitting twice as much video information to the display.

Of course, all 3D Blu-ray players and 3D TVs have HDMI 1.4 connectivity. If you're connecting a 3D source like a Blu-ray player directly to a 3D TV, there should be no problem as long as you use a high-speed HDMI cable. But in many home theatres, all source components are connected to a audio/video receiver, and the receiver is connected to the TV; and here it gets complicated. AV receivers with HDMI 1.4 connectivity are just coming to market. Older versions of HDMI (i.e. 1.3 and earlier) won't pass 3D video onto your TV. If you connect a 3D Blu-ray player and 3D display through an AV receiver with HDMI 1.3 or older, the player will output only 2D video, even when you're spinning a 3D disc. In that case, you have to find different ways of connecting your components. Different manufacturers are taking different approaches, and I'll discuss these in the reviews below.

**How we tested:** Naturally, the first thing I wanted to do after unpacking these 3D TVs and Blu-ray players was put on the glasses and enter the third dimension. But I managed to resist that urge, and instead noted the initial settings, and then used test patterns on a calibration disc, *DVE HD Basics* on Blu-ray, to confirm and adjust the picture settings. Only then did I watch actual programming.

The amount of 3D fare available to me was very limited: a 3D demo disc provided by Panasonic (unfortunately the disc did not run on the Samsung player), a disc with a few scenes from *Monsters vs. Aliens* (I watched this on both the Panasonic and Samsung), and the full 3D Blu-

ray version of *Monsters vs. Aliens* (this arrived after the Panasonic was returned to the manufacturer, so I watched it only on the Samsung).

Most of my viewing was with 2D HD. Content included a few recent movies on Blu-ray (*Inglourious Basterds*, *Sherlock Holmes*, 2012), plus *Planet Earth*, a perennial favourite. I also recorded several HD shows onto a Rogers Cable high-def PVR, and watched them on both sets. These included episodes of prime-time series (*Lost*, *Law & Order*, *V*), plus a few baseball and hockey games.

Finally, I spent some time checking out the networking capability of the two TVs and Blu-ray players. The loan periods for these products was quite brief, so I devoted most of my time to assessing picture quality. We'll be looking at network home theatre in more detail in our next issue.

## Samsung UN55C7000 HDTV and BD-C6900 Blu-ray Player

Like all Samsung's premium LCDs, the UN55C7000 (\$3,400) uses an array of LEDs along the perimeter of the screen, rather than CCFL (fluorescent) illumination behind the screen. Among other benefits, this allows for a very slim design (this 55-inch 3D-capable TV is only 26.5mm deep), very high contrast ratio, and energy-efficient operation. The C7000 series also includes 40- and 46-inch models for \$2,500 and \$2,900 respectively. Samsung sells 3D glasses separately for \$250 a pair, or \$230 for smaller children's glasses. The company also offers a 3D Starter Kit consisting of two pairs of full-size 3D glasses and a 3D movie (*Monsters vs. Aliens* on Blu-ray) for \$450.

**The Player:** Priced at \$400, the BD-C6900 is a slim, attractive compo-



nent, with a transparent window on the top left that shows the spinning disc, and touch-sensitive controls on the top right. The supplied remote has large, well-labeled buttons, and is easy to use and understand. But unfortunately the remote is not backlit, making it hard to use in dark environments (especially if you're wearing 3D glasses).

The player's startup and load times are pretty quick. The BD-C6900 powers up in 10 seconds, and loads *DVE HD Basics* on Blu-ray (our calibration disc) in 18 seconds.

It has only a single HDMI output (Panasonic's 3D-capable Blu-ray player, reviewed below, has two). With Samsung's 3D Blu-ray player, if you don't have a very current A/V receiver with HDMI 1.4 connectivity (these models are just coming to market), you will have to connect the player direct to a 3D display to get 3D pictures. If you have an older A/V receiver with HDMI 1.3 or earlier, the only way to get multi-channel surround sound will be to use the player's analog-audio outputs.

The player also has an Ethernet jack and built-in wireless networking, for connection to a home network. That allows it to stream content from other devices on your network, and to access Samsung's Internet@TV features. In addition to viewers for YouTube content and Picasa online photo albums, and a Skype client, Samsung is offering downloadable apps, such as an Associated Press news feed.

**The TV:** The UN55C7000 is a drop-dead gorgeous television, featuring Samsung's Touch of Colour cosmetics. The 55-inch screen is surrounded by a narrow bezel that at first looks black, but is actually something Samsung calls "Mystic Brown." As noted above, the TV is very thin – just over an inch deep. It can be wall-mounted, or installed on a supplied X-shaped swiveling pedestal.

The supplied remote is a lovely thing, with large well-labeled membrane keys (rather than the more common chiclet type). It's easy to use in a bright room, and is backlit, so you can use in a dark home theatre, even if you're wearing 3D glasses.

In addition to being able to play true 3D content from a suitable Blu-ray player (and cable and satellite when available), the TV can generate 3D effects from 2D content. To use this feature, viewers must wear Samsung's 3D glasses. Other features include Auto Motion Plus 240Hz, which generates extra frames of video information to reduce blurring on scenes with motion. This is even more important with 3D than with 2D. Samsung's latest TVs also have network jacks, and a comprehensive suite of Internet and home-networking features similar to that on the Blu-ray player. One of the new apps on the C7000 series is Skype video calling. The TV also features Yahoo! Widgets, small applications that deliver information like news and weather.

**Setup:** When you first power up the TV, you're asked to confirm whether it's being used in a retail or home setting. Choose Home, and then select your source of TV signals (antenna/cable), scan channels and set the time.

When I selected the HDMI input I was using for the Samsung Blu-ray player, the UN55C7000 television came up in BD Wise video mode, with Backlight set at 14 (20 is the maximum), Contrast maxed out at 100, Brightness reduced slightly to 45 from the midpoint of 50, and Tint and Colour at the 50 midpoint. In the Advanced Settings menu, Black Tone was set at Dark (other settings are Off, Darker and Darkest), Dynamic Contrast at Medium, and Gamma at the midpoint of 0. In the Picture



Options menu, Colour Tone (i.e. colour temperature) is set to Normal, which gives a bluish colour balance (the Cool setting looks very blue). I changed this to Warm 1 to get a more film-like colour balance.

Selecting another HDMI input for watching HD cable put the UN55C7000 into Standard video mode, whose out-of-the-box settings are similar to BD Wise. Other preset modes include Dynamic (which is quite overblown), Natural and Movie. The manual says Movie mode is intended for "watching movies in a dark room," but I found it the best overall preset mode for general use. In this mode, processing functions like Black Tone and Dynamic Contrast are turned off. However, especially if there's some ambient light, some tweaking of the picture settings will pay dividends.

The UN55C7000 has two built-in test patterns, Expert Pattern 1 and 2, which you can find in the Picture Options menu. These patterns can definitely help videophiles make informed adjustments to Backlight, Brightness, Contrast, Colour and Tint, and also to various processing functions like Black Level, Gamma and Dynamic Contrast. Unfortunately, the manual (which I'd rate as fair for clarity and thoroughness) doesn't explain how to use the patterns. Nor does it offer enough guidance in the effects of the many video adjustments in the set's menus. Even with the built-in test patterns, I found it very helpful to use *DVE HD Basics* for setup.

The basic test pattern ("pluge") for setting Brightness displayed correctly with the default setting of 45; but other patterns required a setting of 53 to display properly. Lower settings resulted in "crushed blacks," where very dark tones were rendered as black. With most program material, I found the midpoint of 50 a good compromise setting for Brightness. A Contrast setting of 93 delivered a bright picture while maintaining detail in bright areas of the picture. For use in a room with subdued lighting, setting Backlight to 10 worked well (crank it up to 13 or 14 if you want more light output in a brighter room). The colour test pattern displayed correctly with

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**Samsung's BD-C6900 3D-capable Blu-ray player has an Ethernet jack and built-in wireless networking, which allows it to stream content from other devices on a network, and to access Samsung's Internet@TV features.**

the Tint control shifted slightly toward green (G53/R47) and the Colour control left at the midpoint setting of 50. In the Advanced Settings and Picture Options menus, I set Dynamic Contrast to Low, Black Tone to Off, and Auto Motion Plus 240Hz to Standard.

On test patterns and in some programming, I noticed that bright tones and whites had a pinkish tinge. However, there are many fine picture adjustments, such as Colour Space, White Balance and 10p White Balance, that allow red, blue and green levels to be adjusted independently. Using a colourimeter, a professional calibrator could use these adjustments to get white balance and other parameters as close to perfect as possible. However, even with a calibration disc but no measuring equipment, I was able to get damn-near-perfect picture with a variety of HDTV programming. Occasionally, I made small adjustments to suit the program I was watching.

**2D Viewing:** Most of the time, viewers will be using this television to watch 2D content. So that's where I started. On blank screens, I noticed some mild hotspotting in the sides and corners, but this was hardly ever visible in actual programming. There was some visible dimming when viewing off-axis, starting at roughly 45 degrees. Occasionally, there was some jerkiness when viewing HD content from my Rogers HD PVR (but not from the Blu-ray player). Other than these mild quibbles, I have nothing but praise for my viewing experiences with this set.

*Planet Earth* on Blu-ray, which I find very useful for testing, looked wonderful. In the opening credits and some of the dark scenes, blacks were a bit light until I trimmed brightness to 45. In the opening scene of the Seasonal Forests episode, the camera does a long vertical pan up a giant redwood tree. With Auto Motion Plus 240Hz processing set to Standard, the Samsung maintained excellent detail in the bark of the tree and surrounding forest canopy. It was superb at portraying fine gradations of tone and colour, for example in a scene where a mother mandarin duck entices her ducklings from their nest in a tree, and another where a fox is camouflaged against forest undergrowth.

A pair of scenes showed the Samsung's ability to deal with extremes of contrast. In an amazing nighttime scene showing the sudden emergence of a billion-plus cicada nymphs, tree trunks in the shadows had inky-deep blacks, and dark details emerged wonderfully out of the darkness. In the daytime scene that followed, you could see lovely details in bright areas, such as a leaf lit from behind, and in dark areas as well, such as the dark fur and plumage of the animals and birds feasting on the cicadas.

The same benefits were visible in an HD broadcast of a Blue Jays game.

In an extreme close-up of Vernon Wells at the plate, there was detail and texture in Wells' white home uniform and in the umpire's black jersey. At the same time, blacks were wonderfully dark – not the least bit milky or grey. Faces in close-ups had excellent detail and were modeled with convincing texture and depth.

A high-def episode of *Law & Order* also demonstrated this LED-edgelit TV's ability to deliver deep blacks while pulling details, like the colours of Detectives Lupo and Bernard's dark overcoats, out of the shadows. *Lost* looked wonderful, with glowing colour and superb detail in bright and dark areas.

*Inglourious Basterds* on Blu-ray looked best with the brightness trimmed to 45; that way, the bars at the top and bottom of this widescreen film looked black instead of dark grey. With this setting, dark details in nighttime Parisian street scenes disappeared convincingly into darkness.

**3D Viewing:** Samsung's 3D glasses weigh 36g including the button battery they use for power, and fit comfortably over prescription glasses. Samsung says the glasses will run for approximately 50 hours. When you load a 3D disc, the TV confirms that you want to watch in 3D, and tells you to power up the glasses and confirm the 3D viewing format.

In 3D mode, the TV automatically switches to Standard video format, with adjustments for Brightness and Contrast greyed-out. It also switches colour temperature to Cool, which makes the picture look too blue. I recommend going into the Picture Options menu and changing the setting to Normal or Warm 1.

The optimum viewing angle is considerably narrower when you watch in 3D. When wearing 3D glasses, colours start looking bleached when you're sitting 30 degrees off-axis.

I was only able to watch one 3D program on the Samsung UN55C7000: *Monsters vs. Aliens* on 3D Blu-ray. It was a wonderful romp. The 3D effects in many scenes are spectacularly effective, and add tremendously to the fun of watching this DreamWorks animated feature. In the scene where Susan and the Monsters rescue motorists from the Alien robot destroying the Golden Gate Bridge, the effect was wonderfully immersive. In some scenes, however, the 3D effects don't work as well. For example, in the wedding at the beginning, the background looks like it's being viewed through a fresnel lens. Also, I occasionally noticed some mild blurring that could have been crosstalk between the left- and right-eye images.

The Samsung set can upconvert 2D content to 3D, and I was surprised

## Samsung UN55C7000

### PLUS

- Wonderfully vibrant and detailed picture
- Surprisingly effective 3D upconversion
- Super-thin profile and gorgeous cosmetics

### NUTS & BOLTS

**Screen size:** 55 inches

**Resolution:** 1,920x1,080 pixels

**Technical amenities:** 3D upconversion, LED edge-lighting, Auto Motion Plus 240Hz, 1080p 24, game mode, Internet@TV IPTV features and Yahoo! Widgets, DLNA connectivity to home networks, Skype-ready

**Video inputs:** HDMI 1.4 (4), wideband component video, composite video, VGA (computer)

**Size:** 128.3 x 76.2 x 2.7 cm (w/h/d, without stand); 128.3 x 83.6 x 30.3 cm (w/h/d, with stand)

**Weight:** 22.2kg (without stand)

**Price:** \$3,400

**Website:** www.samsung.ca

### MINUS

- Light falloff when viewed from the side
- Very mild hotspotting on dark scenes
- Price doesn't include 3D glasses





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**Panasonic TC-P54VT25:** "Watching *2012* on Blu-ray on this 54-inch plasma, the opening scene showing the sun, earth and moon aligned against a dark sky, blacks were the deepest I've ever seen on a TV. The scene in the Indian copper mine also had fabulous blacks and shadow detail."

by how effective this was with some programming. In the Advanced Settings area of the Video menu, there's a 3D submenu that lets you adjust the amount of depth created by 2D upconversion. I experimented with different settings, and ended up staying with the default midpoint setting of 5.

While watching a 2D program, you can push the 3D button on the remote, and the set will ask you to confirm if you want to watch in 3D and tell you to put on the glasses. Some programming, for example *Inglourious Basterds* on Blu-ray, looked artificial in synthesized 3D. And 3D upconversion created an artificial layered look when applied to a high-def baseball game.

But 3D upconversion worked very well with *Lost* in HD, adding a feeling of depth that was not overdone. And with *Planet Earth*, the Samsung's 3D upconversion was gloriously effective, and not at all gimmicky. In the Seasonal Forests episode, it added a compelling sense of depth to wide shots of a forest canopy and a downward shot from a giant redwood. A close-up of an owl chick learning to fly was made more compelling by the Samsung's 3D upconversion.

This Samsung television is a great way to get into 3D TV, partly because it gives viewers a way to experience 3D with 2D content, but mainly because it's a magnificent TV, whatever you happen to be watching.

## Panasonic Viera TC-P54VT25 Plasma TV and DMP-BDT350 3D Blu-ray Player

Panasonic's top-of-the-line VT25-series plasma TVs are scheduled to arrive in Canadian stores in early June. Beside the 54-inch model reviewed here,

which retails for \$3,500, the VT25 series includes 50-, 58- and 65-inch models for \$3,000, \$4,000 and \$5,000 respectively. Their big claim to fame is 3D capability; but (not coincidentally) they also perform magnificently with 2D fare. Included with each TV is a pair of active-shutter LCD glasses. Additional glasses are available for \$150. Panasonic's DMP-BDT350 3D-capable Blu-ray player, also reviewed here, retails for \$600.

**The television:** The TC-P54VT25 is a very handsome TV. It sits on a stylish black rectangular base with silver trim along the perimeter. The screen is framed in a black bezel that appears to have a subtle espresso tinge. All V25-series plasmas are deeper than last year's V10 series: 90mm compared to 55mm. They come with an easy-to-use remote with large, well-labeled keys, which are backlit so they're easy to find in the dark.

Much of the new technology developed for 3D also makes for a better 2D experience. In 3D applications, when the lens is front of the viewer's right eye is opening, all vestiges of the left-eye image must be gone from the screen; and the opposite is true when the left lens is open. Otherwise, the picture will look blurry. For the new TVs, Panasonic developed faster phosphors and processing circuitry to eliminate crosstalk between the left- and right-eye images. This improves gradation of tones and colours with both 3D and 2D content.

The new TVs also employ a new panel design that deliver an astoundingly high native (not dynamic) contrast ratio of 5,000,000:1. The result, Panasonic says, is very deep blacks, as well as excellent detail in dark areas of the picture. Also featured is 600Hz sub-field drive, which is said to provide full 1080-line vertical resolution not just in static areas of the picture, but in moving areas as well.



Panasonic's DMP-BD350 3D-capable Blu-ray player has a second HDMI output for sending high-resolution surround-sound digital audio to A/V receivers that lack the latest HDMI 1.4 inputs.

While my loaner unit was a technical sample as opposed to a production model, it appears to be working perfectly, so I'm comfortable writing a full review on the product.

**The player:** The DMP-BDT350 Blu-ray player looks like a standard-issue black-box Blu-ray/DVD player. Compared to earlier players, this 3D model is fairly speedy. It powers up in 24 seconds, and loads our calibration Blu-ray disc in 25 seconds. The remote is easy to understand, but unfortunately lacks backlighting. It has dual HDMI outputs, which is very useful for 3D viewing. For 3D, all components need to support the latest iteration of the HDMI spec: Version 1.4. If you have a surround-sound receiver with an earlier version of HDMI, you can connect the player's main HDMI output to your 3D TV, and the secondary HDMI output (which is intended for audio) to your receiver.

**Setup:** When you turn on the TC-P54VT25 for the first time, you're asked if it's being used in a store or home. Choose Home, and the set defaults to Standard mode, with Contrast maxed out at 100, Brightness and Colour at the midpoint of 50, Sharpness elevated to 75, Colour Temperature at Normal and all the Pro Settings greyed-out. The resulting picture is a little too vibrant, with an overly bluish colour palette; but will be very pleasing for most viewers.

Purists will prefer the THX mode, which reduces Contrast to 85 to tame bright whites, boosts Brightness to 55 to bring out shadow detail, and sets Colour Temperature to Warm 2, for a more film-like colour balance.

As I always do, I used test patterns on a calibration disc (*DVE HD Basics* on Blu-ray) to confirm and adjust settings. I switched the TV into Custom mode, which provides the greatest range of adjustments. I set Colour Temperature to Warm 1. Some Brightness test patterns displayed correctly with brightness in the 50 midpoint; with others, I had to increase Brightness to 58 to get the patterns to display correctly.

In the Pro Settings menu, there's an adjustment for Gamma (which controls the transition from black to white). The default setting is 2.4, which makes the tone curve a little contrasty. I set it to 2.2, which is the target standard for TV production. With actual programming, I found a Gamma setting of 2.2 and Brightness setting of 60 delivered a satisfying combination of deep blacks and good shadow detail. With lower Brightness settings, blacks were a bit deeper, but some dark details were crushed into black.

The colour test pattern displayed correctly for blue (the basic adjustment) with the Colour control reduced slightly to 42. To balance green, I had to reduce Colour to 28 (which made the picture much too

subdued), indicating that this TV exaggerates greens somewhat. Red displayed correctly with colour set at 51. I settled on a compromise Colour setting of 46, which worked very well for regular programming.

**3D Viewing:** Finally, it was time to put on the 3D glasses and get into the third dimension. *Monsters vs. Aliens* looked fabulous in 3D. Especially at night in a dark room, I was completely drawn into the experience. Some scenes, for example a shot looking down from San Francisco's Golden Gate Bridge at the decapitated Alien robot, had incredible depth. Other scenes, such as fly-by in the power core of the alien ship, featured foreground objects that seem to jump out of the screen. Most of the time, 3D simply created depth that made the story more compelling.

Some of the scenery shots on Panasonic's demo disc looked artificial in 3D. Long shots of the skyline of Rome and of the Grand Canyon had a layered quality, especially when there were large objects like overhanging branches in the foreground. Other scenes, such as an underwater shot of a corral reef teeming with tropical fish, looked wonderfully natural and three-dimensional. A 3D shot of clowns juggling in Rome was gimmicky but loads of fun. Balls seemed to jump right out of the screen at the viewer.

I experienced some interesting effects watching the juggling scene from different angles. Seated directly in front of the screen, the juggler is right in the centre of the picture with a Roman street behind him, and balls come straight out of the screen. Seated far to the left, the juggler appears on the left of the screen, with the background behind and to the right. Juggling balls seem to come out of the left of the screen toward the viewer.

In other words, the spatial relationship of foreground and background objects shifts with viewing position, which is fundamentally different from 2D. To get the 3D experience intended by the director, viewers will need to be seated in front. And it really helps to be watching in a dark room so that you can get lost in a picture that's much smaller than a theatrical screen. Even more than with regular HDTV, with 3D HDTV, the bigger the screen, the better.

Panasonic's glasses weigh about 65g, or 3.5 oz. If you wear prescription glasses, as I do, you can wear the 3D glasses.





es in front. I found them tiring after a while. I don't know if it was the weight, or viewer fatigue resulting from having a pair of rapidly blinking images in front of my eyes. Also, I found myself wanting take off the 3D glasses to do things like adjust the remote control or change room lighting.

It's early days for 3D HDTV in every sense: availability of software and programming, filmmakers' skills and practices, and the technology itself. For quite a while, most of our viewing will continue to be in 2D.

**2D Viewing:** Panasonic's new 3D plasmas incorporate new technology that also makes them better with 2D fare. In every sense, they improve upon last year's premium V10 series, which received Gear of the Year honours from *here's how!*

In the first scene of the Seasonal Forests episode of *Planet Earth* on Blu-ray, the camera does a long vertical pan up a giant California redwood tree. This is a great test of motion resolution, and the new Panasonic plasma aced it. The detail in the bark was superb, with not a hint of motion blurring. Even when you're not aware of motion blur, it can cause viewer fatigue, Panasonic says. I can't imagine that being an issue with this set.

The TC-P54VT25 also performed wonderfully in demanding high-contrast winter scenes, preserving detail and texture in the snow and simultaneously delivering exquisite detail in dark areas, such as the fur of a wolverine. In the Ocean Deep episode, the set rendered the subtle gradations of blues, greys and blacks beautifully, producing a great sense of depth and three-dimensionality. And blacks were very deep, both on the opening credits (where the earth is shown against a black sky) and in the scenes on the sea floor.

Watching *2012* on Blu-ray, the opening scene showing the sun, earth and moon aligned against a dark sky, blacks were the deepest I've ever seen on a TV. The scene in the Indian copper mine also had fabulous blacks and shadow detail.

The muted Victorian colour palette of *Sherlock Holmes* was beautifully portrayed, with inky blacks and details that emerged convincingly (and menacingly) out of the shadows. Bright colours, such as Irene Adler's bright red dress, also looked fabulous. Skin tones were excellent, and well differentiated, and faces were modeled with convincing three-dimensionality.

Sports in HD looked great. There was good detail and texture in the ice

in an NHL game between the Washington Capitals and Boston Bruins. The black shorts of both teams' uniforms was satisfyingly deep, yet the subtle differences between the shades of blacks on the different uniforms (and the refs') came through. Ditto for the differences in the red of the Caps' uniforms, the refs' armbands, and blood on the ice after Zdeno Chara was clipped by a high stick.

My impressions of a Sunday Night baseball game between the Yankees and Red Sox were similarly favourable. The Panasonic plasma resolved subtle differences in the dark blue suits worn by the three commentators. The grass at Fenway Park looked naturally green. The skin tones of the players was excellent, and their faces were very well modeled.

I could go on and on, but you get the picture. This is a great TV – the best I've ever had in my home theatre.

## The Bottom Line

These two new televisions illustrate the relentless advance in TV performance. Panasonic's new VT25 plasmas are priced the same as the V10-series models they replace; but are better in every way. As the contrast ratio specification indicates, they deliver outstanding blacks and superb gradations of tones and colours. The new TVs are also notable for their excellent detail in both static and moving images. And of course, last year's V10 series didn't have 3D capability. The new Samsung arrives at a lower price than last year's LED-illuminated models, and it too adds 3D capability and superb performance with 2D content.

Which is the better of these two TVs? That's a hard call, especially as they arrived in my home theatre at different times. If you have a preference between LED-illuminated and plasma TVs, then you already know which one you'd like. In their own ways, the Samsung LED and Panasonic plasma represent the very best of their respective technologies.

Other differences: The Samsung is thinner and has stunning cosmetics. It delivers a wonderfully vibrant picture, and has a surprisingly effective 3D video upconversion feature. The Panasonic has wider viewing angle (especially in 3D mode) and that amazing panel design that delivers the highest native contrast ratio (by far) yet achieved on a consumer television.

One thing is certain: the 3D HDTV era in Canada is off to a rousing start. **HH**

### Panasonic TC-P54V25

#### PLUS

- Wonderfully neutral color
- Outstanding blacks and shadow detail
- Superb resolution of still and moving images

#### NUTS & BOLTS

**Screen size:** 54 inches

**Resolution:** 1,920x1,080 pixels

**Specified contrast ratio:** 5,000,000:1 (native)

**Technical amenities:** Infinite Black Pro panel design, 1,080-line moving-picture resolution, 600Hz sub-field drive, THX Certification, 24p cinematic playback, Viera Cast network-TV features, Skype-ready

**Video inputs:** HDMI 1.4 (3 rear, 1 side), wideband component video (2), composite video (1 rear, 1 side), VGA (computer)

**Size:** 131.3 x 83.2 x 8.8 cm (w/h/d, without stand); 131.3 x 88.2 x 38.7 cm (w/h/d, with stand)

**Weight:** 29.5kg (without stand)

**Price:** \$3,500

**Website:** www.panasonic.ca

#### MINUS

- 3D glasses are a bit heavy
- Deeper than last year's model

# MELLOW YELLOW

Sharp's  
Quattron  
LCD  
HDTV  
put to  
the test



p24 *Sharp's new Quattron LCD televisions add yellow sub-pixels to the customary mix of red, green and blue, enabling them to produce an extended range of colours: not just yellows and golds, but deep blue and green shades as well.*

by Gordon Brockhouse

Until this year, all colour TVs created pictures by mixing red, green and blue light. Every single pixel on a colour-TV screen has a red, green and blue sub-pixel. For red objects, the TV just lights up red pixels, ditto for blue and green.

What about the gazillions of other colours found in nature? TVs portray them by blending red, green and blue light. Mix red and blue and you've got magenta, plus various shades of purple. Mix blue and green, and you've got cyan, plus turquoise, aquamarine and other hues. To make yellow, the TV mixes light from red and green sub-pixels (yes, that is how additive colours work); tweaking the mix will produce orange, yellow-green and other shades. Depending on the program content and precision of the TV's processor, it's possible to produce a billion or so colours by mixing red, green and blue.

However, there are colours beyond the range of conventional RGB displays: some shades of gold, and the more intense hues of green, turquoise and aquamarine. Extending the range of colours that we can bring into our home theatres is the rationale behind Sharp's new Quattron flat panels. These add yellow sub-pixels to the customary mixture of red, green and blue. Whereas conventional flat panels can produce a *billion* colours, Sharp says its new four-colour displays can produce a *trillion*. The four-

colour system also enables the TV to produce more subtle gradations of tone and colours that are inside or outside the standard range (or gamut) for TV, Sharp adds.

Much of the demo material Sharp used to show off its Quattron TVs during the January launch was rich in golds and yellows: a field of sunflowers, and an extended close-up of a saxophone full of metallic golds and rich browns. Not surprisingly for a TV with two million yellow sub-pixels, the Quattron display conveyed these shades more convincingly than one of Sharp's conventional LCDs. The Quattron display also did a better job with the rich blues and greens in a clip of a Caribbean beach – a bit of a surprise until you consider that these are exactly the shades that lie outside the standard range of RGB colours.

Whether they're showing off cameras, printers, TVs or loudspeakers, manufacturers always use demonstration material that will make their products look their best. But these demonstrations don't always translate in home use, when people are using their own content. How, I wondered, would these TVs look with other program content: movies, sports, documentaries and prime-time TV?

It's not an academic question, because the way Sharp's Quattron TVs produce colour pictures is different from the way they're recorded. All colour TV programs – broadcast, cable,

satellite, DVD and Blu-ray – are stored and transmitted as mixtures of red, green and blue. Basically, RGB displays create pictures by responding directly to the levels of red, green and blue in the video signal.

A four-colour display like one of Sharp's Quattron models has to improvise. On a moment-by-moment and pixel-by-pixel basis, the TV's processor has to analyze the program content, and determine how to produce three-colour video on a four-colour screen. It has to decide when to add yellow light to the mixture (because that information is not in the signal) and how to adjust red, green and blue to compensate for the added yellow. I have seen displays that purported to produce colours beyond the standard range for TV. With some content, the effect was very impressive; with other programs, it was artificial.

## The Test

Sharp's LC-40LE810UN is supplied with a lovely rectangular swiveling pedestal stand made of glass and metal, and has gorgeous cosmetics. Its 40-inch screen is framed in a black bezel, with silver trim around the gracefully rounded corners. The bottom of the bezel houses the speakers, so is taller than the area around the top and sides of the screen.

Like all of Sharp's Quattron TVs, the LC-40LE810UN is an LED-edgelit design, with LEDs





along the perimeter of the screen providing the backlight. This allows for a slimmer design than conventional models with CCFL (fluorescent) backlighting. The four models in the LE810 series are only 1.6 inches deep. Other benefits of LED illumination include energy-efficient operation and very high contrast ratio, allowing for deep blacks and good shadow detail. Besides the 40-inch model reviewed here, priced at \$1,800, Sharp's LE810 series includes the 46-inch LC-46LE810UN (\$2,200), 52-inch LC-52LE810UN (\$2,700) and 60-inch LC-60LE810UN (\$3,500).

Other technical amenities include 120Hz video processing for reduced motion blur, and Aquos Net, a set of Internet-enabled features that lets viewers access information like news and weather. The most interesting Aquos Net feature is a Netflix client. Based in the U.S., Netflix rents movies by mail and over the Net. On some Blu-ray players and TVs (including this Sharp Quattron model), viewers can stream movies from Netflix to the screen. The service is not yet available in Canada, but there are rumours that it will be here this year.

The keys on the well-designed remote are logically arranged. For example, the mute key is right next to the volume keys, and the input key is right next to the channel keys. The remote is not backlit, but the arrangement makes it possible to locate the most important keys by touch.

**Setup:** When you first power up the LC-40LE810UN, onscreen menus ask you to con-

firm the language and TV location. Choose Home, and it defaults to Standard mode, with Backlight reduced somewhat to +8 (the max is +16), Contrast at +30 (the max is +40), and Brightness, Tint and Colour at the 0 midpoint settings. In the Advanced area of the Video menu, Colour Temperature is set to Mid-High, which results in a bluish cast; Motion Enhancement at 120Hz High (other options are Low and Off); Active Contrast (which alters contrast based on program content) turned on; and Gamma (which controls the transition from dark to bright) at the 0 midpoint setting. Most viewers will find Standard mode very satisfying for everyday viewing in a bright setting; but purists will find it a bit overblown, with colours that look a little too blue, or "cool."

There are other preset modes, including Auto, Movie, Game, User, Dynamic and Dynamic Fixed. The Dynamic modes (the fixed mode locks it for store use) look very overblown. Video purists will prefer the Movie mode, which maxes the Backlight setting, sets Contrast at +30, leaves Brightness, Tint, Colour and Sharpness at their midpoint settings, turns Active Contrast off, and sets Colour Temperature to a more film-like Low setting.

Out of the box in Movie mode, the LC-40LE810UN delivers a wonderful picture. Watching the sci-fi series "V" in high-def, I was struck by the superb clarity, great skin tones, glowing colour and great facial modeling. However, I also noted that blacks were somewhat "crushed" in the Movie mode's default settings. As a result dark areas of the picture, such as Anna's hair and Father Jack's black clerical shirt, lacked texture and detail.



*The Sharp LC-40LE810UN delivered superb clarity, great skin tones, glowing colour and great facial modeling during a high-def episode of the new ABC sci-fi series "V".*

To tweak the settings, I put the TV into User mode, and then selected various test patterns on our calibration disc, *DVE HD Basics* on Blu-ray. In the Advanced submenu, I set Colour Temperature at Mid-Low, which created a warm film-like colour tone without looking subdued. The basic "pluge" test pattern displayed correctly with Brightness in the 0 midpoint, but the brightness ramps required a boost to +4 for the dark areas to appear correctly. Actual programming looked better with the latter setting, so that is where I left it. Setting Contrast at +28 and Backlight at +6 maintained detail in light areas of brightness ramps. Based on test patterns, in the Advanced submenu, I set Active Contrast to Off and left Gamma at 0. However, with actual programming, I found that setting Gamma to +1 improved shadow detail, so that is where I left it. Turning on OPC (Optical Picture Control, which adjusts the backlight for room lighting conditions) in the Video menu preserved deep blacks when viewing in dark conditions. Colour and Tint are best left at their midpoint settings.

**Evaluation:** With these adjustments, blacks weren't quite as deep when the picture was all or mostly dark. For example, the black background in the V logo screen was slightly grey. But whenever there was any bright content on the screen, blacks were excellent, even when my viewing room was mostly dark. It was a worthwhile tradeoff, because dark details in "V" opened up nicely. Anna's hair and Father Jack's clerical shirt now had texture. And I was impressed by the way the Quattron produced this show's complex colour palette: the dark warmth of St. Josephine's Church, the light pal-



**Sharp Aquos LC-40LE810UN:** "All the opulence of *The Young Victoria* on Blu-ray came through beautifully. The dark interiors of palaces had loads of atmosphere. Details and colours in the characters' elaborate costumes were gorgeously portrayed."

lor of the V spaceship.

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In *Law & Order*, the black background in the show's signature black text screens looked a little grey; but otherwise blacks were excellent. The TV did an excellent job at pulling out detail in dark areas, such as a judge's robes; and it was superb at differentiating dark colours.

A high-def broadcast of an NHL playoff game looked fabulous. The ice was dazzling, but had good texture; and even with this ultra-high-contrast content, dark tones and colours were well differentiated. Even in long shots, the Buffalo Sabres' uniforms were rendered correctly as deep blue and dark areas of the Boston Bruins' uniforms were black with a very subtle brown tinge.

All the opulence of *The Young Victoria* on Blu-ray came through beautifully. The dark interiors of palaces had loads of atmosphere. Details and colours in the characters' elaborate costumes were gorgeously portrayed, from Victoria's bright dresses to Lord Melbourne's dark frock coat (with the satin lapel standing out nicely).

*Planet Earth* on Blu-ray was stunning. In the Jungles episode, the dark shots of the forest floor, with sunlight streaming down through the canopy, had fabulous three-dimensionality. There was wonderful detail in close-ups of animals. For example, in a shot of the aptly named magnificent bird of paradise performing a mating dance, the bird's iridescent deep green breast feathers stood out nicely from the surrounding black feathers. Colours, especially various shades of greens, were beautifully portrayed in brighter shots, such as a time-lapse sequence of plants springing up in a clearing where a tree had fallen.

In the "Shallow Seas" episode, I loved the way the Quattron rendered all the shades of blue, green, grey, yellow and brown in a shot of kelp forests off the coast of California. It did well with more subtle hues too, for example in a scene on the sea floor showing a giant starfish devouring sand dollars.

Some general observations: On mostly black screens, I noticed very mild hotspotting in the corners; but in regular programming, this was hardly ever visible except on black backgrounds during program credits. I was very impressed with the Quattron TV's wide viewing angle, which is very wide for an LCD. Even 60 degrees

off-axis, colour fading is barely noticeable.

The answer to the question I posed at the beginning should be clear: Sharp's Quattron design works very well with a wide variety of programming. Even though it's extending the range of colours beyond standard TV, the effect never looked artificial. Quite the opposite: I was continually impressed with the range of colours and tones I saw on the screen.

One could debate whether Sharp's new Quattron screens are the best HDTVs on the market right now, but they're certainly right up there. They show that 3D isn't the only big story with flat-panel this year. **HH**

## Sharp Aquos LC-40LE810UN

### PLUS

- Extended range of blues, greens and yellows
- Ultra-thin profile and gorgeous cosmetics
- Very wide viewing angle for an LCD

### MINUS

- Slightly crushed blacks at default settings
- Very mild hotspotting on dark scenes

### NUTS & BOLTS

**Screen size:** 40 inches

**Resolution:** 1,920x1,080 pixels

**Specified contrast ratio:** 4,000,000:1 (dynamic)

**Specified response time:** 4 msec.

**Technical amenities:** Quattron four-colour filter; LED edge-lighting; 120Hz Fine Motion Enhanced; 1080p 24 support; Aquos Net Internet features, including Netflix connectivity (when available)

**Video inputs:** HDMI 1.4 (4), wideband component video, S-video, composite video, VGA (computer)

**Size:** 99.2 x 65.8 x 4 cm (w/h/d, without stand); 99.2 x 70.6 x 27.5 cm (w/h/d, with stand)

**Weight:** 16kg (without stand)

**Price:** \$1,800

**Website:** www.sharp.ca





What if your TV and PC spoke the same language?



**The REGZA UX600 series. The first Digital Living Network Alliance (DLNA)-certified® televisions recognized by Microsoft® as compatible with Windows 7.**

Experience the connected home network with DLNA, an industry standard that allows the interoperability of multiple DLNA compliant devices. DLNA provides the ability to wirelessly stream your favourite content - photos, music and videos from your PC to your Television. To simplify the connection between DLNA compliant devices Toshiba engineered the new Toshiba Media Controller application for Toshiba notebooks, an intuitive application with a drag-and-drop interface. Toshiba makes it easier to connect and enjoy your digital lifestyle.



**REGZA**  
**LED TV**

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[toshiba.ca/regza](http://toshiba.ca/regza)



# The Future of Reading

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## Here's how technology is changing our relationship with the printed word

by *Gerry Blackwell*

The way we read, the way we consume text, is undergoing massive change. Is it for the better? We think so. The agent of change, of course, is digital and online technology.

It starts with the Internet. More words are instantly accessible on the Web today than have ever appeared in print, and it's not all mindless blogging and tweeting. Hundreds of thousands of books have already been published digitally as e-books. Ambitious, sometimes controversial, undertakings such as Project Gutenberg and Google Books are transferring whole libraries to digital format on the Internet.

Virtually every magazine and newspaper in the world publishes all or some of its content on the Web, much of it free. Thousands of online-only publications have sprung up.

They're not your father's magazines, often irreverent and with intriguing interactive and multimedia elements. Some formerly print publications have abandoned ink and paper for the Web. *Toro*, a Canadian men's magazine, is a good example.

All of this has already changed consumer behaviour. Young people, if they read traditional books, magazines and newspapers at all (and many don't) are more apt to read them on a screen than the printed page. And it's increasingly not only the young.

As a result, traditional print publishers need to adapt, possibly radically remake themselves and their products. How will it play out? Nobody knows. We're in the middle of this right now. So hang on for the ride. For readers, it's an exciting time, some say a golden age. For publishers, it's also exciting, but decidedly scary too.

### Electronic Ink

To readers raised on printed books, magazines and newspapers, reading on a screen may seem unnatural. But as William Morassutti, editor-in-chief of *Toro*, says. "There's a whole generation of people out there who don't think twice about that." Morassutti has *never* heard a reader complain about having to read his magazine onscreen, he says.

The screen they read on could be a desktop computer or laptop monitor, or a smartphone. Or it could be a dedicated e-book reader with an "electronic paper" display from E Ink Corp. With the long-awaited release last year in Canada of the Amazon Kindle and broad retail availability of the Sony Reader (both E Ink-based), e-readers are suddenly hot. Dozens more have debuted since, though few others





*John Thomson, Associate Publisher, Here's How: "It's actually a pretty exciting time for publishers. There are more opportunities than there ever have been for us to deliver content and more ways that we can do it."*

are readily available as yet in Canada.

What's so special about E Ink displays? They're higher-resolution and contrast than most LCDs, so text appears crisper, and for that reason easier to read. They don't emit light, but reflect it. So they're easier on eyes and don't wash out in sunlight. They're thinner and lighter than LCDs, so despite having larger displays than smartphones (typically five to eight inches diagonally), e-readers are often lighter. Most fit in a jacket pocket or purse and can be easily held in one hand.

Another key characteristic: they use very little energy because they only draw power when "turning" a page: changing the display from one screenful to the next. Besides making e-readers an infinitely greener alternative to traditional print media, it also means their batteries, unlike laptop and smartphone batteries, last for days between charges.

So are e-book readers the essential catalyst for a digital reading revolution? Certainly the idea of a having a very portable, easy-to-hold device that can carry an entire library of books, magazines and newspapers – and with additional memory-card storage, e-readers can hold thousands of books – has enormous appeal.

"E-readers replicated the printed page so closely, replicated as closely as any technology the process of reading a printed book, that many of us in the business thought it would be a big, big turning point," says Steve Osgoode, senior director of digital business development at book publisher HarperCollins Canada.

And so it was. E-readers, especially connected models such as Kindle, which offer the added benefit of allowing customers to buy and download books instantly over a cellular or Wi-

Fi network, have helped "mainstream" the e-book concept, Osgoode says. Sales of HarperCollins Canada titles in e-book format, by online retailers such as Amazon and Kobo Books, an offshoot of Canadian bookseller Indigo, have jumped very quickly to between four and five per cent of the publisher's total book sales. "And that percentage is only going to grow," Osgoode says.

But dedicated e-book readers are not the only devices contributing to the sea change that's underway. Many consumers still read e-books on the backlit screens of computers and smartphones, despite their offering a supposedly inferior experience, and many will continue to do so, Osgoode says.

E-book readers, as Morassutti observes, have not become "the *über*-device that everybody desired." And there are reasons for this.

## Turning the Page

Igor Smirnoff, director of strategic development at NewspaperDirect, a Vancouver company that helps newspapers around the world publish digital facsimile editions that replicate the print edition online, notes that e-book readers work very well for books, but not as well for magazines and newspapers.

"Books have a quite simple structure; you're just flipping pages one after another," Smirnoff says. "But with a newspaper it's a completely different story – magazines also." Readers want to be able to scan newspaper pages to find stories – and ads – and they need to be able to flip quickly to turn pages.

Replicating that experience is more difficult to achieve on an e-reader with its five- or six-inch screen and limited user controls – although

NewspaperDirect, through its retail PressDisplay newspaper-aggregation service, is now offering downloadable digital editions specific to various e-book products, as well as for iPhone and other devices.

Electronic paper displays also aren't ideal for Web-browsing and other computer-based applications. They're not scrollable: you have to change the display one screenful at a time, and it takes a half-second to do this. Finally, current E Ink products are monochrome only.

Despite e-readers making a big splash in recent months, e-publishing watchers and insiders are as or more excited about the potential impact of the Apple iPad. The iPad, due in Canada in May and priced between \$500 and \$700, is a device with a similar form factor: a thin, flat screen with built-in processing and no keyboard. It's not *much* bigger or heavier than an e-reader, and has a more conventional 9.7-inch colour LCD screen. It uses the same multi-touch screen technology and gestural touch interface as Apple's wildly popular iPhone and iPod Touch.

Apple is positioning iPad as a multi-purpose connected device, but with e-books (and e-newspapers and magazines) as a key part of the mix. It has already announced a new Apple iBooks store to go with the company's very successful iTunes online music and video store and AppStore for iPhone applications.

Apple is not alone in recognizing the potential of tablet computers. Other manufacturers have been experimenting with tablets or slates for a few years. But given Apple's vision, marketing muscle and magic touch with industrial design, it seems likely iPad will have a major impact – and spawn dozens of imitators.



William Morassutti, Editor-in-Chief, Toro Online: "One of the challenging things about switching from print to a digital magazine was taking the editorial lineup and re-imagining it for the digital world. Articles necessarily became more compressed."

### More Than Just Words

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The iPad, more than e-readers, also appears poised to push forward the notion of "enhanced" books, hybrids with text plus multimedia and interactive elements. This is not a new idea. Since the 1990s, writers and publishers have been experimenting with book-, magazine- and newspaper-like forms that exploit the hypertext linking and multimedia capabilities of the Web.

Newspaper Websites long ago added video clips to augment text content. Often they source video from broadcast partners, but some formerly print-only journalists are now expected to shoot video for their publications' Websites. And some newspapers have added video crews.



The Death of Bunny Munro by the Australian avant-garde musician Nick Cave is an e-book novel with text and synchronized audio and video of Cave reading it. Readers can listen to Cave read the book to them, watch him reading on TV, and read from a print copy or on an iPad or e-reader.

A key selling feature of the digital editions NewspaperDirect produces, is that telephone numbers, e-mail addresses and ad images can become "live" links. Clicking the phone number in an ad, for example, could launch your Skype or Google Talk Internet phone software and dial the number. Clicking the URL takes you to the company's Website.

"One of the fun and really challenging things about switching from print to a digital magazine," says Toro's Morassutti, "was taking the editorial lineup and re-imagining it for the digital world." Among other things, Toro stories became shorter. As Morassutti puts it, "Articles necessarily became more aphoristic and compressed. It's a style of writing and communication that works in this medium." More radically, the magazine's tongue-in-cheek advice column, "Damage Control," morphed into a video talk show with Morassutti and "columnist" Veronika London. And music reviews gave way to "Garage Band:" live studio recordings of visiting Indy bands and interviews with band members that visitors can stream from the site.

Toro is by no means alone, of course. This magazine, and its sister industry publication, Marketnews, have been developing not just thriving Websites, but Twitter and Facebook presences, widely read online newsletters and iPhone apps. And they recently began incorporating video features in online content.

### Experiments

Books are not exempt. The Australian avant-garde musician and author Nick Cave made a minor publishing splash last year with *The Death of Bunny Munro*, an innovative enhanced e-book novel with text and synchro-

nized audio and video of Cave reading it. *Bunny Munro* gives readers the interesting option of being able to listen to Cave read the book to them while they're preparing dinner, streamed from the Website to their computer, watch him reading on TV after dinner, again streamed from the Web, and later curl up in bed to read the next chapter from a print copy or on their iPad or e-book. Is it great literature? Far from it, but it is an interesting experiment.

Anthony Zuiker, creator of the *CSI* crime drama franchise on U.S. television, followed with an even more interesting experiment, which he claimed was the first "digi-novel." *Level26* is an ambitious melding of book, Website and online TV series. The first title in the series, *Dark Origins*, is available in a print edition or as an e-book from Amazon, Borders and other online booksellers. The second is expected out soon. Readers can read the book, view dramatic videos streamed from the *Level26* Website that expand on and enrich the story, and then read the blog, participate in discussion groups, enter contests and enjoy other online activities.

These are just the latest in a long, mostly under-the-radar, line of such experiments. Apple's iPad is propelling them into the foreground. It's not that the iPad uniquely enables this kind of hybrid, enhanced content. But it does mean you no longer have to sit at a desk in front of a computer monitor, balance a laptop on your knee or squint at a tiny smartphone screen to consume it.

Publishers have already jumped on the bandwagon with gusto. Penguin Books demonstrated iPad-based enhanced titles within weeks of Apple announcing the product, including inter-



SAMSUNG

1 2 3 4 5  
6 7 8 9 0

Clock  
AM/PM

Time Controls  
Cooking  
Time

Delay Start

Kitchen  
Timer On/Off

Clear  
Off  
Set  
Start

So cool. So clean. So advanced. So Samsung.



Samsung's new Induction range uses the latest technology to cook quickly, precisely and cleanly. With Samsung Induction technology, only the cookware heats up. Remove the pan, and like magic, the cooktop is cool - so drips, spatters and spills don't bake on. With a Samsung Induction Range, you'll spend more time enjoying dinner and no time cleaning up. To learn more about the coolest, cleanest new way to cook, visit [samsung.com](http://samsung.com).

#### SMARTER COOKING

Induction cooktop technology produces heat using an electric induction coil below the pot. Only the cookware heats up when placed on the burner, providing a safer, more energy efficient way to cook meals.

#### FASTER COOKING

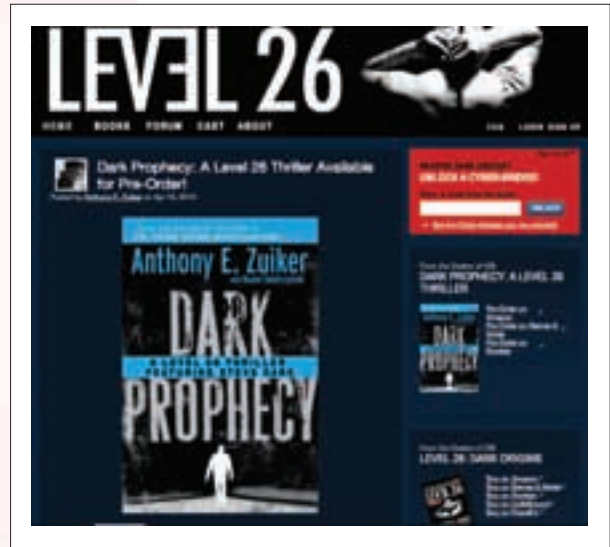
The induction cooktop transfers heat directly to the metal cookware and into the food. Very little heat is lost in the transfer, so meals are heated twice as fast than with an electric or gas range.

#### SAFER COOKING

Induction cooking is one of the most efficient and precise cooking methods available, and it's also one of the safest. Burners only generate heat when they come in contact with cookware, so the rest of the cooktop stays cool and safe to touch.

SAMSUNG

TURN ON TOMORROW



*Level26, from CSI creator Anthony Zuiker, is a melding of book, Website and online TV series. Readers can read the book, view online videos that expand on the story, and then participate in various online activities.*

active, multimedia versions of some of its Dorling-Kindersley (DK) science and travel titles.

The travel books, for example, will allow you to build a custom itinerary and plot it on a Google map. A book on human anatomy lets you zoom into graphics of the human body and view animated or video illustrations. *Baby Touch*, an iPad book for toddlers, lets them explore a bright, animated graphic world using only the touch interface to learn about shapes and other basic concepts. A re-imagined children's storybook includes interactive activities such as colouring in pictures from the book using a simple touch-based painting interface.

*Wired*, the venerable magazine of the digital counterculture, made a YouTube splash by announcing its iPad-centric strategy for a "re-imagined" digital, online version of the magazine. The iPad *Wired* will offer what the magazine's creators call an "immersive" experience, including short videos, "360s" of products (images that can be turned to view all sides simply by dragging a finger across the screen) and social-media components, such as the ability to clip articles, share with friends and tweet about the content directly from the "magazine." But besides the fact that the new *Wired* will cleverly exploit the iPad's slick, intuitive touch interface, the content itself is very little different than you might find at many existing magazine Websites today.

## Mainstream Media

You can bet that virtually every book and periodical publisher is looking hard at the iPad and e-readers, and feverishly making plans, conducting experiments and initiating programs. Most were already doing the bare minimum. In the

case of newspapers, that meant working with Newspaper Direct or on their own to publish "digital editions" of their products – and endlessly tinkering with their Websites as a publishing platform.

*The Globe & Mail* launched a marketing push last December to try and get more people reading its revamped digital facsimile edition. *The Toronto Sun* announced earlier this year that its custom iPhone app, which allows readers to automatically download and browse stories from the newspaper on their smartphone, had become one of the top five downloads from the Apple's Canadian AppStore.

But the accessibility and inexpensiveness of the technology involved means that just about anyone can produce content for the new media. Mainstream media brands may be under intense pressure and at risk, but there are also enormous opportunities for new producers and would-be producers.

All of this makes it a very exciting time indeed for consumers – at least those willing to embrace new devices and new reading habits and experiences. How many will do that? It's a less pressing question today than it was even a year ago. For Morassutti, for example, who is primarily addressing a younger demographic, the answer is moot: the magazine's 50,000-odd visitors a month clearly already *have* embraced the new magazine experience, with or without new devices. But *Maclean's* or *Chatelaine*?

Even among older consumers, especially business travellers and mobile professionals, the habit of reading news and even books on laptop and smartphone screens is already well established – at least according to anecdotal reporting.

And industry watchers don't doubt we will

embrace new reading devices. Gartner, the information technology consulting and analyst firm, predicted in March that the iPad would goose sales of tablet computers – by about eight million units a year.

Market researchers paint a similarly rosy prospect for manufacturers of e-readers. Forrester Research in December estimated 2009 sales in the U.S. at just under 3 million, almost a third more than the company predicted earlier in the year. And it expects sales to double in 2010.

The real question may be, how quickly will the transition to digital occur in different demographics and publishing sectors, and what kind of disruption will that cause in the meantime?

**Angst and optimism:** Some believe the fears are exaggerated. *here's how!* associate publisher John Thomson points out there has been a long history of panic about new media killing old media, yet it has rarely happened. "I think print magazines are going to continue to flourish," Thomson says. "But I think what most print publishers have to do is stop thinking of themselves as print publishers. They have to think of themselves as being in the content-delivery business – whether it's electronic or print."

He also likes to point out that in a survey conducted by the Canadian magazine publishing industry, consumers said they were more likely to be influenced by ads in print magazines than ads in any other medium. And while sales of print ads fell off sharply during the recession, they are coming back now, he says.

There is furious activity in all areas of publishing, and great excitement and, in some quarters, great optimism. Thomson, for example, says, "It's actually a pretty exciting time for publishers. There are more opportunities than there





Igor Smirnov, director of strategic development at NewspaperDirect, says e-book readers work well for books, but not as well for magazines and newspapers. "Books have a quite simple structure; you're just flipping pages one after another. With a newspaper it's a completely different story – magazines also."

ever have been for us to deliver content and more ways that we can do it."

But there is also angst. You might argue that this is no concern of consumers, of readers. All that matters to us is *content*, and more is available now and at lower cost than ever before. So why worry? It may not be that simple.

Take newspapers. Some regional dailies in the U.S. have failed in the last year, and most newspapers are crying the blues about declining ad revenues. Advertisers do buy ads on newspaper Websites, but not as many as in the heyday of print publishing, and they don't pay as much for them.

## Making it Pay

There has been endless talk in the industry of finding new "business models" and figuring out how to "monetize" the Internet, how to generate revenue from publishers' activities there – which to this point, have all-too-often involved giving away content they used to charge subscribers to receive. The rooted expectation that news on the Web will be free is a fundamental problem for newspapers.

"It's not that newspapers *haven't* monetized," says Scott Anderson, senior vice-president of content at Canwest Publishing Inc., publisher of *The National Post* and several major regional dailies. "It's that we trade a dollar for 10 cents when we move from print to online."

As Thomson notes, there is far greater accountability in online advertising than there ever was in print, because advertisers can actually tell how well their ads are working – or they think they can – and are only willing to pay for what they see as positive results: consumers

"clicking through" to their Web pages or buying online.

Some inside the industry have criticized publishers preoccupied with finding new ways to make more money from the Web. Scott Karp, CEO of Publish2, refers to big publishing's "sense of entitlement and impatience." Publish2 is a U.S.-based firm with a new Web-based platform that allows journalists and newspapers to "curate" the Web: organize existing content and add value to it in the process, comparable to what gallery curators do in mounting art exhibits.

Karp believes the ground has irrevocably shifted under big print publishers and they need to shift with it. "Newspaper publishers no longer have the benefit of an economics of scarcity," he points out. "In the past, there were only a few [companies] with printing presses. Now the means of distribution is virtually free."

One result is "citizen journalism," the exciting but sometimes troubling phenomenon of non-professionals reporting the news in fresh new ways – but not always accurately or with biases made clear. As Karp observes, it also means professional journalists no longer have a monopoly on the reading public. "You've got to continually sell the value of your professional editorial judgment," he says. "People are not going take it any more just because it's the only game in town. You've got to earn [your audience]."

Okay, but how does all of this concern you as a *consumer*? In a couple of ways.

First, we rely on journalism, the work of professional reporters and editors, to get us accurate information about what's going on in our world. And we rely on investigative journalists

to hold our governments and corporations to account. Journalism is important.

But it's also a business, or it's tied to one. And if that business can no longer make money, what will happen? One risk is that we'll have less quality journalism: less reliable, accurate information available, fewer in-depth investigations of political and business chicanery, less diversity of points of view.

Something, eventually, has to give. Newspaper and magazine publishers cannot go on forever giving away content for free. It costs too much to produce.

## Behind the Wall

Some have experimented, generally unsuccessfully, with "pay walls," an online distribution model in which Website visitors must pay a subscription fee to get access to content behind the wall. *The New York Times*, for example, has recently started to build its pay wall higher.

Others, sensing the unlikelihood of making pay walls work, are looking at less radical departures from the information-is-free Web mentality. Canwest's Anderson says his company is looking at two approaches: bundling and metering.

Bundling refers to gathering themed content – content related to food, for example – from the publisher's own internal sources and from outside partners such as other publishers and bloggers, and assembling it, along with social-media elements, as a magazine-like package. The publisher will sell this bundle as "premium" content, while continuing to provide basic news free. Would you pay for such a bundle?

Metering refers to the practice, implemented successfully by *The Financial Times* in England



**Scott Anderson, Senior Vice-President of Content, Canwest Publishing Inc.:** "It's not that newspapers haven't monetized. It's that we trade a dollar for 10 cents when we move from print to online."

and others, of allowing visitors to consume a certain number of pages or articles free in each issue, then insisting they pay for more, or come back next issue.

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Thomson speculates, given the success of online music stores such as Apple's iTunes, which sell individual songs for 99¢, that it might eventually be possible to sell magazine articles in the same way, using a similar "micropayment" system. But he concedes this is far from certain. "So much of what has been available online is free. There's going to be a consumer shift that's needed to change that [expectation]."

Some publications such as *Toro*, mostly small ones without the overheads of a *National Post* or *Globe & Mail*, may thrive in the new digital, online environment. But they are not producing the journalism we absolutely rely on to stay informed and keep politicians and business moguls honest. Still, could *Toro* be a model for other print publishers? One thing it's doing is offering creative services to companies that want to build their own social-media sites similar to the magazine's. It has also had success offering TV-like sponsorships of its successful online multimedia features, such as the "Garage Band" live music spots.

Other publishing "brands" such as the big newspapers may have to find different formulas. Canwest's Anderson insists that "overall, the print industry is healthy" and "newspapers just have to figure out how to stake their claim to the part that is rightfully theirs."

Karp has little sympathy for this implied sense of entitlement, and suspects the economics of publishing have changed forever to favour smaller operations such as *Toro*. But the big brands can survive, he says. How? By continuing

to experiment, patiently, with new ways of doing things, until they find ways that work. But it has to be ways that work both for consumers and publishers, he stresses. "[Publishers] are too apt to say, 'Why wasn't this experiment an instant success?' But a failure is not necessarily complete failure. It's just part of the process."

## Instant Gratification

Book publishing is undergoing similar upheavals, for similar reasons. The e-book editions of leading new titles – mainly fiction, but also some non-fiction – sell for considerably less than the hard- or even soft-cover print editions. E-book retailers sell them for as little as \$10, compared to \$30 or \$35 for the hardcover.

Some of this is offset for publishers by savings on not having to print as many books. And some retailers and publishers believe consumers will buy more e-books than they do print books because it's easy to do online: instant gratification.

"The immediacy is so great that people buy books perhaps they would not buy otherwise," suggests Daniel Leibu, chief technology officer at Canadian online bookseller Kobo Books. He's partly speculating, but his company does know that new titles start to sell much more quickly after release as e-books than in print – presumably because consumers see the title promoted in the media and at retail sites and buy on impulse.

But this doesn't offset all the discounting. Retailers – especially Amazon – are in fact offering \$10 e-books as "loss leaders." You may get a very popular title at a low price, while more obscure titles, of which fewer sell anyway, cost closer to the paper or hardcover price. What's unusual about the book industry is that publisher's revenues per e-book are a percentage of

selling price, not list price. So the heavy discounting cuts deeply into their profits.

Again, from a book reader's perspective, what's wrong with that? Well, consider. All publishers depend on best-sellers to subsidize publication of other books. If margins on their biggest-selling titles continue to be pared, will some go out of business or, almost as bad, stop publishing as many titles because they can't afford to take losses on them? "It's not lost on anyone who looks at this industry how fragile an ecosystem book publishing is, with razor-thin margins," says HarperCollins' Osgoode. "No one is getting extraordinarily rich being in publishing, regardless of the size of the company."

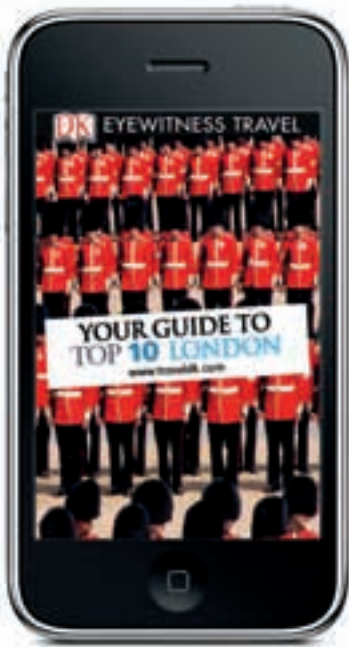
Some in the industry, such as Osgoode, whose mandate is to develop his company's digital business, may welcome increased sales of e-books, as do e-book retailers like Kobo, of course. But it makes the industry as a whole deeply uneasy. And the industry is now starting to fight back, pushing to fundamentally alter its relationships with e-book retailers. This will impact consumers.

E-book publishers, led by Macmillan in the U.S., are now moving to what they call an "agency" model in which *they* set prices and retailers must give them a percentage of the list price rather than the selling price. If they make it stick, retailers will not be able to afford to discount as much. Macmillan insists many low-priced e-books will still appear, but it seems clear prices will go up in general.

## The Golden Age

Consumers who care about books and quality journalism *should* care about the turmoil in our publishing industries for the reasons we're sug-





*The British publisher Dorling-Kindersley has adapted its popular travel guides for the iPhone, and recently demonstrated enhanced titles running on Apple's iPad.*

gesting. But at the same time, it really is a golden age for readers, and it's hard not to relish it.

If you're a newspaper junky, for example, you can go to NewspaperDirect's PressDisplay site and look at the front pages of digital facsimile editions of almost 1,500 newspapers from around the world – for free. For \$30 a month, you get unlimited access to the contents of those publications, and can download them to your computer, iPhone or e-reader. Given that a subscription to the print editions of many newspapers costs in the \$30 range, this is a phenomenal bargain.

If you're a lover of fine magazines, check out the Websites of your favourite print journals, both the ones you subscribe to and those you can't afford. Chances are that some at least of their content will be available free. *Macleans*? *The New Yorker*? *Economist*? *The Walrus*? *The Atlantic*? All offer substantial online "teasers:" complete stories from their current and past issues, excerpts of other articles, and content unique to the Web such as columnists' blogs, verbatim interviews, photo features, etc.

If you're already a Kindle user, you can download and read complete e-editions of some popular magazines and newspapers on your e-reader, for a price. If you have an e-reader – and a bit of a geek streak – you can also clip and paste free content from Websites into another program on your computer, format the text as a PDF (portable document format) file, ePub or other e-book format and download it to your reader.

Books? Yes, you can find free books on the Web too, albeit mostly classics and other titles for which no one any longer holds copyright, or whose self-publishing copyright holders are

offering them free. Check out Google Books, the University of Pennsylvania's Online Books Page, the Gutenberg Project. (Note: the Gutenberg Project's offshoot in Australia, where copyright laws favour consumers a little more than in some other jurisdictions, may include titles not available elsewhere.)

These sites typically point to books available in text format or HTML (the page-formatting language of the Web); but again, you can clip and paste or import them into another program and format them for an e-reader or smartphone. The free *Mobipocket Creator*, for example, can convert *Word*, HTML and text files into the .PRC format that some e-readers use.

Creating PDFs that work well on e-readers is a little more difficult. To do it easily, you need Adobe *Acrobat*, a program that costs over \$350. But it can also be done with free programs such as *PDFCreator* from SourceForge. Rolling your own e-books in the Adobe ePub format, which it now appears will become the industry standard, requires an even more expensive Adobe program, *InDesign*. But it too can be done, if not easily, using free tools.

For free already-formatted Adobe ePub, PDF and PRC e-books, check out sites that sell com-

mercial e-books, some of which also provide the means for authors to self-publish. The Canadian company Kobo Books offers a small library of free, already formatted e-books, mostly classics of literature. Mobipocket has over 11,000 free e-books available at its site in its .PRC format, some of them out-of-copyright titles, some self-published books. ePubBooks, a privately-run site, offers a similar selection of free e-books in the ePub format.

The golden age of e-reading may well shine even brighter in the months and years ahead. Market forecasters believe as many as 20 iPad-like devices will appear in the next year, for example, probably driving prices down, and quite possibly introducing innovative new features and capabilities. Don't count out E Ink-based readers either. The company expects to go into production on more robust, flexible colour screens later this year.

We should all enjoy the pot of reading gold at the end of the Internet rainbow, but also understand that it comes at a cost. If we want professional authors, editors and journalists to continue to produce the quality writing we need and crave, we will ultimately have to pay for it. Or see it disappear. **HH**

**Scott Karp, CEO, Publish2: "You've got to continually sell the value of your professional editorial judgment. People are not going take it any more just because it's the only game in town. You've got to earn [your audience]."**



# Jumping the Line

## First impressions of Apple's iPad

by John Thomson

Sometimes it's hard to wait; and all too often Canadians have to wait for the latest gadgets. Apple's iPad is a case in point. It went on sale in the U.S. on Easter weekend. Sales south of the border have been so brisk that buyers in other countries, including Canada, will have to wait until late May to get one.

Not me. During a holiday in Miami on Easter weekend, my family and I were having breakfast at the beautiful Van Dyke Café, a block away from the Apple Store on Lincoln Road. With the full encouragement of my 13-year-old daughter, I wandered over to the Apple store and picked up the 64GB model. There were no lineups and no stock-outs.

Before leaving the store, my daughter logged onto her Facebook page and updated her status to indicate that she was writing from "her" new iPad. She received 25 thumbs-ups before breakfast was over.

I'm an avid user of the iPod Touch, so the iPad's interface was instantly familiar. I had no difficulties setting up a Wi-Fi connection, accessing my iTunes account or surfing the Web. Syncing with my laptop was dead-easy; so was transferring files.

**Hurry up and wait:** But I couldn't connect to Apple's new iBook Bookstore. I have an account with the Canadian iTunes store; and that account was associated with my new iPad. So when I tried to connect to the iBookstore, I got

**Apple iPad:** "More than for what it does, I love the iPad for what it is: a beautifully designed look into the future. Even in its present incarnation, the iPad will be on every tech-head's lust list."

an error message saying it is not supported in my country. I could have circumvented this restriction by signing up for a U.S. iTunes account and logging in that way. But that would have required paying for e-books with a U.S. credit card, and they would have remained separate from my Canadian iTunes account. Of course, that problem will disappear when the iPad officially launches in Canada. Until that happens, I can't download eBooks to my iPad. So much for being an early adopter!

Similarly, I cannot download iPad apps from the App store, which means that I can't experience apps designed for the iPad. I can run iPhone apps on the iPad, which uses the iPhone OS. But these apps are designed for the much smaller iPhone screen. When I open an iPhone app on the iPad, I can magnify it to fit the entire screen by depressing a zoom button, but it looks fuzzy that way; or I can use the app in a small iPhone-size window. As we went to press in late April, a few iPad apps were beginning to appear in the Canadian iTunes store.

**Showtime!:** I have still found lots to like about the iPad. Websites look spectacular. The first sites I visited were, of course, our own [www.marketnews.ca](http://www.marketnews.ca) and [www.hereshow.ca](http://www.hereshow.ca) portals. I was very pleased at the ease of navigation and pop of the colours. One hitch: like many Websites, ours use Adobe's Flash format for videos. Apple has made it a point of not supporting Flash on the iPad, so I could not access our videos. We are currently addressing

that challenge. Other than the Flash issue, I love the iPad for Web-browsing. For sitting back to do some casual surfing, I find the iPad much more comfortable than a laptop.

I had no problem watching YouTube videos (where our own videos also appear) or movies and TV shows that I bought from the iTunes store and transferred from my MacBook. I finished Season Three of *Mad Men* during our return journey from Miami. Since returning home, my wife has made watching *Mad Men* on the iPad a bedtime ritual.

**Music:** The iTunes interface on the iPad is very similar to iTunes on the PC and Mac, with playlists, album art and artists appearing on one screen, rather than separately as they do on the iPhone and iPod Touch. The iPad's generous screen is fully exploited, with all necessary information a click away. But oddly, the iPad does not support Apple's Cover Flow view. However, I have not put my entire music library on the iPad. The device won't fit into any dock I know of, nor will it accompany me on my next run through the park. So when would I listen to tunes on it? Maybe I'll contemplate this further as I sit in Starbucks with my headphones plugged into the iPad.

**The screen:** For photo viewing, the iPad will give any digital picture frame a run for its money. But its glossy screen makes reading e-books by the pool next to impossible. That's the challenge of trying to be all things to all people: by comparison, the Amazon Kindle's screen looks superb in natural light. But viewing a colour image in a magazine article or kid's book on an E Ink screen is a disappointing experience.

**First things first:** The last time I was an Apple early adopter was when I bought my very first iPod. It held 5GB and cost \$500. Ten days later, Apple announced the 10GB iPod. As I play with my shiny new toy, I realize that I learned nothing from this experience. In no time, a faster, slimmer, higher-capacity and cheaper version will be on the street. But that's the price you pay for early adoption.

Fair value: a month after getting the iPad, the honeymoon continues. More than for what it does, I love the iPad for what it is: a beautifully designed look into the future. We are witnessing computing (and publishing) change before our eyes. This first-generation product is not perfect, nor should we expect it to be. In time, the iPad will be as good at allowing us to create as this first-generation model is good at allowing us to consume. But even in its present incarnation, the iPad will be on every tech-head's lust list. **HH**

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# Just the Basics

## The Kobo eReader is all about reading

by Kris Abel

In May, the Canadian online bookseller Kobo Books, an offshoot of Chapters/Indigo, will launch the Kobo eReader. Compared to the competition, the Kobo eReader has few bells and no whistles. But it addresses the issue of consumers spending hundreds of dollars on books in a year. Why should they have to spend the equivalent on a device to read them?

The Kobo eReader offers the basics on a budget. It isn't easier to use than other eBook Readers; it just has fewer features for a lower price. The \$150 unit uses the same six-inch monochrome Electronic Ink display as Amazon's and Sony's e-readers. But the Kobo device can only display books, magazines and newspapers in ePub or PDF format. No photos, no music, no audiobooks and no other file types. It's lighter than most competing models, and certainly smaller in size than the Kindle. There's no headphone jack or speaker (there's no reason for either), nor will you find built-in Wi-Fi.

**The look:** White with rounded corners, the Kobo device sports a familiar look. But it manages to stand out thanks to two splashes of colour: a light blue injection-molded D-pad on the lower-right corner for navigation (the screen isn't touch-sensitive), and a hidden LED power light that turns a purplish-pink when powered on, blue when processing data and flashing-red when low on power.

Competing devices come with a protective faux-leather cover. To keep the cost down, the Kobo has a quilted, grey rubber padding as its back instead. This, combined with the white finish and the blue D-pad, reminds me of a baby gadget or a digital thermometer; not the best association.

**Downloading books:** Books are purchased and downloaded on a PC or Mac, then transferred to the Kobo via USB. Connection to a PC is also how the Kobo recharges, but an optional AC charger is available. Like other readers that use E Ink screens, the Kobo has long battery life, affording about one week of continuous reading.

Two pieces of software are used to download and manage books from the Kobo store. Adobe *Digital Editions* is used to unlock and add titles to a personal computer; and *Kobo Desktop Software* lets you read them on your monitor and transfer them to the device itself. Having to use two programs is a bit cumbersome, but at least the software supports both Mac and PC, as well as English and French.

At this time, the only book format supported on the Kobo is ePub, but that format is quickly

becoming an industry standard. As an open format, not only is ePub used by the Kobo bookstore, but also by Sony's and Apple's online bookstores. Many local libraries and independent publishers use it as well, so Kobo owners can buy and borrow from a variety of sources.

The Kobo reader also supports PDF documents using Adobe's *Mobile Reader* software. This displays PDF documents better than competing devices I've seen. While you can't change the style or size of the text when reading PDF files, you can zoom in up to 200 per cent; and you can switch between portrait and landscape modes.

**Reading on the Kobo:** With 1GB of built-in memory, the Kobo can store approximately 1,000 books, and will come with 100 classic titles loaded onto the unit, including *The Count of Monte Cristo*, *Paradise Lost*, *Jane Eyre* and *The Art of War*. Sony and Amazon offer free classics for their devices, but these have to be downloaded from the store, so Kobo is saving you a step. The Kobo reader also has an SD memory-card slot that can accommodate an additional 4GB.

The Kobo is slower at loading books and turning pages than competing models I've reviewed. The blue D-pad is used for turning pages forwards and back, something that takes a bit of getting used to. Four plastic buttons on the side bring up the various setting and options menus.

When reading e-books, users can choose between two typefaces (serif and sans-serif); and among six sizes, the largest of which isn't as large as competing models. The Kobo can automatically bookmark the last page you read, but it can't place additional bookmarks or "dog-ear"

corners. You can move between chapters, but can't flip to a specific page. Unlike the Sony and Amazon devices, the Kobo reader does not include a built-in dictionary, highlighting or note-taking features. Books can only be read in portrait mode: there is no option to turn the device sideways and read in landscape mode, which some people like to do when lying down.

As with other readers, the E Ink screen is meant to deliver the look and feel of actual black ink on white paper. However, this means that you'll need to have room lights turned on for nighttime reading. Like a computer display, the Kobo can pick up some glare in harsh lighting. While illustrations, diagrams and photos in books won't appear in colour, they are presented in crisp black-and-white, with fine detail.

**Tricks:** The Kobo reader has one trick up its sleeve, and that's Bluetooth. Travelers who don't have the time to preload their device with books prior to leaving can use an iPhone or BlackBerry to purchase, download, and transfer books while on-the-go.

In addition to this reader, Kobo also offers a selection of dedicated mobile apps for reading books and articles on cellular smartphones. A bookmark can be synced across devices, so you can begin reading a novel on the PC at home, then pick up where you left off on your smartphone in the cab, and continue once again on the plane with the Kobo eReader.

**The verdict:** While the list of things the Kobo can't do is longer than the list of things it can, that's certainly expected for a device that positions itself at entry-level. But it's a well-made, well-thought-out product that is serious about giving value for those on a budget. **HH**

*Kobo e-Reader: "While the list of things the Kobo can't do is longer than the list of things it can, that's certainly expected for a device that positions itself at entry-level. But it's a well-made, well-thought-out product that is serious about giving value for those on a budget."*



A close-up photograph of a green praying mantis perched on a vibrant red flower. The mantis is positioned diagonally across the frame, with its long, segmented body and raptorial front legs clearly visible. The flower's petals are bright red and layered, creating a textured background. The center of the flower is a dense cluster of small, yellowish-orange stamens. The lighting is bright, highlighting the textures of both the insect and the flower.

# BUG'S EYE VIEW

The here's how  
guide to extreme  
close-up photography

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By Peter Burian

Now that spring has come to Canada, it's time to begin thinking about outdoor photography again, particularly of nature's finery. Extreme close-ups of flowers, insects and other minuscule subjects can make for beautiful photos, especially when made with the right equipment and techniques. Often called "macro" photography, high-magnification image-making is enjoyable and creatively rewarding. While specialized equipment is not inexpensive, you can get started with affordable accessories. Use the right techniques and the images can be really stunning.

Most discussions about "close-up" photography refer to moderately close focusing, as in a tight head-and-shoulders portrait. However, it's possible to get much closer for frame-filling photos of a very small subject like a blossom, butterfly or a spider. These photos can resolve exquisite details that are invisible to the naked eye.

The expression "macro" refers to images where the subject is reproduced as life-size on a film frame or digital sensor. This is also called 1x magnification or a 1:1 reproduction ratio. In practical terms, a bee will be exactly bee-size in the image that you capture, so it will look huge in an 8.5x11-inch or larger print.

## TRUE MACRO LENSES

Many telephoto zoom lenses for SLR cameras bear the "macro" designation; that usually means only moderately close focusing ability. Only a few can focus close enough for a dramatic frame-filling image, unless the subject is quite large. The Sigma 70-300mm f/4-5.6 APO DG MACRO can provide 0.5x magnification (or half life-size); but most others max out at 0.25x or 0.33x magnification.

That's why all lens manufacturers also offer true macro lenses (Nikon calls them "Micro" lenses). These employ a special mechanism that shifts internal elements to move the optical centre closer to the subject.

Typically, the internal barrel also extends significantly in close focusing; the combination allows for very high 1x magnification. The extra mechanism makes true macro lenses heavier and more expensive, but provides superior image quality in close focusing.

Macro lenses for digital SLR cameras range from 30mm to 200mm in focal length, but 60mm to 105mm models are most common. With nature subjects, a 70mm, 90mm or 105mm macro lens is most useful, since it provides a more generous working distance. (Owners of DSLRs with the huge full-frame sensor should consider a 180mm or 200mm lens.) In other words, there's no need to move as close to the subject for high magnification, so there's less risk of crushing other plants, spooking an insect or casting a shadow on the subject.

Since they can focus to any distance, macro lenses are suitable for many other subjects, such as portraits. With DSLRs with standard-sized sensors, a 60mm or 70mm macro lens will also work well as a portrait lens; with a full-frame SLR, 90mm to 135mm is a useful focal length for a lens that will be used for both portraiture and close-up work. But these shorter focal lengths mean that you'll be quite close to your subject in macro photography.

We have reviewed several macro lenses over the past few years, and you can find these reviews on our Website at [www.hereshow.ca](http://www.hereshow.ca).

## THE TRADITIONAL MACRO ACCESSORY

If you want to get started without investing in a true macro lens, there are some affordable alternatives. Photographers who own a single-focal-length lens (also called a prime lens) can use an extension tube for higher magnification. This gadget is a spacer mounted between the camera and lens; it extends the distance from the optical centre to the sensor to

reduce the lens' minimum focusing distance. Add a 50mm extension tube to a 50mm lens, and you can get very close to a tiny subject, for a full 1x magnification.

The longer the focal length, the longer the extension tube needed for high levels of magnification. Hence, these accessories are most useful with 50mm to 85mm prime lenses. Extension tubes fit into a corner of a camera bag and are available from some (but not all) camera manufacturers and from Kenko. Regardless of the brand of tube, be sure to confirm compatibility with your camera, particularly if it's a Nikon model. Be sure that the extension tube will maintain light metering; that may not be possible with the D40/D40x, D60, D3000 or the D5000.

**Evaluation:** Because an extension tube contains no glass, there is nothing to adversely affect optical quality. However, few lenses were optimized for extremely close focusing, so shoot at f/8 or f/11 for the sharpest possible pictures. A tube is not suitable for zoom lenses however. That's because every change in focal length also changes focus, calling for constant re-focusing; that's frustrating and will lead to missed photo opportunities.

There's another drawback: a loss of light caused by the increased dis-

*Many telephoto zoom lenses have a "macro" designation, which usually designates moderately close focusing ability, as in the first photo in this series. As the second photo shows, a true macro lens can focus much closer.*



tance from the optical centre to a DSLR's sensor. That makes the viewing screen darker than usual, so manual focusing can be more difficult in low light. More importantly, the shutter speed will be longer unless you use a higher ISO setting; and no camera provides optimal image quality at ISO 800 and above.

## A MORE VERSATILE ACCESSORY

These days, most photo hobbyists own only zoom lenses, making an alternative more popular. Usually recommended for use with 70-300mm and similar lenses, supplementary close-up lenses (sometimes called "plus diopters") resemble filters with magnifying glasses. They're available in various diopter strengths, from +1 to +4 and even higher. This type of accessory screws into a lens' front filter thread for great simplicity and convenience. By reducing a lens' minimum focusing distance, such accessories allow you to create high-magnification images, particularly when using longer focal lengths.

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Since the glass is clear, there's no loss of light, so manual focusing is

*When shooting small subjects like insects, try to frame your subject against an evenly lit section of greenery or blue sky, so that background elements don't distract viewer attention.*



*With conventional DSLRs that have a standard-sized sensor, a 105mm macro lens like this Sigma model is very useful for nature subjects, because it provides a generous working distance.*

convenient and shutter speeds do not get longer. Focus does not shift while zooming and magnification can be varied simply by changing a zoom lens' focal length. The longer the zoom setting, the greater the magnification will be.

Products of this type are available in brands such as Canon, Raynox and Tiffen. The Canon 250D (+4 diopter) and 500D (+2 diopter) close-up lenses are the most readily available and they're perfect for any brand of lens. They're not cheap since Canon uses achromatic glass to correct optical aberrations: two such elements in the 500D series (for 70mm to 300mm focal lengths) and one in the more powerful 250D series (for 30mm to 135mm focal lengths). If a supplementary close-up lens is not available in a size to fit your lens' filter threads, buy a larger size plus an inexpensive step-down ring adapter.

**Evaluation:** I can definitely recommend a high-grade accessory of this type for owners of the

better macro-designated tele-zoom or prime lenses of any brand. For the best results set a small aperture such as f/11 or f/16 for optimal edge-to-edge sharpness. If you use an inexpensive lens, image quality will be less than ideal at any aperture.



Photo by Peter Burian





## Your Guide to Better Photography

### Introducing the Nikon D3000 with its **NEW INTUITIVE GUIDE MODE**

The new 10.2 megapixel D3000 combines Nikon's award-winning technology with simplicity never before seen in such an advanced D-SLR camera. Move up to a D-SLR system with confidence and begin shooting like a seasoned photographer thanks to the D3000's step-by-step Guide Mode that walks you through the process of capturing the kind of pictures you've always wanted to take. And with Nikon's exclusive EXPEED™ advanced digital image processing technologies, you'll enjoy photos with exceptional colour and sharpness at lightning-quick speed.

Learn more at [nikon.ca](http://nikon.ca) or visit an Authorized Nikon Canada Dealer.

*EXPEED*



[nikon.ca](http://nikon.ca)

\*The D3000 comes complete with a two-year Canadian warranty for the body, and all NIKKOR lenses come with a five-year Canadian warranty when purchased from an Authorized Nikon Canada Dealer.



Photo by Peter Burian

*Depth-of-field is very limited at close focusing distances. A narrow aperture setting like f/11 or f/16 will enable you to extend the area of your picture that is acceptably sharp.*

## MACRO PHOTOGRAPHY TECHNIQUES

Regardless of the price or quality of the equipment that you use for extremely close focusing, the right technique is a prerequisite for sharp images. Consider the following tips for greater satisfaction. They'll help to minimize most of the frustrations of high-magnification picture-taking.

**Prevent camera shake:** Because the effects of any movement are amplified at high magnification, use a rigid tripod. A model with independent leg angles and low-level capability (and perhaps a vertical column) would be ideal. Trip the shutter with a cable release or the camera's self-timer so you do not jar the equipment. When you must shoot handheld, use a shutter speed around 1/350 second. Except in very bright conditions, that may require ISO 400 or ISO 800 when shooting at very small apertures.

**Control subject movement:** When you photograph an insect, flower or another plant outdoors, the breeze will often move the subject. To "freeze" that motion for a very sharp image, you'll need to shoot at high shutter speeds: 1/250 second in a gentle breeze and at least 1/500 second if it's windy. (When possible, plan to go out in early morning, while it's still quite calm.) Consider using flash at the fastest sync speed possible with your camera, such as 1/125 second or 1/160 second. The brief burst of light can help to assure sharpness by "freezing" the wind-induced motion.

**Check the background:** Unless you are filling the frame with a tiny subject, try to shoot from a position that allows for framing it against an evenly lit section of greenery or blue sky. Avoid out-of-focus highlights ("hot spots") because these can compete for viewer attention. If the subject is portable, move it to a location with a "clean" background.

**Use small apertures:** In order to keep an entire three-dimensional subject sharp in high-magnification photography, use f/16. This is a small aperture that will maximize "depth-of-field:" the range of acceptable

sharpness in front of the focused point, and behind it. This should allow you to keep much of a subject reasonably sharp, at least the most important parts, like the pistil and stamen of a flower.

When possible, try setting up the equipment so the camera back is aligned parallel to the subject, such as a butterfly's wings. Because most of the subject will be at the same distance from the lens, you should be able to keep it all sharp, even at a wider f/5.6 or f/8 aperture.

**Focus precisely:** In extreme close-up photography, the depth-of-field (or range of acceptably sharp focus) is very shallow even at a small aperture like f/16. Only the focused plane will be very sharp. Focus manually



*Available from manufacturers like Kenko, extension tubes fit between the lens and camera body, allowing the lens to focus at very close distances.*





Photo by Peter Burian

*If you frame your photo so that the camera's back is parallel to the subject, such as a butterfly's wings, it will be easier to keep all of the subject in focus.*

on the most important point in the composition: the nearest eye of an insect, for example.

## WHAT'S IN FOCUS?

Aside from the intricacies of light metering and equivalent exposure, photo enthusiasts generally find *depth-of-field* the most difficult concept to appreciate. That's understandable because the "zone of acceptably sharp focus" is a somewhat hypothetical concept. Even so, it is an essential factor to understand and control. While you can find massive amounts of information about this topic in books, consider the following items as a starting point for depth-of-field control in high-magnification image-making.

**The basic concept:** When you focus on any subject, the zone of sharpness does extend behind, and ahead of it. In truth, only the focused plane in any photo is truly sharp. However, objects in front of that plane and behind it, may also appear acceptably sharp to the viewer's eye. In extreme close-ups, depth-of-field can be measured in millimetres. In practical terms that means that a foreground and background object will be very blurred or indistinct in most cases.

**The "right" f/stop:** Aperture size (denoted by the f/number) is a significant factor in influencing depth-of-field. If you want to keep an entire three-dimensional subject (such as a ladybug) sharp in macro photography, you'll need to set a small aperture like f/16 or f/22. Granted, that may also make the background (such as a leaf or petal) sharper than you might like. Conversely, wide apertures such as at f/2.8 or f/4 produce extremely shallow depth-of-field. Only the focused plane will be sharp when using 1x magnification; the rest of the subject will be blurred. This technique is sometimes used for interpretive (not documentary) images of a tiny element in nature.

Remember that small apertures such as f/16 will call for long exposures such as 1/15 second when using ISO 100. That can produce blurring caused by camera shake and/or by subject motion. When that is a problem, you'll need to set a much higher ISO level to get a good exposure at

a faster shutter speed. In this example, ISO 800 would let you shoot at a 1/125 second shutter speed.

**Preview depth-of-field:** Some DSLR cameras include a depth-of-field preview or "stop-down" button. This control sets the lens diaphragm down to the actual "working" aperture that you selected, such as f/16. This is required for visually estimating depth-of-field, because otherwise, you always view the scene at maximum aperture. Unless you have selected the lens' widest aperture of the lens, you must use the preview control for an accurate estimate of the actual zone of acceptably sharp focus.

Press the preview button, and try viewing a bright scene at f/11, f/16 and f/22. You'll notice which parts of the scene appear completely blurred, moderately sharp and very sharply focused. At such small apertures, the focusing screen will darken, especially at f/22; but your eye should adjust in about 30 seconds. Remember that any visual assessment of depth-of-field



*Manfrotto's 190CX Pro4 tripod features low-level capability, independent leg adjustment for uneven terrain, and a post that can be shifted to any position. These features make it ideal for extreme close-up photography.*



*Nikon's Coolpix P6000 has a macro close-up mode that lets it focus on subjects as close as 2cm. Unlike many compact digi-cams, it has a hotshoe so you can use an accessory flash unit, which can be a desirable feature with macro photography.*

# COMPACT CLOSE-UPS

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## You don't need an SLR to do macro photography

Although our feature has concentrated on extreme close-up photography with DSLR systems, you can achieve the same effects with many cameras with integral zoom lenses. The vast majority of such models include a Macro setting that causes the lens to focus much closer than normal. Particularly with a long lens, such as a 10x or 15x zoom, very high magnification is possible.

For instance, the Panasonic DMC-ZS7 (with a 25-300mm equivalent lens) allows for focusing as close as 3cm. And the Nikon Coolpix L110 (with 28-420mm equivalent lens) can focus down to 1cm. (Check your own camera's owner's manual for the specs.) Manufacturers rarely provide data as to the actual magnification that you can achieve, but it's definitely very high when using a long zoom setting. Frankly, a close focusing ability of 5cm (quite common in macro modes) is all you will really need for most purposes, especially in nature photography.

The techniques for extreme close-up photography are similar to those you would use with a DSLR. Use a fast shutter speed to minimize blurring caused by camera or subject movement. Since off-camera flash is probably not possible, use a reflector panel (or a sheet of white Bristol board) to bounce some light onto the subject. Because cameras with a built-in lens typically use a very small sensor (perhaps 1/10th the size of a DSLR's chip), depth-of-field is more extensive. It may be adequate to keep the entire subject in sharp focus even at a wide aperture such as f/5.6. That's great because most cameras with built-in lens do not offer apertures smaller than f/8 or perhaps f/11. **HH**

## Digital Imaging Here's How

is an estimate and not a scientific technique. Even so, depth-of-field preview is a valuable tool in extreme close-focus photography.

### CONTROL THE LIGHTING

Many nature photographers recommend shooting in cloudy/bright conditions when the illumination is soft and even across the entire subject. That's understandable since you won't need to deal with excessive contrast (extremely bright highlights and murky shadows) in such conditions. The problem is that this type of illumination is not often available. And when you do find it, the flat light may not produce the most dramatic effect. In my experience some light modification is often desirable, using various types of accessories.

**Light modifiers:** If you want to shoot with ambient light only, a reflector will be very useful for bouncing some light onto a tiny nature subject. This can be very effective, filling in (lightening) shadows and adding a bit of sparkle. Several brands of circular panels are available in brands including Cameron, Lastolite, Photoflex, Opus and Flexfill. My own favourite provides a silver side and a "soft" gold side for a gentle warming effect. A 10-inch model is the smallest you'll want; the larger surface of a 22- or 30-inch panel can provide softer lighting.

When your subject is in direct sun, a diffuser accessory is more appropriate. Available in circular, triangular and rectangular format, a 32-inch light-softening panel can moderate contrast when held between the sun and the subject. Even at high noon, pleasing effects are possible, with the gentler light that also helps to retain the subtle nuances of colours that would be lost otherwise.

**Electronic flash:** Especially on dark days, or when the subject is in deep shade, flash is a more suitable alternative. With the right equipment and techniques, flash offers several benefits: full control over the intensity, and the exact positioning, quality and direction of light. If you find the intensity of light excessive, use a -1 or -2 flash-exposure-compensation setting; this feature can be activated with many cameras and high-end flash units.

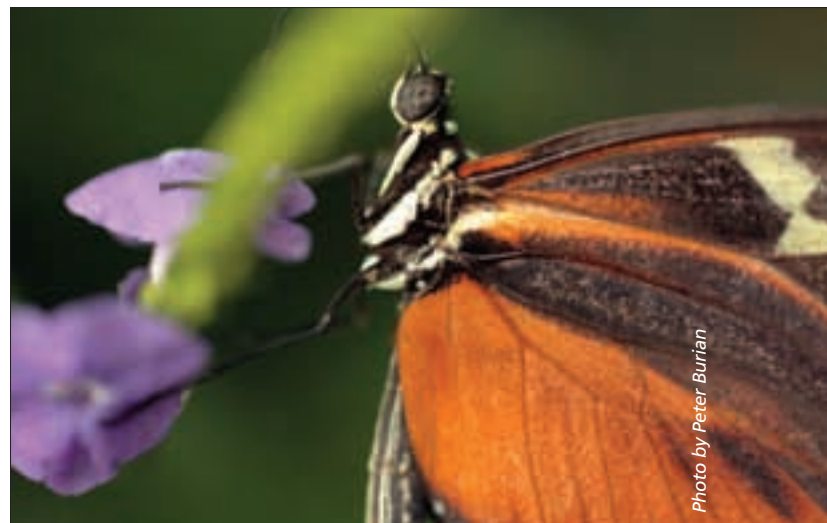


Photo by Peter Burian

*In this photo, taken at Niagara Parks Butterfly Conservatory, the location was dark and blowing fans were causing the butterfly to move. The author used a macro flash to illuminate his subject, and a fast shutter speed of 1/400 second to keep subject motion from blurring the photo. This required a wide aperture setting of f/2, which resulted in very narrow depth-of-field.*





Photo by Peter Burian

The high-contrast lighting from the greenhouse windows at the Royal Botanical Gardens in Burlington, Ont. created very bright areas and deep shadows. Using a macro flash enabled the author to bring out detail in the shadow areas.



Photos by Peter Burian

These two photos were taken using a Metz ring flash. In the second picture, only the left flash tube was activated, creating shadows that enhance modeling and provide texture.

## Digital Imaging Here's How



On-camera flash is not suitable in extremely close-focus work. In such situations, the light from the flash will often illuminate an area

*Circular reflectors, available from Cameron and other manufacturers, let you bounce light onto your subject, for filling in shadows and adding some sparkle.*

above the subject and the lens barrel can block some of the light. Use remote flash with wireless off-camera flash, if that feature is supported by your equipment. If not, you'll need an optional off-camera TTL flash cable. Hold the remote flash above and to the side of the nature subject. For gentler light quality, add a Lumiquest, Lastolight, Westcott or Photoflex flash-diffuser softbox accessory.

If you become very serious about close-up photography, consider one of the macro ring light flash units from the camera manufacturers or from Metz and Sigma (\$500 and up). (Nikon's R1C1 Speedlight kit is different, with two distinct flash tubes on brackets for maximum versatility.) A device of this type includes a circular head with a flash tube on each side. The assembly attaches to the front of a macro lens with the provided adapter or with an optional mounting ring of the necessary size. Instead of the flat, even light that's produced by full output with both tubes, activate only the one on the left or right side.

## THE BOTTOM LINE

Unlike some types of photography, close-up nature image-making does not call for extensive travel. Most of my photos were made in a nearby park, botanical garden and butterfly conservatory, where it was easy to find great subject matter. Take a technically serious approach, add a bit of artistic flair and you should be able to make visually appealing photos of nature on a diminutive scale.

Regardless of the lens or accessory you use to achieve high magnification, you can make the commonplace fascinating. Get some additional inspiration from a book such as Paul Harcourt Davies' *Nature Photography Close Up: Macro Techniques in the Field*. Master the techniques with the affordable accessories, moving up to true macro lenses and flash units as your budget, interest and skills expand. **HH**



*Ringflash units like this Pentax model mount directly on the lens, and have a flash tube on either side. Intended for serious macro photographers, they're controlled from the camera body by an adapter that fits into the hotshoe.*



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# SMALL BUT MIGHTY

By Peter K. Burian

Based on recent announcements, it's obvious that interchangeable-lens camera without a reflex mirror or pentaprism are hot right now. First implemented by Panasonic and Olympus, these "mirrorless" Micro Four Thirds cameras employ a full-size (18x13.5mm) Four Thirds sensor, but they're much smaller/slimmer/lighter than DSLRs. For some time, we've expected other manufacturers to introduce non-reflex cameras as well, and Samsung is the first to do so with its NX10. That camera is reviewed here, along with Panasonic's latest Micro Four Thirds model, the Lumix DMC-G2.

Non-reflex cameras of this type offer much of the versatility of a digital SLR, but are far more portable. Because there's no optical viewfinder, they're designed for use with Live View only. In other words, you compose images using the LCD screen on the camera back. However, some models are also equipped with an electronic eye-level viewfinder (EVF) that provides a live view of the subject. A few cameras accept

an EVF as an optional accessory.

As a bonus, Olympus' and Panasonic's Micro Four Thirds lenses are relatively tiny. On the other hand, most lenses for the NX10 are not much smaller than Samsung's DSLR lenses. While the NX10 is sold in a kit with an 18-55mm zoom, Samsung also offers an unusually slim 30mm "pancake" lens for greater overall portability.

## Panasonic Lumix DMC-G2

Arriving in June, this Micro Four Thirds model benefits from DSLR-type controls and capabilities, plus useful automation that you might find in a point-and-shoot digicam. That includes a touch-screen LCD that is one of the most versatile and sophisticated available in a camera. In a nutshell, this makes some camera operations similar to an iPod or iPhone.

The new Venus Engine HD II features advanced signal processing and improved noise reduction, for better results at high ISO levels. The DMC-G2 is the first to provide the new Intelligent Resolution technology, which can

smooth or sharpen different parts of an image or video frame to optimize the quality. It's always on in iA mode and some Scene modes, and can be activated in other modes at the desired level of intensity.

**Feature set:** Resembling a miniature DSLR with an electronic viewfinder, this Panasonic G2 employs high-grade components. These include a swing/tilt LCD screen with 460,000-point resolution and a 1.4-million-dot EVF based on technology developed for broadcast video cameras. Instead of an in-camera stabilizer, an anti-shake system is installed in many Lumix Micro lenses. In addition to Face Detection, there's a full Face-Recognition system. After taking a photo of a person, you can input the subject's name; in future photo sessions, the camera will prioritize focus/exposure for that individual.

The built-in flash is small, but offers decent power (Guide Number of 11 at ISO 100). The G2 also accepts optional flash units. In addition to many familiar modes, overrides and functions, Panasonic provides a special mode, My Colour, with seven options for special effects.



# Interchangeable-lens cameras that deliver DSLR-class image quality in a compact package

Photo by Peter Burian



*Panasonic Lumix DMC-G2: "Because of the vast range of features, it's most likely to appeal to tech-savvy digicam owners who want to upgrade. But even novices will get great pictures with the Intelligent Auto mode."*

moves, the system will track it until you take the photo. Touch the [Q.Menu] icon and you can select a desired function by touching the pertinent icon. Other features can also be set by a touch, including aperture, shutter speed and exposure compensation. When the touch-shutter feature is set to On, the camera will focus

and take a shot as soon as you press the shutter icon on the screen.

While reviewing images in playback mode, you can scroll by swiping your finger across the screen as you would with an iPod. Press any part of the screen and the image is magnified (up to 16x); you can then roam around the

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Nine Film Modes (picture styles) are also available for creating virtually any desired look. Overrides for contrast, sharpness, saturation and noise reduction are available in each mode.

And Panasonic installed its own Intelligent Auto (iA) system with automatic motion detection, which sets faster shutter speeds and Tracking AF when motion is detected. The iA mode can also select the fully automatic Scene mode that's most suitable for many types of subjects.

**Operation:** In addition to the many auto modes, you'll find a wealth of advanced features, 21 menu screens and many analog controls to satisfy experienced photographers. The numerous options can make the camera seem overwhelming at first. For quicker/easier operation there's a [Q.Menu] button that activates a sub-menu of 14 features. These are quite intuitive once you appreciate the purpose of entirely new items such as Intelligent Resolution and Intelligent Exposure (for better highlight/shadow detail).

Instead of using analog controls, touch the LCD anywhere to optimize focus and exposure for that that part of the scene. If the subject



Photo by Peter Burian

*This photo was shot on the Panasonic DMC-G2 at ISO 1600. At ISO 800 and 1600, the camera delivers smooth images with good resolution of fine detail.*



Photo by Peter Buritan

*To get this overhead photo, the author used the Panasonic G2's articulating LCD to shoot above the heads of pedestrians on a crowded sidewalk in Toronto's Chinatown.*

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magnified image to examine various segments of the photo by moving your finger. The touchscreen is very responsive and rates high on the cool-factor scale.

**Speed and quality:** The Lumix DMC-G2 started up in 0.5 second and responded quickly to a touch of the shutter button. While the G1 employs only contrast-detection AF, using a 23-point system, single-shot autofocus was amazingly fast, finding focus in 1/3 second outdoors.

It was quite fast in low light too, finding focus in under a second, except at long telephoto focal lengths. The continuous Tracking focus worked well with subjects moving at moderate speeds, but was less successful with the erratic, high-speed motion of a dog-sled race.

Continuous-drive mode at 3 frames per second was useful for long bursts of shots. Even after a dozen Large/Fine JPEGs, the camera was ready to shoot another series almost immediately with a fast SDHC card. Images made in the default picture style exhibited rich, accurate colours, accurate exposure and excellent white balance.

The G2 uses the same sensor (but with an improved processor with better noise reduction) as the GF1 I tested last issue. Since the G2 sample was a pre-production camera, I hesitate to comment in detail on high-ISO quality. In general, images made at ISO 800 and 1600 are surprisingly smooth with good resolution of fine detail. My ISO 3200 JPEGs are decent too: quite smooth, with some smudging of the finest details and overly high in-camera sharpening. A new ISO 6400 option is available, but the photos are mushy due to aggressive noise-reduction processing.

**Movie mode:** The DMC-G2 can shoot really fine 1,280x720 HD video in Motion JPEG format (which is suitable for editing in a computer) or in the AVCHD Lite format. The latter consumes less space on the memory card and provides even



Photos by Peter Buritan

*As this series of pictures demonstrates, the Panasonic DMC-G2's Tracking focus can keep subjects moving at moderate speeds in focus as the camera-to-subject distance changes.*

## Panasonic Lumix DMC-G2

### PLUS

- Articulated LCD with touchscreen operation
- Built-in flash and high-resolution EVF
- A wealth of features and overrides

### MINUS

- Oversized handgrip makes it less portable
- Very few image-modification options in playback mode
- Multitude of features increases complexity

### NUTS & BOLTS

**Sensor:** 12.11MP LiveMOS (4,000x3,000 pixels, 17.3x13mm)

**Capture modes:** JPEG, RAW, Motion JPEG or AVCHD Lite to 1,280x720 pixels

**Lenses:** All Micro Four Thirds; with adapter, Four Thirds lenses (some with autofocus)

**LCD/viewfinder:** 3" articulated 460,000-dot screen; 1.44-million-dot EVF

**Operating modes:** Intelligent Auto, program, aperture- and shutter-priority, manual, 26 Scene modes, Movie

**Features:** Built-in flash; numerous overrides; continuous drive to 3.2fps; 7 My Colour filters; 9 picture styles with overrides; 23-point AF, Single-Shot Quick AF, Tracking AF, Face Detect AF; focus-assist lamp; sensor dust cleaner; mono mic with wind cut; accepts optional flash units and stereo mic

**High-tech amenities:** Touchscreen interface; Intelligent Auto; Intelligent Resolution; Face Recognition

**Power:** Rechargeable Li-Ion battery for 360 shots

**Memory-card format:** SD, SDHC or SDXC

**Size:** 124 x 83.6 x 74mm (w/h/d, body only)

**Weight:** 371g (body only, without battery)

**Price:** \$900, including 14-42mm standard-zoom lens with image stabilizer

**Website:** www.panasonic.ca



better quality on an HDTV. Many camera features can be preset to affect the look of the video clips. During actual shooting, the aperture and exposure compensation can be shifted as desired when the camera is in Movie P mode.

Audio is recorded by the built-in mono mic. For better quality, get an optional stereo mic; set it up some distance from the camera so it won't pick up the sound of the autofocus or image-stabilizer motor. Autofocus during video capture is not super-fast, but that's a fact of life unless you use a true video camcorder.

**Evaluation:** The Lumix DMC-G2 is the largest but also the most full-featured of the cameras tested. Its touchscreen interface will attract many buyers. Panasonic also offers a nearly identical new model, the G10, at \$200 less, with a non-articulated LCD and without the touchscreen feature. Because of the vast range of features, neither camera is simple, so it's most likely to appeal to tech-savvy digicam owners who want to upgrade. Still, even novices will get great pictures with the Intelligent Auto mode.

## Samsung NX10

Similar in concept to the Micro Four Thirds models, the NX10 is smaller than the Lumix G2, but its lenses are larger and heavier. This camera is well equipped with built-in flash, an impressive 921,000-dot electronic viewfinder and a fixed three-inch LCD screen. Samsung emphasizes one benefit over Micro Four Thirds cameras: larger pixels for a higher signal-to-noise ratio to provide relatively clean images at high ISO. The NX10 will be available in late June.

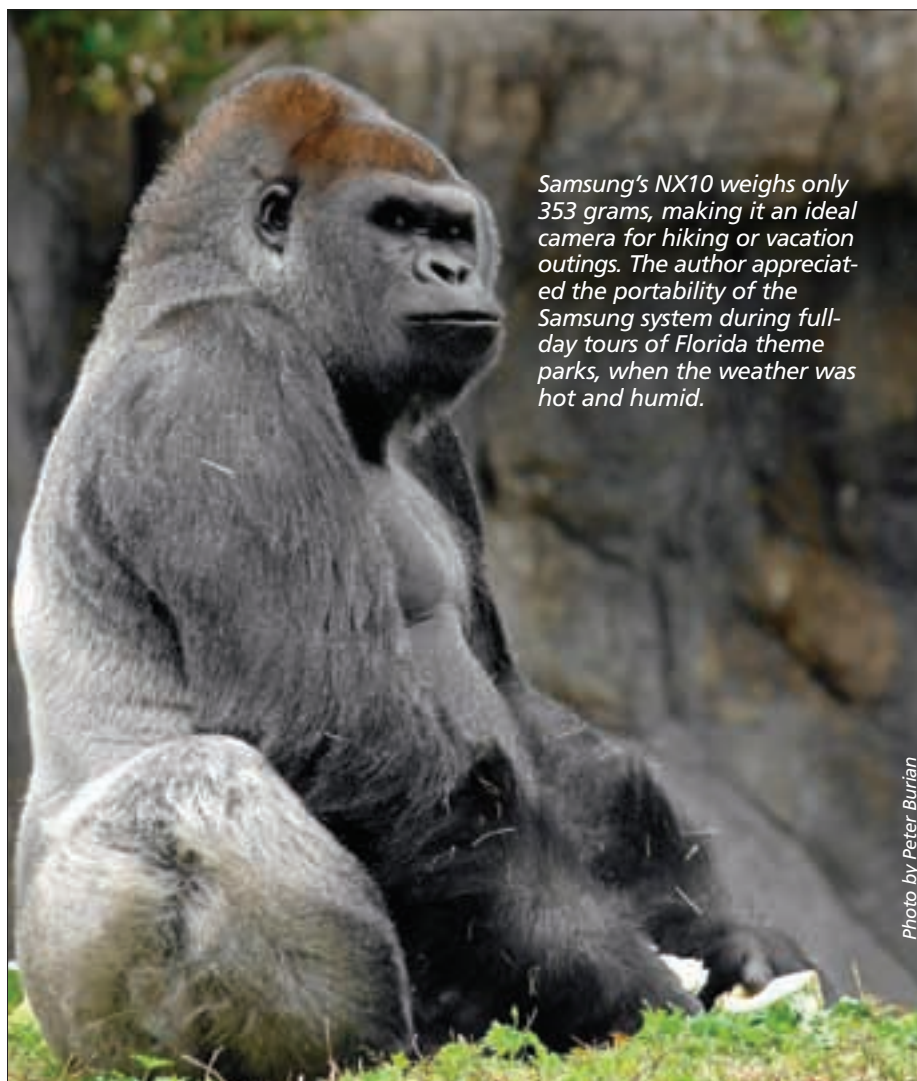
**Feature set:** The NX10 was designed to compete with entry-level DSLRs and it features similar modes, overrides and functions, including depth-of-field preview. The menu includes only the bare essentials, with very few customization options in order to minimize complexity. The built-in flash tube (with a Guide Number of 11 at ISO 100) is fine for some purposes, but Samsung offers two external flash units. Most NX lenses are equipped with an image stabilizer.

Its external screen, with 614,000-dot resolution, employs AMOLED (Active-Matrix Organic Light-Emitting Diode) technology with two (instead of one) red, green and blue dots to represent each pixel. Hence, the display is very contrasty, provides a wide viewing angle, and refreshes at a much faster rate than a typical LCD. The electronic viewfinder is very good, almost as impressive as the one in the Lumix G2. It provides a bright, crisp image, 100 per cent scene coverage and data displays.



*Samsung NX10: "Samsung's autofocus, AMOLED and EVF systems are all very effective. If the reduced size and weight appeal to you, the NX10 would be a fine alternative to a DSLR."*

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*Samsung's NX10 weighs only 353 grams, making it an ideal camera for hiking or vacation outings. The author appreciated the portability of the Samsung system during full-day tours of Florida theme parks, when the weather was hot and humid.*

Photo by Peter Burian

On bright, sunny days in Florida I preferred to use the EVF. It's excellent in all respects, but does not refresh as quickly as the AMOLED screen. That made it a bit more difficult to keep a baseball player well framed for a series of shots while he was running/sliding to second base.

Useful features include Tracking Autofocus, Smart Range for greater detail in both highlight and shadow areas, and a Smart Auto function with automatic Scene-mode selection. The picture styles include basics such as Vivid and Landscape, plus creative options such as Forest, Retro, Cool and Calm for special effects. Each style provides a full set of overrides. Later, in Playback mode, the JPEGs can be modified with features such as red-eye fix, backlight compensation, resize, Face Retouch for flattering portraits, and the application of various creative styles.

**Operation:** The NX10 is equipped with DSLR-style controls including a mode dial, input dial, four-way controller keys, and buttons for frequently used functions. Samsung also provided an [Fn] button for quick access to seven functions. The menu includes only the essentials without esoteric items; most options are quite intuitive. While the operating sequences do not specifically target novices, the NX10 is certainly not complicated to use, thanks to its logical interface.

**Speed and quality:** The camera starts up in about 1.5 seconds and reacts quickly to a touch of the shutter button. It can shoot many Large/Super Fine JPEGs in a sequence; image processing is quite fast, so I rarely missed a shot during a beach volleyball game. In terms of autofocus speed and reliability, the NX10 is very good. In outdoor photography, focus was usually

achieved in 0.25 second. Tracking AF was quite effective during a Blue Jays spring-training game. While shooting in a dark theatre, autofocus was most reliable when using only the central AF detection point; focus acquisition rarely took more than 0.75 second.

In Standard picture Style, the NX10 provided slight underexposure of light tones, rich colours, somewhat high contrast and moderate sharpness. All of these aspects were easy to modify with overrides. My 14.6-megapixel Super Fine ISO 100 to 400 JPEGs were clean and richly detailed, suitable for very nice 12x18-inch prints. My ISO 800 JPEGs look great as 11x16-inch prints. At ISO 1600, extra noise-reduction processing provides a smooth effect, but tends to soften fine detail. Still, the images made for nice letter-size prints after some edge sharpening in *Photoshop*. There was more obvious loss

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Photo by Peter Burian

For this photo, taken at Florida's Busch Gardens with the Samsung NX10, the author used an ISO setting of 3200 and later applied sharpening in *Photoshop*. The NX10 employs a sensor with large pixels, allowing decent quality at high ISO settings. However, aggressive noise reduction processing tends to produce a softening effect. Before making prints, use a sharpening filter in software to obtain the desired results.



of intricate detail by ISO 3200, as well as some “mushiness,” but I was able to make decent 5x7-inch prints after some edge sharpening in *Photoshop*.

**Movie mode:** The NX10 can record 1,280x720 clips at 30fps in MP4 format with mono sound. Autofocus (with multi-point AF only) can be used while shooting a video, but the system is slow and the sound of the AF motor is recorded on the audio track. Samsung does not provide a method for connecting the camera to an external mic, but the wind-cut function is useful on breezy days.

Important camera features can be preset in advance. Aperture control is available during video capture. While the NX10 does not provide the most versatile movie mode, the available features offer adequate control over the look of a video clip. Overall, movie quality is very good and the audio is acceptable for family events.

**Evaluation:** As expected, the larger sensor with oversized pixels did provide some benefit in high-ISO image quality. Samsung’s autofocus, AMOLED and EVF systems are all very effective, making the NX10 competitive in many aspects with an affordable entry-level DSLR. While only three lenses are currently available, Samsung plans to release another five by year-end. If the reduced size/weight appeal to you (and if you don’t need many customization features), the NX10 would be a fine alternative to a DSLR.

## The Bottom Line

Both these mirrorless interchangeable-lens cameras are very desirable, but it should be easy to identify the one that would be best for each user.

The Panasonic Lumix DMC-G2 or Samsung NX10 with built-in EVFs will both appeal to those who want a camera with a more traditional look and controls. The G2 is loaded with menu items for maximum versatility, and features the touchscreen interface plus lots of analog controls. The NX10, with a slightly smaller body, is even more like a DSLR in styling and operation. It includes all of the essentials plus some extras, and is the best of the three at for low-light photography at ISO 800 to 1600.

As more manufacturers announce “mirrorless” interchangeable-lens cameras, this type will become particularly popular. That’s understandable considering the size/weight benefits. Granted, a DSLR does have some advantages, including faster autofocus (in most cases), a true optical viewfinder plus a greater choice of lenses and accessories. In my estimation, the newer cameras are more likely to attract those upgrading from digicams than photo enthusiasts. Regardless of your own interests and experience, it’s always great to have additional options when shopping, and the extra competition among brands will help to keep prices quite affordable. **HH**

### Samsung NX10

#### PLUS

- Built-in EVF, flash and excellent AMOLED screen
- DSLR-style controls; logical operating sequences
- Very good high-ISO image quality

#### MINUS

- Not as full-featured as some competitors
- Only 3 lenses (but 5 more by year-end)
- Lenses are larger than Micro Four Thirds models

#### NUTS & BOLTS

**Sensor:** 14.6MP CMOS (4,592x3,056 pixels, 23.4x15.6mm)

**Capture modes:** JPEG, RAW, MP4 video, 1,280x720 pixels @ 30fps

**Lenses:** NX mount; with a future adapter, Pentax lenses with manual focus only

**LCD/viewfinder:** 3” AMOLED 614,000-dot screen; 921,000-dot electronic finder

**Operating modes:** Smart Auto, program, aperture- and shutter-priority, manual, 16 Scene modes, Movie mode

**Features:** Built-in flash; many overrides; continuous drive to 3fps; depth-of-field preview; 9 picture styles with overrides; 15-point AF, 35 in Face Detect; Single, Tracking, Face-Detect and Self-Portrait AF; mono mic; supersonic sensor cleaner; accepts optional flash and remote controller

**High-tech amenities:** Smart Auto; some creative picture styles; Beauty Shot for portraits; dynamic-range expansion; JPEG modification options in playback mode

**Power:** Rechargeable Li-Ion battery for 400 shots

**Memory-card format:** SD or SDHC

**Size:** 123 x 87 x 40 mm (w/h/d/, body only)

**Weight:** 353g

**Price:** \$800, including 18-55mm standard-zoom lens with image stabilizer

**Website:** www.samsung.ca



*With its 3fps drive mode, fast JPEG processing and effective tracking AF system, the NX10 is suitable for sports photography. While an optical viewfinder is preferable, the author did get many well-framed images using the electronic viewfinder.*

Photos by Peter Burian

# A TOUCH OF INNOVATION

## HERE'S HOW HANDHELD DEVICES AND PERSONAL COMPUTERS ARE USING FINGERTIP CONTROL

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*By Frank Lenk*

The biggest problem with fancy digital devices is how to control them. The smarter the device, the more difficult it is to tell it exactly what you want it to do. But where the mouse and keyboard leave off, a touchscreen can take over.

This year, a new wave of touch-enabled devices is being unleashed. The most hyped is Apple's iPad, which will soon become available in Canada. But many other devices that exploit touch are hitting the market, and more are on the way. In their own ways, all of them are ground-breaking. They're going to give us entirely new ways to access digital media.

To get a sense of this revolution in the making, we surveyed the new technologies, and tested as many existing touch-enabled products as we could get our hands on.

### **Pods**

The idea of controlling digital devices by touching their display screen is almost as old as personal computing itself. For example, the Hewlett-Packard HP-150 touchscreen desktop computer was







quite successful during the early 1980s. Kiosks and special-purpose terminals have used touch for years.

But with Apple's release of the iPhone

three years ago, the technology seemed to come of age. Apple's took a fresh look at the whole concept of touch, and made it not only convenient, but downright sexy. While the iPhone continues to dominate the smartphone landscape, other manufacturers have been adapting touch in their own various ways.

The LG KM555R "Shine Touch" cell phone is an interesting example. It's not really a smartphone, just a fun phone for the younger set. Yet it does use touch very effectively. There are just three "buttons," and even those are just backlit spots on the front face. One brings up the main menu, another initiates a phone call and the third terminates it.

Everything else is controlled by the three-inch touchscreen. There are big, colourful icons to access weather reports, a calendar, notepad and even your Facebook account. Smaller icons along the bottom access things like your address book and text messaging. A surprisingly helpful feature of the Shine Touch is that it vibrates slightly when a touch is sensed. This remedies the one notable drawback of touch: the lack of tactile response.

The most notable competitor to the iPhone so far has been Google's Android system, which runs on hardware from manufacturers such as HTC, Motorola and Samsung. As on the iPhone, touch is the preferred control method, and there's a "desktop" with icons that can be tapped to run various applications.

Android's most important distinction is that the software is open-source. It can be adopted by multiple device manufacturers, and they

have great flexibility in tailoring it for their own products and markets.

Also, while Apple's App Store has been a huge success, it does funnel everything through Apple. Android is a clear alternative, in that it lacks any strong central control. Programmers can create dream up whatever apps they like. Hopefully, this should encourage innovation, though of course it is a tradeoff.

Playbrains is an Ottawa-based game developer that's publishing on both the iPhone and Android. Paul Winterhalder, company VP and co-founder, notes that because Android is so open to modification, each device tends to have slightly different specs. This makes extra work for the developer who wants apps to run on all of them.

"I love the openness of Android," he says, "but it's already kind of a nightmare." Of course, that's something that developers have to take in stride, and hasn't stopped Playbrains from releasing its *Babo Crash* action-puzzle game on both iPhone and Android.

*Babo Crash* is a good example of the kind of app that's being spawned in these new touch-based environments. Players start with the familiar task of matching triplets of coloured jewels. But the complexity soon ramps up with new twists such as touch-steerable characters, and even the ability to shift the direction of "gravity" within the game by rotating the phone.

Free-for-all app development will also be a bit more of a wild world for the user. That's because anybody can publish an application for Android, as they can on the PC or Mac. The app may be a great piece of work, or a piece of junk. Some users will revel in that freedom, but many will prefer the safety of Apple's cloistered garden.

### Windows Phone 7 Series

Within the next few months, we'll be seeing another alternative in smartphones, one that promises to really shake things up. Fusing elements of its Zune music player with its widely used Windows Mobile smartphone software, Microsoft has concocted a radically different touch-based environment, dubbed "Windows Phone 7 Series." (Alas, it seems Microsoft is still

allowing engineers to come up with product names.)

Like Android and Windows Mobile, WP7 will be used by various hardware manufacturers. Commercial products are not expected much before the fall, but Microsoft has been showing off the system's unique new "Metro" touch-based interface.

Resembling a painting by Mondrian, Metro displays a tight-packed array of squares, about eight at a time, representing various types of activities. These Live Tiles are drawn in a solid "accent colour," but also animate continuously to preview their associated content.

For example, the Pictures square might show a mini-slideshow. Contacts may cycle through photos of your friends. The result is that the display is in constant motion. It's visually dynamic, where previous user-interface designs are essentially static.

WP7 has no desktop. The borderless Live Tiles offer the largest possible target for a finger-touch. Control icons are only displayed when needed. For example, a single arrow lets you skip to the next instance of a search term when using the integrated Bing search engine.

You can scroll the WP7 screen vertically to show more tiles, or horizontally to drill-down into a selected activity, or "hub." For example, one hub might combine address book, Facebook account and text messaging. In each hub, text and graphics are allowed to run off the edges of the display, to indicate when side-scrolling is called for.

Everything has been done to use the tiny handheld screen to maximum advantage. "We want people to feel that the experience is bigger than the small screen," said Joe Belfiore, corporate vice-president, Windows Phone, at Microsoft's MIX10 conference in March. Like the iPhone, WP7 can pop up a virtual touch-keyboard for text-based tasks. A spell-checker suggests words based on partial input, and makes corrections either on-the-fly or under user control.

Microsoft's demos suggest that WP7 will ship with elegant touch-enabled versions of its Office apps, which would be a huge plus for business-oriented users.

Windows Phone 7 Series is a whole new type of device. Some of us will miss the roomy feeling of the traditional "desktop" display. Others will lament the loss of the Windows-like robustness and handwriting recognition of Windows Mobile. But there's no question that WP7 is going to be an excellent new way of accessing the capabilities of a smartphone.

If nothing else, Windows Phone 7 Series leaves no doubt that Microsoft can innovate when it puts its mind to it. It will take a lot to catch up on Apple's huge momentum with the iPhone, but WP7 devices promise to be just as attractive and perhaps just a tiny bit more efficient to use. A very exciting prospect indeed.

## Tablets

While Apple has come to rule the roost in handhelds, when it comes to larger devices, it's still very much a Windows world. That dominance includes touch devices. Touch-enabled Macintosh portables remain conspicuous by their absence, but Windows-based tablet com-

puters have won a solid following.

The Hewlett-Packard TouchSmart tm2 is a great example. Like most Windows tablets, it's a convertible, meaning that the screen can be opened, rotated and re-closed display side up, ready for stylus or finger input. This approach increases both weight and cost, but users have been loath to abandon the keyboard entirely. The TouchSmart tm2 compromises somewhat with its short-travel, chiclet-style keyboard, but remains quite usable for routine typing tasks.

Running Windows 7, the TouchSmart tm2 responds to a full set of touch gestures. I loved scrolling Web pages by dragging them with a fingertip, and zooming by means of the two-finger pinch gesture. Both gestures worked perfectly in both *Internet Explorer* and *Firefox*.

On the down side, Microsoft has made very little accommodation for touch in the overall design of the Windows environment. The new taskbar does have larger "fingertip-friendly" icons. But until you've pinned your favourite programs to the taskbar, you'll have to deal with a heavily text-based Start menu. In fact, the action of pinning an app itself uses a text pop-up.

Built-in Windows apps like *Paint* and *Notepad* use Microsoft's new Ribbon interface, an inconsistent, non-configurable mess of icons, drop-downs and text tabs. It's cumbersome for mouse and keyboard, yet also far too tiny and cluttered for fingertips.

But the most frustrating missed opportunity is handwriting recognition. Windows 7 handles the basic translation superbly, and was consistently able to turn my hasty scrawl into error-free text. But instead of being pervasive, handwriting is confined to a cramped one-line applet that's forever in the way, yet can only copy a few words at a time into something like *Word* or *Notepad*.

The TouchSmart tm2 did include *Corel Paint it! Touch*, a basic paint program that offers a peek at how touch should be done, using simple toolbars and big easy-to-hit icons. There's also Microsoft's own *Touch Pack for Windows 7*, a very good collection of touch-based games. For example, *Rebound* is a futuristic Pong-like game in which you use two fingers to bat the ball around.

At the very least, Windows 7 should have included an optional visual theme for touch, with larger fonts and controls. Better yet, why not an alternative touch environment? Microsoft's Media Centre provides a great interface for "10-foot" interaction with a TV remote; it came pre-installed on the TouchSmart tm2. So why no 'Touch Centre'?"

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**LG's Shine Touch phone has a touchscreen with icons for accessing everything from weather reports to your Facebook account.**





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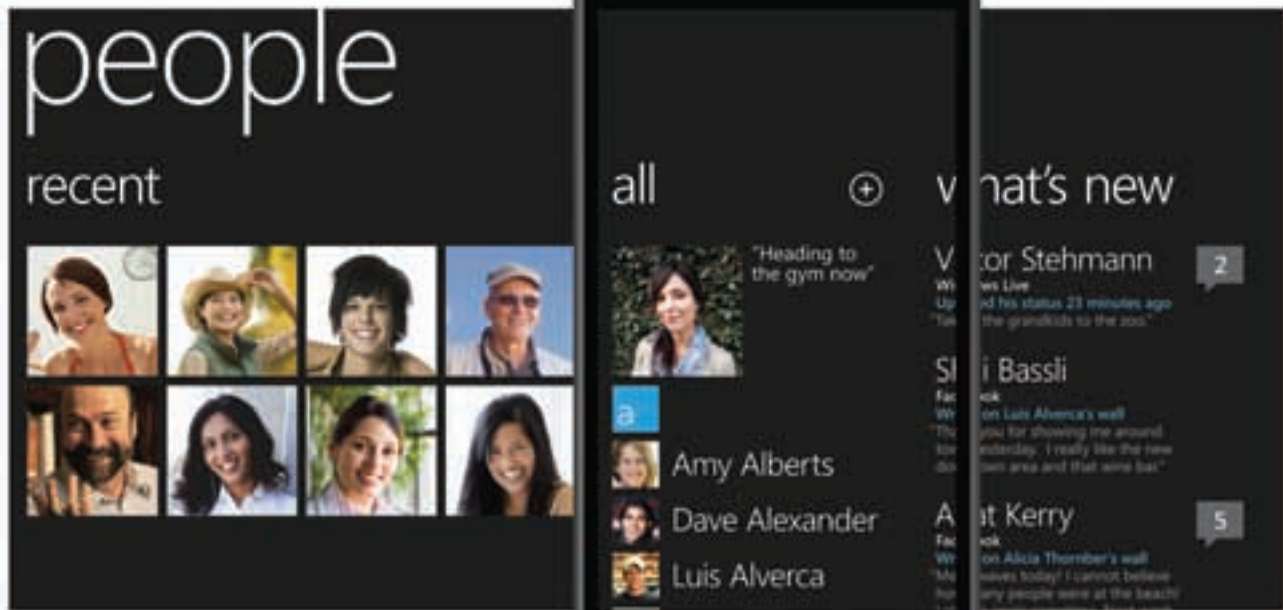


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*Microsoft Windows Phone 7 Series: "WP7's Metro interface displays an array of squares representing various activities. The Pictures square might show*

*a mini-slideshow. Contacts may cycle through photos of your friends. The result is that the display is in constant motion."*

Hewlett-Packard must have had the same thought, because its TouchSmart 600 PC integrated desktop includes just such an optional touch environment. You can work normally in Windows 7, but run HP's TouchSmart software and you'll find yourself in a fully touch-based world.

Applications such as photo-organizing or Web-surfing are arranged horizontally, so you can scroll through them like picking clothes off hangers in the closet. The suite of apps should be perfect for communal family use, with a shared calendar and quick access to news feeds and personal messages.

Aside from these touch capabilities, the TouchSmart 600 is a very nice computer. The 23-inch screen is brilliantly clear, and the unit is almost uncannily silent. I found myself using it in preference to my own living-room PC, especially for tasks like Web-surfing, that are really enhanced by fingertip control.

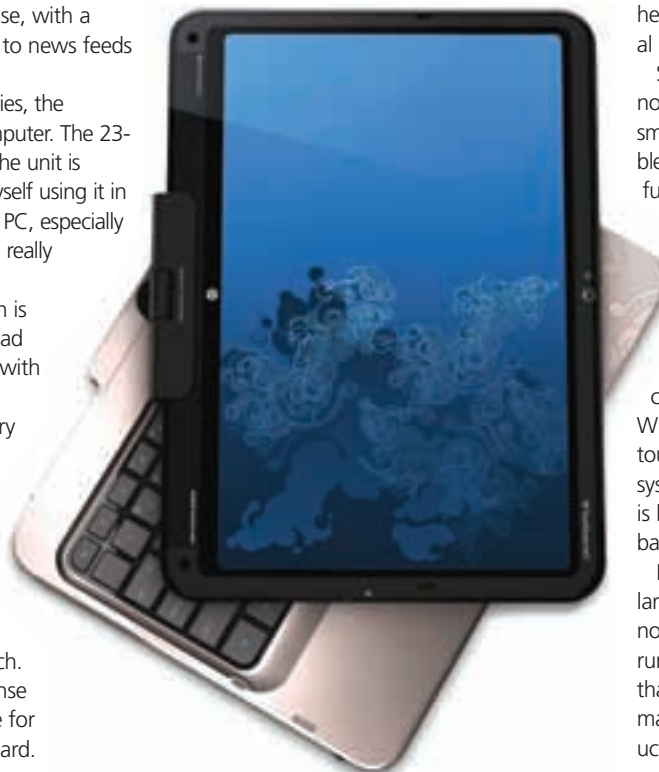
A whole different take on touch is exemplified by the Lenovo ThinkPad T400s. This laptop is all business, with a slim, matte-black profile, a very good keyboard, and the customary trackpad. It's also got a touch-enabled screen, which benefits from all the same Windows 7 touch controls as described above.

The T400s doesn't convert to tablet form, and Lenovo has in fact held out against that approach. But many users will happily dispense with tablet operation in exchange for lighter weight and a better keyboard.

There's no downside to the touch-screen in the Lenovo design, but potentially a big upside when you're on the road and working without a mouse.

### Slates and Pads

Yet another new type of touch device was announced at this year's Consumer Electronics



*HP TouchSmart tm2: "I loved scrolling Web pages by dragging them with a fingertip, and zooming by means of the two-finger pinch gesture. Both gestures worked perfectly in both Internet Explorer and Firefox."*

Show in January, by Microsoft CEO Steve Ballmer. In a demo lasting just a few minutes, he debuted a range of slate devices from several manufacturers.

Slate appears to be a reversion to the original non-convertible tablet design, but lighter and smaller. Sizes may vary from something comparable to a small netbook or e-book reader, up to full nine- or 10-inch laptop expanse. However, slate devices do seem to be full-fledged personal computers, running Windows 7.

There are already a few devices on the market that might be lumped into the slate category. The ExoPC Slate has an 8.9-inch multi-touch LED-backlit screen, and a custom user interface running on top of Windows 7. The ARCHOS 7 has a seven-inch touchscreen and runs the GNU/Linux operating system. The JooJoo has a full 12.1-inch screen, is less than an inch thick, and a "browser-based" operating system.

HP has also announced that it has a much larger slate product just about ready to go, but no further details were available. Dell is rumored to be working on a seven-inch slate that runs on the Android system. Come what may, this looks like it's going to be a hot product category.



**The iPad:** But the biggest bombshell has come from Apple. Ironically, while Microsoft was mustering Windows Phone 7 Series for an assault on the iPhone's domain, Apple was rolling out its own challenger for the turf currently occupied by Windows-based tablets and netbooks.

The iPad is a pencil-thin, slate-type device, with a 9.7-inch touchscreen and 10-hour battery life. It weighs just a pound and a half, and sells for as little as US\$499, with Wi-Fi connectivity and 16GB of Flash storage. (Larger storage capacity adds to the price, as does 3G cellular capability.)

Unlike Microsoft's slates, the iPad does not run a computer operating system (such as Apple's Mac OS). Instead, it's basically a larger iPhone. Out of the gate, the iPad is expected to run just about all 140,000-plus existing iPhone apps, either at original size with a wide black border, or blown up to full-screen. Many apps are being quickly updated to work with the larger screen.

But the iPad should really come into its own as a platform for entirely new types of apps. What form those may take isn't yet clear, though they'll certainly be visual, interactive and touch-enabled.

The announcement of the iPad in January included a quick demo of an updated iPhone paint program called *Brushes*. It showed that the iPad could be a wonderful creative tool.

On the other hand, traditional productivity applications such as mail, calendar or writing look great on the iPad, but are likely to be limited by the lack of a keyboard or stylus for hand-writing input. The iPad's onscreen keyboard is "almost life-size," according to Steve Jobs. But without tactile feedback, it's not likely to be as efficient as even the diminutive keyboard of a netbook. Apple is selling an accessory outboard keyboard, but by the time you add that, you'll have lost the portability of a netbook and surpassed the price of a low-cost laptop.

Content consumption is where the iPad is likely to excel. "It is the best [Web] browsing experience you've ever had," Jobs enthused at the launch. Of course, that's a bit of typical Jobs hyperbole. The iPad's big screen will certainly make it a better portable browser than even the iPhone, and its touch interface will make it nicer than a netbook. It's certainly not going to be superior to a desktop PC, nor to a Windows tablet; but it will be lighter and cheaper.

The iPad's Web-browser has one notable limitation: like that of the iPhone, it will not support content plug-ins like Adobe Flash or



**Lenovo ThinkPad T400s:** "This laptop is all business, with a slim, matte-black profile, a very good keyboard, and the customary trackpad. It's also got a touch-enabled screen, which benefits from all of Windows 7's touch controls."

Microsoft Silverlight. This will prevent it from properly displaying many commercial sites, and from playing much (if not most) of the video currently on the Web.

In Apple's favour, there is a strong movement afoot to replace proprietary animation plug-ins with tools based on open standards such as HTML5 and SVG (scalable vector graphics). Also, several major U.S. broadcasters have specifically announced that they will be translating their content into iPad-compatible form.

As a video player, the iPad will certainly be a lot easier to watch than any handheld. It will also do a great job with music, though it's obviously going to lack the portability of something like Apple's own iPod Touch.

The iPad should certainly excel at e-book viewing. Its LED-backlit screen may not be quite as sharp as the e-ink screens of devices like the Amazon Kindle, but it's bigger, faster and in full colour. That would make it the clear winner for illustrated material such as online magazines or kids' books. In landscape mode, the iPad can even display two pages side by side, mimicking a physical paperback.

The iPad should also be an excellent photo viewer. The built-in image browser takes full advantage of Apple's multitouch controls, and allows easy creation of slideshows with transitions and music. It may soon be common to see an iPad passed around at family gatherings.

Then there are games. Winterhalder sees the iPad as an ideal platform, and Playbrains will definitely have *Babo Crash* available on the iPad. He predicts that the new device will favour

a new type of entertainment experience: less action-oriented than the iPhone, and tending to longer play sessions.

Board games should be a natural. The iPad could easily replace a physical chessboard or Monopoly set, allowing either solo play against the processor or head-to-head against human opponents.

Winterhalder suggests that the iPad could also support realtime strategy (RTS) games, which have so far been popular mainly on desktop computers, owing to the complexity of their controls. Touch control on the iPad could actually make them easier to play than the mouse and keyboard.

That's just the beginning. As we were finishing this article, the floodgates seemed to open, and a mounting rush of games and other apps was being announced for the iPad.

So just who is the iPad for? Having worked with the device early on, Winterhalder sees it potentially winning over a whole new wave of users, who've found personal computers too complex.

On the other hand, organizations such as the Free Software Foundation (a prime mover behind the GNU/Linux operating system) have raised concerns. The iPad extends the vendor-controlled App Store into what has traditionally been personal-computer territory. That could signal an erosion of the very openness that has produced so much innovation over the past several decades.

It's a valid point; but the issue doesn't really arise unless closed devices like the iPad actually

start to drive more-open computers to extinction. So far, the iPad seems much more likely to create its own niche, bringing entirely new types of capability, and extending the interactive experience to a previously untapped audience.

Bottom line, it's impossible to criticize the iPad as a product. It's equally impossible to predict just how big a role this type of device will play in the life of the average consumer. What's certain is that we're going to really enjoy finding out.

## Conclusions

There are several ways to look at today's touch devices. They're seductive for what they can do right now. They're exciting for what they promise to do in the very near future. Yes, they're still just a bit frustrating for some of the things they can't do, but really ought to.

Based on my tests, it's apparent that touch-enabled tablet PCs are, if nothing else, superlative PCs. A convertible like the HP TouchSmart tm2 does everything a portable computer should do, and then some. The Lenovo ThinkPad T400s is a fine notebook computer, made even finer with the option of touchscreen control.

Even a compact desktop system like the HP TouchSmart 600 gains a lot from the addition of touch, while sacrificing nothing. And let's not forget simpler devices like the LG Shine Touch, which can use touch to become easier and more fun to use.

On the other hand, it should not be left to hardware manufacturers such as HP to create the software environment. Microsoft has done well in providing basic touch functionality in Windows 7, but needs to provide a complete new interface to make touch truly integral to the experience. Hopefully, the company won't wait for Windows 8 to set this right.

Newer touch-based arrivals offer glitzy, futuristic features, but move entirely away from the strengths that made the personal computer such a revolutionary device.

Apple's iPad is another brilliant product, a great follow-up to the iPhone, and another sure hit for the company. But Macintosh fans are still waiting for a touch-enabled tablet computer that would let them take Adobe *Creative Suite* on the road. Let's hope there's some truth to the rumours that such a thing might appear

later this year.

Meanwhile, Microsoft's Windows Phone 7 Series offers a refreshing rethink of how a touch-based handheld should work. Many smartphone fans will be thrilled to have this new option. And yet, it would be great to see some continuity for users of the older Windows Mobile, who may be reluctant to leave behind that platform's open programming model and stylus-based input. Perhaps the system will allow individual hardware manufacturers to take up the slack with more business-oriented devices. But this remains to be seen.

In any case, it's a hopeful sign that Steve Ballmer in his CES keynote referred to the new wave of touch-based Windows devices as "slate PCs." This suggests that touch won't become the exclusive preserve of "appliances," and that more-powerful devices will be available for those who want them.

One thing that's certain is that these new touch devices are bringing digital interactivity to a whole new level of refinement. Gadget-lovers are going to have a tough time picking just one! **HH**

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HP TouchSmart 600: "The 23-inch screen is brilliantly clear, and the unit is almost uncannily silent. I found myself using it in preference to my own living-room PC, especially for tasks like Web-surfing that are really enhanced by fingertip control."



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# MEDIA IN MOTION



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## Using in-car communications, navigation and entertainment systems safely

by Gordon Brockhouse

These days, everyone's a multi-tasker; but there are situations where you need to focus on just one thing. Driving is one of them. Lots of people feel the need to place a call, choose a song, read a text, or find an address when they're behind the wheel. That can easily lead to an accident, which is why most provinces have laws banning the use of high-tech devices while driving.

These laws are specific in their application to handheld devices. You can choose a song on your in-dash car radio, but not on an iPod that you've connected to it. You can enter an address into a dashboard-mounted GPS, but not a portable one.

That's a sensible demarcation. With in-dash radios and nav systems, you don't have to fumble for a tiny portable when you need to do something technological. And in-dash devices have larger screens and controls than handheld devices.

That doesn't make them completely safe. It may be less of a distraction to change tunes or enter destination on an in-dash media centre with a big screen; but it's still a distraction.

Fortunately, there are safer ways to operate car electronics. Many cars have steering-wheel controls, and voice control is available on some OEM and aftermarket systems.

The best-known OEM automotive entertainment/information/communications system is probably Ford's Sync. Launched in 2007 and co-developed with Microsoft, Sync is available on a wide variety of Ford vehicles.

A successor called MyFord Touch will soon be released on certain cars (see sidebar); but for this article, I drove a 2010 Ford Fusion Hybrid, which included the current Sync system with all the bells and whistles.

**Green machine:** I liked the Fusion Hybrid a lot. The fit and finish are excellent, and the car drives very nicely. This is the first hybrid I've ever driven, so I can't compare its performance against other cars in its class. Moreover, *here's how!* isn't a car magazine, and I'm not an automotive journalist. But I can comment on the car's electronic systems, some of which have a direct effect on performance, fuel economy and safety.

One of these is an unusual instrument cluster that Ford calls "SmartGauge with EcoGuide." On either side of the analog speedometer are LCDs with configurable graphical displays. In the most detailed view, graphs on the left show how much power the car's electrical accessories are drawing, whether the car is using fuel or battery power, and battery level (including an icon that shows when the battery is being charged by regenerative braking). On the right, you can see average and instantaneous fuel consumption; a graphical display that shows overall driving efficiency; and the number of kilometres until the tank is empty. The displays are easy to see and interpret, and I found myself altering my driving habits to maximize mileage. It almost became a game.

Options accounted for \$6,230 of my test vehicle's sticker price of \$38,229. The 12-speaker 390-watt Sony Audiophile Sound System is part of the \$1,600 Moon & Tune package, which also includes a power moonroof. The sound is excellent: full-bodied, effortless and very clear. The Drivers' Vision Group (\$1,400) includes side mirrors with yellow dots



that flash when there's a car in your blind spot, plus a rear-view video camera that shows what's behind you on the Sync system's LCD display; it also beeps a warning sound when there's something behind you. I've had enough scrapes in parking garages and close calls when changing lanes to appreciate the value of this package.

## Built In

The Sync system is standard on the Fusion Hybrid, but my test vehicle also included the optional Navigation system (\$2,100), which is integrated with the Sync system so that it can be operated by voice. Sync also has Bluetooth technology, so that you can operate your cell phone by voice, with the steering-wheel controls or from the system's eight-inch touchscreen. And you can also use Sync to operate the car's entertainment and climate-control systems.

Once I learned how to pace my spoken commands, I found that Sync's voice-recognition system worked very well. You can improve its accuracy by creating a User Profile specific to your voice.

Sync doesn't understand every word in the English language, but it helps you along. When you push the Voice button on the steering wheel, a menu of commands appears on the screen. You can say "audio" if you want to choose some music, or "phone" if you want to place a call. After that, further sub-menus appear, and the end result is (usually) the operation you want being performed. Once you know the commands in sub-menus, you can jump to them directly, for example saying "CD" when you want to play a disc.

**Communications:** Pairing a Bluetooth cell phone with Sync is pretty simple. Press the Phone button, then select Add on the touchscreen. The Sync system will generate a PIN that you enter onto your phone to complete the process, at which time you can import your contact list. This lets you call people in your contact list by pressing the Voice button on the steering wheel, and saying "Call <Contact Name>." This function worked perfectly in my tests. You can also dial by voice by dictating the numbers, and store 10 frequently called numbers for easy access.

One really cool Sync feature, which is highlighted in Ford's TV ads, is hands-free text messaging. When you receive a text, the system will emit a tone and alert you to the incoming text on the screen. You can view the message or have Sync read it aloud, and then either send a pre-formatted reply (e.g. "be there in 10 minutes") or dial the number. This feature is phone-dependent. I was disappointed that it did not work with

my BlackBerry Bold; but I was able to try it with a Sony Ericsson phone, and it worked as advertised. Parents of text-crazy teens will definitely appreciate this feature, as long as their phone supports it. You can find a list of Sync features that are supported on different phones at [www.syncmyride.com](http://www.syncmyride.com).

**Entertainment:** For music playback, you can perform many functions using steering-wheel controls: selecting stations and program sources, changing CD tracks, and adjusting volume. You can perform those functions with voice control as well, and a whole lot more. For example, I had no problem selecting non-preset stations just by calling out the frequency. This involved pressing the Voice button on the steering wheel, saying "Audio," and then "590" when I wanted to tune in a Toronto sports-talk station and "94.1" when I wanted the Toronto CBC Radio Two feed. In the former case, Sync was smart enough to select AM; and in the latter, it selected FM.

You can attach an external sound source to the line-level analog-audio input or the USB connector. If you use the line-in connector, you can select line-in as your source by voice or the touchscreen. But then you have to do everything else on the portable device, which you're not allowed to do (and shouldn't do) while driving.

Alternatively, you can connect an MP3 player or a thumb drive with digital music to the USB connector. The advantage is that you can use Sync to select music, either from the touchscreen or using voice commands selecting artist, album, genre, playlist and track. However, before you can do this, Sync has to index the contents of your player, and that can take a while. It took 15 minutes for Sync to index 8GB worth of music on an iPhone 3G connected via USB. While indexing occurs, Sync will continue playing whatever album or playlist you were listening to before connecting the device. The graphic display is plain, without album art, but functional.

You can also stream music via Bluetooth from a smartphone, but then you have to select music on the phone's screen. Sync also has a built-in 10GB jukebox. You can transfer music from a CD to the jukebox; and its built-in Gracenote database will catalog the music. Then you can select songs by voice. I did not test this feature, but it looks promising.

**Navigation:** I found the maps, graphics and menu structure of the Sync navigation system clear and easy to understand. The nav system can accept input from the touchscreen, or by voice. To dictate an address, press the Voice button on the steering wheel, then say "Destination

*The Ford Fusion Hybrid's instrument cluster, which Ford calls "SmartGauge with EcoGuide" has graphical icons and indicators that help drivers maximize fuel economy.*





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*Ford's Sync system allows drivers to control cell phones and iPods, and operate the car's radio, GPS navigation and climate-control systems using voice commands and buttons on the steering wheel.*

Street Address," "Destination Intersection," or "Destination POI," depending on the information you want to enter. Again, I found the voice-recognition system worked well once I learned to slow down and wait for it to react. Navigation is integrated with other Sync functions. For example, you can use choose an entry from your address book as a destination.

Sync is a very rich system, and I've just scratched its surface here. My four days of driving the Fusion Hybrid and using Sync were enough to convince me that it largely succeeds in its stated goal: to enable drivers to keep their hands on the wheel while using communications, entertainment, navigation and climate-control functions.

## Add On

Lots of drivers would like a system that does what Sync does, but not many are ready to buy a new car. Electronics companies like Alpine and Pioneer offer aftermarket components that provide many of the functions of advanced OEM systems like Sync.

I had a chance to take a short spin in a Mazda 3 equipped with a Pioneer's brand-new AVIC-X920. The \$1,299 in-dash component has a

6.1-inch touchscreen and voice-recognition capability. Functions include GPS navigation, Bluetooth hands-free communications, Bluetooth music streaming, iPod connectivity (with an optional cable), and CD and DVD playback. An optional rear-view camera is available for \$299.

I was really impressed with the speed-sensitive touch interface, which allows for very precise fingertip control. The home screen features huge 3D icons, which take you to phone, entertainment and navigation functions.

The navigation graphics are excellent, with a 3D overhead view that gives a good representation of your whereabouts, including the number of lanes on the road, and signs that look very much like the real thing. The unit has a neat Eco view mode that gives visual feedback on your driving habits. You can enter destinations on the touchscreen or by voice. During the brief demonstration, the system's response on voice input didn't seem quite as quick or reliable as with Sync, but voice is certainly usable. Also, the synthesized voice that provides verbal feedback and information sounds quite artificial.

You can't select radio stations by voice as you can with Sync, but you can select songs on your MP3 player. After connecting your player, it takes the AVIC-X920 a few minutes to create a voice catalog. Indexing



*Alpine's CDE-103BT CD receiver has built-in Bluetooth connectivity. When a call comes in, the unit mutes the radio and shows Caller ID info on the display.*



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an iPod with 6,000 songs took about two minutes. Then you can give a command like "Play the album 'The Arcade'," and album art will appear on the screen, and your music will begin playing.

The various functions are well integrated, allowing you to send an address from the phone book to the navigation system, for example. If your car has steering-wheel controls, these can be used to operate the AVIC-X920.

Alpine's INA-W900 Navigation/Entertainment system has similar capabilities. The \$1,100 component lacks voice control, but supports steering-wheel controls if those are present in your car. An optional adapter is required for Bluetooth connectivity. Also available is a matching backup camera whose output appears on the INA-W900's seven-inch touchscreen.

Electronics companies have many other, less expensive options, including in-dash CD players with integrated Bluetooth handsfree calling. Alpine's CDE-103BT CD/receiver will automatically mute the radio when a call comes in, and shows Caller ID info on its display. It sells for approximately \$250.

In our busy world, drivers will never stop multi-tasking. Fortunately, there are products that let you do more than one thing, while keeping your eyes where they belong: on the road. **HH**



*Pioneer's AVIC-X920 lets you select songs on your iPod, place calls on your cell phone, and enter addresses into the built-in GPS on the seven-inch touchscreen or with voice control. An Eco screen gives visual feedback on your driving habits.*

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## Ford updates its Sync system

According to Ford, the time has come for drivers to control their cars in the same way they control their MP3 players, smartphones and mobile computers. The 2011 Lincoln MKX and Ford Edge will both feature redesigned dashboards that incorporate touchscreens and controls. Gauges and displays have been replaced with LCD screens; and a touchscreen now sits where banks of buttons and read-outs did

before. Traditional knobs and levers have been swapped out for new touch-sensitive controls. As your fingers steer, your thumbs manipulate dual D-Pads like those on a video game controller.

Peering through the new steering wheel, drivers will see two four-inch LCD screens on either side of the speedometer. The screen on the left delivers information relating to the car itself, while the screen on



the right displays options like climate controls, navigation, and entertainment. The options for each screen are mapped to a corresponding five-way controller on the steering wheel itself. Two screens, two controllers, one for each thumb.

"The beauty of going to LCD is that you can present the information in vivid colour," explains Paul Aldighieri, member of the Human Machine Interface Team at Ford. "We can change the colour of the fuel gauge when you go 'yellow,' rather than it just dropping down and turning on a little light. It's appropriate that the thing that's advising as to a change should itself change."

Some drivers want to see even more information. "We're able to show instantaneous fuel economy on the same scale as average fuel economy," Aldighieri offers as an example, "If you are consuming more than average, it's nice to see that."

To the right of the driver is a large touchscreen control system near the centre console. By touching a finger against a corner of the screen, the driver can switch between four different, colour-coded menu systems: red for entertainment, yellow for communications, green for navigation, and blue for climate control. While this is the same information shown on the right-side LCD screen in front of the steering wheel, the large touchscreen allows for more sophisticated navigation, and additional options.

There is one knob Ford won't change. Over the years, consumers have made clear their love of the volume knob, and so it stands out, traditional, mechanical, and very much unchanged. "We've tried different versions of the volume knob, little rocker switches in the '80s,

and those were never really accepted," says Aldighieri.

**Safety:** Ford has taken all of the necessary steps to ensure safety as well. Screens have been placed at the proper distance and angle from the driver's eyes. If a screen sits too close on the steering wheel, it would be difficult to shift focus from the road to the screen and back.

"If you're looking at intense data, there's a suggestion that you can get lost in it and start to lose the ability to recognize the colour red when you're more than 30 degrees away from your focus," explains Aldighieri. "When you're looking down at a screen, you still want to be able to see red in case someone taps his brakes."

Safety regulations mean that Ford can't replace all controls with a touchscreen. There are controls, such as Defrost, that have to be available at all times, and thus have their own buttons. Even in these cases, though, Ford has implemented a new design; for example TouchSense controls that drivers can run their fingers along to adjust fan speed or temperature.

Both new car models will come equipped with an updated version of Ford Sync, a voice-command system that works with Bluetooth-enabled cell phones. "The safest way we know of to interact with a phone while driving is to use voice," says Asdighieri. "So that's our primary technology to deal with phones."

Ford plans to install the new MyFord Touch and MyLincoln Touch systems in 80 per cent of its cars within the next five years. Will other carmakers follow suit? **HH**

– Kris Abel

*The 2011 Lincoln MKX and Ford Edge will both feature redesigned dashboards and centre consoles that replace gauges and switches with touchscreen LCDs and touch-sensitive digital controls.*





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#### Giro Prolight Helmet

So light you'll wonder if you're wearing a helmet! In 1985, the original Giro Prolight set the standard for modern lightweight cycling helmets. Now, 25 years later the 175g Giro Prolight, which made its debut at last year's Tour de France, is the lightest production helmet ever built. The new Prolight sets the benchmark for how little a helmet can weigh without compromising ventilation or comfort. Available in multiple sizes and colours. \$249 [www.giro.com](http://www.giro.com)

# Gadgets for Cyclists



#### Oakley Jawbone Livestrong

Oakley, a partner with the Lance Armstrong Foundation to empower people affected by cancer, donates \$20 to the Armstrong foundation for every purchase of the LIVESTRONG edition of Oakley eyewear. Featuring Oakley's SWITCHLOCK Technology, the lower part of the frame allows easy access for quick lens changing, to suit any light condition. The Jawbone suspension system keeps stresses on the frame from affecting the optics. With ordinary frames, flexing can change the surface contours of the lenses, causing optical distortion. \$260 [www.oakley.ca](http://www.oakley.ca)



#### Rapha Team Issue Cycling Jersey

British-based Rapha is deemed by many riders to be one of the best in the business. The Rapha Condor Sharp team jersey is a high-performance Sportswool race jersey. It features the three main team sponsor logos in white, a full-length zip, and a three-pocket-in-the-back configuration. Sharp's relationship with the team began with the company's partnership with the Prostate Cancer Charity. The Sharp4Prostate logo appeared on the team jersey at the 2009 Tour of Britain and the Tour of Ireland. Sharp is a main team sponsor for the 2010 season. \$185 [www.rapha.cc](http://www.rapha.cc)



#### Look Keo Blade Carbon Pedals

The pedal that pushed Alberto Contador to the podium of the 2009 Tour de France. Like all the products on this page, the Keo Blade Carbon is ultra-light. Weighing a mere 95g, it achieves 30% higher linear spring tension than the 2009 Keo carbon, allowing easier entry and release. While lighter than last year's model, the 2010 Keo carbon has 31% greater surface area, and is 17% wider than other Keo pedals. In other words, no fussing at a stoplight trying to get back in your pedals. \$539 [www.lookcycle.com](http://www.lookcycle.com)





**Sidi Ergo2 Carbon Lite**

So you thought that shoes north of \$500 were exclusive to the catwalk and had a heel. Not in the cycling world. SIDI's top-of-the-line shoes feature an ultra-light handmade carbon sole optimized to maximize power transfer. The upper is made from breathable Lorica Microfiber with nylon mesh panels, and features an adjustable caliper buckle and Tecno II closure systems for a secure yet fully adjustable fit. \$539  
[www.sidiusa.com](http://www.sidiusa.com)

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# Bike accessories that watch their weight



**Science in Sport Nutrition**

This U.K. company of sports scientists, food technologists and physicians has developed a cross-section of products that focus on energy, hydration and recovery. Carlos Sastre's 2008 Tour de France win was fuelled with Science in Sport (SiS), as was Alberto Contador's 2008 Giro Italia win. We particularly like the taste and the funky packaging, and we're guaranteed to not raise any eyebrows in the Sunday group ride, as all SiS products are 100% free of IOC-banned substances! Various pricing; \$3.95 for a 60ml gel  
[www.scienceinsport.com](http://www.scienceinsport.com)



**Garmin Edge 500 GPS**

Garmin's lightest and smallest GPS-based cycling computer can track your speed, location, distance, elevation, calories burned and even your heart rate and cadence with compatible accessories. Once your ride's done, connect Edge 500 to your computer with the included USB cable to analyze your performance. With a simple click, you can join a worldwide network of cyclists and outdoor enthusiasts through Garmin Connect, a one-stop site for data analysis and sharing. So accurate you'll never be able to exaggerate how far you rode. Approx. \$270  
[www.garmin.com](http://www.garmin.com)



**Fizik Antares Road Saddle**

This U.S. company's funny name is derived from the phonetic spelling of the word "physique." Fizik has been hand-making its saddles in Italy since 1996; and the Antares is the latest offering in its performance line. The carbon-braided 145g saddle will give you instant racing cred, as Fizik is a staple of teams such as Columbia-HTC, Team Garmin and the Cervelo Teast Team. \$229  
[www.fizik.com](http://www.fizik.com)

Special thanks to Oakville Ontario



for accessory recommendations. [www.racersportif.com](http://www.racersportif.com)



# Made to Order

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## Toronto company builds bikes one at a time

A perfect fit is a hard thing to find, whether you're buying clothing or furniture. This is doubly true of bicycles, especially models for racing enthusiasts. A startup Toronto bike maker is taking a different approach to selling bicycles. Instead of trying to fit riders onto mass-produced models, and perhaps customizing them with aftermarket components, Vitess builds bicycles from the frame up individually, for each customer.

Company founder Julien Papon hails from France, and is a serious mountain and road cyclist. Designed for road racers, Vitess bicycles (the name comes from the French *vitesse*, for "speed"), are sold from a showroom on Toronto's west Lakeshore. Its doors opened in November 2009; by April 2010 it had sold a dozen bikes, all of them for over \$7,000. Papon says prices for Vitess bicycles range from \$4,000 to \$13,000.

The showroom has a small fleet of demo bikes. "To know if you like a bike, you have to put your bum in the saddle," Papon states. The next step is a lengthy interview, during which Papon asks customers about their physical condition, past injuries, flexibility, riding practices, and budget. He also takes detailed body measurements.

With that information, Papon is able to select the frame size. "That way, you get a bike that fits you," he says. "A lot of riders are riding bikes with a frame set that is too large or too

small." Vitess offers nine frame sizes; other makers typically offer five, Papon says.

Papon also chooses packages of other components, such as saddles, wheels, tire mounts, handlebars and power transmission. "We package components that work together in a coherent way," Papon says. There are 2,400 different possible combinations of component packages and 432 different dimensional combinations. "The selection is made before building the bike," he elaborates. "This is the opposite of the way the industry is run."

If a buyer chooses one of Vitess' minimalist paint options (metallic silver, dark night, Arctic white), it takes two to three weeks to build a bike. For a custom colour, it takes about 10 weeks. When the bike is almost finished, the buyer comes in for a tuning session to customize the fit.

Interestingly, key aspects of Vitess' strategy, including supplier selection and just-in-time inventory, come from the automotive industry.

Before forming Vitess, Papon was in charge of engineering operations for a large automotive parts supplier. In 2008, he decided to pursue a business plan for carbon-fibre road bicycles that he had developed while studying for an executive MBA.

In late 2008 and early 2009, Papon visited fabricators of carbon-fibre frames in Asia, assessing them against a 250-item sourcing

checklist that included expertise in engineering, manufacturing, product testing, raw materials and quality assurance. He eventually selected a Taiwanese company, Gigantex, to produce carbon-fibre frames and rims. The carbon-fibre construction allows for very low weight, key to road racing. Vitess' bikes weigh between 13 and 16 pounds without pedals.

During the spring of 2009, Papon selected component suppliers, many of them established names. These included Archos GmbH to supply headsets (the bearing set that links the bike's fork and frame); Fi'zi:k to supply saddles; Continental AG to supply tires; 3T Design to supply the bar, stem and seat post; and Shimano and SRAM to supply the power components and levers.

Papon reached agreements with his suppliers that allowed him to run Vitess on a just-in-time basis, which is key to the custom-fit model. Lab and road testing during the summer and fall led to some design adjustments. Vitess delivered its first bike in November.

The next step is to open showrooms in other cities. Papon is considering Montreal, London, Ont. and Ottawa. The challenge will be to find entrepreneurs who can provide the same services as the original location, because the whole point is to provide a perfect fit.

— John Thomson



# FACE EVERY CHALLENGE WITH PATHFINDER



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Siegrist is making the first ever free ascent of the route 'Magic Mushroom' in the Eiger Northface.  
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# Free Your Music!



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## Two wireless noise-cancelling headphones, plus the industry-standard wired model

by Gordon Brockhouse

The great thing about iPods and other digital music players is the way they let us listen to music almost anywhere. The problem is that a lot of the places where we'd like to listen to music are pretty noisy, which means we have to crank the volume and damage our hearing, or have the quiet bits drowned in ambient noise.

A popular technological solution to this dilemma is noise-cancelling headphones. These look like regular headphones, but have tiny microphones that sense the surrounding noise and digital circuitry that generates a signal that cancels most of that noise.

For several years, Bose's QuietComfort series has been the gold standard of noise-cancelling phones. Recently, a couple of interesting competing models have appeared, both with a feature yet not available from Bose: Bluetooth connectivity.

The first two such phones that we know of are Nokia's BH-905 (which won a Gear of the Year Award from *here's how!* last year) and

Sennheiser's brand-new PXC 310 BT. You can stream music wirelessly to either of these headphones from any music device with Bluetooth AD2P wireless technology, such as an iPhone, iPod Touch or BlackBerry Bold. Not only can you dispense with the audio cable between phones and player, you can adjust volume and pause your music with controls on the headphone.

Do these wireless newcomers block out noise as effectively as Bose's wired models? Do they sound as good? Does their wireless operation compromise audio quality? To some degree, that depends on the player's Bluetooth transmitter, but it also depends on the phones' amplifier and Bluetooth receiver.

To find out, I tested them against Bose's latest model, the QuietComfort 15. I wanted to try these phones in an environment with a consistent level of noise, so I listened in my kitchen, standing a foot away from a range hood with both exhaust fans going full blast. I played some favourite music from an iPod Touch, choosing tracks with subtle inner details and nuances of expression that could easily be masked by the noisy fans.

### Bose QuietComfort 15

Priced at \$400, the QC15 comes with a very nice travel case, a battery, headphone cable, airline adapter and quarter-inch adapter jack.

Bose's headphones are justifiably praised for their comfort, sound and noise isolation. Unlike the Nokia and Sennheiser phones reviewed here, the QC15 covers the entire ear, so they block a fair bit of noise even without the active noise cancellation turned on. The shape and materials of the earcups and headband make these phones very comfortable; the ear cushion material also improves acoustic isolation.

The QC15's newly designed noise-cancelling circuitry employs microphones inside and outside the earcup; this improves the accuracy of noise measurement, Bose says. The QC15 runs on a single AAA battery, which Bose says will provide about 35 hours of use. A green LED below the switch on the right earcup lights up when the QC15 is turned on. Like all Bose QuietComfort headphones, the QC15 has to be turned on to operate. So remember to turn it off when you're finished listening.



# Free Your Music!



**Bose QuietComfort 15:** *"I was impressed by the great bass definition and extension in the accompaniment to Norah Jones singing 'Turn Me On'."*

By a small margin, the QC15 seemed to provide the best noise cancellation of these three headphones. The sound was excellent: pleasantly smooth with full, deep bass. Very occasionally, bass seemed over-prominent, but only in recordings that themselves emphasize bass, for example Leonard Cohen performing "Ain't No Cure For Love" in the London concert. But most of the time, I was impressed by the great bass definition and extension, for example in the accompaniment to Norah Jones singing "Turn Me On" on *Come Away with Me*. Instruments and vocals, both male and female, generally sounded very accurate.

## Nokia BH-905

If you're raising an eyebrow at the inclusion of a leading cell-phone brand in an article about high-fidelity headphones, you can stop right now, because this is an excellent product. Priced at \$350, the BH-905 comes with a leather case, headphone cable, various adapters, and a charger.

Nokia says the built-in rechargeable battery will provide 16 hours of music playback time with Bluetooth and noise cancellation turned on, 24 hours with Bluetooth on and noise cancellation off, or 40 hours with a wired connection and noise cancellation. If you use the BH-905 with a wired connection and noise cancellation turned off, there's no drain on the battery at all. This is the only headphone of the three reviewed here that you can use with a dead battery.

It's unique in another respect as well. It has speech microphones, so that it can be used for

hands-free calling, making it the ultimate accessory for an iPhone, or other Bluetooth music phone.

This NH-905 sits on top of the ear, rather than covering it entirely. That may make it a touch less confining than the Bose QC15, but it also means that there's less acoustic isolation. The BH-905 has a total of 10 microphones:

eight for noise cancellation and two for speech.

You turn on noise reduction with a small switch on the bottom of the left earcup. I thought the NH-905 provided the least noise cancellation of these phones, by a small margin. But it's certainly very effective.

For wireless operation, you have to pair the BH-905 with your Bluetooth-equipped smartphone or music player. To do this, you turn on Bluetooth on your player, then press the master switch on the BH-905's right earcup until the LED at the bottom flashes blue. After a minute or so, your player will ask if you want to pair with the headphone. Thenceforth, the BH-905 will automatically connect to the player wirelessly whenever you turn it on.

I didn't notice a significant difference in sound quality between a wired and Bluetooth connection to my iPod Touch when using the BH-905. I was very impressed with its sound quality. The BH-905 has lovely detail and sparkle, though on recordings with lots of high-frequency energy, the sound can occasionally become a little tizzly. Vocal and instrumental timbres almost always sounded wonderfully natural. On a rollicking concert of jazz standards recorded in Baden, Switzerland in 1969, Albert Nicholas' clarinet sounded completely convincing throughout its range; so did the Henri Chaix's piano and Romano Cavicchiolo's drums.



**Nokia BH-905:** *"It has lovely detail and sparkle. On a rollicking concert of jazz standards, Albert Nicholas' clarinet sounded convincingly natural throughout its range."*

# Free Your Music!



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*Sennheiser PXC 310 BT: "These phones were excellent at revealing inner details in the lovely instrumental accompaniment to Jennifer Warnes' cover of 'Famous Blue Raincoat'."*

## Sennheiser PXC 310 BT

Priced at \$450, this wireless noise-cancelling headphone is a compact folding design, enabling it to fit into a travel pouch that is considerably smaller than the cases that come with the Bose and Nokia phones. If you're trying to fit a lot of stuff into a small carry-on bag, this may be an important consideration.

Besides the pouch, the headphone comes with an audio cable and various adapters, plus a USB charger for filling up the removable rechargeable battery. You can also charge the battery from a PC with a USB cable. According to Sennheiser, the PXC 310 BT will run for eight hours with Bluetooth and NoiseGuard noise-cancellation both turned on, 12 hours with Bluetooth turned on but NoiseGuard turned off, or 20 hours with Bluetooth turned off and NoiseGuard turned on.

You can also operate the PXC 310 BT unpowered, with a wired connection and NoiseGuard turned off. The PXC 310 BT has a useful talk-through function: if a flight attendant is asking

you a question, push the NoiseGuard button on the right earcup to hear what she's saying without taking off the headphones.

There's a Quick Guide booklet in many different languages, but no printed manual. For a full technical briefing on the PXC 310 BT, you'll have to load the supplied CD into your computer, and read a PDF file in the language of your choice. Doing so will make it easier to figure out the pairing process.

It's not that difficult. Activate Bluetooth on your music player, and it should start looking for compatible devices. Make sure the headphone is turned off, then hold the master switch in the centre of the right earcup until the LEDs surrounding the switch flash blue and red. After a minute or so, your player should discover the Sennheiser headphone and ask if you want to pair with it. Thereafter, phone and player will connect whenever they're turned on and within range – about 10 metres.

The PCX 310 BT sits on top of your ear, and is quite comfortable. It's a tighter fit than the Nokia. With NoiseGuard turned on, I thought the

Sennheiser was slightly more effective than the Nokia at shutting out noise, and slightly less effective than the Bose. The differences were very slight however.

I liked the sound a lot. Bass was very satisfying: a little leaner than the Bose, but with superb detail. Occasionally, the sound can become a touch hard, but generally I really appreciated this headphone's superb clarity and precision. It was excellent at revealing inner details, for example the lovely instrumental accompaniment to Jennifer Warnes' cover of Leonard Cohen's "Famous Blue Raincoat."

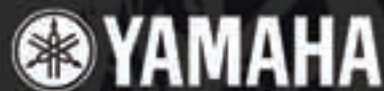
## Which One?

The way you plan to use your phones will give you a good idea of which one might be best. I really like the freedom that wireless operation provides. If that's not important to you, then you'll probably be swayed by the lovely warm sound, superb comfort and great noise isolation of the Bose QC 15. If portability is key, you'll love the compact design of the Sennheiser PCX 310 BT. If versatility is what you're looking for, you'll appreciate the fact that the Nokia BH-905 can work without battery power, and that it can be used for hands-free calling.

Headphones are a product that you really have to try for yourself, not just to assess their sound quality, but also their overall feel and comfort. But I can't imagine anyone being disappointed with any of these phones' sound quality, or with the effectiveness of their noise-cancelling systems. **HH**







What colour is your *music*?



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MCR-040 Micro Component System includes an iPod dock, CD player, USB port on the front panel, FM radio and an audio input jack for portable audio devices. Compact and convenient with 10 color choices, so you can match color to your room decor... as well as your music!







## YOUR BEST SHOTS

### The Winning Pictures in our 36th Photo Opportunity Contest

"You have to be good to be lucky," coaches like to tell athletes. That bit of wisdom applies to photography as much as it does to sports. Many photos are the result of a sudden opportunity. But the photographers who make the most of their opportunities are the ones who are prepared. They've taken the trouble to go to places where there are pictures to be made, and they know what to do when they get there. The winning pictures in this issue's photo contest illustrate that principle perfectly.

Gerald Scheenaard of Whitby, Ont. acknowledges that he was "very lucky" to capture his prize-winning photo of a loon swimming on Chandos Lake, northeast of Peterborough, Ont., while visiting a friend's cottage. It was a late August afternoon, and Gerald and his friend had gone boating hoping to photograph waterfowl. Loons are normally shy, but this one swam right up beside Gerald's boat. "I think both the loon and I were surprised," Gerald writes.

Gerald quickly got the picture using a Canon EOS Digital Rebel XT digital SLR and Canon EF 400mm f/5.6L USM telephoto lens. Setting ISO to 800 allowed a shutter speed of 1/3,200 second, easily fast enough to freeze the ripples in the lake and the water droplets coming off the loon's beak. An exposure-compensation setting of +0.33 helped the camera maintain detail in the loon's dark head and neck feathers. After he took the loon's picture, it casually swam away.

Gerald regularly visits a bird sanctuary near Whitby to photograph rap-

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*Gerald Scheenaard of Whitby, Ont. used a Canon EOS Digital Rebel XT and Canon EF 400mm f/5.6L USM telephoto lens to capture this iconic photo of a loon swimming on Chandos Lake near Apsley, Ont. Loons are normally shy, but this one swam right up beside Gerald's boat. As a grand-prize winner, Gerald receives an Epson Stylus Photo R1900 wide-format printer, which can produce prints that last up to 200 years.*

tors. His ultimate goal though is to photograph a mother loon swimming with a chick on her back. "I haven't managed to get that yet," Gerald says.

Brian Haig of Tilbury, Ont. was visiting Cambodia on an extended trip through Asia when he shot his prize-winning picture of three children riding a bike in a village near Siem Reap. The kids were curious about the foreigner who was visiting their poor farming village. The local soil has high iron content, which added a red hue to the dusty haze. This makes the picture "just pop," Brian says, and we agree.

Brian took his prize-winning photo using a Canon EOS Digital Rebel XTi and Canon EF 70-300mm f/4-5.6 USM telephoto zoom lens set to 290mm. He shot in RAW mode, and processed the file with *Photoshop CS4*. Brian says his time in Cambodia was "very eye-opening. People hardly have anything."

Both grand-prize winners receive an Epson Stylus Photo R1900 wide-format printer. The R1900's UltraChrome Hi-Gloss 2 ink set includes reformulated magenta and yellow inks for richer blues and greens; new red and orange inks for improved flesh tones; and auto-switching Photo Black and Matte Black cartridges for printing on glossy and matte media.

Our two runners-up each receive an Epson Artisan 710 all-in-one printer/scanner/copier, with built-in Wi-Fi networking and separate trays for plain and photo paper.

Ronny D'Haene used a Nikon D200 and Sigma 150-500mm f/5-6.3 APO DG HSM telephoto zoom lens to get a gorgeous close-up on a praying mantis. The insect was perched on a sumac bush in a wildlife preserve that Ronny had built on a 99-acre plot 50km south of his home in Sarnia, Ont. A serious nature photographer, Ronny quietly walked around his subject until he found a location where he could frame the insect with sumac in the foreground and an out-of-focus sumac on the opposite side of the pond behind his subject. The result, he says, is colours that match like a painting.

David Hesse's photo of a fox sitting by the road is another instance of pure luck. David and his wife, who live in St. Catharines, Ont., spotted the animal while driving along a country road in Prince Edward Island last June. He stopped, went behind his car, and fired off several frames using a Canon EOS Digital Rebel XSi and Canon EF-S 18-200mm f/3.5-5.6 IS zoom lens set to 150mm. The fox was completely unperturbed, and let David approach to within five metres. It stayed in that spot, looking back over its shoulder, after David and his wife drove away.

We hope readers will be inspired by these wonderful photos, and by the 12 amazing pictures we've chosen as Honourable Mentions. You can find those on our Website, at [www.hereshow.ca](http://www.hereshow.ca). Then we hope you'll get out shooting, because we have some fabulous prizes for our next contest.

Two grand-prize winners will each receive a Samsung NX10 interchangeable-lens camera, complete with 18-55mm f/3.5-5.6 standard-zoom lens. The NX10 employs a large CMOS sensor that delivers SLR-class image quality, and can shoot high-definition video as well as 14.6-megapixel stills.

Two runners-up will each receive a Samsung PL150 2View camera. The PL150 has a secondary LCD screen on the front, so it's easy to for photographers to get in their own pictures.

You'll find prize descriptions and entry information elsewhere in this issue, and on our Website. The deadline for entries is 9:30 a.m. EDT on June 14, 2010.

Now get out there, and take your best shot! **HH**

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*Brian Haig of Tilbury, Ont. took this picture of three Cambodian children riding a bike during an extended tour through Asia. The farming village where the photo was taken has high iron content, which adds a dramatic rusty haze to the photo. Brian shot the photo in RAW mode on a Canon EOS Digital Rebel XTi and Canon EF 70-300mm f/4-5.6 USM lens, and processed the file with Photoshop CS4. As a grand-prize winner, Brian receives an Epson Stylus Photo R1900 printer, which employs new Radiance technology for lower grain and smoother colour transitions.*









*Ronny D'Haene of Sarnia, Ont. shot this close-up of a praying mantis on an early October afternoon using a Nikon D200 and Sigma 150-500mm f/5-6.3 APO HSM telephoto zoom lens. Ronny carefully framed his subject against a sumac bush in the foreground and an out-of-focus sumac in the background, resulting in a lovely blend of colours. As a runner-up, Ronny receives an Epson Artisan 710 all-in-one printer/scanner/copier, with built-in wireless networking.*



# GO TO EXTREMES

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# CASIO

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*David Hesse of St. Catharines, Ont. photographed this red fox sitting by the side of a country road in Prince Edward Island using a Canon EOS Digital Rebel XSi and Canon EF-S 18-200mm f/3.5-5.6 IS zoom lens. The fox was unperturbed about David's presence, and continued to look back over its shoulder after he drove off. As a runner-up, David wins an Epson Artisan 710 all-in one printer/scanner/copier, with separate trays for photo and plain paper.*



# ENTER OUR PHOTO CONTEST!

Here's your opportunity to show off your digital photography skills. We want to include your best shots in the next issue of *here's how!*, and on the *here's how!* Website; and we have some great prizes for the winners.



## 2 Grand Prizes!

Samsung's NX10 interchangeable-lens camera has a large CMOS sensor that delivers DSLR-class image quality; but the NX10 is smaller than any DSLR. You can compose images on the bright three-inch AMOLED screen or the high-resolution electronic viewfinder. It comes with an 18-55mm f/3.5-5.6 standard-zoom lens with optical image stabilization. In addition to 14.6-megapixel still photos, the NX10 can also capture 720p high-definition video.



## 2 Runner-Up Prizes!

Samsung's PL150 2View digital camera has a three-inch LCD on the back and a 1.5-inch LCD on the front. The front LCD makes it easy to shoot self-portraits, and can also show animations that make kids smile. The PL150 has a 12-megapixel sensor and 5x wide-angle zoom lens with image stabilization.

**SAMSUNG**

**TURN ON TOMORROW**

To enter our 37th Photo Opportunity Contest, you can burn your image to a CD, and mail it to the address at the bottom of this page. Or send your image to [photocontest@hereshow.ca](mailto:photocontest@hereshow.ca) as an e-mail attachment. Images must be high enough resolution to be reproduced in this magazine (*at least 1600x1200 pixels*). Only one submission per person please. Include your name, postal address, e-mail address and phone number, and a note describing how you made the image, including the type of camera you used. To be eligible for our next contest, entries must be received by 9:30 a.m. EDT on June 14, 2010. Now get out there and take your best shot! To view past winners, visit [www.hereshow.ca/photocontest/index](http://www.hereshow.ca/photocontest/index).

Full contest rules are posted at: [www.hereshow.ca](http://www.hereshow.ca)

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# Musical Bliss



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He: "They sound fabulous." She: "They look awful." As a conversation, this has become a cliché; but that's because many high-tech products emphasize performance and neglect design. Don't get us wrong: performance *is* important. But nothing can suck more air out of a beautiful space than a big, ugly sound system.

One can't imagine that conversation occurring in connection with the Solo Mini from Arcam. The British company has applied its experience with high-end amplifiers, surround-sound processors, A/V receivers and disc players (all highly regarded by audiophiles) to this tiny, elegant all-in-one system.

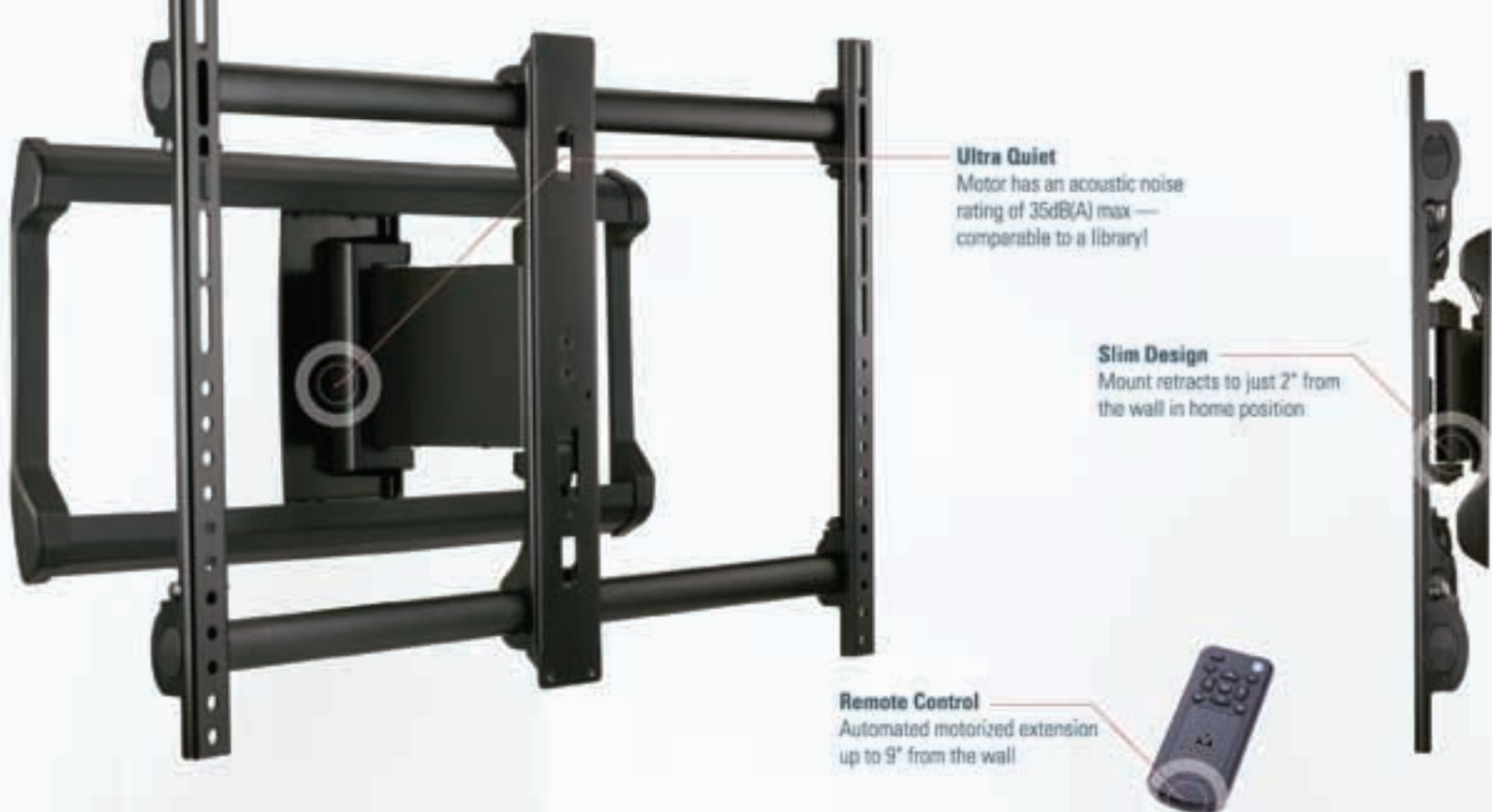
A masterpiece of industrial design, the Solo Mini would be a head-turner at any cocktail gathering. The gorgeously minimalist brushed-metal component houses a CD player, AM/FM tuner and 25-watt-per-channel amplifier that can fill a small living room with sound. (And there's no cooling fan to compete with your music.) A lovely indigo dot-matrix screen shows what the system is doing. The buttons are subtly placed on top, allowing easy control without spoiling the presentation.

The Solo Mini has a USB input, so you can connect a thumb drive full of your favourite music. Or add an optional rDock to integrate your iPod with the Solo Mini, and control your player with the system's remote.

You can mate the Solo Mini with Arcam's matching Muso speakers, or with bookshelf speakers of your choice. The result: a sound system that will be admired by style-hounds and audiophiles alike.

– John Thomson





**Ultra Quiet**  
 Motor has an acoustic noise rating of 35dB(A) max — comparable to a library!

**Slim Design**  
 Mount retracts to just 2" from the wall in home position.

**Remote Control**  
 Automated motorized extension up to 9" from the wall

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· Play music wirelessly  
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Speakerphone VM-605**

· Make hands-free voice calling  
· Stream music

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