



New Products

Editors: Eyal de Lara ■ University of Toronto ■ delara@cs.toronto.edu
Maria Ebling ■ IBM T.J. Watson Research Center ■ ebling@us.ibm.com

EDITORS' INTRODUCTION

This month we review a new technology for printing temporary documents that can reduce paper usage and a basketball jersey that dynamically displays players' statistics. We also review a secondary display that provides access to personal content on a laptop without the user having to boot it up and a universal charger for mobile devices. Finally, we examine a handheld astronomy device that identifies celestial bodies, an ergonomic "keyboard" for individuals with hand and finger injuries, an electronic-book reader, and a computerized tool for making small lots of artisan wine. Please continue to send pointers to upcoming products with exciting possibilities, your feedback on existing products, and your personal experiences with them (your name will be included with your review). Email us at pvcproducts@computer.org.

—Eyal de Lara and Maria Ebling

APPLICATIONS

ENVIRONMENTALLY FRIENDLY ERASABLE PAPER

Xerox scientists have developed a printing technology for creating temporary images that automatically disappear after a period of up to a day, leaving the paper ready to be printed again. This "erasable paper" technology could significantly reduce paper waste in office environments where workers discard many documents—such as emails, Web page printouts, and reference pages—after a single use.

Scientists at the Palo Alto Research Center (PARC) and the Xerox Research Centre of Canada jointly developed erasable paper. A special printer shines ultraviolet light on paper coated with a photochromic compound that changes to a colored state, creating a temporary image. The printed image self-erases over a period of 16 to 24 hours, or you can erase it immediately by exposing it to heat. Additional research to give users the option to permanently preserve content is under way. Xerox researchers have created a prototype printer that demon-

strates the technology's feasibility and are working on making the technology commercially viable.

WEARABLE DISPLAY OF ATHLETES' STATISTICS

TeamAwear is a basketball jersey that displays real-time information about its wearers' statistics—such as their fouls, points, and scores—and alerts players when the game is nearly over or when time is running out to shoot. Mitchell Page and Andrew Vande Moere at the Centre of Design Computing and Cognition of the University of Sydney developed the system, which consists of numerous colored electroluminescent panels. A small computer attached to the player's body controls the panels and communicates wirelessly with a server that tracks relevant game statistics. For example, panels on the jersey's side light up to show how many goals the wearer has scored, with each panel representing 10 goals (see figure 1).

Although the inventors developed the TeamAwear jersey originally for basketball, they claim that it could also work in other fast-paced sports in which



Figure 1. The TeamAwear jersey displays real-time player statistics and time alerts.

player-specific data changes rapidly, such as soccer, volleyball, cricket, and baseball. It could also support emergency teams working in noisy environments where verbal communication is inefficient.

COMPONENTS

SECONDARY LAPTOP DISPLAY

PortalPlayer's Preface hardware component extends notebooks with a secondary processor and display subsystem embedded in the notebook's lid or in a detachable unit. Preface exploits Windows Vista SideShow technology to let users listen to music and scan their email and other information stored in the laptop without having to boot it up. This extends the laptop battery's life and approximates always-on operation.

Preface periodically powers up the laptop while the display remains off and uses Windows Vista Sidebar gadgets to extract text and bitmaps from text-rich applications such as calendars and email. The secondary display then displays this information while the laptop is off.

Preface's power-efficient architecture includes a dual-core processor, memory,

NEW PRODUCTS



Figure 2. PortalPlayer's Preface component lets users scan their email and other personal information without having to boot up their laptops.

and Flash-based local storage. A typical LCD display would range from 2.2–2.8" with a resolution of 320 × 240 (quarter video graphics array). Users interact with Preface with a key matrix of left, right, up, down, select, and menu buttons or with capacitive touch pads. Optional biometric devices provide secure access to both SideShow and the notebook. PortalPlayer, which NVIDIA recently acquired, claims that a SideShow display can provide uninterrupted access to content stored on the Preface subsystem for hundreds of hours on one battery charge. Figure 2 shows the ASUS W5Fe laptop, one of the first notebook PCs to incorporate Preface.

UNIVERSAL MOBILE DEVICE CHARGER

Arizona-based WildCharge has developed WildCharger, a product that could make keeping track of a plethora of chargers for your personal mobile devices a thing of the past. WildCharger consists of a flexible pad that plugs into the wall and an adapter that attaches to or is integrated into mobile electronic devices. To power or recharge a device, you just place it on the pad and it charges via electromagnetic induction, which transfers power wirelessly (see figure 3).

The WildCharger pad can simultane-

ously power multiple devices with varying power needs, and it provides enough power to run a laptop and other smaller devices. WildCharge expects to place the product on the market by the second quarter of 2007 for an estimated US\$40 to \$100. WildCharge has also approached high-tech manufacturers about including its technology in their products.

DEVICES

SKYSCOUT

If you've ever looked at the night sky and wondered what stars you were observing, Celestron's SkyScout might

be for you. Especially useful for novice astronomers, this handheld device combines GPS technology with a map of the sky to identify, locate, and provide information about celestial bodies.

To identify an object of interest, you simply view it through the SkyScout and press the Identify button. SkyScout's technology identifies the object and tells you what it is. To locate a celestial body, you select it from a reasonably easy-to-use menu of objects and press the Locate button. SkyScout uses red directional arrows around the eyepiece to guide you to the object in the sky. A nice feature is that the menu shows only objects that should be visible. (Unfortunately, Sky-



Figure 3. The WildCharger recharges mobile devices wirelessly, using electromagnetic induction.



Figure 4. The SkyScout identifies and locates celestial bodies and provides text and audio information about them.

Scout has no way to know which of those objects are blocked by trees).

Finally, the device can educate you about many of the more popular celestial bodies. The information is available both through audio and text and includes facts about the object and its history and mythology.

SkyScout's release was delayed in 2006 because of manufacturing problems in one of the components. The product is now available for about \$400.

ORBITOUCH KEYBOWL

Computer users who experience pain caused by a repetitive stress injury or who have a physical impairment that makes typing and mouse motions difficult might want to check out KeyBowl's orbiTouch sliding keyboard.

Unlike traditional keyboards, the orbiTouch has no keys. Instead, it has two domes—one for each hand. The right dome has eight areas located at the eight compass positions (N, S, E, W, NE, NW, SE, SW). Each area has five color-coded characters or numbers. The left dome has five colored sections. To type a character or number, you simply choose the position with the right hand containing the character or number of interest and the color with the left hand. Those two hand motions uniquely specify the character or number of interest.

The orbiTouch also acts as a mouse. Pressing the right dome controls the cursor, and the left dome controls the clicks (for example, you would slide it left for a left click).

The KeyBowl FAQ states that the fastest typing speed yet recorded on the orbiTouch is 42 words per minute, with an average of about 30–40 wpm. (The average typing speed using a traditional QWERTY keyboard seems to be in the 38–40 wpm range.) For someone who averages about 83 wpm with a top speed of 103 wpm, such speeds would be extremely frustrating. On the other hand, if the choice is typing painlessly at 30–40 wpm or not typing, the orbiTouch would seem a reasonable compromise.

SONY EREADER

With the eReader, Sony appears to have finally built an electronic book that avid readers can accept. According to reviewers from <http://cnet.co.uk>, the electronic page looks “almost exactly like traditional printer paper.” The eReader's dimensions (approximately 7” × 5” × .5”) and weight (under 9 ounces) are reasonable, and the battery supports up to 7,500 page turns, although your mileage may vary. The device costs approximately \$350.

Although this sounds intriguing, further investigation revealed that Connect (the service from which you purchase eBooks) leaves much to be desired. The eBooks' prices are comparable to those offered by Amazon or Barnes & Noble online. When a book is available only in hardcover, the Connect price is comparable to the hardcover price; when a book becomes available in paperback, the eBook's price drops accordingly. eBooks are sometimes slightly cheaper or more expensive than their physical counterparts. However, considering the high price of paper and that none is required to produce these books, you might expect eBooks to be significantly cheaper than physical ones.

Connect's selection of titles is reasonable but incomplete. Thousands of titles are available, but some important ones that we looked for weren't—specifically, neither J.K. Rowling's popular Harry Potter series nor the science fiction classic *Ender's Game* by Orson Scott Card.

In our opinion, the device challenge of the elusive eBook seems to be solved, but the business model around it remains imperfect.

WINEPOD

Anyone who loves fine wine or who has considered moving to the Napa Valley might find the WinePod an interesting proposition. This computerized tool for making small lots of artisan wine integrates pressing, fermentation, and aging in an easy-to-use unit that

connects wirelessly to your PC.

You control the WinePod through the WinePod dashboard, an interface that receives data wirelessly from the SensorStick. The dashboard displays the data the SensorStick sends from the WinePod, manages your winemaking records, and provides instructions and prompts to help you with winemaking.

In addition, the company offers grapes from proven vineyards in a range of prices. You can also use your own grape supply, and the software will help you record your results. Or, you can use other fruits—for instance, to make cider or perry. Alas, making beer isn't possible because the WinePod doesn't support boiling.


The 2006 model WinePod is sold out. The company is maintaining a waiting list for the 2007 model, which it expects to ship in May. For more information, see www.mywinepod.com. 



Figure 5. The WinePod computerized tool integrates pressing, fermentation, and aging for small batches of artisan wine. (figure courtesy of Todd Tankersley)