



**Call Me in Tokyo, If You Can:** Globe-trotting CIO John Halamka discovers it isn't easy to find a single voice/data device that works in the U.S., Europe and Asia. **PAGE 28**

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## Brainy Tech

Read e-mail on your bag. Surf the Web using eye movements. These and other Horizon Award-winning technologies aren't science fiction anymore. **Page 30**

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# Brainy TECH

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AWARDS 2007

These **10 technologies** could extend human capabilities, take everyday devices to **new levels** and **improve** how we live and work.

## Wearable Gadgetry

ELEKSEN GROUP PLC

### Sideshow Wearable Display Module

WOW  
FACTOR

Schedules and recent e-mails are viewed through a fabric-embedded module

By Robert L. Mitchell

IT STARTED as an idea for making more life-like puppets for the British TV show *Spitting Image*. Four years later, Eleksen Group PLC is hoping that its interactive textile technology will form the foundation for a new generation of wash-and-wear computer control and display devices.

The centerpiece of the technology is ElekTex, a fabric-based, pressure-sensitive control interface that can be integrated into jackets, bags and other textile products. The technology is already used as a remote control for iPods

and cell phones in backpacks and coats. At this year's Consumer Electronics Show in Las Vegas, Eleksen presented its latest design concept, which integrates ElekTex fabric controls with an LCD display that can interact with Windows Vista's Sideshow feature. The latter exports information from a Vista laptop to a secondary display. Mini-applications, or "gadgets," written for Sideshow can then wirelessly deliver e-mail, alerts or other updates to the remote screen even if the laptop remains in its case and turned off. Fabric-based controls and embedded control electronics interact with the

display. Iver Heath, England-based Eleksen is also planning support for secondary displays on the Macintosh.

Initial implementations of ElekTex will likely be integrated into laptop bags with embedded button controls and small color LCD displays, says John Collins, vice president of marketing and business development at Eleksen. However, Collins envisions an eventual move to flexible displays based on color organic LED technology. That would allow the control and display surfaces to be embedded on any fabric surface, including a shirt. "Imagine receiving critical information from enterprise information systems on your sleeve," says Vassilis Seferidis, vice president of product management.

ElekTex fabrics are constructed from woven layers of nylon and carbon-impregnated nylon that's not only bendable, but also washable. Because of the nature of the material, it can be sewed, glued or even heat-welded into other fabrics. Mark Treger, national sales manager at Goodhope Bags Inc. in Chino, Calif., has embedded ElekTex sensors into backpacks to control iPods. "You can just sew through it. It just works," he says. The one limitation is cost. Collins estimates that a laptop bag with the technology would cost about \$200. But Treger says the cost of the ElekTex technology has already dropped by 50% in the past year. He sells a fabric keyboard for use with the BlackBerry that sold for \$169 last year. Today, it's priced at under \$130, and by the holiday season, he says, retailers will be selling them for about \$80.

The technology and the manufacturing process took years to perfect, says Collins

— and that gives the company a leg up on any competition. "Their strength is understanding how to do the wiring and connections and create control surfaces with the right amount of tactile feedback," says Leslie Fiering, an analyst at Gartner Inc.

"The knitted, woven materials allow us to get x, y and z coordinates," says Collins. Currently, Eleksen is producing button and scroll controls. Next, it plans to support gestures across the control surface, simulating a mouse or

fabric-based touch pad. "It's a matrix arrangement, similar to what you'd find on touch-screen displays," Collins says.

Seferidis expects viable bendable displays to be available

in about two years. But he is working with vendors to make displays do more than just bend. "Our work will be to make them washable," he says.

The Sideshow capability is "pretty cool," says Fiering, but even more interesting will be what designers can dream up if the technology catches on. The most fascinating applications, she says, haven't even been thought of yet. ■

✂ **ElekTex, a fabric-based, pressure-sensitive control interface, can be integrated into jackets and bags.**

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**WINNERS' CIRCLE**

For a full list of the 10 winners and 10 honorable mentions from this year's Computerworld Horizon Awards, plus links to product demos, tutorials and white papers, visit us online at [computerworld.com/horizon](http://computerworld.com/horizon).



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