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A Pen That's More Than Meets the Paper

By ANNE EISENBERG

IT'S been a hectic year since Jerry M. Hultin took on the presidency of Polytechnic University in Brooklyn — a year packed with meetings and all the notes taken at them. The yellow pads have been piling up.

But recently Mr. Hultin made a small, effective change in his note-taking life: he bought a digital pen. The device looks like a slightly plump ballpoint, and works like any ballpoint. But inside this gadget are a tiny camera and an optical sensor that record the pen's motions as he writes, and a microprocessor that digitizes the words, sketches and diagrams that the optics detect.



When he docks the pen in its cradle connected to a [USB](#) port, the handwritten notes flow in a digitized stream into his computer and are processed by software, reappearing almost immediately on his monitor in his handwriting. "All the notes I've written are sucked into the computer, and there they are on the screen," he said.

His pen, called io2, is sold by Logitech of Fremont, Calif., for about \$200.

With this system, Mr. Hultin has no more need to paw through those stacks of yellow pads to find something written weeks ago. Instead, his notes are on his computer's hard disk, available to be searched and retrieved. "I can put the notes in a file where I can find them," he said. The information is also accessible when he works at home, so that he needn't ferry notes back and forth.

The optical pen holds a rechargeable battery and enough memory to accommodate roughly 40 pages of handwriting, said Mark Anderson, a senior manager at Logitech. Mr. Hultin carries the pen with him all day, then plugs it in to be recharged at night.

"For many things, handwriting is still the fastest," he said, "especially in the middle of a meeting when you don't want to be typing at a keyboard."

The pen will introduce some discipline into the lives of people used to making notes on the backs of envelopes. It works only with paper encoded with tiny dots that tell the optics exactly where the pen is as it moves across a page. This paper comes in many of the forms that note-takers love, including legal pads, spiral-bound notebooks and sticky notes. Mr. Hultin uses a spiral-bound version (\$5) that is ordered on the Web.

The Logitech pen was introduced in its first, chunky version in 2002; early adopters compared it to a fat cigar. Since then it has slimmed down and increased its capabilities, in part through software add-ons that link it to other applications where digital writing may come in handy.

Jack Paddock, a general contractor in Tucson, is taking advantage of one of these new functions. His business requires many forms that must be completed and signed, like check-off lists, or changes in orders when a customer decides to add light fixtures or switch types of cabinets. All these forms, with their filled-in entries and signatures, must be scanned before they can become part of his computer records — a time-consuming process.

Recently, to his delight, Talario, in Brookings, S.D., has introduced a refinement to digital writing systems that permits people to add handwritten comments to all the forms they use, and then to save all the information in the ubiquitous PDF format. The process is painless, Mr. Paddock said. He takes whatever blank form he needs, like an inspection sheet he created on Word, and prints it on digital paper — the paper encoded with those tiny dots that will guide a digital pen. Now he has an inspection form, its boxes ready to be filled out. On his rounds, he ticks off the boxes, adds comments and gets signatures, all using his digital pen. When the pen's contents are downloaded, the computer superimposes the handwritten entries in exactly the right spots to make a new PDF that incorporates both text and handwriting. "It saves an incredible amount of time," he said. "I plug in my pen, download the files and it's done."

The Talario kit he uses, at \$250, includes a Logitech pen, a docking cradle, software and 100 sheets of Xpaper, the digital paper that the company sells, said Tim Aughenbaugh, Talario's president.

William Madara, too, needed to keep track of the endless handwritten notes that are part of his days as a tax and financial planner at Apex Tax Advisors, a company he helped to found in Moorestown, N.J. The office uses a popular software system, ACT!, for customer management, and he wanted to shift all his handwritten notes directly to this program — especially after the rigors of the past few tax seasons.

His solution was a digital writing system, bought last month. The kit includes a pen, several forms of digital paper, and software that plugs in to the ACT! database. The kit, made by the ASDS Computer Company of Denver, costs \$249, said Jean McCandlish, vice president for sales and marketing at ASDS.

Mr. Madara likes the handwriting recognition software that comes with the pen.

"I have to write a little neater than I'd usually do," he said, "but it's worth the effort."

The occasional error doesn't bother him. For instance, using his pen and the digital paper he now keeps at hand, he jotted down on his "to do" list, "Install a PDF reader for Bill's [Treo](#)." The message went from his pen to the computer, was translated into text and appeared on the screen as "Install a PDF reader for Bills Trio."

Mr. Madara made the corrections. "I can live with that kind of misspelling," he said.

Paul Butare, chief executive of AcroSoft, in Columbia, S.C., which supplies software to the insurance industry, has also adapted a digital pen to his needs. In the insurance business, handwritten notes and signatures are a constant, he said, so his company wrote code that would allow handwritten entries to be integrated into its software products for document management. Mr. Butare wrote the software needed for this, linking Talario's Xpaper system to his company's software that is sold to insurance companies. The add-on, sold by AcroSoft, is \$99, and includes 100 sheets of paper. With a pen, the cost is \$249, according to Mr. Butare.

It's too early to say whether digital writing systems like Logitech's, or other, related technologies will be a hit. At the least, the systems require a staunch rule: always have digital

writing supplies at hand when you may need to take notes. Such rigorous habits may be harder to acquire than a new gadget. As Paul Saffo, a technology forecaster based in Silicon Valley, said: "There are lots of tools to make business more productive, but that technology has to be accompanied by a change in behavior."

But combining a new digital technology with some old-fashioned discipline may pay off. Pierre Charles Le Monnier, the 18th-century French astronomer, might have had a few things to say about that. Le Monnier observed Uranus several times but didn't get the credit for discovering a new planet. That honor fell to the British astronomer William Herschel in 1781. This happened in part, according to the eminent chemist E. Bright Wilson Jr., because Le Monnier wrote his measurements on scraps of paper, including a paper bag that had once contained hair powder.

If only he'd had a digital pen and pa- per.