

Document Imaging Report

Business Trends on Converting Paper Processes to Electronic Format

4003 Wood Street ● Erie, PA 16509 ● PH (814) 866-2247 ● FX (800) 507-8981 ● <http://www.documentimagingreport.com>

April 22, 2005

E-Forms, Bar Codes And A Paper Trail

Document capture technology key to new balloting system.

It was after the 2000 U.S. presidential election that *DIR* first raised the question, couldn't document imaging be used to improve the vote tabulation process? You remember—butterfly ballots, hanging chads, recounts, protests, Mayor Daley—all that jazz [see *DIR* 12/1/00].

Well, between 2000 and 2004, many states and counties took initiatives to upgrade their balloting systems. To almost no one's surprise, document imaging was largely ignored. After all, even before 2000, touch screen-based systems were the most popular form of upgrade. However, one problem soon became apparent with strictly electronic voting systems—there is no paper trail. When reports started to surface about hackers potentially having the ability to change election results without any paper to audit, the poop started hitting the fan—at least in some circles. [For more on this issue, see <http://www.blackboxvoting.org>.]

There was enough of an outcry that the major vendors of touch screen systems began introducing add-ons to produce paper trails, but there are still concerns about how well these options work. Now, it seems at least one company has recognized that, hey,

maybe document imaging does have a place in the election world. At the **FOSE** show held earlier this month in Washington, D.C., Manhattan-based **Comfindex** introduced *VoteFiler*, an election balloting system based on scanning paper.

Okay, so technically, *VoteFiler* doesn't utilize document imaging. It does, however, use a concept very familiar to our industry. That is the capture of bar codes from paper. *VoteFiler* is based on Comfindex's patented technology for matching a bar code with information submitted via an electronic form. Specifically, *VoteFiler* registers votes by matching the bar code on a paper ballot submitted at a polling station with information submitted via a secure Internet site.

Inventors Have Deep Imaging Roots

Comfindex was founded in 1997 by David Berenson and Dr. Bill Stratigos who both have deep roots in the document imaging world, dating back to the mid-1980s. They were principals with **Sigma Imaging Systems**, whose claim to fame was a large contract with **Empire Blue Cross Blue Shield**. Sigma was eventually sold to **Eastman Software**. Berenson and Stratigos also have close ties to New York City-based integrator **R2K**, which currently services Empire.

Comfindex's flagship product is *FormFiler*, which like *VoteFiler*, is used to match paper documents with electronic information. Comfindex's customers include **AmeriTrade** and the **Vanguard Group**. "Typically, *FormFiler* is deployed in applications where information is entered into an electronic form, but a signature on paper is also required," said Stratigos, Comfindex's president and COO. "So, the user might fill out an online form, submit it electronically, and then print a copy to sign. The printed copy would include a bar code. When the paper form is submitted, the bar code is scanned and the signed document is associated with the electronic data."

Stratigos noted that while a bar code is the preferred method of document identification, other data formats, such as a string of numbers, can be used. "Typically, our technology is deployed for signature requirements," he added. "However, we feel our patents apply to any situation where paper is being matched with electronically submitted data, such as electronic ticketing applications that require users to print their tickets themselves."

The relevant U.S. patents held by Comfindex are numbers 6,189,009 and 6,725,220. They were filed in 1999 and 2001, respectively, and granted in 2001 and 2004. Stratigos declined to discuss who

might currently be in violation of those patents.

He was, however, more than happy to discuss how the patents have been leveraged to create *VoteFiler*, which is being marketed as a low-cost and efficient alternative to touch screen systems. "We started thinking about the concept after the 2000 election," Stratigos told *DIR*. "It took us awhile to come up with an application, because we wanted to make sure we understood all the vulnerabilities in the current processes. We wanted to design our system to eliminate those vulnerabilities, while at the same time, not create any new ones. We also wanted to make sure we leveraged our patents in such a way that we didn't create opportunities for competitors."

Security & Anonymity Stressed

In a nutshell, here's how *VoteFiler* works: A Web site presents a voter with an electronic ballot form. He selects the candidates and issues he wants to vote for and submits his ballot through the Web site. At the same time, he prints out a paper copy of the ballot, which includes a bar code. The voter folds up that paper and seals it in an envelope with a clear window that shows only the bar code. On election day, the voter hands the envelope to a poll worker who initials it and scans the bar code. When the bar code is scanned, the electronically submitted ballot is officially counted.

Of course, there are all sorts of security measures in place to prevent anyone from hacking the vote. Methods like encryption, firewalls, and variable ballot forms are used to protect information. And, if there are any questions, there is a stack of envelopes containing paper ballots that can always be counted.

"We do not view *VoteFiler* strictly as an alternative for existing systems," stressed Stratigos. "We also see it as complementary. For example, we think it offers a tremendous upgrade to the way most absentee ballots are handled today. Using *VoteFiler* makes it very easy to preserve the anonymity of a form sent in through the mail.

"Also, we see the possibility of precincts setting up 'express lanes' using *VoteFiler*. There has been plenty of publicity about the long lines encountered during the 2004 election. A lot of this had to do with people taking time to read various proposals that

appeared on their ballot screens. Using *VoteFiler*, those proposals can be read and considered at home. A voter can even go back and change his vote any number of times before finally printing the bar-coded document that will register the vote. Once the envelope with the bar-coded form has been handed to a poll worker, we estimate it will take approximately five seconds for the voter to

receive confirmation that his vote has been counted."

"...going with *VoteFiler* would save the state \$40-50 million in hardware costs alone. Also... the majority of our hardware cost is for PCs that can be used 364 days a year for other types of work."

– Dr. Bill Stratigos, Comfidex

COTS Hardware Cuts Costs

Of course, if *VoteFiler* is installed as an alternative to touch screen-based systems, Stratigos said the cost savings could be

staggering. "Our system is based on software running on off-the-shelf hardware," he told *DIR*. "Touch screen systems rely on proprietary hardware than can be many times more expensive."

Stratigos gave us an example of just how expensive. "The state of Virginia has 2,300 voting precincts. To make it easy, let's just compare that cost of installing one touch screen-based system in each precinct vs. the cost of one *VoteFiler* system. In this scenario, going with *VoteFiler* would save the state \$40-50 million in hardware costs alone. Also, keep in mind, the majority of our hardware cost is for PCs that can be used 364 days a year for other types of work. What else can you do with the proprietary devices?"

Stratigos also believes *VoteFiler's* software costs are some 30-75% lower than its competitors. Comfidex's current price list shows an initial fee of \$950 per precinct, plus a \$200 annual fee for precincts with under 1,000 voters and a \$900 annual fee for precincts with up to 5,000 voters. States or counties would be expected to run *VoteFiler* on their own servers.

Looking For A Partner

A prototype of the system was shown at FOSE, and it was awarded "Best of Show" by *Government Computer News*. "We are currently following-up on some interest we received from entities outside the U.S.," said Stratigos. "In the U.S., we'd like to participate in the 2006 elections, if not sooner. However, we realize we could use a large partner with a national reach to help us penetrate the market. At Sigma, we had success partnering with **Unisys**; we'd like to try to follow that model again."

For more information: <http://www.comfidex.com>