Government ENTERPRISE
IT INNOVATION IN THE PUBLIC SECTOR

A Businesslike Approach To Solving Crime

By Larry Kahaner, Government Enterprise
April 05, 2004 (03:01 PM)

When the U.S. Air Force's Office of Special Investigations began treating its crime data more like a company handles its marketing data, the improvement was astronomical.

"In 1997, OSI started to look at applying business-intelligence metrics to our cases," says Tim Ries, director of warfighting integration at OSI. "We use business intelligence as a means to graphically display metrics and measures."

By looking at data in fresh ways, the office, which handles everything from murders to narcotics cases to spy investigations for the Air Force, was able to quickly see anomalies that had cropped up in its data over the years. For example, because military people move around a lot, the office frequently added information to its database but it didn't integrate with all the new and old data. "We had a lot of bad data, but we didn't realize how bad," Ries says.

In addition to unintegrated data, the OSI database contained incorrect information and, as a result, sometimes provided inconsistent results. For instance, a staffer might query the database about how long a certain case was active, and the response would be something like "negative 2,000 days," because somebody had entered into the database that the case was completed in 1898 instead of 1998, and nobody noticed it, Ries says.

OSI started building the business-intelligence system, known as I2MS, or Investigative Information Management System, six years ago with the help of Computer Sciences Corp. The new system has fixed the data-quality problems and pinpointed old cases that needed to be closed or pursued. With I2MS, cases are automatically updated as often as every two weeks, so the investigations office became better at finding holes that needed to be addressed--missing lab work or witness testimony, for example. Management also began to change its expectations of how fast cases should be completed. Business intelligence started driving behavior, Ries says. As a result of this attitude change, bolstered by an accurate and up-to-date system, OSI saw the time it took to handle the investigative portion of a case drop from 120 days to about 75 days in three years.

To make cases easier to input and measure, they're broken down into sections: two days to key data into the database, 60 days to run the investigation, seven days to document and publish a report, 90 days to report the outcome in court, and 14 days for final disposition. It's OK if some cases take longer, but these measures help identify problem cases.

Behavior is driven in two ways, Ries says. First, company leadership's watchful eye drives people to do a better job. Second, when workers can look at cases in sections, they can see the weak spots and address them. For example, the two-day measurement to open a case was being

reached almost 100% of the time, so it's no longer being measured, although cases are checked to make sure there's no backsliding.

What sets the Office of Special Investigations apart from similar units is its size. "We're small compared to others, but we're very spread out," says Ries, a career agent with more than 20 years of service. The group has 1,890 agents in 202 locations in 40 countries.

I2MS was built by OSI agents who worked side by side for three years with CSC personnel. Because of security concerns, the network, which is headquartered at Andrews Air Force Base in Maryland, is an offline system--that is, field agents write reports on their laptops and transmit the information in one burst, not by logging in and writing online in real time. Security concerns also rule out wireless transmission, Ries says.

Based on their clearances, agents have access to unclassified, classified, and superclassified databases, which are kept separately on about 40 servers running Windows 2000 or NT. Because information is kept in object-oriented databases, any agent can check a name in both classified and unclassified files simultaneously. Because all data is Web-based, every inquirer gets the same information at the same time.

The heart of OSI's business-intelligence measurements and graphical presentations is Cognos Inc.'s Cognos Series 7. One program, called PowerPlay, takes information from databases and builds three-dimensional "cubes" representing data. Users can perform analysis from more than a billion rows of data in 2 million categories, according to Cognos.

One of the most important types of reports the Office of Special Investigations publishes are those produced on-demand about cases for specific commanding officers. "OSI used to duplicate efforts with these reports; now they can render reports to specified individuals based only on what they want to see," says Terrence Atkinson, director of public solutions at Cognos. "OSI can drill down to any level of detail it wants, whether it's down to the level of one agent or one incident."

To Atkinson, the problem facing most of Cognos' customers isn't implementing the technology, it's understanding what they're trying to accomplish. "The challenge is articulating the business problem, then figuring out where the data is located and how to render it," he says. "Most businesses look at the data first and try to use it, instead of understanding the business goals first and then seeing how the data can help them. OSI does this very well."

Robert Friedmann, professor of criminal justice at Georgia State University, who studies law-enforcement networks and databases, is part of a university group that's building a data-sharing platform for law enforcement databases and networks. The five-year project, now in its second year, encompasses more than a half-dozen university departments.

One of the issues plaguing law enforcement is lack of intelligence-sharing among agencies, which is what Friedmann's group is trying to overcome. Because systems have different software and are part of different corporate cultures, coordination and sharing can be difficult. But since OSI has experience melding different databases, Friedmann sees it as worth studying for ideas. "OSI has a system that can update information from everywhere in the world, anytime. It cuts across several databases. It's very impressive."

OSI shares intelligence with other agencies through a document called the Talon Report, which focuses on suspicious-activity reports, Ries says. The Web-based report can be read by an agency no matter what system or software it uses.

What's next for OSI's I2MS system? "It's still too slow," Ries says. "It'll always be too slow until it's instantaneous. And it still looks too complicated to the user. It should be intuitive. We're not there yet."