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State fusion centers look to expand beyond counterterrorism efforts

With data exchange models in hand, centers look to share other criminal information



- By Patrick Marshall
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Data isn't information until you find a use for it, which requires connecting two pieces of data that might be insignificant on their own. For example, it might be unimportant that someone has enrolled in a flight training school unless that person is listed on a terrorism watch list.

That's the principle behind fusion centers: Put data in a form that analysts can turn into useful information that contributes to improved decision-making. Fusion centers combine data from various sources — primarily federal, state and local law enforcement agencies, but also other repositories, such as driver's license databases — and make the information available through a single interface or, at least, in a single location.

The 2001 terrorist attacks and the intelligence gaps that allowed them to happen have played a significant role in the rapid expansion of fusion centers in recent years.


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“The primary mission of fusion centers is information sharing,” Robert Riegler, director of the Homeland Security Department’s State and Local Program Office, told Congress in April 2009. “Just as Congress and the 9/11 Commission have recognized, information sharing is vital to protect the American people and our institutions. The success of the national network of fusion centers is crucial to the department and to the states in achieving greater situational awareness toward the threats we face.”

Riegler said the way fusion centers combine and synthesize data from different sources turns them into force multipliers.

DHS and the Justice Department have driven the development of fusion centers. The departments have cooperated to establish guidelines for developing fusion centers, and they provide a variety of resources, including personnel and grants, to assist state and local agencies in setting up and operating fusion centers.

By the numbers, the impact has been dramatic. Bart Johnson, principal deputy undersecretary at DHS’ Intelligence and Analysis division, said there are 72 fusion centers in operation nationwide, up from 38 centers as recently as 2006. DHS has deployed 39

intelligence offers to state fusion centers and more are in early stages of deployment.

Money Matters

Shortly after the first fusion centers were established, federal and state officials realized two things. First, the fusion concept could extend beyond counterterrorism. And second, federal grants were a powerful force in shaping fusion centers.

"It was soon realized that the concept could be very valuable beyond the counterterrorism environment and that it would be very valuable across all crime types and all hazard types," said Stephen Serrao, a former New Jersey State Police Counterterrorism Bureau chief and now director of product management at Memex, which consults in the development and management of fusion centers.

Serrao said funding also fueled the shift. "State agencies realized there was money available for other kinds of initiatives that were not [counterterrorism], and they tried to harness that," he said. "They could pool their resources to build these fusion centers if they were all-crimes, all-hazards centers." For example, an all-crimes fusion center would qualify for grants aimed at gang crimes, whereas a fusion center focused strictly on counterterrorism would not.

Serrao noted that many states were also trying to establish new emergency operations centers while fusion centers were in development. "It made perfect sense to marry up your fusion center to your emergency management system," he said. "Basically, your fusion center is your full-time operation, and your EOC only gets activated with a large-scale event. That is the trend, and I think it makes perfect sense to go that way."

Johnson said DHS supports the broader approach to state fusions centers. "Often, terrorism is supported by identity theft, smuggling and other 'feeder' crimes," he said. "That's where the majority of the fusion centers are right now, or heading that direction. When you have a chief need to show the mayor that not only am I helping protect the country, but protecting the local jurisdiction," the center can prove its value.

Marty Zaworski, solutions director at Unisys, a provider of fusion center technologies, agreed. "What we're seeing is that if you want police to come to the table, it has to transcend terrorism activity," he said. "It has to be part and parcel with the fabric of what they do every day. What I see in fusion centers is these folks supporting the investigative process. My sense is that fusion centers are evolving as these things grow."

Data Matches

The development of fusion centers has faced some significant challenges. First and foremost, the centers must overcome the practical challenge of integrating data.

"Even in the same state, you can have 500 police departments using different software to manage their [computer-aided design] and intelligence needs," Serrao said. And generally that data is saved in different formats.

The first major step toward integrating data was provided by Justice's [Global Justice XML](#). Beginning in 2001 and working with other justice and public safety organizations at federal, state and local levels, the Global Advisory Group at Justice developed the Extensible Markup Language data model by analyzing about 16,000 data elements and reducing them to 2,000 elements that were incorporated into 300 data objects in the system's dictionary. Released in April 2003, Global XML allowed agencies at all levels to store data in a form that other organizations could easily access.

The Global XML model was expanded with the development of the [National Information Exchange Model](#), first released in 2006. Like Global XML, NIEM — developed jointly by Justice and DHS — is based on XML schemas for structuring data. But NIEM was designed to accommodate other sectors in addition to law enforcement.

"I do think that NIEM is the answer," Serrao said. "It is certainly being used at all levels, from local law enforcement to state, county

and regional.”

The federal government has pushed the adoption of NIEM by requiring most grant recipients to incorporate the model. And that has pushed NIEM into the private sector. “Now you're beginning to see private-sector companies begin to incorporate those very standards into the products they produce,” said Gerry Wethington, vice president of homeland security, justice and public safety at Unisys.

Whose Data Is It?

An even more challenging problem for most data centers has been the management of data authority — that is, who controls the data when it is shared.

“There is a known issue of the loss of control of data once it leaves your domain,” said Shawn McCarthy, an analyst at IDC’s consulting group and a GCN columnist. “Once you start sharing data and it leaves your facility, data authority is difficult to establish.”

McCarthy said that although the federal government is experienced at maintaining authority over data it releases, many state and local agencies are not so adept. “The upstream piece — when it comes from state and local up to the federal government — is very fragmented,” he said. “Some states and large cities are very good at it. Some small towns and counties are not there yet.”

Mike Bosacker, commander of the Minnesota Joint Analysis Center, said data authority is an ongoing challenge for the center.

The first challenge is ensuring the accuracy of data. “The preferred method is that everything comes through a law enforcement agency,” Bosacker said. “Then it’s law enforcement data, and it has been vetted by a local agency. We do not take direct public reporting. If we get a report from some piece of critical infrastructure, we’ll reach out to the appropriate local law enforcement [agency] to make sure they are taking a report.”

But retaining control of the data also can be difficult. Bosacker said that in Minnesota, all data that is not part of an active law enforcement investigation is public information by law. That means that when the analysis center gets a request for data, staff members must check to see if the information is part of an active investigation. If it is, the center can only release the information to another law enforcement organization and not, say, to a fire department, unless there is a need to know.

However, Minnesota laws do allow active case data to be released to other law enforcement agencies even if they are out of state, and Bosacker said that after it leaves the state, the protections afforded by Minnesota law might not apply. “That’s another issue that has come up — the ability to protect data in other states,” he said. “That’s another gap in our law.”

McCarthy said one answer might be to include data authority information as a piece of metadata attached to any piece of data in fusion centers. “What is needed is overwriting sets of rules that exist beyond the database,” he said. But such a capability does not yet exist in fusion center schemas. “If you’re going to start trusting the data to go up into these fusion centers, that’s one piece that needs to be addressed,” McCarthy said. “I’ve been looking for someone to tell me that it has been addressed for about six months now. I have yet to come up with it.”

Road Ahead

Many people involved with fusion centers agree that their potential has barely been tapped. In part, that’s because the centers are relatively new, and many state and local agencies have not yet integrated their data into the fusion centers.

“Law enforcement data [in Minnesota] is pretty fractured,” Bosacker said. “Our issue has been trying to get agencies aware of who we are, what we’re looking for and how to submit things to us.”

Other analysts point to the potential of expanding fusion centers to include many additional types of datasets.

Serrao said information about corrections, probation and paroles has not yet been added to the mix. "As it turns out, it is a very important piece, especially with street gangs and other organized criminal activity," he said. "That is the next piece of information that is going to be broadened in the fusion center environments."

Other prospective sources of potentially valuable data are sensors and cameras. Although there are already XML schemas for sensor data, they have not been incorporated into fusion centers. As a result, data from sensors and sources such as video feeds must be handled separately.

"One [goal] is the ability to get hold of sensor-type data — sensing wind, air quality," Wethington said. "And when you collect that type of data, it can help you make informed decisions. Also, there is a lot of public data out there: property records, etc. It is so pervasive. There is an eye to looking at that type of data."

License plate readers are one data source likely to be incorporated in the near future into fusion centers. Zaworski said working groups are already talking about incorporating data from license plate readers into NIEM. "I think it's an evolutionary process," he said.

About the Author

Patrick Marshall is freelance technology writer for GCN.



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