Increase Your Call Center's Productivity with
WIRELESS
technology

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Taking advantage of technology improvements allows communication centers to maintain a higher level of productivity by reducing dispatcher workload.

I N THE BLOCKBUSTER HIT *MINORITY REPORT*, HOLLYWOOD PROVIDED A glimpse of how crime fighters may be deployed in the future. Investigators are shown putting together a virtual crime scene of a murder that has yet to occur. They use images captured directly from the location in which the incident will happen. Dispatchers maintain constant communication with responding units, directing them where to go based on a video depiction of the eventual crime scene. This technology assists Tom Cruise working in the pre-crime division to foil the plans of potential criminals.

While technology has yet to catch up to Steven Spielberg's imagination, it is providing dispatchers with the means to direct emergency response teams in ways that were once inconceivable. High-speed connectivity, live video streams, mapping technology and highly portable communication devices are all emerging applications designed to increase the productivity of public safety personnel.

Current Wireless Dispatch Solutions

Wireless technology has made broad leaps in public safety communication. Mobile computing devices are smaller and more powerful than ever before. Technology has dramatically improved the rate at which information is processed. Laptops and handheld computing systems allow law enforcement officers to spend more time involved in community-oriented policing efforts.

Photo courtesy of James Hernandez.

Reduced Workload

Taking advantage of these improvements, communication centers can maintain a higher level of productivity by reducing their workload. For instance, mobile communication enables law enforcement to query databases directly from their patrol cars or even on foot. This frees up dispatchers to concentrate on managing calls without being interrupted by routine queries like driver's license checks.

"It's nice that officers can run their own queries," says Pat Joy, dispatch supervisor for the Pima County Sheriff's office in Arizona.

Using mobile software in patrol cars, Pima County officers are linked to state and national databases by a TCP/IP connection, so they can access information beyond their local database. **Figure 1 (page 55)** shows officers performed more than twice as many queries as dispatchers

during a sample six-month period. More queries in the field frees up dispatchers to concentrate on other priorities.

Efficient Workflow

Voiceless communication between dispatchers and officers also provides a more efficient workflow. While dispatchers input call information, this information is viewed simultaneously by response units who are able to update the status of the call, informing dispatch of their arrival and completion for each call without using the radio.

"In some cases, we're seeing a faster response from officers, because they can be en route to a call before it is dispatched," explains Joy.

Maintaining radio silence is particularly useful to law enforcement. Officers from the Thatcher Police Department in Arizona identified an individual with an outstanding arrest warrant when they ran a query from a laptop on a homeowner's name and address. The individual had been monitoring police activities using a scanner. The officers successfully made the arrest because they maintained radio silence.

Current technology also puts the dispatcher in more control of a situation. Using CAD mapping technology, dispatchers can provide visual intelligence about an area including street names, landmarks and specific buildings. The dispatcher can orchestrate the movement of units on a map, providing real-time guidance and direction of the best routes, and more rapidly send this information to units through voiceless communication.
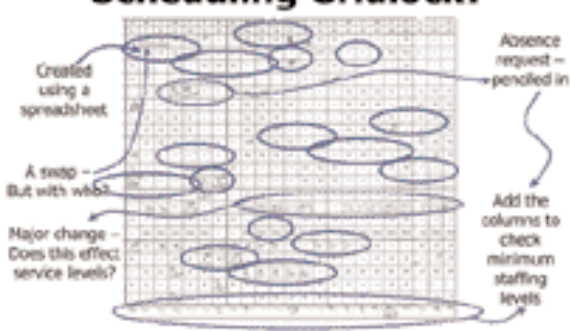
A New Era in Voiceless Dispatch

Many of the future improvements in wireless technology will be made from service providers—including improved availability and coverage of their services. Many law enforcement agencies use wireless connections to query and communicate information from the field. However, wireless carriers are expanding their network coverage, making high-speed connectivity cheaper and more available. More agencies are moving to broadband services, which enable them to use streaming audio and video, as well as image-rich applications, such as fingerprinting.

Streaming Audio and Video

Being able to receive streaming audio and video enables emergency response personnel to provide a live video feed from

Figure 1

Sample from Pima Co. Sheriff's Office, AZ (2003)

Legend: Dispatch, Mobile Patrol. Y-axis: Number Of Queries. X-axis months: July, August, September, October, November, December.
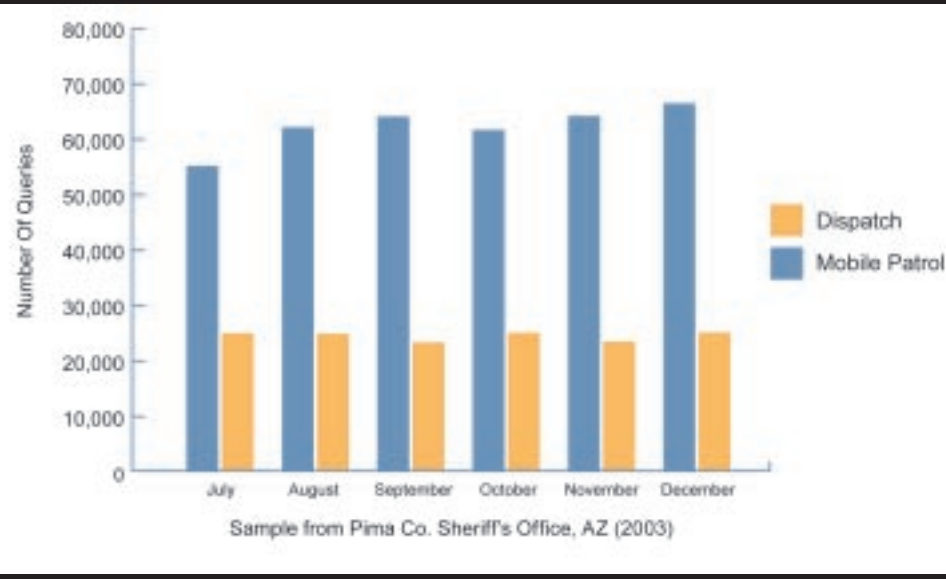
Figure courtesy of Pima County Sheriff's Office.

The dispatcher can orchestrate the movement of units on a map, providing real-time guidance and direction to the best routes, and more rapidly send this information to units through voiceless communication.

their vehicles to the dispatch center, or even other emergency units. Rather than working blind, responding units and dispatchers will have a visual depiction of the scene before or while other units are en route, ensuring the safety of field personnel, and the effectiveness of the communication center.

For example, an area high school and middle school in Logan, UT, installed a network of security cameras. Each camera is assigned its own IP address. If an incident occurs, responding Logan police officers can use a Web browser to access live video on laptops from their patrol cars.

In California, the Seal Beach Police Department installed a network that transmits the output of bank security cameras during an alarm directly to dispatch and responding units. This live video system provides real-time access to the crime scene, enabling dispatchers to direct units and provide a description of suspects, vehicles and possible escape routes.
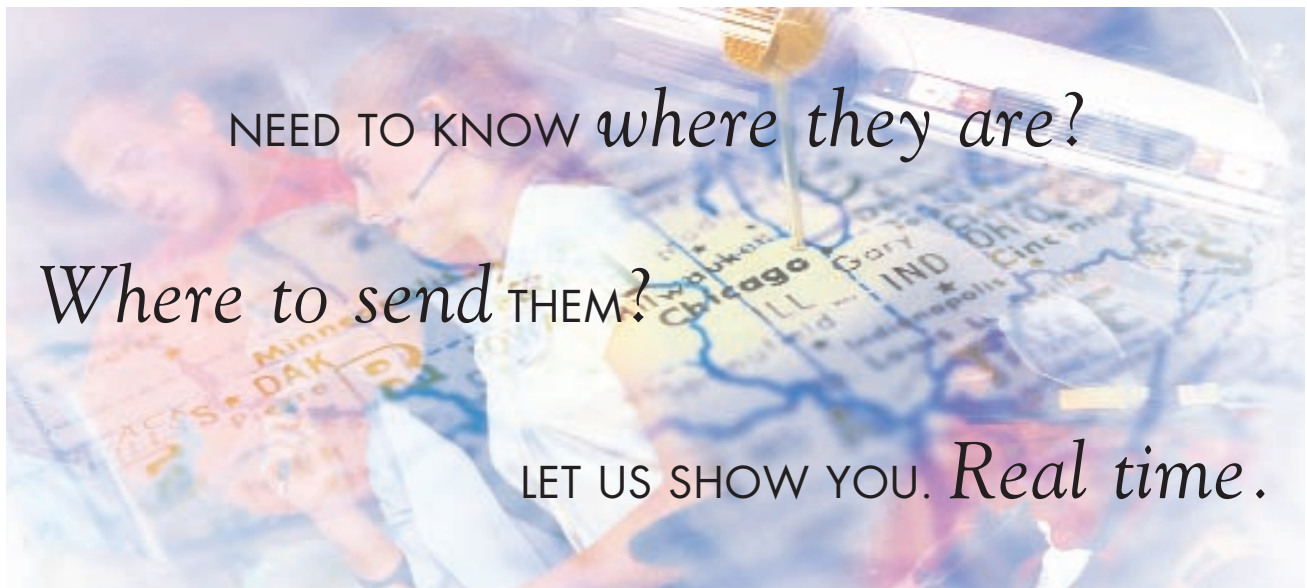
Improving Response Time

Enhancements to automatic vehicle location (AVL) systems provide a notification when various vehicle systems are accessed or engaged. For example, an alert may be sent to the dispatch center when a patrol unit's siren is turned on, the speed of the unit increases, a gun is removed from its place or an officer leaves the car seat. This type of technology is geared to protect the officer, as well as improve response times.

Another emerging technology is the automatic collision notification (ACN) system, which immediately connects vehicle crash victims with emergency care from the dispatch center. A box containing motion sensors and a GPS chip is placed in the car. When an accident occurs, the GPS sends the coordinates of the vehicle to a dispatcher and a wireless voice link opens, allowing the dispatcher to obtain additional information from vehicle occupants.

Challenges Facing Dispatchers

Despite the growing use of wireless solutions, there are some barriers to implementing such services. One of the major challenges is interoperability. Interoperability is the ability of public safety agencies to exchange voice and data on demand, in real-time and when needed.

In a publication called, "When They Can't Talk, Lives are Lost," from the National Task Force on Interoperability (NTFI), there are five reasons public safety agencies are not interoperable:

1. Different agencies use different radio frequencies that may be incompatible.
2. Limited funding exists to obtain and update equipment.
3. Planning is limited and fragmented.
4. Agencies are hesitant to share control.
5. There is a limited amount of radio spectrum dedicated to public safety.

Additional challenges may include geographical terrain and the limited reach of wireless networks. According to the same NTFI publication, commercial systems can be overloaded or unavailable during severe crisis situations.

Another major challenge is receiving funding to obtain and maintain a wireless infrastructure. Equipment costs, service fees and licenses must all be calculated when purchasing technology. Federal grants provided through the Department of Homeland Security and Department of Justice programs offer some funding opportunities, but resources remain limited.

Outlook

While the future of wireless technology will never be able to predict emergency situations, and a department such as Tom Cruise's pre-crime division is unlikely, there are some current and emerging technologies that are making significant impacts on the efficiency of public safety response personnel. Such solutions will ultimately make information more accessible and trim down response times to ensure community safety. **ENPM**

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