



The Changing Face Of Public Safety Communications

Public safety communications must be intuitive, ergonomic and 100 percent reliable.

By Pam Baker

First responders are expected to bring order to chaos, but sometimes their own tools can add to the confusion. “I don’t think we would be seeing as much progress in public safety communications as we are, if it hadn’t been for 9/11,” says Chuck Wexler, executive director of the [Police Executive Research Forum](#), a Washington, D.C.-based think tank for law enforcement around the world. “That day was a wake-up call around the world that underscored the importance of communications, interoperability and redundant systems.”

There have been astounding technological advances. There are more devices; some mount in vehicles, others up close on helmets or faraway on street corners; still others tuck away in uniform pockets or clip discreetly to lapels. Applications gather evidence — mug shots, reports, crime records and court orders — as digital information resulting in data becoming more available over wireless broadband than

ever before. But all of this technology must be simple and transparent for the end user, or it won't be used at all.

“When the gee-whiz people forget the users and the environment they work in, the technology is doomed to fail and will ultimately end up tossed aside,” says Jay Reardon, executive director of [MABAS](#), a mutual aid organization, and a retired fire chief of the Northbrook Fire Department in Northbrook, Ill.

Intuitive Technology

In a crisis, first responders don't have time to call a help desk. Public safety communications must be highly intuitive and easy for first responders to use under stressful conditions so that the devices and systems become “second nature” to the user. If tiny keys are difficult to press with fingers encumbered by protective gloves, or if a device requires a responder to take his eyes off of an emergency situation when an audible alert would be preferred, the effectiveness of the technology becomes diminished at the scene of an emergency.

“Critical features include ease of use and simplicity, multiple ways of use in case circumstances prevent access by one method, and the utmost of reliability – it must never fail,” says Craig Fraser, director of management services at the [Police Executive Research Forum](#), (PERF).

To the end-user, second-nature communications means being able to communicate anywhere, anytime to the appropriate person, with instant awareness of the right information via easy-to-use intuitive devices.

“Firefights do more than fight fire,” Reardon says. “Our work is intense, dangerous and diverse. The technology has to be able to assist in conditions where the firefighters senses are compromised or dulled — by the environment or the protective gear — and their focus is elsewhere.”

Second Nature

All aspects of a device or technology must meet the following expectations: interoperability, reliability, coverage, capacity, control, and instant, real-time communications with devices that have excellent ergonomics and intuitive interfaces suited to the environment in which they must operate. Omission or substandard performance in any of these areas could jeopardize the “second-nature” intent.

Previously, these aspects were dealt with separately or only partially. Interoperability is a high priority for agencies all over the world and represents the end user desire to communicate to anyone, anywhere. Yet interoperability alone will not deliver a second nature communication system. Having interoperability on a device that is difficult to use in a demanding emergency situation is of little use. First responders and

agencies demand more. For truly second-nature technology to exist, all of these aspects must be addressed in totality to avoid a single weak link resulting in a frustrating experience.

“It’s a real challenge to connect some 17,000 to 18,000 police agencies with all the different responders,” Wexler says. “There are huge changes in how departments are dealing across all the different lines.”

It Must Work

Behind all of this is the implicit assumption that mission critical devices and technology will work in extreme conditions when other forms of communication may fail. This is where careful planning, deployment, integration and exhaustive testing are important. Reardon says there are two elements in firefighting: the strategist (command post) and the tactician (ground forces).

“For the strategist, the technology needs to be able to sort through all the information coming in, and deliver the most critical [information] first,” he says. “It also must walk the strategist through the decision-making process. For the ground troops, it must be intuitive and receive info from command without distracting the tactician. It must also be usable with little effort in multiple modes so a firefighter can use it even if he can’t see, because of smoke or his own sweat running in his eyes; he can’t touch it because his hands are occupied carrying a victim; or he can’t be heard speaking over the noise of the catastrophe. Absolutely nothing can be taken for granted by its operation.”

If an application does not perform as anticipated, the experience is frustrating and possibly dangerous. The end user doesn’t care where the fault lies when the result is impaired performance. One failed deployment can have dire consequences for any future initiatives so it is vital to place technology that’s second nature as the key directive. It requires considerable upfront planning, commitment, persistence and coordination.

“If done right, technology that is second nature allows first responders to focus on the mission not the technology,” says Thomas Quirke, director of Solutions Marketing at Motorola. “This is the future challenge of mission critical communications.”