Technology & the Evolution of Worker Safety

By Joe O'Brien & Ted Smith

We live in a connected world. Connected technology is ever-present in most of our lives today as the Internet of Things (IOT) expands. Our mobile devices are always at arm's reach to help us navigate freeways, track our fitness and sleep, save energy at home and provide greater organization at the office. These same technologies can make our work more productive and efficient. They are transforming and optimizing communication, planning and work processes in many industries. Why not utilize these technologies to improve workplace safety?

Today's Safety Programs Lead to Plateau

Historically, the science and practice of safety has been focused on injury reduction. While this is obviously a worthwhile endeavor, it is currently done in a mostly reactive manner. Organizations respond to incidents by conducting thorough investigations and using the information gathered to develop or improve upon processes to prevent recurrence. Too often, safety performance is still measured by looking backward, with few leading indicators. Real-time indicators are rarely used.

Many safety professionals use old data to make decisions and take action too late. This results in millions of dollars spent on training and management, and millions of hours spent engaging workers across all industries based on lagging indicators. This cycle continues when safety professionals use the same manual safety processes for data collection, analysis and communication. When continuing to use these traditional methods, safety professionals miss opportunities for engaging workers and increasing their efficiency; as a result, safety program investments begin to plateau.

Leading companies are finding that incremental increases or changes in the focus of a safety budget no longer deliver a corresponding reduction in incidents. Worker engagement in safety along the path toward zero incidents and other specific safety goals is proving elusive to organizations of all sizes and across all industries. Contrary to traditional safety beliefs, adding training hours is not a sustainable solution for continuous improvement. Regardless of how many training hours they have attained, workers experience limited capacity to predict and prevent incidents once they leave the safety training setting. Many factors that vary per individual are responsible for this disconnect between the classroom and the workplace: competing priorities, reaction time, perception of risk, and other individual and psychological differences.

Worker-Driven Safety Communities

Connected technology is currently underutilized to bridge the safety performance improvement plateau. The use of smart devices in the workplace that are connected to the IOT can reduce inefficiencies that are associated with traditional safety processes. With connected technology in the workplace, the process of identifying unsafe conditions and behaviors can be expedited, ensuring that critical decisions are made and executed by the right personnel in real time. Several traditional safety processes can be combined in one step by leveraging IOT, which includes many devices and equipment that most companies already have in place.

The practice of safety is at an evolutionary crossroads. Safety professionals understand that an engaged workforce means a safer workforce, and many struggle to build engaged teams using traditional management-driven processes that measure incidents rather than risk. The individual worker is in the best position to impact the safety of him/herself and that of other workers. Leading companies have accepted this theory and are using new technologies to connect and engage individual workers with the goal of optimizing team safety for injury protection.

Traditional management-defined safety cultures are becoming worker-driven safety communities. In a safety community, workers own the processes that keep them safe by connecting with their team in real time to enhance work site awareness, hazard and risk identification, mitigation of unsafe conditions and behaviors, and effective safety communication across all levels of workers at a site. Innovation drives engagement in a safety community where each worker, regardless of title, has the opportunity to guide the improvement of the company's safety performance.

Leverage Technology to Break Through Plateaus

Any safety program, whether traditional or progressive, involves a lot of data. Inspection and investigation findings, worker training metrics, and injury and illness data can overwhelm even the sharpest safety professional. Safety professionals can learn from other industries that have adopted technology to streamline workflows and gather intelligent, informative data to overcome this common plateau in improvement by using data in a smarter manner. Data in real time and throughout the weeks, months and years can be enhanced using connected devices.

Evolution of Worker Safety Is Happening Now

Such safety technologies are available today. Simple, cost-effective devices with site-deployed networks enable highly engaged workplace teams. This allows the practice of safety to evolve in real time, thereby preventing injuries before they occur. Contextual data streams allow organizations to make smart decisions about workplace risks and efficiently deploy resources to help manage them.

By deploying smart and connected technology, workers can streamline safety with production and quality demands. Companies of all sizes can go beyond traditional manual safety
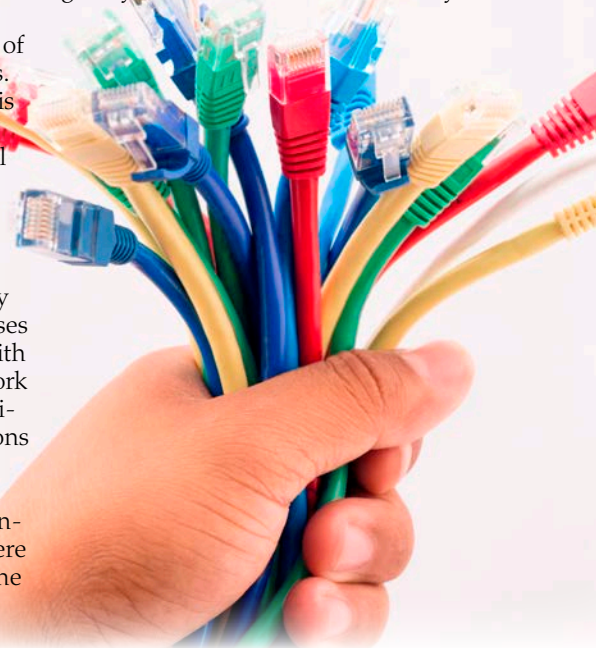
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processes and adopt technologies that provide frontline workers with critical information, data and support in a platform with the ability to communicate in real time with peers, supervisors and the safety department. Integrating this platform with PPE via wearable sensor technology further facilitates more efficient data collection and seamless communication.

For decades, safety product manufacturers have improved upon safety glasses, hard hats, gloves and hearing protection. Companies use smart technology and sensor integration but these are typically product specific and lack integration with other equipment or platforms. It is not practical for an organization to adopt multiple unconnected pieces of smart PPE that rely on the support of many different applications on workers' phones. This defeats the purpose of efficient communication. With IOT, the opportunity exists for a platform that unifies these technology concepts with information sharing among multiple pieces of PPE that connect to larger-scale corporate and safety indicators.

Many companies are beginning to recognize the benefits of a data-driven safety community. Today, safety programs compile data manually, making analysis and quick action difficult. By integrating technology such as connected devices, companies can look forward to new efficiencies by allowing team members to receive and act on data in real time, ultimately preventing injuries and related costs.

A device that equips every worker with the information and technology to communicate with peers in real time can dramatically decrease costs related to time spent conducting inspections, preparing for or participating in training and investigating incidents. This decrease in costs can be achieved by more efficient worker interactions and more efficient safety program management by supervisors, ultimately leading to reduced injuries and insurance premiums.

Joe O'Brien and **Ted Smith** are cofounders of Corvex (www.corvexsafety.com), an innovator of safety technology for the connected workforce. O'Brien and Smith bring together decades of experience and deep expertise in safety and enterprise software. They are both members of ASSE's Northwest Chapter.