by Glenn Cullen

The Role of Technology in Health & Safety

As the ability to manage workplace health and safety in real time grows in importance, new and ever-increasing roles for technology are becoming more and more apparent. The ability to use and apply technology is exciting, but the need to focus on relevant uses that fill gaps is key in ensuring workers will actually adopt and use the new solutions. Additionally, incentivizing ongoing user behaviour is an important aspect of introducing technology into health and safety procedures, while ensuring that the technology becomes ubiquitous.

This is no easy task as the landscape is complex and diverse; in Ontario alone, the public sector consists of over 1.6 million workers and more than 10,000 firms across education, healthcare, emergency services, government, and First Nations sectors. Introducing innovations in technology to drive safer workplaces can only be achieved through collaboration and knowledge transfer. To know where best to focus our resources and develop technology, we need to understand what factors indicate compliance risk. Ultimately, it's about how we can use technology to tailor the end product to best meet workers' health and safety needs. Some of the ways technology is benefiting health and safety management in the public sector are through the use of wearable devices and mobile applications, along with increased functionality and sophistication of websites, yielding relevant, real-time information for workers and employers.

Wearable Technology

Previously limited to use within health and wellness applications, "wearable technology" is now being used to drive innovation and productivity in business environments, such as the mining industry. Fatigue is an emerging health and safety hazard; a fatigued worker is 70 percent more at risk of a workplace accident than his or her non-fatigued colleague. With the help of wearable wristbands that measure sleep patterns and circadian rhythm, workers can more effectively manage potentially unsafe working conditions by being able to identify fatigue as a risk factor.

If workers are isolated or alone on the job, a firm understanding and assessment of possible health and safety risks is imperative. Wearable devices can not only provide accurate pictures of risk, but they can also help bridge the gap to ensure worker safety and wellbeing when working alone. For example, individuals working alone can benefit through the use of wearable technologies, such as personal alarms, that workers can use to call for help if a situation arises.

These are just some examples of how wearable technology is working to address occupational health and safety hazards. Other projects are currently applying similar technologies to support workers at high risk of back strain, carpal tunnel syndrome, repetitive strain injuries, and other musculoskeletal disorders.

Mobile Applications

Mobile devices have become integral to the way we conduct our business and, in some cases, are essential to all facets of our life. The diversity of mobile applications in the health, wellness, and safety sector is growing. We are now seeing mobile applications that provide workers with quick and engaging lessons based on cognitive behavioural therapy designed to help individuals deal with feelings of depression and anxiety. There are also applications that can help identify workplace mental health issues that require attention and support in the workplace.

Further, location-based mobile advertising can target workers according to their geolocation to deliver certain content or serve a particular advertisement and get the message out. As long as people have agreed to allow their apps to capture information about their whereabouts, targeted messages can appear within their mobile games, where they access the news, or map their routes home. For instance, using this technique, it is possible to deliver a fall-prevention

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or working-at-heights message to construction and municipal workers once they are within the geofenced area of their workplace, or a predetermined virtual barrier. This keeps important messaging top of mind and can strike an emotional chord, reminding workers to take care on the job. Technology can ultimately provide better tools to protect workers by using content and an engaging approach that is already ubiquitous in their everyday life.

Finally, we are seeing an increase in the use of mobile applications for event reporting. Municipalities are seeking new ways to communicate with their citizens using live website reporting applications. This type of technology can inform and provide response activity updates using live GPS tracking. Currently, this is commonly used for tracking snowplough activity in real time. The public can monitor activities and receive updates during weather events from public works management. Such technology helps to bridge gaps between municipalities and citizens, and the public can appreciate the connection to worker activity and their fleets.

Another angle on event reporting is using similar technology to report potholes, malfunctioning streetlights, and other compromised road conditions. This allows for two-way communication and appeals to tech-savvy users. Ultimately, it makes for safer communities and efficiencies to decrease phone and foot traffic.

Technology-Driven Learning

Learning through electronic or mobile devices has steadily been growing as a preferred form of learning. The online world has influenced everything we do, including how we search, shop, and sell. So, adapting how workers learn has become a focus for many health and safety professionals. Developing eLearning for the health and safety market requires developers to work closely with health and safety experts and instructional designers to customize solutions that will fit with workers' training needs. Using eLearning as an option for organizational health and safety programs makes sense in that you:

- pay for only what you need;
- enjoy reduced barriers to buy; and
- take advantage of tracking and certificate generation.

As eLearning becomes an increasingly popular method of instruction, workplaces are discovering various ways in which to customize course material and keep workers engaged. Blended learning, for example, combines eLearning with classroom learning. The combination is resulting in a more convenient, productive, and efficient method of teaching worker health and safety. In the case of Certification Part 1 for Joint Health and Safety Committees training, blended certification training can combine online modules and classroom training. The advantage of blended training is that the eLearning component allows you to complete the modules on your own time and at your own location, which is shown to improve efficiency and personalize the learning process.

Workplace Awareness

Being aware of new technologies and having the desire to integrate these technologies into current systems and strategic plans helps to:

- transform a business model and develop solutions;
- collaborate and structure for growth; and
- understand and innovate to better serve communities and worker health and safety needs.

Leveraging insights from new technologies, and how they can relate to worker health and safety, workplaces can better understand and address issues. By taking a leadership role as it relates to technology, organizations can provide a channel to communicate health and safety information, as well as provide access to products and information that may otherwise have been difficult for workers to obtain. *MW*

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