



Property & Casualty

## Technology and Workplace Safety



### How You Can Use Technology to Boost Workplace Safety.

According to the U.S. Bureau of Labor Statistics (BLS), 5,703 fatal work injuries were recorded in the U.S. in 2021 — an increase of 6% compared to 2020. This staggering statistic highlights the importance of prioritizing workplace safety to prevent fatalities and protect employees from harm. It underscores the need for robust safety measures, comprehensive training programs and ongoing efforts to mitigate workplace hazards across industries.

Beyond traditional safety measures, harnessing the potential of technology can contribute significantly to a safer work environment. By embracing technological advancements, businesses can leverage innovative solutions that proactively address potential hazards and streamline safety processes. Have you considered these technologies for your business?

**Exoskeletons** — This wearable technology device can help prevent injury by providing support and assistance to workers during physically demanding tasks, reducing the strain on their muscles and joints. Exoskeletons can enhance strength and endurance, improve ergonomics and reduce the risk of musculoskeletal injuries, enabling workers to perform their jobs with reduced fatigue and improved safety.

**Virtual Reality (VR) and Augmented Reality (AR)** — VR and AR technologies are used for immersive and interactive training experiences. They simulate hazardous scenarios, allowing employees to practice safety protocols and make informed decisions in a controlled environment. By familiarizing employees with potential risks and appropriate responses, these technologies can help prevent accidents and injuries in the workplace.

**Wearables** — Wearable devices, such as smart helmets, safety vests or wristbands, are equipped with sensors that monitor vital signs, posture or exposure to hazardous substances. They provide real-time feedback to employees, with reminders to maintain proper ergonomics, take breaks or avoid potential dangers, thus reducing the risk of injuries.



**Smart Sensors and Monitoring Systems** — These technologies use motion sensors, environmental sensors and proximity sensors to detect potential hazards in real time. They alert employees and management to potential dangers, helping to prevent injuries caused by collisions, hazardous substances or unsafe conditions.

**Drones** — Sending drones into high-hazard areas instead of humans helps safely assess damage and plan for emergency response.

### Using Data Science And Artificial Intelligence To Identify Hazards

Aside from new devices, data science is enabling companies to analyze photos from job sites and scan them for safety hazards, using an algorithm that correlates the images with their accident records. This innovative approach allows organizations to identify potential safety risks more efficiently, proactively addressing them before accidents occur and improving overall workplace safety.

Additionally, the integration of artificial intelligence (AI) and machine learning algorithms in this process enables continuous improvement and adaptation based on data insights, leading to a more comprehensive and effective hazard identification system.

Although the technology still needs some fine-tuning, companies can use such algorithms to rate project risks. As a result, the technology could prove extremely helpful in detecting elevated threats and intervening with safety briefings. AI can contribute to enhancing workplace safety with these features:

**Risk Prediction and Prevention** — AI algorithms can analyze large volumes of data, including historical safety records, incident reports and environmental factors, to identify patterns and predict potential risks. By proactively identifying safety hazards, AI systems can help companies take preventive measures to mitigate risks and prevent accidents before they occur.

**Real-Time Monitoring and Alerts** — AI-powered systems can monitor workplace environments in real-time using sensors, cameras and IoT devices. These systems can detect abnormalities, unsafe behaviors or hazardous conditions and issue immediate alerts to employees and management. Timely notifications enable swift action to promptly address potential safety threats.

**Predictive Maintenance** — AI can analyze data from machinery, equipment and sensors to predict when maintenance or repairs are needed. By identifying potential equipment failures or malfunctions in advance, AI systems can help prevent accidents caused by faulty machinery while reducing downtime and improving overall safety.

**Intelligent Video Surveillance** — AI algorithms can analyze video feeds from security cameras to detect unsafe behaviors, unauthorized access or potential hazards. This technology can aid in identifying and addressing safety violations promptly, ensuring compliance with safety protocols and regulations.

**Data-Driven Insights** — AI algorithms can analyze vast amounts of safety-related data to identify trends, root causes of accidents and areas for improvement. These insights enable organizations to make data-driven decisions, implement targeted safety measures and continuously enhance their safety protocols.

By leveraging AI technologies, companies can enhance their safety programs, reduce workplace hazards and foster a proactive safety culture. It's important to note that AI should be integrated thoughtfully and in alignment with organizational needs, ensuring ethical considerations, data privacy and proper employee training to maximize the benefits and effectiveness of AI for workplace safety.

### Time To Get On The Cloud

Storing safety-related data in the cloud allows for easy access and retrieval from any location or device, enabling efficient sharing of information and collaboration among team members. Centralizing safety management systems in the cloud simplifies administration, enhances visibility and facilitates better monitoring of safety performance.

Real-time communication and collaboration tools in the cloud promote quick dissemination of safety alerts, sharing of information and coordination of safety initiatives. The scalability and flexibility of cloud-based solutions enable organizations to adapt to changing safety data volumes and business requirements.

Additionally, the cloud offers advanced security measures, data encryption and reliable disaster recovery capabilities, ensuring the protection and integrity of safety-related data. Overall, leveraging the cloud in workplace safety efforts enhances efficiency, collaboration, accessibility and data security.

The cloud offers significant advantages to businesses operating projects and crews in multiple locations, making it an invaluable tool for ensuring seamless information transfer and monitoring of workers' safety.

### Successfully Deploying New Technology

Proper deployment is crucial for maximizing the value of new technology investments. While it's tempting to be captivated by the "wow factor" of technology, it's essential not to lose sight of the intended improvements. Without a well-defined deployment plan, the potential benefits of technological investments can go unrealized, resulting in wasted resources. By carefully strategizing and implementing a deployment plan, businesses can ensure that new technologies are effectively integrated, delivering the intended enhancements and driving meaningful outcomes.

Before seeking out new technology, consider ways to improve workplace processes. After improving these processes, it is easier to identify gaps that new technology can address. No amount of technology will help if the process first needs to be fixed.

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