

How Wearable Technology is Transforming Safety and the Industrial Workplace

There are many benefits to incorporating wearable technology in your safety programs.

For industrial companies around the globe, worker safety depends on always knowing where your workers are and what hazards they are facing, and then using that information to proactively improve safety protocols and procedures. All too often, though, companies lack the required visibility into their operations and workforce to properly mitigate risks. That's where wearable technology, or more specifically, cloud-connected wearable technology can help.

Wearable Technology is Already All Around Us

From tracking an Uber's location on a phone to checking heart rates on wrist monitors, wearable connected technology is already commonplace in our personal lives—and it's changing industrial safety protocols too. Environmental, health and safety (EHS) is going through an evolution in incident detection, avoidance, reporting and management through the rise of "connected safety" in the workplace.

With around 340 million occupational accidents and 160 million victims of work-related illnesses annually, according to the **International Labour Organization**, there's lots of room to improve. And it is modern technology that gives real-time, data-driven insights into safety on the ground that will enable quick and informed decisions to best protect workers' lives.

A Closer Look at Connected Safety

A connected safety solution is composed of a cloud-based software platform that connects to worker and workplace Internet of Things (IoT) safety-based devices, including wearable devices, to display data in real time.

It's basically the Industrial IoT (IIoT)—but with a safety focus. The IIoT refers to a network of interconnected devices used for designing, maintaining, monitoring, optimizing and analyzing industrial operations to gain real-time insights and make more effective decisions.

In the context of wearable technology, this means progressing from simple monitors with only personal alarms to a cloud-connected network of devices that can mix wearable gas detectors with area monitors, and even other sensor devices. Data flows into smart, cloud-based software for analysis and reporting with monitoring personnel able to communicate safety information back to devices. This results in a fully managed network of incident alerting, response and avoidance opportunities across your entire workforce and every site.

This data-driven approach is already revolutionizing industrial EHS, leading to improvements in worker safety, workflow, safety process automation and compliance. In fact, a 2021 **Polaris research report** predicts the market for connected safety will be some USD\$24.3 billion by 2029.

Configurable to a Variety of At-Risk Situations, From Lone Worker to Gas Exposure

Wearable safety devices are configurable, enabling you to get ahead of *all* the risks your industry workers face—whether from working alone, confined spaces, slips and falls or harmful gases and VOCs—often using a single device.

For example, Blackline Safety's G7 **personal wearables** protect lone workers, but can also be leveraged as single-gas, multi-gas or multi-gas pump devices. Transmitting gas and location-based sensor information directly to Blackline's cloud-based software platform Blackline Live, they have two-way communications functionality over satellite or cellular networks depending on the model. G7 can wirelessly connect a worker to a live monitoring team—meaning real-time help is always available, while GPS location monitoring pinpoints where your workers are in emergency situations.

The **Blackline Live portal** provides insightful data analytics with visualization dashboards, real-time visibility into incidents, and drill-down capabilities so you can monitor the safety of each employee.

The portal also facilitates remote device configuration, alert profiles and emergency response procedures; time-stamped GPS locations (including floorplan-based monitoring) and flexible integration with other enterprise software products such as SAP to make a fully connected workplace.

Six Top Benefits of Cloud-Connected Wearable Safety Technology

Real-time visibility into the safety status of all workers. Whether in a busy facility or in a lone worker situation at a remote site, with connected wearable devices and data-driven dashboards, you can monitor the safety status of every single employee, anywhere in the world. With G7, workers are protected by built-in cellular or satellite connectivity, keeping them always within reach, even when out of sight or sound. Full visibility into your entire worksite can also help to view and manage worksite evacuations and mustering operations in real time.

Leading indicators in the data allow for predictive, proactive safety. By using predictive models on specific accumulated historical data across a range of IoT devices, you're able to identify patterns and, thus, key indicators to forecast where and when incidents are more likely to occur. Proactive analysis allows you to change procedures, behaviors and responses quickly to avoid incidents. This reduces downtime in the case of planned events like turnarounds and shutdowns—and unforeseen events like gas leaks.

Streamline safety processes. Cloud-connected wearables constantly stream data direct-to-cloud. By eliminating manual uploads and through automated reporting, there is no delay in accessing data and no human-fallible link in the measuring and reporting process. And with real-time data, help can be dispatched with full awareness of what risks are present, so responders arrive prepared to handle every situation.

Compliance reporting in real time. Industry regulatory compliance in safety and audits can cause nervous headaches for managers. With connected safety technology, you gain full confidence that you are always compliant. Blackline Analytics, for example, gives you sight of workers using noncompliant devices based on your organization's bump and calibration procedures, allowing corrective action to ensure they stay safe. Since IoT device firmware and settings are automatically updated without needing to dock devices, this means they are always up-to-date and up-to-code, with no downtime required.

Worksite efficiency. With wearable technology, jobsite activity can now be monitored remotely, decreasing the number of employees needed on-site and, in turn, significantly lowering safety risks across the board.

IoT cloud-connected G7 devices from Blackline Safety are GPS-location enabled, so you can identify worker time and location, seeing where safety and efficiency improvements can be made. Custom reporting using your data can identify patterns, insights and opportunities for facility layout improvements, changes in shift management, contractor behaviors and resource scheduling.

Data-driven analysis ensures site operators make informed and insightful decisions to translate patterns into efficiency and digitally transform the workplace.

Layers of communication. It's important to understand the value of communication when it comes to safety. The ability to communicate no matter where a worker is and under any critical circumstance could save that worker's life. Wearable safety devices can offer flexible communication solutions that fit the unique needs of your industrial worksite to protect those at risk.

For example, all G7 **wearables** have built-in layers of communication and, when paired with live monitoring, provide a critical lifeline between your people and the help they need during an emergency, health event, dangerous situation, poor weather conditions and more:

- Manual, patented SOS latch so workers can send an emergency call for help
- Automated no motion, fall detection and missed check-in capabilities let G7 send an alert when your people can't
- Two-way voice communication so first responders can connect directly with workers during an emergency to best assist
- Optional push-to-talk function

This combination of features allows workers to be connected, protected from hazardous gases and to communicate, all while carrying less equipment throughout the workday.

Real-World Case Study Demonstrates Benefits Of Wearable Technology

A project with a major construction contractor in the UK used a connected safety device to understand worker locations and time spent on site, including time in specific locations. The data generated allowed the company to identify how long each task or element of it was taking each worker. This data was then compared with the original work plan. The company was able to identify productivity gains in terms of both worker efficiency, planning and task design. Ultimately the project proved that better visibility into what was happening could lead to significant ROI benefits on future projects. Add in worker safety capabilities, and you've got a proven solution to drive efficiency, reduce risk and better protect people.

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