

A black and white photograph of a worker in a hard hat and safety glasses, looking down at a control panel with various buttons and displays. The image is partially obscured by a dark overlay.

Understanding connected safety

the future of workplace operations

Forecasting a Connected Future	1
Mobility Transforms Safety	2
Dissecting Connected Safety	3
Deploying Connected Safety Technology	4
The Worker Safety Impact	5
Unpacking the Bottom Line Impact	6
Understanding the Industrial Scientific Difference	7
Embracing Connected Safety Technology	8





Forecasting a Connected Future

The demand for workplace safety solutions is growing. Businesses across the globe are expected to **increase their environmental health and safety budgets 4%** in 2019 as they seek out and implement the latest tools and techniques for protecting their personnel.¹ Unfortunately, a significant portion of this new budgetary bandwidth will likely go toward compliance-centered software and hardware made to meet the minimum regulatory requirements and little else.

One way to improve worker safety, even in the most fraught conditions, is through connected safety solutions. These innovative EHS offerings allow companies to monitor employees and worksites in real time and limit exposure events that injure skilled workers, drag down morale, and decrease the bottom line.



Mobility Transforms Security

The emergence of “internet of things” (IoT) technology has spurred operational transformation across numerous industries as it gives businesses the power to create backend infrastructure that supports data sharing. Connected safety solutions rank among the many innovations associated with this development.

These platforms typically feature two primary modules, beginning with cloud-connected monitoring devices and personal protective equipment (PPE). These wearable assets, which include gas detectors, hardhats, and fall protection can monitor workers and the environments in which they function and collect real-time insights. Connected PPE deployments then deliver the information they collect to centralized software portals, where EHS leaders can monitor conditions on the ground and gather historical data to improve safety.



Dissecting Connected Safety

Connected safety solutions function effectively in multiple settings, including the harsh industrial environments found at manufacturing plants, mines, oil and gas production sites, and hazardous material storage locations. But what does connected safety look like? Some examples include:

- **Teams** working in confined spaces use connected gas detectors to automatically alert attendants when conditions become unsafe—giving them the information they need to act in the moment and reduce second guessing.
- **Safety managers** use connected gas monitors to send muster messages to all employees in an evacuation zone and to know that everyone has reached the designated muster point.
- **Industrial hygienists** remotely monitor fencelines after a gas explosion to minimize the impact on neighboring communities.
- **Turnaround planners** use connected devices to monitor contractors and learn from their patterns of behavior, which helps with future planning.



Deploying Connected Safety Technology

Deciding to implement a connected safety solution takes buy-in from many people within an organization. Consider these steps to get started:

- 1. Understand program goals** — who and what do you want to monitor and how will you use the data?
- 2. Determine scope and budget** — it's OK to start small and build upon your solution, but you'll need to make sure you choose options that can scale.
- 3. Evaluate communication options** — wi-fi, cellular, satellite, peer-to-peer ad-hoc networks—to deliver the best-connected solution.

Once you have some basics outlined, starting the conversation with internal stakeholders like IT, safety, and operations becomes more effective.



The Worker Safety Impact

While American workplaces are the safest they have ever been—the nonfatal occupational injury and illness rate has fallen from five cases per 100 full-time workers to fewer than three cases per 100 full-time workers over the past 14 years—U.S. employees continue to sustain significant injuries on the clock.² Stateside organizations reported 3 million worker injuries and illnesses in 2017, approximately 5,100 of which resulted in death.^{3,4}

Connected safety solutions make it possible for businesses to protect their workers from harm through real-time monitoring and data-based hazard mitigation. This increases worker morale and productivity, and eases talent retention and recruitment efforts.

\$13,260 - \$132,598

penalty cost of compliance violations

\$161 billion

costs incurred by U.S. companies in 2017 following workplace injuries



Unpacking the Bottom Line Impact

Worker injuries and illnesses wreak havoc on corporate budgets. In the immediate aftermath of injuries, most organizations find themselves grappling with productivity decreases that translate to losses. They also take on additional expenses directly related to these unfortunate occurrences, including hospital bills and workers' compensation payments. Human resources spending goes up too, as recruiters rush to fill vacancies. Occupational health and safety inspectors have also been known to render increased scrutiny following injuries and can hand out violations that carry financial penalties ranging from \$13,260 to \$132,598 per instance of noncompliance.⁵

These costs add up to massive amounts. U.S. companies collectively incurred \$161 billion in worker injury-related expenditures in 2017 alone.⁶

Connected safety solutions help organizations address workplace hazards in meaningful ways and therefore reduce the budgetary burdens associated with injuries on the job.

Understanding the Industrial Scientific Difference

Companies worldwide are expected to spend more than \$400 million on connected safety solutions in 2019.⁷ There are many software and hardware providers navigating this growing marketplace niche, but few have an EHS innovation history as rich as Industrial Scientific.



Industrial Scientific has been partnering with businesses for more than four decades to deliver workplace safety equipment that protects workers and preserves the bottom line. The newest connected safety solutions build on this legacy, delivering advanced hazard monitoring and mitigation solutions that can be deployed across industries, from manufacturing to mining.



Embracing Connected Safety Technology

Connected safety solutions are ideal for organizations pursuing effective EHS techniques and tools, offering next-generation capabilities that serve workers and shareholders. Instead of devoting budgetary bandwidth to workplace safety tools of the past, businesses can focus on putting into place the EHS assets of the future.

Is your business interested in implementing a proven connected safety solution? Contact Industrial Scientific today to [learn more](#) about industry-leading offerings.

¹Verdantix, "Global EHS Leaders Survey 2018," 2019. | ²U.S. Bureau of Labor Statistics, "Employer-Reported Injuries and Illnesses — 2017," 2018. | ³U.S. Bureau of Labor Statistics, "Employer-Reported Injuries and Illnesses — 2017," 2018. | ⁴U.S. Bureau of Labor Statistics, "Census of Fatal Occupational Injuries — 2017," 2018. | ⁵U.S. Occupational Safety and Health Administration, "OSHA Penalties," 2019. | ⁶National Safety Council, "Work Injury Costs," 2019. | ⁷Verdantix, "Connected Worker Safety Devices Market Size and Forecast, 2019-2039," 2019.



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