WORKtoZERO

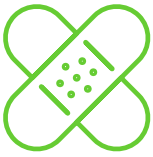
an nsc program

Making the Business Case for Safety Innovation

National Safety Council

Introduction

Injuries and fatalities in the workplace come at a high cost, both to the people and the organization. Even a single workplace incident can result in six- or seven-figure losses once the direct and indirect costs are accounted for. Consider the following:



The total cost of work injuries in 2023 was an estimated $176.5 billion, or roughly $1,080 per worker (Injury Facts, 2025a).

The estimated cost per medically consulted injury in 2023 was $43,000, while a single fatality averaged $1,460,000 (Injury Facts, 2025a).

In 2024, workplace injuries resulted, on average, in 80 lost workdays per injury, an increase of more than seven days since 2020 (Travelers Insurance, 2025).

According to OSHA's 2025 guidelines, employers can face fines of up to $16,550 for serious violations, and up to $165,514 for willful or repeat violations (OSHA, 2025a).

A 2022 study of 334 Ontario-based employers in manufacturing, construction and transportation found health and safety initiatives yielded "positive and substantial" returns between 24% and 114%, on average (IWS, 2022).

Over the past 25 years, the OSHA recordable injury rate has fallen by 64% (Injury Facts, 2024b). In the same period, the number of annual worker fatalities has dropped only 23%, with 4,543 preventable deaths occurring in 2023 alone (Injury Facts, 2025b). This stagnant trend in workplace fatalities is cause for concern for many safety professionals, as efforts to reduce workplace injuries have not had the same impact on reducing fatalities (Campbell Institute™, 2018; Ivensky, 2016). As a result, employers are increasingly turning to emerging safety technologies to drive reductions in serious incidents and fatalities (SIFs). This is further reflected in a 2023 survey of 500 employers across safety-sensitive industries, which found that 65% were researching or considering the adoption of new technologies (Work to Zero, 2024).

While many safety professionals see the value of innovation, it is not always easy to translate the benefits into financial or operational returns that also resonate with decision makers. This guide is designed to help employers build a clear and compelling business case by outlining the key benefits of innovation, strategies for reducing up-front and lifetime costs, and methods for calculating and communicating return on investment. Finally, it introduces twelve ROI calculators (see Appendix A) developed by the Work to Zero initiative at the National Safety Council, offering guidance on how to leverage their outputs to support informed, data-driven conversations with leadership.

Quantifying the Benefits of Safety Technology

Business leaders expect clear, quantifiable benefits before committing to major safety technology investments. According to Work to Zero (2024), 41% of employers reported their leadership team would be "unlikely to approve the purchase of new solutions," demonstrating that building a business case remains a key barrier to adoption. Effectively communicating both the measurable returns and the less-tangible advantages of innovation is essential to securing leadership buy-in.

Tangible benefits, such as reduced injuries, lost workdays, or medical or insurance costs, can be quantified and tied back to cost savings or productivity gains. Intangible benefits, such as stronger safety culture, improved employee morale, increased retention and mitigated retraining costs are more challenging to measure, but they often have lasting impacts across departments. While the impact of safety innovation varies by company size, risk exposure and operational maturity, modest improvements in incident reduction or efficiency often generate compounding value over time.

Table 1. Potential Benefits of Safety Technology

Tangible Benefits	Intangible Benefits
• Reduced workplace injuries, illnesses and fatalities[1, 2, 3, 4]	• Improved worker health and well-being [1, 3, 10]
• Reduced exposure to workplace hazards [1, 3, 4, 5, 6]	• Improved job satisfaction [4,10]
• Improved identification and awareness of workplace hazards [3, 5, 7]	• Improved talent recruitment and retention [11, 12]
• Improved regulatory compliance [2, 8]	• Reduced worker stress, anxiety or fatigue [3, 13]
• Improved productivity and efficiency [1,3,8]	• Improved product quality and customer experience [12]
• Reduced time spent on EHS processes [8]	• Improved consistency of safety initiatives across teams and locations
• Reduced workers' compensation and insurance premiums	

1 Dodoo et al. (2024)
2 Hossain et al. (2025)
3 Patel et al. (2021)
4 Rahman et al. (2023)
5 Nnaji & Karakhan (2020)
6 Zhou, Izizarry, & Li (2013)
7 Newaz et al. (2024)
8 Law (2025)
9 Powers Insurance and Risk Management (2025)
10 Katz et al. (2019)
11 Employers Insurance (2017)
12 Mittal, Piazza, & Singh (2024)
13 Moshawrab et al. (2022)

AES' Use of Drones for Boiler Inspections (Work to Zero, 2022)

In the energy generation sector, boilers play a crucial role in producing high-pressure steam, which is used to drive turbine blades. These systems demand regular inspection and preventative maintenance to ensure both their operational integrity and safety. Traditionally, these inspections have been both disruptive and hazardous, requiring boilers to be shut down and cooled for 36 to 48 hours. During this time, workers were exposed to hazards, including confined space entry, elevated temperatures, poor air quality and work at height. To mitigate these risks, AES Corporation deployed aerial drones and Gecko Robotics' wall-climbing robots to conduct thermal and visual inspections. This shift has significantly reduced the need for manual entry into the boilers, preventing over 60,000 hours of high-risk work and generating an estimated cost savings of at least $10 million, showcasing how targeted safety investments can deliver measurable safety, operational and financial impact.

Building the Business Case

More than 70% of companies investing in digital technologies fail to move past the pilot phase of implementation, citing issues including unclear business value, lack of leadership buy-in and organizational misalignment (World Economic Forum, 2018). Organizations that take a structured and strategic approach to innovation are far more likely to achieve lasting impact. The framework below outlines five essential steps for building a successful business case for safety technology, designed to help organizations move beyond pilots and toward meaningful, sustained adoption.

Figure 1. *Steps Toward Making the Business Case*

9 Powers Insurance and Risk Management (2025)

1. Align Safety Goals with Organizational Priorities

Investments that support organization-wide priorities are more likely to gain leadership buy-in, so it is critical to align the use of technology with the organization's strategic plan and ongoing initiatives (Law, 2025). Vague objectives like "improving safety" often aren't enough. Instead, clearly defined outcomes, such as reducing SIFs, reducing exposure hours, improving compliance or streamlining time-intensive manual processes are more effective in demonstrating value (see Table 2 for more examples). From there, having one or more aspirational goals for the technology, like driving improvements in organizational culture or building a proactive safety program, can help demonstrate a forward-looking mindset in an otherwise grounded approach.

It can also be helpful to identify where safety technology can support the goals of other departments. For example, effective safety programs have been linked to improved job satisfaction (Rahman et al., 2023) and talent attraction and retention (Employers Insurance, 2019; Mittal, Piazza, & Singh, 2024), which directly support the priorities of human resources teams. Wearables and other connected Internet of Things (IOT) systems have also been linked to improvements in operational efficiency (Dodoo et al., 2024; Law, 2025; Patel et al., 2021) and quality (Mittal, Piazza, & Singh, 2024), which can help drive revenue and boost customer satisfaction scores. The ability to translate safety outcomes into operational or financial benefits is critical, as the same investment may be framed as cost-avoidance for finance, increased efficiency for operations and cultural improvements for HR.

It is just as important to engage directly with frontline workers and the intended end users of the technology. Workers are often the best sources of knowledge for understanding workplace risks, as their firsthand experiences allow them to identify hazards, inefficiencies and emerging risks that may not be obvious during formal inspections or walk-throughs. Engagement doesn't have to mean formal meetings or structured safety huddles; it can also happen during everyday conversations. Use these moments to ask about the challenges workers are facing, the types of hazards they encounter, procedures that aren't working or technologies that could make their jobs better. Making safety personal, from executive leadership to the front line, helps ensure that the business case is both credible and broadly impactful.

2. Assess Readiness for Technology Adoption

At this stage, it is essential to have a realistic understanding of the budget, staffing and time available for a technology pilot. Ongoing conversations with key stakeholders, such as frontline workers and end users, IT teams responsible for implementation, and HR or legal teams that may need to update policies, can surface practical considerations early. These discussions can help determine whether the organization has the infrastructure to support the technology, and if it can be integrated into existing workflows without undue disruption.

An assessment of organizational readiness for technology adoption should include another common barrier to safety technology: employee distrust or resistance (Work to Zero, 2024). Workers may worry that tools, such as wearables or monitoring systems, will be used to track performance rather than improve safety. Others may resist changes to familiar routines or feel overwhelmed by new systems. Without clear communication about the purpose and benefits, new tools can seem intrusive or unnecessary, resulting in low engagement and poor adoption. To ease these concerns, consider a few strategies:

- **Transparency is key:** When introducing a new technology, clear and transparent communication is critical to building trust. Employees should understand why the tool was chosen, what it does, what data it collects, who can access that data, and how it will be used. Be honest about its limitations, expected outcomes and any changes to daily routines. Most importantly, show how the technology directly benefits workers, whether by improving safety, making tasks easier or making their work more efficient. During these discussions, it is important to also explain how the technology could potentially improve safety, productivity or performance. Use these interactions as an opportunity to collect valuable feedback on the feasibility of the new solution with your existing work systems.
- **Identify a digital champion:** A digital champion is an employee who helps introduce and support the implementation of new technologies by communicating the benefits, answering questions or addressing concerns, and offering peer-to-peer support. Small companies may even choose to take a team-wide approach instead of designating a single champion. Strong digital champions represent their peers well, communicate effectively across all levels of the organization, embrace technology with curiosity and flexibility, and provide meaningful feedback about what is working, and what is not.
- **Avoid punitive use:** Safety technology should be used to support and protect workers, not to punish them. If employees believe these tools are being used to discipline or monitor behavior unfairly, trust and engagement will erode quickly. Consider disciplinary action only when a worker's behavior poses a clear, intentional danger to themselves or others. Prioritize learning, coaching and improvement over enforcement, to build a culture where safety is shared, not driven through fear.

The Work to Zero program at the National Safety Council developed a free **Digital Readiness Assessment** to help you evaluate your organization's readiness to innovate and identify key steps to advance to the next phase.

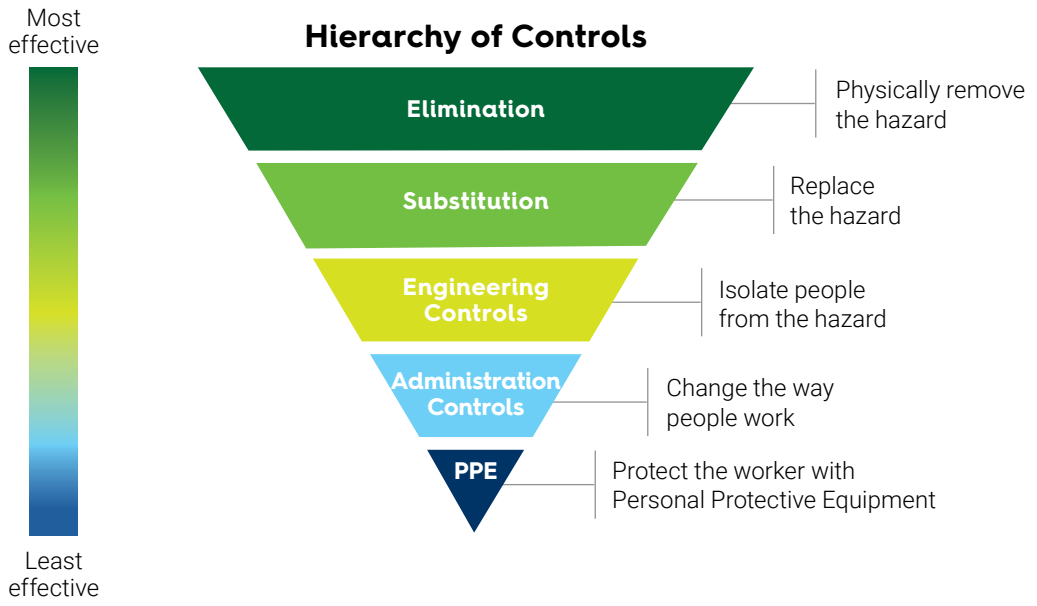
3. Identify Potential Technology Solutions

A clear, structured risk assessment helps you uncover hazards, prioritize your efforts, guide safety investments and measure improvements over time. Without it, safety initiatives and technology upgrades can become unfocused and ineffective. Start by identifying the jobs, tasks or environments where injuries are most likely to occur, or where the consequences could be severe. This should include a physical walk-through of your worksite to spot visible hazards such as unguarded machinery, moving equipment, exposure to hazardous materials or fall risks. This process should also include a review of any existing safety data (e.g., injury logs, near misses or OSHA logs) to uncover trends, recurring hazards, or overlooked risks. For each hazard, ask:

- **What could happen?**
- **How likely is it to happen?**
- **What are the consequences if it happens?**

Once hazards are identified, they should be prioritized by likelihood and severity, with focus given to those most likely to result in serious injuries or fatalities. From there, identify technologies that can help control or eliminate these risks (see Table 3 for examples). The Hierarchy of Controls (see Figure 2) is a useful framework for identifying and prioritizing approaches that will protect workers from hazards. Controls are arranged from the most to least effective, and they include elimination, substitution, engineering controls, administrative controls and personal protective equipment.

Figure 2. *The Hierarchy of Controls (NIOSH, 2024)*



Before investing in new tools, conduct an audit of existing systems that may support safety initiatives. For example, common workforce communication platforms like Microsoft Teams or Slack can be used to share hazard alerts, distribute safety policies to standard operating procedures (SOPs), or recognize safe behaviors through shout-outs or digital badges. Company-issued phones can also host a variety of free or inexpensive applications for tasks such as incident reporting, location monitoring, environmental monitoring or on-demand training. Repurposing familiar tools in this way can reduce costs, minimize disruption and improve compliance through systems that are already trusted by workers.

If a clear need for new technology has been established, the next step is selecting a solution that aligns with the organization's risk profile, strategic goals and available resources. A structured set of evaluation criteria can support confident, informed decision making (see Table 3).

Table 2. Considerations for Selecting Safety Technology

Effectiveness at Mitigating Risk	Select solutions that address the specific hazards, exposures or challenges present in the organization. Ask your prospective vendor for data, case studies or testimonials that demonstrate a solution's effectiveness in similar environments.
Integration with Existing Systems	Ensure that the new technology integrates with existing systems, to minimize disruption, avoid redundant processes, keep adoption costs low and keep key data accurate, up to date and consistent across platforms.
Ease of Use	Prioritize intuitive, user-friendly or familiar systems that require minimal training and can be integrated into daily workflows without significant disruption.
Compliance	Ensure that the technology meets relevant regulatory requirements (e.g., OSHA, ISO 45001 or industry-specific standards), and provides the documentation and recordkeeping to support regulatory compliance.
Ease of Implementation	Prioritize vendors that offer clear onboarding, on-site training and strong customer support. Cloud-based platforms, plug-and-play hardware or systems that integrate into existing tools can help reduce disruption and downtime.
Lifetime Costs	Consider the total cost of ownership over time, including subscription fees, maintenance, upgrades, training and any required hardware.
Scalability	A scalable solution should adapt to new hazards, expanding teams or additional locations without requiring costly overhauls or major reinvestments.
Data Management	Choose vendors with strong data protection practices, and communicate clearly about what data is collected, how it's stored, who can access it and how it will be used.

Table 3. Safety Technology Overview

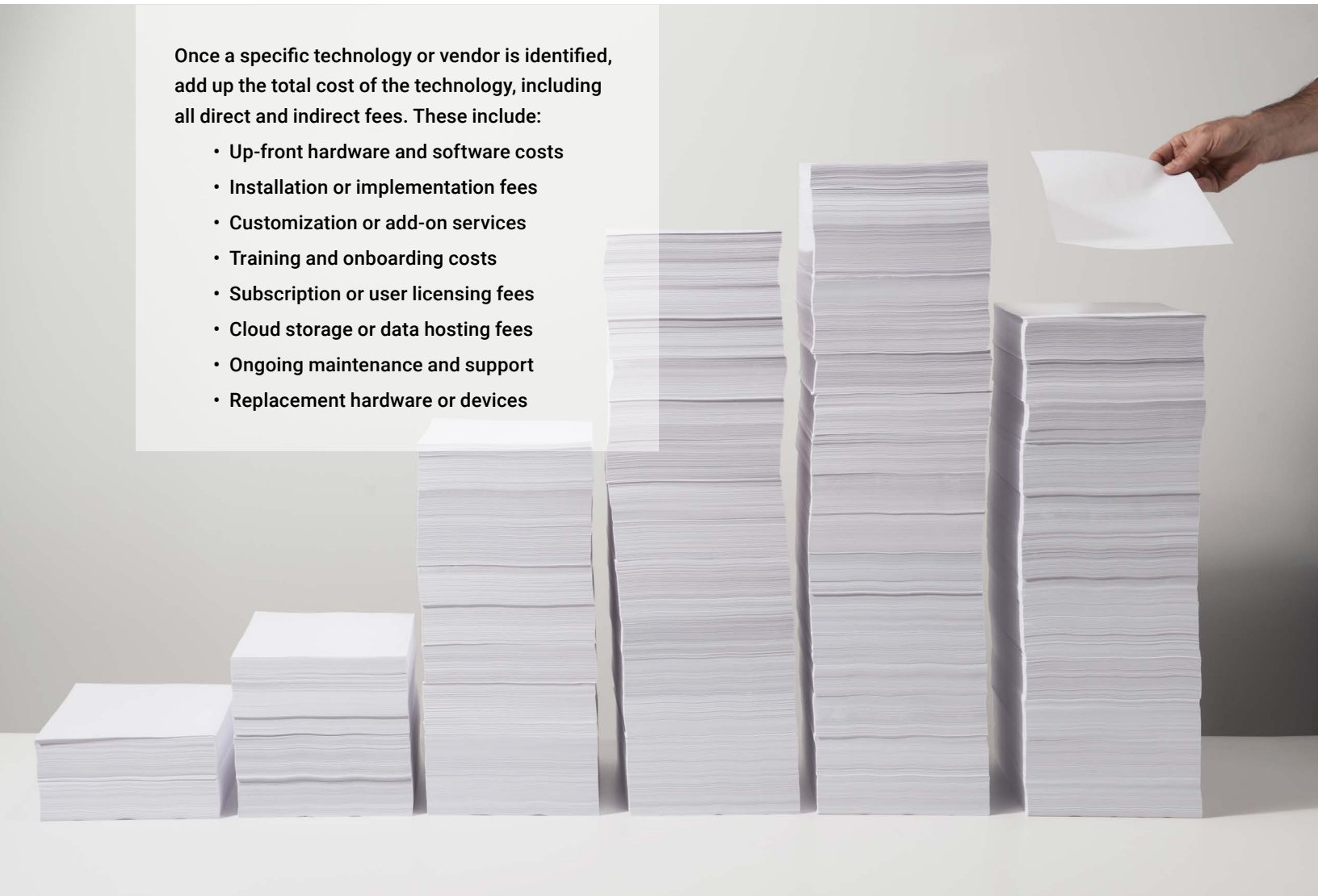
Technology Type	Technology Description	Examples
Digital Management Systems	Software platforms or mobile applications that streamline the tracking, reporting and management of EHS activities, such as incident tracking, inspections, training and compliance.	• EHS management software • Contractor management software • Audit and compliance applications • Learning Management Systems
Industrial Wearables	Devices worn on the body or built into personal protective equipment that monitor worker health, location and risk exposure, enabling real-time alerts if hazards or incidents are detected.	• Vital signs monitoring wearables • Fatigue monitoring wearables • Wearable panic/distress buttons • Smart Personal Protective Equipment (PPE)
Sensor-Based Monitoring	Fixed or mobile sensor systems that detect hazards and unsafe conditions, with real-time alerts to prevent collisions, exposure to hazards or unauthorized access to high-risk areas.	• Proximity sensors • Digital gas monitors • Fleet telematics • Work zone intrusion detection
Artificial Intelligence (AI) and Advanced Analytics	Solutions that use data-driven algorithms to identify patterns, predict safety risks and support proactive decision making before incidents occur.	• Computer vision • Natural language processing (NLP) • AI-powered risk modeling • Chatbots/AI assistants
Immersive Training	Digital tools that deliver immersive, interactive and repeatable training experiences to strengthen worker skills, increase engagement and enhance worksite awareness.	• Virtual reality (VR) • Augmented reality (AR) • Digital micro-learning • Digital twins
Robotics and Automation	Automated, semi-automated or operator-controlled tools that reduce human exposure to repetitive, strenuous or high-risk tasks, such as work at height or confined space entry.	• Drones • Autonomous mobile robots (AMRs) • Exoskeletons • Robotic arms

4. Determine the ROI for Safety

The next step in building a strong business case for safety technology is to demonstrate the cost of inaction or continuing with "business as usual." This can be challenging, as success isn't always reflected in immediate reductions in incident rates. For example, an increase in hazard or near-miss reporting may indicate stronger worker engagement, not a more dangerous workplace. In many cases, value may come from streamlining manual processes, improving data quality to guide future initiatives or strengthening overall safety culture.

Collecting baseline data helps demonstrate progress and quantify the impact of safety technology investment. Existing records, such as incident reports, audits, training records or OSHA 300 logs, can offer valuable starting points. If formal data is limited, information can be gathered through supervisor interviews, insurance and workers' compensation claims, or estimates of time spent on recurring safety tasks. Even rough internal assessments or third-party benchmarks can strengthen the investment case.

Where feasible, monetary values should be assigned to relevant metrics. For example, when incident reduction is the objective, track indicators such as recordable injuries, near misses, claims and lost workdays, then estimate the associated medical, insurance and productivity costs. If the focus is on improving efficiency, estimate the labor hours spent on manual reporting, safety-related stoppages or injury-related absences.



Once a specific technology or vendor is identified, add up the total cost of the technology, including all direct and indirect fees. These include:

- **Up-front hardware and software costs**
- **Installation or implementation fees**
- **Customization or add-on services**
- **Training and onboarding costs**
- **Subscription or user licensing fees**
- **Cloud storage or data hosting fees**
- **Ongoing maintenance and support**
- **Replacement hardware or devices**

Compare the cost of the technology against the combined value of injuries prevented, operational efficiencies gained and improvements in workplace culture, productivity or morale. A basic formula for guiding this calculation is:

ROI (%) = (Money Saved – Cost of Technology) ÷ Cost of Technology × 100

In the absence of an internal finance team, input from a bookkeeper, accountant or business advisor can help validate cost estimates and strengthen the financial case. Technology vendors may also provide case studies or benchmarks from similarly sized organizations to support projections. Even conservative estimates often demonstrate that targeted safety investments quickly offset their costs by reducing risk and improving operational efficiency. Anecdotal evidence from case studies or testimonials from comparable organizations can also reinforce the credibility of your proposal, especially when internal data is limited. These real-world examples can help leadership visualize how the technology performs in similar environments, offering proof of impact beyond finances.

Cost Reduction Strategies

There are several strategies organizations can use to reduce the initial investment costs associated with safety technologies, including:

- **Grants and Funding Opportunities:** External funding programs can help employers, especially small- to medium-sized organizations, offset the cost of piloting or implementing technologies. These programs are often available from government agencies, industry associations, research institutions and nonprofit organizations.
    - The Work to Zero program hosts an annual Safety Innovation Challenge, providing organizations with the opportunity to apply for up to $25,000 in funding to pilot and test technologies aimed at reducing SIFs in the workplace.
    - The MSD Solutions Lab™ at the National Safety Council similarly offers up to $20,000 in funding for organizations to pilot solutions that address musculoskeletal disorder risks in the workplace.
- **Financing Options:** Some technology providers offer flexible financing options that allow organizations to spread payments out over time rather than making large, up-front investments. Common options include installment plans, deferred payment schedules, subscription-based models and lease-to-own agreements. When evaluating financing options, it is essential to consider the total cost of ownership, including interest rates, service or maintenance fees, upgrade costs and other contractual obligations to ensure that the agreement aligns with your financial goals and supports long-term ROI.
- **Insurance Benefits:** According to Powers Insurance & Risk Management (2025), safety technology can reduce both the frequency and severity of workplace incidents, leading to fewer claims and improved loss histories, which are two key factors in determining premium rates. These tools also collect data that can help insurers assess risk more accurately, often resulting in more competitive pricing, especially in industries with higher perceived risk. Many carriers also offer incentives, rebates or preferred pricing to organizations that adopt safety technologies.
- **Tax Incentives and Credits:** Organizations can often deduct the cost of safety technologies and equipment through existing tax laws. For example, the Section 179 deduction allows companies to deduct the full cost of qualifying purchases in the year they are implemented, rather than over time. Eligible purchases may include off-the-shelf software, machinery, HVAC systems and fire protection systems (IRS, 2024). Ongoing expenses like PPE or software subscriptions may also be deductible if they are considered necessary and ordinary business expenses (IRS, 2022). In addition, organizations developing or testing new safety technologies may qualify for Research & Development tax credits (IRS, 2025). Consult with a tax professional to verify your eligibility and identify additional tax incentives.
- **Collaborative or Group Purchasing:** Collaborative purchasing is a powerful, but often underused, approach in which businesses, industry groups or networks pool their purchasing power and negotiate volume discounts on software, equipment or material. Group purchase organizations (GPOs) can facilitate these arrangements by negotiating prices and strengthening relationships between suppliers and businesses, ultimately giving small and medium-sized organizations access to the same cost advantages typically reserved for larger companies (CBUSA, 2023).
- **Pilot Programs:** A pilot program is a practical way to reduce up-front investment risk when adopting safety technology. By starting with a limited rollout, whether in a single facility, department or role, organizations can evaluate the effectiveness of the solution, identify implementation challenges and gather feedback from employees and end users. Many vendors offer free trials, discounts or rental options for pilot programs, helping reduce the financial barrier to entry. Pilot programs also allow organizations to build internal support, demonstrate early ROI and avoid investments in tools that are misaligned or fail to integrate with existing systems.

Use of AI for Ergonomic Risk Assessments at Superior Tube Products

Superior Tube Products (STP), a manufacturer and small business based in Iowa, used a pilot grant from the National Safety Council's **MSD Solutions Lab** to partner with an AI-driven ergonomic assessment provider. Workers at STP faced an increased risk of musculoskeletal disorders (MSDs) stemming from repetitive and physically demanding tasks, such as loading and unloading steel tubing, parts assembly and conducting quality inspections. To address these risks, STP sought a more efficient alternative to traditional ergonomic assessments. The solution analyzes short video clips taken of employees performing high-risk tasks and assigns risk scores for different areas of the body (e.g., upper and lower trunk), helping to pinpoint the motions most likely to contribute to MSD-related injuries.

With these insights, STP was able to make small, but impactful, changes to the workplace, to reduce these motions. For example, replacing long spray wands with shorter, ergonomic nozzles significantly eased shoulder and wrist discomfort in one area of the production floor. Notably, the pilot led to a 98% reduction in workers' compensation costs and reduced their total recordable injury rates (TRIR) from 13.6% to 5.5% in one year. By leveraging external funding to reduce up-front costs, STP was able to trial innovative technology, drive measurable improvements and better protect its workforce without overextending its resources.

Work to Zero Safety Innovation Calculators

Unlike traditional investments, safety outcomes are often measured in the reduction or absence of safety incidents, which can be difficult to capture, especially for smaller companies without historical safety data for comparison. Furthermore, much of the available evidence on technology effectiveness is fragmented, industry- or device-specific, or limited to vendor case studies, making it more difficult to establish reliable assumptions when calculating ROI. To address this gap, Work to Zero partnered with Verdantix, a UK-based research and advisory firm, to develop twelve Return on Investment Calculators (see Table 4). These free tools help organizations evaluate whether an investment in safety technology is likely to deliver a positive return by comparing the costs of maintaining current risk levels to the potential savings from reducing serious injuries and fatalities.

Calculator Methodology

Each calculator is built to help organizations evaluate a realistic financial return of adopting specific safety technologies by comparing a "business-as-usual" scenario to the potential savings of adopting technology. These tools rely on three main components: the inputs, the model assumptions and the outputs.

- **Inputs** are organization-specific information provided by the user. These inputs vary by technology type, but generally include industry type, organization size, the number of vehicles or equipment in use, the presence of a night shift and the number of technology units (e.g., wearables, sensors or beacons) needed for implementation. These variables help tailor the model, allowing for a more accurate estimate based on risk exposure and size.
- **Assumptions** are embedded in the calculators, and they estimate two comparative scenarios. The first estimate calculates the cost of operating "business as usual" by determining the expected number and cost of workplace injuries using national and industry-specific averages from reputable data sources, including BLS, OSHA and NSC. These estimates include both direct and indirect expenses, lost work time, medical costs, workers' compensation claims, legal fees, operational downtime and other associated administrative costs. The second scenario utilizes data from vendor interviews, employer use cases and independent market analysis from Verdantix to estimate the potential reduction in workplace incidents that the technology could achieve. Then, it calculates the potential savings from avoiding those incidents, while considering other advantages like time savings, increased productivity and efficiency gains.
- **The output** provides a clear summary of your projected return on investment over five years. It accounts for the total average cost of ownership of the technology, including hardware and software costs, maintenance fees and the costs associated with training, implementation and change management. The summary will provide information including the average total cost of implementation versus operating "business as usual," the expected break-even point and an estimate of your return for each dollar invested.

At the core of this model is a realistic estimate of how much the technology can reduce SIF risk in the workplace, which is based on a combination of validated vendor interviews, employer case studies and proprietary research from Verdantix.

Table 4. Overview of Technologies Featured in Work to Zero ROI Calculators

Technology	Description
AI-Enabled SIF Prevention	Applies machine learning and predictive analytics to identify high-risk tasks, environments and conditions. Supports proactive interventions by uncovering patterns in incidents and near misses that may lead to serious injuries or fatalities.
Autonomous Mobile Vehicles (AMRs)	Sensor-enabled robots that navigate work environments without human control or fixed routes. Reduce manual material handling, lowering the risk of ergonomic injuries and fatigue-related incidents.
Drones for Confined Space Inspections	Unmanned aerial vehicles (UAVs) equipped with imaging technology used for inspections in confined or elevated spaces. Minimize worker exposure to hazardous environments while maintaining inspection accuracy and detail.
EHS Software	Digital platforms that centralize and automate safety processes, including incident tracking, risk assessments, audits and compliance. Improve visibility, consistency and responsiveness across EHS programs.
Fatigue Monitoring Wearables	Sensor-equipped wearables that track real-time physiological data, such as heart rate and exertion, to detect signs of fatigue. Enable early intervention by alerting workers and supervisors to elevated risk levels.
In-Cab Fatigue Monitoring	Camera-based systems that analyze driver behavior to detect fatigue or distraction. Provide real-time alerts to prevent incidents caused by impaired driving performance.
Lone Worker Mobile Applications	Mobile apps designed to protect workers operating alone or in remote areas. Offer features like two-way communication, automatic check-ins and SOS alerts to support rapid response in emergencies.
Permit to Work Software	Digital tools that manage approval workflows for hazardous tasks. Help to streamline job authorizations while ensuring that risk controls are in place before work begins.
Proximity Monitoring Wearables	Wearable sensors that detect the location of nearby objects, equipment and people. Alert users to potential collisions or unsafe proximity to hazardous zones.
Video Analytics	AI-powered systems that analyze video feeds to detect workplace hazards, such as missing PPE, unsafe behaviors, and ergonomic risks. Enhance situational awareness and enable real-time corrective actions.
Virtual Reality for Safety Training	Immersive simulations that allow workers to experience hazardous scenarios in a controlled, virtual environment. Improve retention and hazard recognition without exposing users to real-world risks.
Vital Signs Monitoring Wearables	Devices that track temperature, heart rate and exertion to identify signs of heat stress and overexertion. Help prevent serious health events by enabling early intervention in high-heat working conditions.

5. Build the Business Case for Safety Technology

Step five is the culmination of the process, where the value of safety technology is presented to create a compelling, actionable case for decision makers. According to experts, selling safety is often based on demonstrating how it aligns with organizational priorities, combining both quantifiable outcomes and powerful stories to make it both attainable and compelling (Bottino, 2024). To deliver a complete and credible business case, follow these final steps:

- **Align the use of technology with organizational priorities.** Demonstrate how the solution supports broader organizational objectives such as driving productivity improvements, improving employee engagement and retention, or avoiding costly workplace injuries.
- **Select a technology that fits the need.** Prioritize solutions that address the organization's highest-risk or most frequent hazards. Tools that align with strategic goals, existing infrastructure and available resources and budget are far more likely to succeed. Select options that are effective, easy to use, and compatible with current systems to support smooth implementation and long-term adoption.
- **Establish a baseline.** Review available safety data such as incident rates, injury claims, OSHA logs or time spent on manual safety tasks. If data is limited, supplement with employee feedback, supervisor interviews, insurance records or industry benchmarks, to demonstrate the immediate need.
- **Assign costs to workplace risks.** Translate safety and efficiency improvements into monetary terms. Instead of reporting injury rates alone, estimate the cost avoidance tied to medical expenses, lost workdays and administrative burdens. If the solution improves efficiency, quantify the labor hours currently spent on manual tasks and the potential savings from automation or streamlining.
- **Estimate the potential return.** Compare the total investment to the projected savings and benefits, including reductions in injuries, improved compliance, increased efficiency and cultural improvements like morale or engagement. Tools such as ROI calculators, vendor data and case studies can help support these arguments by demonstrating use cases and impact insights gleaned from real-world use cases.

Conclusion

Investing in technology can not only drive safety improvements, but it can also provide a strategic advantage when done well. When approached thoughtfully, safety innovation can reduce serious injuries and fatalities, improve operational efficiency and strengthen workforce engagement. This framework helps translate intent into impact by guiding organizations through aligning goals, assessing readiness, identifying solutions, calculating ROI and making a clear, credible case to leadership.

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