National Safety Council

October 31, 2023

The Honorable John Hickenlooper
Chair
Workplace Safety Subcommittee
United States Senate
Washington, DC 20510

The Honorable Mike Braun
Ranking Member
Workplace Safety Subcommittee
United States Senate
Washington, DC 20510

Dear Chair Hickenlooper and Ranking Member Braun:

The COVID-19 pandemic changed the way we work in many ways and sped up technology and other transitions across workplaces. The National Safety Council (NSC) has been engaged in these transitions from the perspective of how technology impacts workplace safety and health. Through the NSC SAFER and Work to Zero initiatives, we have captured thoughts and reactions of workplaces and workers across the country on these changes and would like to share these findings with the Health Education Labor and Pensions (HELP) Committee, Employment and Workplace Safety Subcommittee for the hearing "AI and the Future of Work: Moving Forward Together." NSC believes the impacts of the pandemic that slingshot advances in technology, like AI, are only part of the makeup of the "Future of Work," and we believe that work changes brought by the pandemic and technology implementation are more related to influence the success or failure of each other. We would like to offer an overview on the topics being considered with links to the full reports for the Subcommittee's consideration.

NSC is America's leading nonprofit safety advocate and has been for 110 years. As a mission-based organization, we work to eliminate the leading causes of preventable death and injury, focusing our efforts on the workplace and roadways. We create a culture of safety to keep people safer at work and beyond so they can live their fullest lives. Our more than 13,000 member companies represent nearly 41,000 U.S. worksites.

Before sharing our report findings, there are a few key points to raise for your consideration.

1. Many cases of bias in technology and especially "learning" technology like AI have been found.[1] Technologists, employers, policymakers and others should take every step to ensure bias is not part of machine learning.
2. Incorrect information and data are always present online. For workplace safety and health programs, incorrect information can be the difference between life and death. People will be necessary for the foreseeable future to validate AI data.

Our first report, "State of the Response, The Future World of Work," recognized that not all workers experienced the pandemic in the same way. Front line workers, construction workers, healthcare workers and other employee groups continued to go into workplace settings to ensure seamless operations. Likewise, new technologies and other innovations have impacted workplaces differently depending on the sector. This report also highlights how new technology was more quickly integrated into workplace situations because of the pandemic. Cameras, healthcare screening devices and augmented reality replaced some of the interactions that had previously been done between people.

[1] https://www.nist.gov/news-events/news/2022/03/theres-more-ai-bias-biased-data-nist-report-highlights

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This report highlights the following topics:

- Operations—Moved to remote work arrangements for as many employees as possible
- Human Resources—Provided flexible work arrangements (e.g., hours, days, scheduling)
- Stress, Mental Health and Wellbeing—Promoted or increased employee assistance plans (EAP) benefit offerings
- Communications—Provided regular communication via multiple channels
- Organizational Culture—Increased focus on safety and health using COVID-19 as a catalyst
- Technology—Increased use of mobile app software
- Sustainability—Rethought need for physical space and travel

NSC issued "SAFER Recommendations for Moving Past the Pandemic" earlier this year on moving past the pandemic with a section on the future of work. This report built upon the way work changed during the pandemic to be more remote and with a greater use of technology. The report provides recommendations for how employers can proceed in a way that keeps workers engaged, safe and healthy. NSC recommends employers can prepare their organization and workforce for continued change from automation and AI by doing the following:

1. Invest in Training and Upskilling: Provide opportunities for workers to learn new skills that align with emerging technologies and trends. Offer training programs that help them adapt to changing roles and responsibilities, enabling them to stay relevant and valuable.
2. Foster a Learning Culture: Create an environment where continuous learning is encouraged and celebrated. This could include providing resources for self-paced learning, hosting workshops and offering incentives for workers to gain new skills.
3. Promote Critical Thinking and Problem-Solving: Emphasize the importance of critical thinking and creative problem-solving. Encourage workers to think outside the box and come up with innovative solutions, which are skills less likely to be automated.
4. Facilitate Collaboration: Develop team-based projects encouraging collaboration and diverse skill sets. Cross-functional teams can work together to tackle complex challenges requiring both human expertise and technological support.
5. Flexible Work Arrangements: Allow for flexible work arrangements, including remote work and flexible hours, to accommodate different employee needs and enhance work-life balance.
6. Provide Clear Communication: Keep employees informed about the organization's strategies and plans related to technology adoption. Openly discuss the potential impacts on jobs and responsibilities and provide a clear vision of how the changes will benefit both the company and the workforce.
7. Support Wellbeing: Acknowledge the potential stress technological changes can bring and offer resources to support workers' mental and emotional wellbeing. This can include stress management programs and access to counseling services.
8. Redesign Job Roles: Analyze current job roles to identify tasks that can be automated and determine how human skills can complement automation. This can lead to the creation of new hybrid job roles leveraging the strengths of both humans and machines.
9. Empower Individual Autonomy: Give workers the autonomy to explore new technologies and suggest ways to implement them for improved efficiency. Empower them to be proactive in adopting new tools and methods.
10. Leadership and Vision: Leadership plays a crucial role in guiding the organization through change. Leaders should set a clear vision for the future, communicate it effectively and demonstrate their commitment to supporting workers throughout the transition.
11. Monitor and Adapt: Regularly assess the impact of technological changes on the workforce and adjust strategies accordingly. Flexibility and adaptability are key in navigating the evolving landscape.

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For companies that are ready to implement more advanced technology, NSC issued guidance to help implement AI systems to improve workplace safety outcomes. “Using Data and AI to Gain Insights into Your Safety Program” examines how these technologies may be used by organizations of all sizes and identifies both potential benefits and drawbacks. Findings in this report include the following:

1. Data collected across an industrial enterprise in various forms (i.e., written reports, forms, images, video and audio) can all be used by modern data analytics and AI systems to derive powerful insights and deliver actionable risk predictions.
2. AI-assisted computer vision offers automated object recognition from images and videos for uses including spills, fires, personal protective equipment (PPE) adherence and site inspections. The technology can be further combined with EHS software and other safety workflows.
3. Natural language processing can rapidly summarize written reports and extract quantitative insights and sentiments to help EHS personnel perform incident analysis and make quicker decisions.
4. Predictive and prescriptive analytics engines can use large datasets to review permit-to-work requests, predict the risk for future incidents and deliver suggested solutions based on best-practice guidelines and historical data.
5. Drawbacks include high costs for building models from the ground up, bias exacerbation due to learning from world-scale datasets, data privacy issues, lack of general intelligence and tough tradeoffs between effectiveness, cost and complexity.

People must be the center of any conversation surrounding the future of work. Workers should be part of any effort to integrate technology into workplaces. They should be brought in early as a normal part of the process to gain additional perspectives and share potential concerns about a technology’s use. In this process, technology developers should be forthright about what technology can and cannot due, thus maintaining safety as a priority for both the worker, organization and wider community. Included is an overview of NSC recommendations for implementing workplace technology.

I am available to discuss this topic more as it is central to work NSC is doing to prevent injury and deaths in workplaces—a goal I know members of the Employment and Workplace Safety Subcommittee share. Thank you for the opportunity to share the work of NSC with the Subcommittee.

Sincerely,

Lorraine M. Martin
President and CEO

Attachment

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# WORKtoZERO

an nsc program

***Eliminating fatalities in the workplace through emerging technology.***

Every worker deserves to return home safely, yet **each year approximately 5,000 US workers lose their lives**. Although workplace injuries have been decreasing over the past decade, the number of fatalities remain relatively stagnant. The National Safety Council (NSC) Work to Zero initiative believes technology can help eliminate workplace fatalities in our lifetime. Early tech adopters are not only reporting health and safety performance improvements but also increased operational efficiencies from implementing technology.

In 2020, NSC conducted initial research, identifying and mapping the top workplace hazards, contributing risk factors and viable technology solutions. This research has helped guide the Work to Zero program in supporting businesses in adopting lifesaving technologies.

Review the full report, *Safety Technology 2020: Mapping Technology Solutions for Reducing Serious Injuries and Fatalities in the Workplace*, to learn more.

## *Safety Technology 2020* Key Findings

| Top 5 Hazardous Situation | % of Non-Roadway Deaths |
|---|---|
| 1. Work at Height | 22.59% |
| 2. Workplace Violence | 13.27% |
| 3. Repair and Maintenance | 12.40% |
| 4. Construction and Installation | 12.24% |
| 5. Logging Equipment Operation | 5.67% |

| Examples of Situational Risk | Examples of Systemic Risk |
|---|---|
| Falls | Lack of Training |
| Falling Objects | Fatigue |
| Struck by an Object | Poor Safety Culture |
| Electrocution | Adverse Weather |
| Fire | Worker Wellbeing |

| Most Commonly Used Tech | % of EHS Participants Used |
|---|---|
| Robotics | 71% |
| Sensors/detectors | 47% |
| Software | 35% |
| Wearables | 29% |
| Equipment | 24% |
| Content | 18% |
| Mobile Apps | 18% |
| Analytics | 12% |
| Data Management | 6% |

To learn more about NSC Work to Zero, our research and growing suite of free tools and resources visit: nsc.org/worktozero. Start by reviewing the ***Safety Innovation Journey*** and ***Implementation Roadmap***.

# SAFETY INNOVATION JOURNEY

The Safety Innovation Journey, a key resource developed by Work to Zero, is a free interactive webtool that organizations can use as a customized step by step guide to successful adoption of technology solutions.

## 1. Assess Your Risk

Start by assessing the level of risk in the workplace. NSC has developed a risk assessment tool to help identify the primary workplace hazards associated with serious injuries and fatalities and which to prioritize solving through innovation.

## 2. Identify Technology Solutions

NSC can connect you to key resources such as webinars, white papers, investment calculators and case studies to explore technology solutions that can be used to address workplace hazards.

## 3. Determine Your Readiness

NSC provides a free online assessment to determine an organization's readiness for implementing technology. The assessment report outlines the five phases of digital readiness for safety technology (observing, experimenting, adopting, integrating, and transforming) and provides guidance for organizations as they progress.

## 4. Make The Business Case

NSC developed calculators to help organizations make the business case for innovation solutions and start the conversation about investing in safety technology. These calculators allow comparison between business as usual versus adopting technology solutions.

## 5. Your Roadmap

NSC has created a guide to help organizations plan, prepare, evaluate and innovate work practices within an organization.


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Work to Zero is funded by the McElhattan Foundation

# NSC WORK TO ZERO
## SAFETY TECHNOLOGY PILOT AND IMPLEMENTATION ROADMAP

NSC believes the best way to protect workers is to eliminate, substitute or engineer out potential hazards, and implementing safety technology solutions can help. Recommendations below come from the ***Safety Technology Pilot and Implementation Roadmap: Making Innovation Accessible*** report. This report discusses challenges to innovation and provides a roadmap to assist employers on their innovation journey. This four-stage tool includes a series of continuous improvement action steps for employers to follow for successful digital transformation.

## Step 1: PLAN

☐ **Define values and business goals.**
- Articulate values, goals and strategic vision.

☐ **Consider the Management of Change (MoC) process to assess business impact.**
- Align on values and communicate the collective 'why'.
- Step back to assess how technology interacts with and impacts the various users and stakeholders, including employees, through its lifecycle.
- Identify what supporting elements need to be put in place to fully leverage and realize its value (e.g., IT infrastructure, talents, functions, activities, resources, process changes).
- Clarify expectations, anticipate errors and assess the potential unintended consequences.

☐ **Ensure organizational readiness.**
- Assess and discuss the organizational and digital readiness level, with management, employees, customers and other stakeholders.
- Develop consensus on business goals and strategic vision.

## Step 2: PREPARE

☐ **Build a coalition of digital champions representing all employment levels and revisit readiness.**
- When forming the coalition, consider:
  - What purposes may the technology serve?
  - How will the business need and the technology evolve?
  - Who interacts with the technology and how?
  - Who is affected by this technology?
  - What may need immediate attention?
  - What likely upskilling will connect with employees?
  - What are the hidden safety and security risks?
  - What skills and expertise are needed?

☐ **Determine data structure and reporting alignment.**
- Consider the following fundamental questions:
  - What data are needed to fulfill the purpose?
  - How is that data captured?
  - Who contributes to that data?
  - How is the data processed and how will it be used?

☐ **Revisit the MoC Process.**
- Reassure innovation aligns with business goals.

## Step 3: EVALUATE

☐ **Examine the Return on Investment (ROI) of technology.**
- Consider the costs and value involved in business-as-usual compared to the costs and value of innovation.

☐ **Review case studies.**
- Case studies or use cases from like businesses can serve as useful points of comparison and analysis to make a technology solution fit-for-purpose.

☐ **Design/select possible technology solutions.**
- Consider a set of comprehensive criteria, such as:
  - Scalability
  - Ease of use
  - Data quality and transferability
  - Minimal business interruption
  - Security
  - Compatibility
  - Technology maturity

## Step 4: INNOVATE

☐ **Roll-out technology.**
- Engage affected groups for technology and support readiness. Consider assessing their:
  - Acceptance and willingness
  - Skill and problem-solving abilities
  - Cultural appetite for change
- Consider launching a pilot project with a small group of team members.

☐ **Evaluate data integrity and performance.**
- Consider digital objectives and business goals.

☐ **Enact continuous improvement and monitoring.**
- Follow MoC principles.
- Conduct regular assessments regarding technology use and data produced.
- Commit to continuous improvement and monitoring.

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