



SAFETY

Safety 4.0: Updating Safety for Industry 4.0

The style and method of safety leadership needs to change as new technologies are adopted

Terry L. Mathis | Apr 03, 2018

The focus of the recent Campbell Institute Symposium of the National Safety Council centered around the implications of the fourth industrial revolution on safety. The label most ascribed to this era is “Cyber Physical Systems.” The driver of this revolution is technology, but the implications of it go much deeper. Changes in technology without accompanying strategic and cultural changes can cause more

problems than they solve. So how do you prepare your safety efforts to meet these coming challenges?

The first step is to become more familiar with emerging technologies for safety and more generally for other purposes that may support safety efforts. New products are being developed at an incredible pace and safety professionals will find they need either more time, exposure (conferences and workshops, etc.), professional help from the IT department or even a dedicated safety technician. New digital equipment ranges from drones and robots to wearables for workers, proximity sensors for vehicles and even smart PPE. We have helped many client companies perform analyses of past accident data to prioritize the adoption of new technologies by the number and/or severity of potential accidents they could prevent. Technology products then need to be priced and budgeted over the future time periods.

The final product that should come from these efforts is a technology roadmap. Although such a plan may change due to future issues or developments, it will provide a foundation for planning other aspects of safety that must support the technology.

The roadmap will enable the expansion or redevelopment of the overall safety strategy. If the organization does not have such a strategy, then now is the time to develop one. Strategy is a methodology and plan to achieve a goal. In this case, the strategy should be the way the organization is going to identify and mitigate risks inherent in the products or services produced. Strategy is much needed in safety where all too often the efforts are a group of programs directed at lagging indicators.

In programmatic safety programs, major actions are often reactive rather than proactive. Strategy recognizes that success is more than avoiding failure, and outcomes are the result of processes and performance. The strategy aligns the processes and performance according to the strategic methodologies.

The most excellent safety strategies begin with the mindset that workers are not a problem to be controlled but rather the customers of safety efforts. The strategy

should be centered around adding value to those customers to enable them to do their jobs more safely. New technology can enable the organization to move up the hierarchy of controls, eliminating employee exposure and relying less on administrative controls.

Leadership

Just as the roadmap gave clarity and enabled the strategy, the strategy should clarify and enable the development of three other elements that need to be aligned with Industry 4.0. The first of these is leadership. The style and method of safety leadership needs to change as new technologies are adopted. Leaders will need to develop and improve workers, not merely direct them. Coaching methodologies will become increasingly important and leaders will need to develop the technical skills in order to help the workers adapt.

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Training will need to extend beyond the classroom or computer into the workplace, and knowledge of leaders will become a critical part of success. Leaders will not only need to be able to use and teach the use of new technologies, but will need to set a personal example that becomes the model for workers. Simply installing new equipment or handing a worker a new gadget will be completely inadequate. Leaders will need to be quick learners and teach workers to do likewise.

Leaders also will quickly discover the wisdom of explaining the rationale for each new technology and not just its operation. Workers will need to have a vision of what success looks like with the adoption of each new item, as well as a working knowledge of its operation. The testing of competencies both formally and informally will become a way to measure value-added to the workforce.

Culture

The second element is the culture needed to support new workplace realities. New norms of interaction between workers, and between leaders and workers, will be necessary. Very likely, communication technologies will drastically change the way people converse. Cultural communities may begin to move online, and Internet communication may replace some or all interpersonal communication. Even direct contact may be more centered on new technology than on traditional job skills.

Just as machine shop workers became programmers when mills became computer numeric controlled (CNC), many manual laborers will need to become more technical as jobs are mechanized. Even where jobs remain largely manual, smart PPE and information availability such as smart visors will change basic job descriptions. New jobs will require new cultural norms to support and sustain best practices.

Leaders and workers will need to cooperate to control the climate and chemistry of the organization to form more ideal cultures. Cultural norms will need to be measured more often along with competencies. Critical cultural changes will need to be accurately targeted and prioritized to ensure maximum impact.

Measurement

The third element is measurement. Lagging indicators will be completely inadequate to manage the new approach to safety. Even the two-dimensional idea of leading and lagging indicators will fall short. A complete balanced scorecard will be needed that measures:

- safety drivers such as leadership, training and onboarding;
- the impact of drivers on perceptions, culture and competency;
- the impact of the first two on actual behaviors and performance;
- the impact on lagging indicators.

While these four sets of metrics will start out as a sort of dashboard, the ultimate metrics will be the algorithms between these indicators.

Industry 4.0 is upon us. It is time for Safety 4.0 to develop. Are your leaders, culture and metrics up to the challenge?

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