WHAT CAN SAFETY LEARN FROM LEAN?

If you think lean is only for manufacturing, look it up on Wikipedia. You will find that lean principles, lean thinking and lean tools have been adapted and applied to everything from service industries to software development and now are being used to reduce the greatest waste of all: workplace injuries.

BY TERRY L. MATHIS

In a highly-competitive global marketplace, almost everyone is looking for competitive advantages. Lean is not just about "less," it is about efficiency. It does not seek to do as well with fewer resources; it seeks to produce excellence by focusing resources on highly effective activities and eliminating the activities that do not add value. The basic premises of lean offer some potential opportunities to further improve safety as well.

Most people associate the term lean with the Toyota production system. This combined management and production system helped a small company grow to world-class size and market share. As they grew, most of the auto manufacturers and other industries studied their methods and tools to learn how to improve their own organizations. The system is multi-faceted, but several tenets within it have good potential application to safety: customer orientation, focus on value, efficiency through elimination of wastes and questioning existing wisdom and continuous improvement.

Customer orientation – Many safety professionals view their customer as upper management, board of directors and/or stockholders. Others don't think of their safety process as having a customer at all; it is simply an aspect of management and a service to

the organization. Lean thinking would point to the worker as the customer of the safety process. As such, the process should seek to better understand and meet the needs of the worker rather than seek to install safety programs through command and control.

Many organizations actually view the worker as the "problem," rather than the customer. The goal of such processes is to limit the ability of the worker to take risks and therefore reduce accidental injuries. Very few safety programs actually market themselves to the worker and seek to "sell" them on the process' merits and worth. It is assumed that safety is a duty of an employee and that compliance, rather than excellence, is the goal. These processes tend to evolve negatively oriented goals. Safety becomes an elimination of accidents rather than a strategy for excellence. The goal is not so much to succeed, as it is not to fail.

Focus on value – In lean manufacturing, value is defined as any action or process for which a customer is willing to pay. Obviously, people choose to pay for products or services they like or need. They base their selection on availability of features and aspects they prefer over the alternatives.

Organizations traditionally spend a lot of resources on marketing research to find out what their customers value and making sure that their products and services have those features. In safety, we tend to focus on what the organization wants and ignore the wants and needs of the customer. Certainly, if you view the worker as the problem rather than the customer, this makes sense.

However, viewing the worker as the customer opens a whole new avenue to determining the most effective way to design safety products and services. How many workers would be willing to pay to attend safety meetings or training sessions put on by their employer? How many would choose another type of PPE or tools or equipment to do their jobs if their input was sought before making those choices? If the safety department had to sell these to the workers rather than force them, would they take another approach?

Efficiency through elimination of wastes – In manufacturing facilities, a lot of practices and designs become customary and remain in use long after the reason for them changes. As Toyota began to examine their processes and practices, they found steps and designs that no longer added value. The most prominent of these was Muda (an activity that is wasteful and doesn't add value or is unproductive). Unfortunately, many of these antiquated practices still used worker time and effort while adding little or no value to the process.

Toyota began to eliminate nonessential transportation of products, inventory that was not immediately needed, process steps that duplicated tasks and similar activities. The two, less-known categories of wastes were Mura (unevenness or anything that interfered with even flow of processes) and Muri (overburdens such as too many or overly difficult activities). Toyota sought to redesign processes to maximize flow and even out the burden placed on workers by the design of their jobs.

In safety, we often have traditional activities that take up time but fail to add value. We have our workers attend repetitive and boring training that keeps us legal, but does not make us safe. Our accident investigations tend to fix the blame, but not fix the problem. Traditional approaches to behavior-based safety can include massive overtraining, resource-intensive overuse of observations, data analysis by employee teams with no statistical training and checklists with so many behaviors that they overburden workers rather than empower them to progressively change a few habits at a time. Safety elements of new-employee orientations also are overloads, designed more to avoid liability than to avoid accidents. Many safety programs go through the motions without asking if the motions add value.

Questioning existing wisdom – Toyota began to question the assumptions of Frederick W. Taylor and Henry Ford and practices such as time-and-motion studies. This almost was sacrilege in the day when these men and their techniques had created and defined the industry. However, as workers

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became more educated and capable, Taylor's ideas of breaking jobs into tasks and sub-tasks began to be de-motivating and routine. Ford's ideas of mass production also evolved and newer and better methods began to emerge.

Quality issues caused Toyota and others to question their processes and find the cause of defects that produced scrap and other wastes. Rather than simply look for Kaizen (ways to make small, continuous improvement), Toyota began to also question whole methods and processes and look for Kaikaku (large, transformational improvements).

Like the automotive industry, safety has its founding fathers and revered pioneers. Safety programs have been fashioned and duplicated based on their theories. New approaches to safety have been built on a blind acceptance of their assumptions. Recently, however, we have seen many of these sacred theories and practices questioned and new thinking has sprung out of their ashes. Safety management practices have evolved from command and control to worker engagement. Safety focus has evolved from conditions to behaviors to influences on behavior, and from compliance to culture. The assumptions of Heinrich and others have come under new scrutiny and common practices such as behavior-based safety and safety rewards and incentives have been questioned. A much more practical and less academic attitude toward the traditional wisdom of safety practice is taking shape. Safety practices and theories can't just make sense, they have to prove themselves and demonstrate that they can work in the real world.

Continuous improvement – Just after World War II, while much of the world was perfecting phrases like "If it isn't broken, don't fix it," Toyota was promoting the idea that there is no dichotomy such as broken vs. fixed and that anything, no matter how good, always can be better. They challenged their shop floor workers – not just the managers – to contribute ideas for continuously improving every product and process. They adopted W. Edward Deming's advice that the people closest to the work often know the most about it and that problem solving is best done at the level with the most expertise.

While the average factory production worker in other parts of the world made one or two improvement suggestions per year, Toyota workers were making close to 100. Many of these ideas were adopted with great results and workers were cross-trained to do any job in their area and the improvement suggestions increased. Workers became the primary source of improvement ideas and the quality and productivity of the factories improved continuously.

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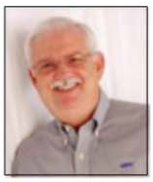
In safety, we also are evolving away from managers and safety professionals making all the decisions and improvements and toward asking workers for improvement ideas. Many safety suggestion systems are poorly designed and cannot handle the volume of input they receive. We are not yet highly effective and efficient at managing worker safety suggestions, but we are beginning to see the value of doing so. More and more organizations have begun to ask for worker input and are perfecting the processes of handling this wealth of ideas.

The whole buzz about safety culture is an indicator that we are turning away from the old ideas that safety must be managed and supervised and realizing that worker ideas and safety culture are the keys to continuously improve safety. Organizations are going beyond asking for input and are implementing worker-driven and worker-led processes to improve safety. Safety committees, which traditionally included only managers, are beginning to have hourly workers as regular members. Organizations are realizing that managers can take safety performance from bad to good, but the workers and the culture must be engaged to make it excellent.

For many, lean is not so much a set of concepts as a set of tools to identify and eliminate waste or inefficiency. The tools often are better known and utilized than the concepts. Even organizations out of the mainstream of lean often utilize value stream mapping, 5S, Kanban walks and versions of poka-yoke (a system for eliminating and preventing errors). While the lean tools can be helpful, it is lean thinking that has the greatest potential to begin a significant change in safety performance. All meaningful change begins with thinking differently. As lean concepts become better known and understood, perhaps they can be better utilized to improve safety at the strategic level.

Once you get past the stereotype of lean manufacturing and consider the concepts of lean from a more generic point of view, they can be applied very well to safety. Accidental injuries are defects in our processes. We can improve the quality of these processes, thus diminishing the defects, by making them more efficient and removing the waste. This will demand that we question and examine the existing process norms and the theories that drive them. We must decide who the customer is and what the customer values. We must design safety like a great product that gives the customer both what is wanted and what is needed. Safety and lean can forge an alliance to reduce the greatest of all possible wastes: accidental workplace injuries. EHS



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