



Reducing Costs by Minimizing Risks

An *IndustryWeek* Manufacturing Roundup



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Reducing Costs by Minimizing Risks

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How Culture and Safety Impact Your Bottom Line

Organizational culture effects sales growth, customer satisfaction, ROA and many other measures.

What is your culture costing you? A recent study looks at the effects organizational culture has on plant safety in 85 manufacturing plants in North America. The plants are members of three organizations that deploy safety programs across the plants -- with varied results. Taking both direct and indirect costs associated with the number of lost time accident (LTA) cases as well as the number of recordable incidents, the plants with the higher performing cultures in the study had more plants with zero LTAs and zero recordable cases than the plants with the lower performing cultures. In fact, the plants with the high performing cultures had 50% of the plants without either an LTA or recordable case, as opposed to the lower performing plants which only had one single plant without an LTA or recordable.

The study of eighty-five manufacturing plants was divided into four groups by how they scored on the Denison Organizational Culture Survey. Group one scored in the bottom 25% of the Denison benchmark database (a database of 1000+ organizations who have conducted the culture survey). Group two scored between the 26th and 50th percentile. Group three scored between 51st and 75th and group four were all the plants scoring in the 76th percentile and above. Basically, group one and two would be cultures who scored below average and group



three and four would be those plants who scored above average.

The results show that for group four, the plants with the higher culture scores, fifty percent of the plants had zero lost time accident cases and zero recordables, while group one had one single plant that had zero LTAs and zero recordables. When you compare the culture scores to the recordable rate by plant, the results show a correlation of $-.4082$. (sig. 0.0007). This means as culture scores for the plant rise, the recordable rate falls.

Figure One: Culture Scores to Recordable Rate

[Click here to view Figure One](#)

When we applied both the direct and indirect costs for both the LTAs and the recordables for each plant and then calculate a total cost for each plant, the correlation of the total costs to culture was $-.3693$ (sig. 0.0003). Once again, the plants with the higher culture scores incur fewer costs. The figure below shows the plants in the group with a ranking of 75th percentile or greater was more than a third of the cost per plant of the groups that were below the 50th percentile.

Figure Two: Culture Rankings of Plants by Percentile

[Click here to view Figure Two](#)



What this research points out is the numerical value of culture and the impact it has on safety and ultimately costs, which comes straight off the bottom line. It is understood to develop a safe environment an organization needs to create a "safety culture." Except, most of the organizations in the study of eighty-five had fantastic safety programs in place, yet there were still accidents in some and not others. Therefore, it can be argued, the issues are much deeper than a safety culture, but just simply cultural. So, how do you measure culture?

The culture of an organization can be measured in multiple ways. The assessment used in this study was the Denison Organizational Culture Survey, a valid and reliable instrument used by thousands of companies around the world. It is a great way to get a good snapshot of an organization's culture and provides some great actionable steps for moving forward. Usually, the organization will need to go deeper with some focus groups and management interviews to compliment the Denison survey. But, upon completion, the organization will have a pretty comprehensive view of their culture and a good idea of the strengths and weaknesses they, as an organization, bring to the table.

From that point, it is all up to the leadership. They, in the end, decide the fate of the cultural process. They have to lead the change. This isn't just at the executive level, but the plant level as well. When analyzing the open-ended comments of many of these plants, the big differences coming to the forefront are how the leadership engages the employees in the safety process. They also act as role models. They don't tell employees safety is "number



one," then set it aside when production numbers need to be met. The safety of the plant becomes a core value. As one employee of the higher performing plants put it, "Safety is not a priority, it is a core value. Priorities change, values do not."

What this describes is a culture of consistency -- not only in safety, but where management is open and honest with employees. Management practices what they preach. If you have an organization where a large communication gap exists between management and the workforce, you probably have an organization with a culture which is less than par. Don't tolerate it. It costs you money.

Here is an example, let's assume there is a manufacturing plant with \$20 million in annual revenues. They operate on a profit margin of five percent. Now, assume during the year there are six lost time accident cases and 30 recordable cases. OSHA calculates the direct and indirect costs of lost time accident cases as \$28,000 per case and \$7000 per recordable case. Therefore, the total cost for the lost time accident cases would be $(\$28,000 * 6)$ \$168,000 and the cost of recordable cases would be $(\$7000 * 30)$ \$210,000. The total cost to the plant would be \$378,000.

For a plant with \$20 million in sales with a profit margin of 5%, the profit for the plant at the end of the year would be \$1 million. However, the \$378,000 comes out of the

bottom line. Therefore, the cost of the accidents throughout the plant represents 38% of profits. Furthermore, to replace those lost profits, the plant would need to generate \$7,560,000 more in annual revenue to replace those profits -- or just grow by 35%.

Before any issues around safety can be resolved, you really need to examine the culture first. But first, establish a baseline. By assessing the culture, the organization can identify not only the areas of weakness, but the strengths that need to be preserved as well. The cost of a good cultural assessment (including consulting) could range from \$10,000 to \$25,000 for a plant with 300 employees and \$20 million in revenues. The cost of six lost time accident cases and 30 recordable cases will cost an organization \$378,000. Reducing the LTAs by one case would pay for the assessment. Reducing the safety record in half would eliminate \$189,000 in costs.

Culture is an issue that has a direct effect not only on safety, but many other measures as well (see Organizational Culture Increase Organizational Value). Recent studies show organizational culture impacts areas such as sales growth, customer satisfaction, ROA and many other measures. In a business environment where every competitive advantage needs to be utilized, the organizations that look to their human capital to gain the advantage -- based on the research -- get the edge.



"By truly getting to know our business, Zurich helped us reduce workers' compensation claims."

Brian McInerney, President & Chief Executive Officer,
Glacier Water Services, Inc.

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How to Create a Healthy Workforce

Lincoln Industries lowers workers comp and cuts health care costs with aid of happy well-balanced employees.

If every company was as progressive in their thoughts and actions as Lincoln Industries the U.S. would be full of healthy, happy and productive workers who are bringing down the cost of healthcare.

"We didn't create a wellness program in order to receive a good ROI. We just felt it was important to help our people create better lives for themselves. A happier, healthy environment is the basis for achievement. What we found was that we have lower healthcare costs, lower absenteeism, lower turnover and higher quality," explains Dan Krick, Vice President of People Resources at [Lincoln Industries](#), a manufacturing, fabrication and metal-finishing company.

One interesting metric that isn't often measured is the effect of wellness programs on the cost of workers' compensation. Lincoln has examined that connection and found that its costs decreased dramatically over the past seven years. In 2003 costs were \$516,513 compared to \$4,201 in 2010. And those saving go straight to a profit sharing plan.

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"Progressive companies are seeing the relationship between injuries and illness and the overall state of health of the workforce. At the start of every shift we have a pre-shift stretch to prevent injuries. And if someone is feeling sore we provide trigger point therapy on-site and on-the-clock," Krick said.

The company has also made great strides in decreasing lifestyle factors that account for high health care costs. For example tobacco use fell from 42% of the population smoking in 2004, to 15% in 2010. And in comparison to other Midwestern employees in the region, Lincoln's health care costs are 30% less.

In 2004 the company was already offering voluntary health checks after having spent time working one-on-one with employees to find out what issues needed to be addresses. The evaluations included blood pressure, weight, body fat and flexibility. Participation was high -- 75% -- and no one objected when the company moved to a 100% required participation.

"We have a culture here where people care for each other and that attitude extended to creating healthier behaviors. To understand how to get there we offer a holistic approach to health with includes physical, emotional, social, and financial -- all aspects of health," explains Krick. Their philosophy of living a balanced life is incorporate in their Wellness Wheel which includes Physical, Social, Financial, Emotional, Career and Spiritual Wellness.



The company uses metrics called Well-Being Domains to help fulfill their vision plans which are formulated in three year intervals. The categories they measure are:

- Life Evaluation Index
- Healthy Behavior Index
- Emotional Health Index
- Work Environment Index
- Physical Health Index
- Basic Access Index

Earlier this year the company announced its HealthyU which is being built in co-operation with IMSCORP, another manufacturer in Lincoln. The 20,000 square-foot facility will provide medical care, disease management and health coaching. These services will be provided free of charge to employees and their families -- no copays or deductibles.

The center will deal with acute conditions as well as provide lifestyle counseling. "As compared to a retail health model, our health professionals will have the time to spend 30-40 minutes helping to understand the nature of the conditions and how best to help. And often we have specific programs right on site that deal directly with the problem. It's a seamless transition."

Krick said the self-insured company will break even on the costs associated with HealthyU and will have a nice ROI the second year. "If companies learn to look at



wellness the same way we looked at quality and then lean it's easy to understand how investing in people, through wellness programs, pays off. As the workforce becomes healthy on all levels people operate on a higher level and bring more quality and efficiency to their efforts. This co-operative positive environment creates success for the company as a whole," says Krick.

Improving Performance and Maximizing Efficiency for Manufacturers' Hiring Processes

An aging manufacturing workforce, fewer recent graduates and increasing technology in production requires manufacturers to make a larger investment in their employees.

As manufacturers continue to implement the 3 P's of Lean: Purpose, Process, and People, their focus on the third pillar, people, is going beyond their current workforce. An aging manufacturing workforce is depleting resources with fewer recent graduates learning the basic technical skills to provide replacements. And increasing technology in production requires manufacturers to make a larger investment in their employees.

This drives home the value of identifying the right person for the job. With longer learning curves and larger investments and the greater leverage of output per employee, the cost of a poor hire is on the rise. And yet the hiring practices for these employees hasn't evolved much beyond electronic applications and applicant tracking.

But manufacturers have solved this problem before when making decisions about other resources. By identifying specific purchasing needs and analyzing suppliers based



on metrics rather than relationships through strategic sourcing techniques, the quality and performance of the supply base has increased. While certainly a more complex decision, the principles are similar: provide a standardized process that screens a candidate's skills and behaviors against the requirements -- and -- better outcomes will prevail.

The challenging part is to design a process that fairly and effectively screens a candidate. And this is where hiring technology comes into play. Used successfully for years in retail where high levels of turnover required automation to manage, the technology is now standard practice for most retailers.

A science based workforce selection process typically includes these tools:

- **Screening** -- to help managers quickly identify candidates most likely to be a good fit
- **Hiring** -- to help managers make objective, knowledge based evaluations of a candidate's fit for a specific position in the plant
- **Onboarding** -- to expedite background checks, tax credit screening, employment eligibility, and payroll integration.

Using automated workforce selection solutions tied to a comprehensive workforce management solution, manufacturers can extend their lean initiatives by



implementing a data-driven hiring process that helps them make better hiring decisions based on proven success factors. They can review performance of their hires on an ongoing basis and use these results to continuously improve hiring effectiveness. Additionally, streamlined workflows standardize the hiring process and help ensure compliance with union rules and federal regulations.

A Data-Driven Process Improves Hiring Quality

Without science-based hiring processes, manufacturers have no tools for screening and assessing applicants for competencies that accurately predict future job performance. Managers' hiring decisions are left to guesswork, instinct or intuition.

Behavioral assessment tools apply complex science to help managers make objective, data-driven assessments of candidates as they make their hiring decisions. While no tool can predict employees' performance with 100% accuracy, these assessments provide manufacturers with an efficient means of measuring critical aspects of a person's knowledge, skills, personality, experience, and motivation that influence whether the person is likely to succeed or fail in a particular job.

Using these tools can help managers identify applicants who are likely to demonstrate behaviors that make them successful on the job, eliminate applications without the essential competencies to perform the job effectively, and greatly improve the accuracy of hiring decisions. As a result, these tools can enhance the quality of the manufacturing workforce, increase output and



productivity, reduce labor costs, and boost the bottom line.

When these tools are deployed within an integrated workforce management platform, manufacturers measure and analyze how hiring strategies are actually performing at specific plants, regions or across the enterprise. For example, manufacturers can take data from the workforce management system about the people hired using the workforce assessment tools (e.g., productivity data, absenteeism information and so on) and feed it back into the workforce selection and assessment tools to fine tune the screening process. They can also continually model the selection criteria after the characteristics of the company's top employees. This enables continuous improvements in the quality of the hiring process.

A Uniform and Consistent Hiring Process

Manual hiring processes often mean redundant manual tasks, paperwork, and fragmented processes. As a result, manufacturers may hire workers without all of the requisite background information they need to make a sound decision or comply with regulations.

Workforce assessment tools automate screening, selection, and onboarding processes to allow manufacturers to standardize on and enforce uniform and consistent processes based on characteristics proven to result in successful workforce performance.



Manufacturers can capture candidate information and decision criteria consistently and accurately. Automated features also make the overall hiring process faster, more efficient, more comprehensive and less costly.

Regulatory Compliance

Automated and consistent processes that set clear standards for everyone to follow also ensure that manufacturers are compliant with both government and union hiring rules. By reducing subjectivity in the hiring process and creating a measurable, repeatable hiring cycle, manufacturers minimize the associated compliance risk. An automated hiring solution also facilitates the creation of comprehensive audit trails. These audit trails make it very easy to collect, disseminate, and report on data about the hiring process as required by many regulations.

Conclusion

With scientific-based, data-driven workforce assessment solutions, manufacturers have a tool that can help them extend their lean manufacturing continuous improvement efforts to their workforce. This allows them to improve their ability to hire the best workers for each position right from the start. Through integration with their workforce management solution, they can then measure the performance of new hires over time. Finally, by feeding results back into the hiring system, manufacturers achieve a closed-loop system that can help them continually improve hiring based on real world results. At



the same time, standardized hiring processes minimize guesswork in the hiring process and help ensure compliance with complex government and union hiring regulations.

Ergonomics: Separating Fact from Fad

Here's what you should know about mandating a corporate stretching program -- and other ergonomic solutions.

There are facts and there are fads, and when it comes to ergonomics it sometimes becomes difficult to know which is which. Do anti-vibration gloves work? What about anti-fatigue mats? Should you implement a corporate stretching program?

Ergonomics consulting firm [Humantech](#) recently discussed these ergonomic solutions -- and more -- in an effort to separate fact from fad.

“Fads tend to obscure the facts,” says Jim Good, president of Humantech, during a recent [webinar](#). Fads, he explained, are forms of behavior that tend to be followed enthusiastically for brief periods of time, typically only to fade away when the general body of knowledge catches up. Facts, on the other hand – and by Humantech’s definition -- make a “measurable contribution” to good ergonomic practice or behavior.

Humantech experts addressed several ergonomic solutions, including:



Anti-fatigue matting: Such matting is a fact supported by scientific evidence, says Humantech. Standing for long periods of time on hard surfaces leads to poor blood circulation and fatigue, two challenges anti-fatigue matting can address. The slightly unstable surface and “cushy” feel of the matting prompts movement and adjustment, which aids circulation.

That’s not to say it is required everywhere. The consulting firm suggests its use at standing work stations and in areas of high foot traffic. Provide industrial mats for workers who stand for at least 90% of their working hours, Humantech advises.

Neither is all anti-fatigue matting created equal. Humantech offered several guidelines, including the need to place the edge of the padding at least eight inches underneath a work station to prevent an employee from operating on uneven standing surfaces.

Back belt for manual material handling. The consulting firm described the back belt as a fad, reporting that evidence suggests it can be either detrimental or beneficial to a worker. Given the lack of scientific evidence to show back belts prevent a first injury, and muddy additional evidence, Humantech experts say universally prescribing the use of back belts is typically not the best means to reduce or prevent back injuries.

They instead suggest addressing the root cause of back injuries and eliminating those causes. That may include



lightening loads that require lifting or making the loads heavy enough that an individual would not consider moving it manually without the aid of an engineering solution.

Workplace stretching. Stretching may not help in preventing injuries, Humantech stated, which led its experts to label stretching a fad when it comes to reducing workplace injuries.

In particular, the experts cited corporately mandated stretch programs as less than justified. Many folks may not do the stretches properly, the ergonomic experts said, and for others it may even be contraindicated.

The seminar leaders were quick to clarify they were not saying stretching is bad, only that rolling it out “en masse” is not recommended. They identified it as a good element of an overall wellness program.

Anti-vibration gloves. Such gloves are an ergonomic winner, according to Humantech, provided the correct solutions are selected. The consulting firm noted the existence of both ISO and ANSI standards by which to compare the performance of such gloves.



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Loss Cost Management for Manufacturers

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Zurich Services Corporation recognizes that risk engineering services have a direct impact on your business—your profitability, your property and other

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NEW for manufacturing customers! Risk Solutions Gateway, an online loss control management portal designed to help manufacturers:

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How Effective Management of Productivity, Quality, Risk and Safety (PQRS) drive manufacturing profitability and sustainability

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