A Lifeline for Your Bottom Line

How an Autonomous Approach to Safety Can Boost Productivity

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Introduction

From 2010-2011, Australia's manufacturing industry experienced the third highest injury incidence rate of all industries, with rates almost double that of the national average.[1] When you consider the increasing autonomy of manufacturing processes, it's a bitter pill to swallow; and yet still today almost 95% of all workplace accidents occur as a result of human error.[2] For responsible manufacturers who regard safety as a number one workplace priority, results like this can prove hugely discouraging.

Of course, while investment in workplace safety is often seen as a bottom-line burden, many forward-thinking businesses have come to regard safety assurance as a crucial lever for enhancing operational performance and productivity.

Indeed, rather than relegating safety procedures to series of punitive actions, modern safety assurance represents a key opportunity for manufacturers to gain a competitive edge. Evidence shows that a proactive approach to safety not only protects workers from serious injury and boosts workplace morale, but greatly reduces the chance of business-crippling machine downtime.

For today's Best-in-Class manufacturers, a well balanced combination of advanced safety technologies, adherence to global safety standards, and a positive shift in the workplace safety culture have proved a powerful means to mitigate workplace hazards and add real financial value to the business.
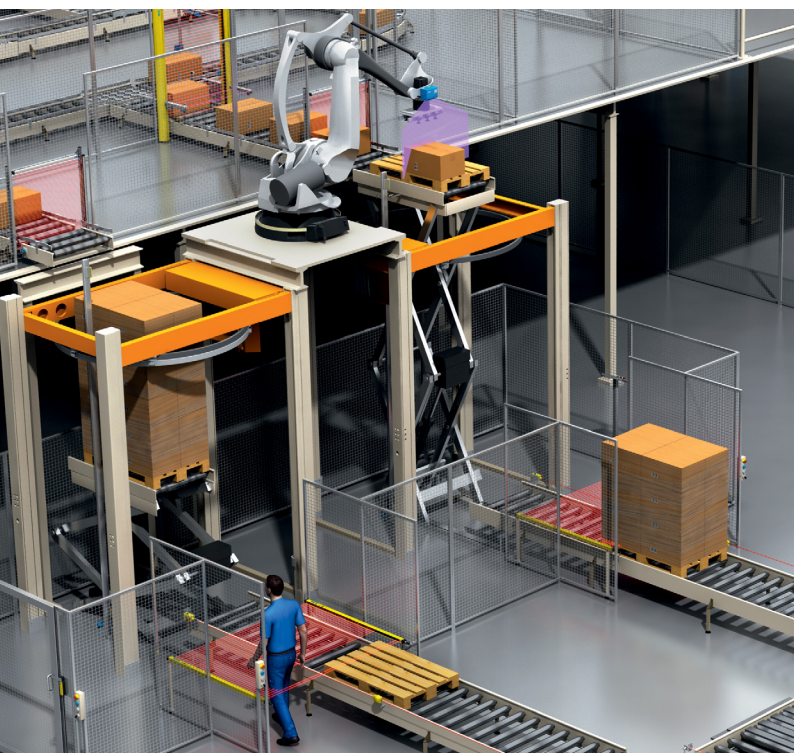
"95% of all workplace accidents occur as a result of human error."

The Problem With Traditional Safety Technologies

There is a common misconception that safety and productivity are opposing interests. This idea is formed from ill-designed safety methodologies that continue to embrace legacy technologies and outmoded management approaches.

Up until the 1990s, these attitudes were grounded in practical reality. The mission critical nature of factory-level infrastructure, and the general lack of confidence in – and regulation of – microprocessor systems,[3] meant that early microprocessor-based safety control systems were generally disfavoured as an industry technology. These 'traditional' safety systems were typically hard-wired, relay-based systems, operating independently to guarantee the highest possible availability: this ensured that a failure in "normal" operations wouldn't compromise or degrade the overall safety process.

One of the fundamental drawbacks of this 'siloed' approach is that the safety system, by default, had a lower level of

"intelligence" capability than the machine control system. This discrepancy imposed serious limitations on the integration capabilities between the two systems.

The introduction of industry standards in the late 1990s, particularly IEC 61508, paved the way for microprocessor-based controllers for manufacturing safety systems. This in turn supported greater integration between the machine control and safety control systems, leading to improved diagnostic capabilities and cooperation between control systems.

The benefits of adopting newer safety control technologies include the flexibility provided by software configurable/programmable devices. This means that the inevitable changes to production techniques, processes or materials, requiring revision of the safety control system are more easily addressed.

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The Problem With Traditional Safety Technologies (*Continued*)

> Using current safety automation technologies makes the adoption of new safety standards – with the benefits they bring – a much simpler process.

What's more, the costs of maintaining legacy technologies can grossly outweigh the expense of upgrading: this includes the increasingly high costs of labour and, in the event of a safety related stoppage, troubleshooting and production downtime.

Evidence clearly shows that manufacturers who invest in integrated safety technologies will not only reduce manufacturing risks and streamline standards compliance, but will drastically improve workplace productivity.[4] Yet despite the obvious advantages of an integrated approach, these legacy safety systems still dominate today's manufacturing landscape.[5]

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Closing the Cultural Gap – Costs of Injury vs. Costs of Safety

A 2010 *Aberdeen Group* study into industrial safety and productivity found that safety culture in manufacturing is still largely driven by pressure to comply with regulatory standards.[6]

While today's 'Best-in-Class' companies recognise a corporate duty to deliver a safe working environment, many businesses maintain a retroactive attitude to compliance, acting only when commercially expedient. The potential fallout from non-compliance, however, extends far beyond concerns over brand equity, with the imposition of costly penalties, plant shutdowns and the potential for serious worker injury.

Of course, simply acknowledging recognised safety standards isn't enough to guarantee ground level compliance. Without a supportive management team, poor safety habits and ill-discipline can proliferate, shattering staff morale and creating workplace cultures where avoidance is cure and critical safety hazards go unreported.

As evidenced from Alcoa's bold safety shake-up in the 1990s, simple strategies can go a long way to improving injury incidence figures and, as a result, worker productivity. Enacting positive procedural changes, such as 'no-guilt' hazard reporting and regular fostered engagement between ground staff and management, can help transform any business from safety liability into a productive powerhouse.[7]

In terms of financial cost, the high failure rate of outmoded safety technologies and methodologies can prove a crippling business expense: industry estimates calculate that the average manufacturing downtime event can hit an astronomical $USD1.6 million per hour.[8] Financial pressures like this can defeat the value of any safety program, as workers who are pushed to meet deadlines or efficiency targets can forgo safety when needed most. Such practices are rife throughout today's manufacturing industry, extending from issues of basic machine safety, to abandoning personal protective equipment and taking dangerous short cuts.

Companies who are proactive with regulatory changes (including ISO 61800-1), who evolve with new technology and implement proper safety control systems, will be able to enjoy high level production and reap the benefits from reduced downtime and injury risk.[9]

SICK: A New Approach to Safety

Deciding to upgrade safety systems is an investment requiring specialised industry and equipment knowledge. This ensures that every decision is made in-line with current Australian and global legal requirements, and in full accordance with your production needs, safety systems, and corporate responsibilities.

SICK is a technology leader in industrial safety systems, offering scalable safety solutions for many applications, ranging from wash down environments in food and beverage manufacturing, to challenging environments within the timber and cold storage industries. We offer trend-setting products and application oriented functionality in everything from simple machine guard door interlocks to intelligent safety light curtains, cameras, laser scanners and programmable safety controllers with motion monitoring capabilities.

SICK's offering is complemented by our holistic 'Safety PLUS' philosophy, combining experience, competence, and high technology with full system openness and a comprehensive suite of safety services.

Safety solutions from SICK enhance your investment, achieve greater potential for savings through more efficient processes, and always focus on the primary goal – human and machine safety.

[1] Safe Work Australia, 'Compendium of Workers' Compensation Statistics Australia 2010-11', Canberra, March 2013

[2] K. Wong, 'Behind every great safety solution is a need for attention', Manufacturers' Monthly, 25 March, 2013
   http://www.manmonthly.com.au/news/behind-every-great-safety-solution-is-a-need-for-a

[3] H. Mulder, 'Automation systems of the future will have safety fully integrated and networked', Process & Engineering Control (PACE)
   http://www.pacetoday.com.au/features/automation-systems-of-the-future-will-have-safety

[4] M. Eitzman, 'Study finds safety is a path to productivity', Plant Engineering, 18 October, 2013
   http://m.plantengineering.com/articlepage/study-finds-safety-is-a-path-to-productivity/760d661364576e1d7d7430ffbbf6c4b5.html

[5] Aberdeen Group, *A Risk Management Approach for Improving Safety and Productivity*, Harte-Hanks, October, 2010

[6] Ibid.

[7] M-C. Ross, 'Is this the best safety plan ever?', Digicast Productions, 24 February, 2013
   http://www.digicast.com.au/blog/bid/94701/ls-this-the-best-safety-plan-ever

[8] A. Hiles (Ed.), The Definitive Handbook of Business Continuity Management (Third Edition), John Wiley and Sons (Chichester), November, 2011

[9] D. Greenfield, 'Adapting to the New Machine Safety Standard', *Automation World*, 13 March, 2013
   http://www.automationworld.com/safety/adapting-new-machine-safety-standard

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