

## **Drivers for leaders to achieve sustainable benefits from ergonomics interventions**

David Caple

*David Caple & Associates Pty Ltd, PO Box 2135, Ivanhoe East, Victoria 3079, Australia*

**Abstract.** Leaders of industry assess the outcomes of risk assessments from a holistic perspective. Compliance with legislation is only one driver and the sustainable interventions are those that bring productivity and quality benefits. A review of 10 Case studies where supply chains have successfully implemented sustainable risk reduction interventions found that reduction of OHS risk was a minor driver for success. The primary drivers related to the impact on process productivity and quality of the system. These case studies were undertaken in agriculture, construction and transport industry sectors. A further study involved consultations with 18 CEOs of multinational companies. They indicated that legislation played a minor consideration for addressing OHS risks. The primary drivers for the CEOs to allocate resources to safety were a fundamental concern for the safety of their people and a broader concern for the reputation of their company to be seen as a leader in safety. Another series of case studies with managers and worker representatives in the health sector indicated that sustainable implementation of risk reductions were problematic where clinical performance was perceived to be more important for feedback from medical managers than utilization of safety risk controls. The future challenges for ergonomists involve their understanding of the big picture of the industry sector and the drivers for their leaders to resource investment.

**Keywords.** Leadership, supply chains, organizational culture, cost benefit analysis

### **1. Introduction**

Leaders in industry have a range of motivations to invest in improvements to their workplaces. These include factors such as increasing productivity, improved product quality and reducing costs. Their motivation to invest in improvements solely to address health and safety risks alone is less clear. Governments around the world introduce legislation to enable enforcement of Health and Safety Standards and Norms. In Australia the current legislation is based on the Robens model (1972) which places a duty on the employer to provide a safe place of work and safe systems of work. This utilizes a risk assessment approach to consult with workers to identify workplace hazards, assess the risk and implement risk controls to eliminate or reduce the risk. Since this time Regulations on specific hazards and Codes of Practice have been introduced to assist employers and employees as well as Inspectors to consistently understand what is required for compliance.

Behind this legislation is an assumption that without such a law employers would not address health and safety risks and that enforcement is required to punish those who do not comply.

This paper discusses a series of case studies to understand the motivation for employers to not only strive to prevent health and safety risks in their workplaces but to

also provide leadership for a proactive organizational culture.

## **2. Methods**

This paper consists of three sets of case studies relating to sustainable ergonomics benefits from initiatives led by senior managers. These methods were selected to enable the CEOs and employers to describe why they invest in process improvements. They were also asked to elaborate to what extent compliance with health and safety legislation was a motivator for their investment. This methodology was selected due to the focus in Health and Safety Management systems audits on leadership (AS4801:2001 – Occupational Health and Safety Management Systems).

The Case studies selected related to three separate studies conducted to understand how sustainable ergonomics interventions can be achieved at an industry level or large organizations.

*2.1* Supply chains from the agriculture, transport and construction sector were researched using interviews with industry partners and site visits to identify the motivations for sustainable interventions. The focus of these studies was to identify examples where ergonomics risks have been eliminated or significantly reduced.

*2.2* Personal interviews were conducted with the Chief Executive Officer (CEO) of 18 multinational and national companies to discuss their opinions of what their role is to achieve a successful health and safety performance and a proactive organizational culture.

*2.3* Site visits and consultations occurred with senior managers and nursing staff in health care sector to understand the outcomes of Incident Investigations particularly when musculoskeletal disorders had been reported by nurses.

## **3. Results**

*3.1* In the agriculture sector the financial viability for farms involved in growing crops is based on high quality and a good yield of grain for the size of the farm sown with seed. It was found that the sustainable investments in plant and machinery have eliminated the use of bags or drums of seed, fertilizer and chemicals. These had been associated with injury and disease for farm workers. The size of farms in Australia has increased significantly to enable them to become financially viable. They now utilize large machines to prepare the soil, plant the seed and harvest the grain. These machines test the soil and add calculated doses of fertilizer from bulk hoppers on the sowing machines. When the grain is harvested it is conveyed directly into bulk bins and transported in bulk for processing. This eliminates the use of large bags of grain that were once manually handled by the farm workers. The drivers of these machines sit in air conditioned cabins with reduced risks to dust, noise and extremes of heat. It was found that the motivations for these investments were based on the cost benefit analysis for the productivity and quality of the grain. The fact that the significant health and safety risks to farm workers were eliminated was not found to be a motivator but a positive side benefit.



3.2 In the vegetable growing sector multiple handing of vegetables can occur through the harvesting, transporting and distribution centre and retailing process.



3.3 In the domestic housing sector the construction of roof frames, known as trusses, involving the harvesting of trees, sawmilling and making of the trusses in factories. These are packed in house lots and transported to the construction site for assembly.



3.4 One on one interviews were conducted with the 18 CEOs to understand how they see leadership in health and safety. They were also asked about the key drivers for a proactive organizational culture. The common response was that proactive involvement of the CEO in the health and safety performance of the company is critical to their role. This was not about just reviewing data and reports on incidents but active involvement with the staff in supporting and recognizing proactive performance. Holding their senior managers accountable for performance and integrating contractors into their expected procedures were frequent responses.

They see that a focus on health and safety is a reflection of the company Values on a focus on their people.

Legislation compliance was not a major driver for the CEO. The reputation of the company was more important. They were concerned that their company may receive negative publicity in the event of a major incident. The potential fine from the regulator was not seen as a driver for their commitment to be “best in class”. They were very interested to monitor the health and safety performance of their competitors to ensure that their company was equal to or better than their competitors. They typically used the LTIFR (Lost Time Injury Frequency Rate) as the standard measure for comparison. The ability of the CEO to describe ergonomics interventions that had sustainable and positive outcomes for the workers was an indicator of how close they were with their understanding of injury prevention. Those CEOs that were not in the practice to walk through their workplaces and engage directly with their workers were unable to provide this insight.

3.4 Within the health care sector it was found that the clinical outcomes for the patient was the primary topic for performance feedback and priority for time allocation for the nurses. All parties in the health sector work under great pressure and expectations from patients and their families. Significant investment has occurred on patient handling equipment and training to reduce nurses lifting or transferring patients. Incident Investigations reviewed

indicated that nurses frequently did not follow the safe procedure but took “short cuts”. This was a reflection of the culture in their workplace where they have a high workload demand and clinical needs of their patients are also high. It was also a reflection of the poor ergonomics design of some of this equipment and the difficulty to use it on their own.

They tended not to use the lifting equipment if it was not readily available. For example if it was shared between wards and stored at a distance from where it was required. They also experienced injuries when using the equipment where the architectural design of the wards did not allow sufficient space to position and move the equipment safely. This included narrow doorways and corridors as well as poorly designed bathrooms where the equipment was difficult to move.

There were also risks of injury when the sizes of the slings were not suitable for the anthropometry needs of the patient. This resulted in the nurse needing to use excessive force to position and move the patient.

#### **4. Discussion and Conclusion**

*4.1* Compliance with health and safety legislation was not found to be the major motivator in three sets of case studies where proactive injury prevention programs have been implemented. The economic and process quality benefits of major changes across supply chains in agriculture, construction and retail sectors were the major driver for large financial investment. The elimination or reduction of health and safety risks were achieved by these investments but they were not considered by the stakeholders as a major driver. They were recognized as a secondary benefit to the interventions that were primarily introduced for the future financial viability of the company. This encourages ergonomists to be more involved with and aware of the holistic nature of the business or industry sector they are working and to integrate ergonomics input as part of the big picture opportunities.

*4.2* The major investments that resulted in risk reduction included the use of greater mechanization of processes and elimination or reduction in the use of manual work. The lack of availability of trained workers in rural areas was also a major driver for investment in mechanization of process to increase productivity and quality of agricultural products. The introduction of more mechanization however brings with it new challenges with physical, cognitive and work organizational risks. These need to be recognized and assessed as part of the future planning models.

*4.3* The companies seen as best in class were led by passionate and proactive CEOs who drove their executive managers to ensure the safety of their staff and contractors. The existence of safety legislation and the potential threat of fines was not found to be a major driver for their leadership. They see health and safety as a primary indicator of them achieving their company Values by respecting their people. However it was evident that where the health and safety regulator was active in a particular industry, risk area or workplace, the senior managers were very engaged.

They were very concerned that any legal compliance risks were quickly addressed or challenged in the courts to have them resolved. The probability of Inspectors visiting workplaces is very low unless a particular incident or risk is notified. For example in the State of Victoria there are around 200 Inspectors with over 300,000 workplaces. Hence the impact of direct action by the regulator needs to be well targeted to optimize their influence over risk reduction actions.

*4.4* Within the health sector the primary focus for nurses was found to be the clinical outcomes for their patients. They use of patient lifting equipment was seen as a proactive initiative but not a guarantee for safe behaviours. It was found that they would sometimes not use the equipment at all or not follow the safe procedures if they were busy and they

assess the risk to themselves as low. This risk assessment by the staff was also influenced by the equipment if it was poorly designed from an ergonomics perspective or the architectural environment limited the safe use of the equipment. It also reflected the lack of staff available to assist with the equipment being used.

**References**

Robens, Lord (1972). Safety and Health at Work, Volume 1. H.M.S.O. London