ARTICLES

Safety Performance and Profitability - Is There a Relationship?

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INTRODUCTION

While considering the issue of good safety performance and its relationship to the operating and/or profit efficiency of an organisation, it is important to clarify what is meant by performance (Wooden et al 1999). As Wooden et al (1999 p9) suggest "... the performance measures adopted should reflect the goals and objectives of individual firms. When dealing with aggregations of firms, however, this is difficult given these objectives can differ enormously across firms. What, however, is consistent across firms (at least, those that operate in the market sector) is the need to meet some minimum profit requirement. Thus, in assessing whether OHS is good for business, it is the impact on profit that should be examined most closely."

However, Wooden et al (1999 p9) go on to identify that..."Unfortunately, while it is profitability that is of most importance, much of the research evidence has tended to concentrate on the productivity effects of OHS. While high levels of productivity (output per unit of input) may be an important prerequisite for profitability, productivity and profitability are not the same. An increase in productivity could be achieved, for example, by replacing old equipment with new, more efficient equipment, or by motivating workers to work harder through increased pay." Increased profits do not necessarily follow increased productivity. This should be considered while reviewing this paper.

INDIVIDUAL INTERVENTIONS

There are plenty of examples of individual interventions that, while put in place to improve safety, have also changed productivity in a profitable way. Many practitioners in health and safety have personal experience of these successful interventions. For example, often we will find that a proposal to eliminate manual handling effort by the provision of a mechanical aid will increase productivity to a point that easily justifies the expense of the aid on that ground alone.

A recent well-documented report is that of Abrahamsson (2000) who described the results of an project at Swedish Steel. The evaluation was performed for three years and indicated that, as well as safety, quality and efficiency improved and the venture was profitable in those terms. Well before this time Oxenburgh (1991) documented over 60 case studies where productivity gains were achieved alongside safety improvements. Data was collected in Australia, the United Kingdom, United States and Sweden and included companies such as General Motors, Goodyear, Shell and Volvo as well as many others. Safety and productivity gains were estimated as were investment pay-back periods.

The recently-established "OHS Solutions Database" available via the NOHSC website (www.nohsc.gov.au) lists hundreds of OHS solutions. Many of these also indicate that the solution resulted in productivity gains as well as improvements to safety. Likewise, the US Occupational Safety and Health Authority (OSHA) lists on its website (www.osha.gov) a series of short descriptions of ergonomic interventions that have resulted in both safety and productivity gains. They include businesses such as: General Motors; Union Camp (cardboard container manufacturer); 3M; and John Deere.

There is no doubt that many discrete interventions have improved safety and profitability. If the health and safety activity of an organisation were composed of a series of these successful safety-enhancing and economically beneficial interventions then it would be logical that the profitability of the organisation would improve along with safety. However, as Oxenburgh (1991) points out, not every safety intervention will be profitable. It is also obvious that very few safety practitioners would be keen to describe a safety intervention that achieved very little. The research lacks studies that examine the broad activities of organizations and compare these experimentally. Wooden, et al. (1999) of the National Institute for Labour Studies conducted a study on behalf of the NOHSC aimed at determining the relationship between OHS activity and productivity. Wooden, et al. found little strong empirical evidence to support a link. Reports often suggest a link between OHS activity and productivity but causal relationships are not usually proven.

BROADER ANALYSES

An example of broader analysis of the costs and benefits of health and safety can be found in regulatory impact statements prepared at the time of proposed regulations. One of the most recent is the *Regulatory Impact Statement for the proposed Occupational Health and Safety Regulation 2001* (WorkCover NSW 2000). WorkCover estimated that the costs of injury in NSW were about $5.7B per annum with about $3B of this borne by employers. The compliance costs of the proposed *Occupational Health and Safety Regulation 2001* were estimated at about $0.5B per annum. Economic modeling over a ten-year period suggested that an injury and disease reduction of about 1.7% per annum would represent a break-even point. WorkCover estimated that a reduction of 4% would be achievable and hence compliance with the regulation would be a profitable exercise to the tune of $4B (total of benefit to the community including employers). Whether WorkCover's estimations will be achieved is of course unknown and the exact costs and benefits are unlikely to be ever quantified. Nevertheless, because the regulatory impact process is reasonably rigorous and subject to public comment and submission there is probably good cause to have some faith in the estimates.

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INVESTOR PRESSURE FOR CORPORATE RESPONSIBILITY

Socially responsible investment (SRI) is a term loosely defined to mean investments that produce income in a socially responsible way. What "socially responsible" means can vary and is subjective (ILO 1998). Socially responsible investment first became popular in the United States in the early 1980's and soon after in the United Kingdom and France. Within a decade they spread to other developed countries such as Australia, Austria, Germany, Japan and Switzerland (ILO 1998).

One approach to SRI is the screening of investments that form investment funds. Various screens can be developed and sometimes these include labour standards. However, the content of the screen and its implementation is subject to no set standards. In terms of returns, these funds are now viewed favorably by some commentators (ILO 1998)[3]

The Dow Jones Sustainability Group Index (DJSGI) (see www.indexes.dowjones.com) is an example of a financial index that incorporates the SRI principles. Figure 1 shows the DJSGI performance plotted against the Dow Jones Group Index (DJGI).

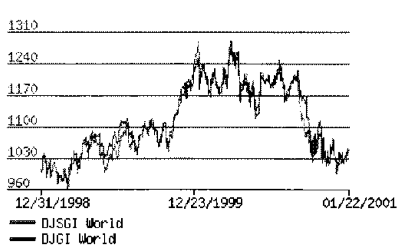

Figure 1

Safety is only a small part of the sustainability issue, but we can see that there does not seem to be any great difference between the performance of the Sustainability Index and the Dow Jones Index.

In Australia, Westpac Investment Management have recently developed an "eco" index to reflect the performance of a pool of companies listed on the Australian Stock Exchange that exhibit socially responsible characteristics (Westpac Investment Management c2000). Along with the index, Westpac are now operating a fund reflecting the same principles.

As well as the concerns often thought of in socially responsible funds (e.g. environmental), it was established though a survey of superannuation fund members that worker health and safety was also a high priority among those who contribute to the funds. Westpac have conducted preliminary investigations into the establishment of an investment screening system to highlight businesses with good OHS practices (Mather c2000). Westpac engaged Monash University to develop the screening system. A screen of 150 companies on the Australian Stock Exchange established a pool of 51 companies. Analysis of the stock performance of the members of this pool showed a similar price growth to that of the ASX200 index.

Increased profits do not necessarily follow increased productivity

It is probably too early to give great emphasis to these comparisons but it appears that socially responsible investments, including those focussed on workplace safety may yield similar profit levels to the broader market.

CEO DRIVERS

The National Occupational Health and Safety Commission will soon release the Stage 2 report of the "CEO and Supervisor Drivers" project. The first stage was completed in 1999 and consisted of a literature review to explore the motivators behind action that CEO's and supervisors take with regard to workplace safety (Gunningham 1999).

Gunningham (1999) identified a range of drivers that motivate CEO's and supervisors. Credibly enforced regulation was the most prominent followed by the potential damage to corporate image. Other motivators, having a smaller or emerging impact, were identified and these included the "safety pays" argument.

In relation to "safety pays", Gunningham (1999) presented views on both sides of the argument. Based on the literature reviewed, only small weight is given to the argument that "safety pays" is a strong motivator. The contrary arguments that seem to sway Gunningham were that there is some evidence that managers tend to only look a few years ahead when considering returns on funds. Preventative safety interventions can take very much longer and may involve uncertain returns. In the United States it may be a strong motivator where compensation costs are higher. Further, Gunningham notes that OHS is not on the agenda of many managers who would only deal with OHS in a crisis situation - otherwise if all seemed to be well, or at least not particularly problematic, then it would receive little attention.

The second stage of the project is expected to be released shortly. The second stage is being conducted by KPMG consulting and involves a large-scale survey of CEO's and supervisors. It is expected that regulation will be prominent as a self-reported motivator and this would concur with the conclusion Gunningham (1999) reached through a review of literature. However, it seems possible that some motivators not given great weight in the literature reviewed by Gunningham (1999) will feature strongly in the self-reports. Of course with the report yet to be released this is somewhat speculative but it would not be surprising if the ethics of providing for worker safety and the prevention of loss were self-reported as key motivators. Russell (1999) agrees and says, "An ongoing problem [enunciated by Oxenburgh 1991] relating to the financial approach is our general failure to convince organisations that OHS performance represents an opportunity, not a cost." (p. 90).

Should it be established that the prevention of loss is a key motivator in the mind of CEO's then that would provide some evidence that OHS and profitability are positively correlated - at least in the minds of those surveyed.

Interestingly Quinlan (1996) believes that a cost/profit based motive would not be useful as it would lead to a reactive and minimalist approach. Quinlan's view is that an approach based on ethics is likely to be of more substance.

3 *ILO Cite Cowan v. Scargill (1985), I Ch. 270 (Cowan) at p. 287 (UK); M. O'Brien Hylton: "'Socially responsible' investing: Doing good versus doing well in an inefficient market", p. 42, in* ***American University Law Review*** *(1992), pp. 2, 37-45; A. Leigh: "'Caveat investor': The ethical investment of superannuation in Australia", p. 25, in Australian Business Law Review (Oct. 1997), 341.*

In global terms there is evidence of some growth in interest in social issues among otherwise profit-motivated corporations. The World Business Council for Sustainable Development (WBCSD see www.wbcsd.ch) is one such example. The WBCSD is a coalition of 150 international companies drawn from 30 countries and covering 20 industry types. The WBCSD members are committed to environmental protection, social equity and economic growth.

The WBCSD document *Corporate Social Responsibility: Making Good Business Sense* (Holme & Watts 2000) outlines the Council's corporate social responsibility doctrine. Part of the framework is employee rights, including a safe workplace. Among conclusions from the two-year global study, Holme and Watts, co-chairs of the WBCSD Corporate Social Responsibility Working Group, wrote that "...a coherent CSR strategy, based on integrity, sound values and a long-term approach, offers clear business benefits to companies and a positive contribution to the well-being of society." (p. 3). Employee safety is only part of the model, but the conclusions of the Council's report supports the argument that safety is a profitable venture.

An ongoing problem is our general failure to convince organisations that OHS performance represents an opportunity, not a cost

Case studies of Council member activities include the Carvajal (2001) case study that demonstrates how efforts toward ecological sustainability can achieve those goals but also improve safety dramatically and significantly reduce costs. Carvajal is an international graphic arts business operating in 18 countries with over 10,000 employees. The issue described in the case study is that of the substitution of hydrocarbon-based solvents and cleaners with environmental and worker friendly solvents.

The United Nations "Global Compact" (www.globalcompact.org) is an initiative of similar global nature to those of the World Business Council. The Global Compact was proposed at the World Economic Forum meeting at Davos in January 1999 and finalized at the High-Level Meeting on Global Compact on 26 July 2000. The Compact aims to give impetus to the ILO's labour conventions by engaging with corporations who make a voluntary commitment to good corporate practices in human rights, labour and the environment. UN Secretary-General, Kofi Annan, said in his opening remarks that "What we must do instead is to ensure that the global market is embedded in broadly shared values and practices that reflect global social needs, and that all the world's people share the benefits of globalization".

If safety is done well then the impact on profitability should be a positive one

Specifically the Compact consists of nine "principles" drawn from: 1. the Universal Declaration of Human Rights; 2. the ILO's fundamental principles on rights at work; and 3. the Rio Principles on environment and development. Four of the total of nine principles concern the "labour" theme and they coincide with four ILO Conventions:

Principle 3: freedom of association and the effective recognition of the right to collective bargaining;
Principle 4: the elimination of all forms of forced and compulsory labour;
Principle 5: the effective abolition of child labour; and
Principle 6: the elimination of discrimination in respect of employment and occupation.

At the meeting 50 large companies committed their support and the aim is to add 1,000 companies in total including 100 large transnational corporations within three years. Corporations are not bound legally, but nevertheless the concept is that these corporations are directly committing to ILO standards whereas in contrast the commitment of their home nation and the nations where they operate may be much weaker or non-existent.

GOOD SAFETY IS GOOD BUSINESS

It is clear from the involvement of major corporations in the World Business Council for Sustainable Development and the ILO's Global Compact, that social and worker issues are of at least some concern at senior level of international companies. This is likely to continue if there is a growth in investment vehicles and indices that promote these issues. The great question here concerns the result of that commitment and interest. In this regard the phrase, "*good* safety is good business" is herein proposed, as it might be more appropriate than "safety is good business".

Surveys undertaken on behalf of the National Occupational Health and Safety Commission (NOHSC) show that many people in the Australian working community hold a "victim blaming" view of safety (ANOP 1995; 1996; 1998). The thinking of health and safety representatives has also been shown to be similar (e.g. Cowley & Else 1987; Biggins & Phillips 1991; Gaines & Biggins 1992; Culvenor, Cowley & Else 1996). It is therefore reasonable to presume that the thinking of people in management positions would also be unfortunately aligned to a behavioural model. Unpublished data collected by VIOSH Australia supports this proposition.

The effectiveness of safety efforts is therefore questionable if highly-safety-motivated but otherwise uninformed senior management initiate and guide safety programs. Without a radical change in knowledge about key safety concepts, much safety effort is likely to be poorly directed and perhaps even "driven in reverse" (see Culvenor 1997b).

However if safety is done well then the impact on profitability should be a positive one (Else and Hill 1998). Over the past twenty years health and safety regulation and practice has moved from the so-called prescriptive model toward a problem-solving model[4]. This development has paralleled thinking in business improvement such as quality (see Deming 1982). What emerged from both business imperatives is that there are no set solutions for problems. What is mandated is that efforts must be made to examine the work processes, to identify hazards, poor quality, etc and to engage in a problem solving process that seeks to reduce these problems with a focus on changes to the equipment, process, etc.

4 A change largely initiated by the Robens report (Committee on Health and Safety at Work 1972) and since endorsed by Industry Commission inquiry in Australia (1995)

Like quality improvement, the control at source model that underpins OHS legislation requires a strong sense of creativity (see Culvenor 1997a, 1997b; Culvenor & Else 1997; Mathews 1997; Culvenor 2000). The control at source model manifests itself as the "hierarchy of control" in many OHS regulatory instruments. These usually begin with "elimination at source", "substitution of the hazard", etc. Creative challenges arise at this point because the hazards in question often exist either directly or indirectly as a result of a productivity goal. Safety regulation thus calls for some radical thinking about how work is to be achieved. "Why do we need this hazard?" "How else could we do this job?" These types of questions must be asked in an attempt to pull apart how the work is done and put it together again in a way that improves safety.

Figure 2 shows a model of the relationship between risk controls (ranging from low order such as PPE, administrative, behavioral controls to high order such as control at source by elimination, substitution, engineering modification, etc) and the innovation of the system that is required. The model illustrates that a very much greater level of system innovation is associated with high order controls. This is a "double-edged sword" in that it implies that high-order and highly-effective risk controls require great innovative effort. However, the positive side is that innovative effort focussed on redesigning a work system should yield opportunities for great improvement in productivity and profitability.

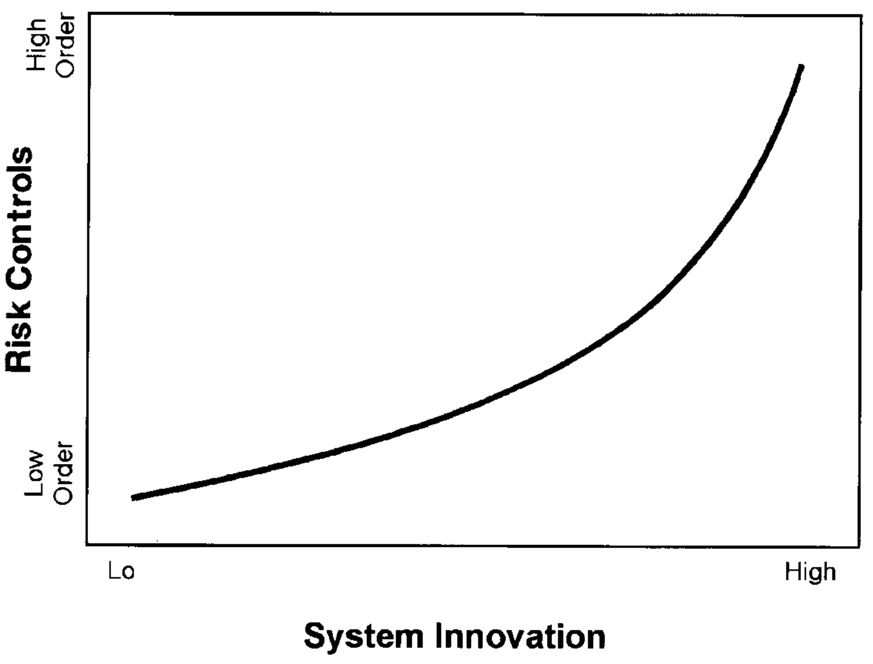

Figure 2

CONCLUSION

There are both documented examples and personal anecdotes demonstrating that safety intervention results in greater profitability.

In broad terms, it can be seen that regulatory impact assessments such as that recently completed in NSW suggest that compliance costs borne by employers would probably yield a profitable return. However, there is little data about the effects on profitability of safety investment across an organisation, and this area of research is expected to be pursued by the National Occupational Health and Safety Commission.

It has been suggested that managers of organizations are primarily driven by ethical or legal motivators and hence would seem to be either unconvinced or unaware of economic benefits of safety interventions. Contrary to this is the growing commitment of very large corporations to social matters including occupational safety. This would seem to indicate their preparedness to countenance safety as a profitable venture or at least view it as one that is not counter productive to their profit motives. If this trend at a global corporate level eventually becomes widespread, it would offer great hope for safety improvement.

Finally it is the contention here that safety should cause improvements in profitability if it is done well. If the thinking of influential individuals is aligned toward contemporary ideas in safety such as the control at source model, then we could expect to see innovative efforts in safety. It would be logical that these efforts would have the potential to innovate systems in a profit-enhancing way. In that sense, good safety is good business.

REFERENCES

Abrahamsson, L. 2000, 'Production economics analysis of investment initiated to improve working environment', *Applied Ergonomics*, vol. 31, no. 1, pp. 1-7.

ANOP Research Services Pty Ltd, 1995. *Community Awareness of, and Attitudes to, Occupational Health and Safety: Detailed Report of ANOP National Benchmark Study Presented to Worksafe Australia, December 1995*, www.nohsc.gov.au.

ANOP Research Services Pty Ltd, 1996. *Occupational Health and Safety Post-Campaign Evaluation: Report on March 1996 ANOP Re-interview Survey Presented to Worksafe Australia*, May 1996, www.nohsc.gov.au.

ANOP Research Services Pty Ltd, 1998. *Community Awareness of Occupational Health and Safety: Detailed Report on ANOP 1998 Survey Presented to NOHSC, June 1998*, www.nohsc.gov.au.

Biggins, D. & Phillips, M. 1991, A Survey of Health and Safety Representatives in Queensland: Part 2: Beliefs about accident; comparisons of representatives and shop stewards, *Journal of Occupational Health and Safety-Australia NZ*, vol. 7, no. 4, pp. 281-286.

Carvajal 2000, '*Eco-Efficient Cleaning Process*', in World Business Council for Sustainable Development, available www.wbcsd.ch, also see www.carvajal.com.co.

CCH Australia 1996, *Planning Occupational Health and Safety*, 4th edn, CCH, North Ryde, NSW.

Committee on Safety and Health at Work, 1972, Safety and Health at Work: Report of the committee 1970-1972, Her Majesty's Stationery Office, London.

Cowley, S. & Else, D. 1987, Trade Union Health and Safety Representative Training Evaluation Report, unpublished, Ballarat College of Advanced Education, Ballarat

Culvenor, J. & Else, D. 1997, 'Finding Occupational Injury Solutions: The Impact of Training in Creative Thinking', Safety Science, vol. 25, nos. 1-3, pp. 187-205, , www.culvenor.com.

Culvenor, J. 1997a, Breaking the Safety Barrier: Engineering New Paradigms in Safety Design, PhD Thesis, University of Ballarat, Ballarat, www.culvenor.com.

Culvenor, J. 1997b, 'Driving the Science of Prevention into Reverse', Safety Science, vol. 27, no. 1, p. 77-83, www.culvenor.com.

Culvenor, J. 1997c, 'The Use of Creativity Techniques in OHS Risk Management', Creativity and Innovation Management, vol. 6, no. 2, pp. 99-105, www.culvenor.com.

Culvenor, J. 2000, 'From Prevention to Innovation', Corporate Risk, vol. 7, no. 6, pp. 39-44. Also in Safety in Action 2000, Melbourne, 4-6 April, Volume 1, pp. 78-83, www.culvenor.com.

Culvenor, J.F., Cowley, S. & Else, D. 1996, Evaluation of Health and Safety Representative Training in South Australia, WorkCover Corporation of South Australia, Adelaide. See www.workcover.com or www.culvenor.com.

Deming, W.E. 1982, Quality, Productivity, and Competitive Position, MIT, Cambridge.

Else, D. & Hill, J. 1998, 'Healthy is Both Wealth and Wise', Company Director, October, pp. 17-21.

Gaines, J. & Biggins, D. 1992, A Survey of Health and Safety Representatives in the Northern Territory, Journal of Occupational Health and Safety-Australia NZ, vol. 8, no. 5, pp. 421-428.

Gunningham, N. 1999, CEO and Supervisor Drivers: Review of Literature and Current Practice: A Report Prepared for the National Occupational Health and Safety Commission, NOHSC, Canberra, www.nohsc.gov.au.

Holme, R. & Watts, P. 2000, Corporate Social Responsibility: Making Good Business Sense, World Business Council for Sustainable Development, Geneva, www.wbcsd.ch.

Industry Commission 1995, Work, Health and Safety: Inquiry into Occupational Health and Safety, 2 vols, Report No. 47, AGPS, Canberra.

International Labour Organisation 1998, Overview of Global Developments and Office Activities Concerning Codes of Conduct, Social Labelling and other Private Sector Initiatives Addressing Labour Issues, ILO, Geneva, www.ilo.org.

Mathews, J. 1997, 'More Innovative Workplaces = Safer Workplaces: Organisational Innovation and the Protection of Workers' Health and Safety', Journal of Occupational Health and Safety Australia and New Zealand.

Mather, E. c2000, Linking Screened Investments to Shareholder Value: Occupational Health and Safety Screening, Westpac Investment Management.

Oxenburgh, M. 1991, Increasing Productivity and Profit through Health and Safety, CCH, North Ryde, NSW.

Quinlan, M. 1996, 'Managing Occupational Health and Safety in a Changing Environment', in Johnstone (ed.). New Directions in Occupational Health and Safety Prosecutions: The Individual Liability of Corporate Officers, and Prosecutions for Manslaughter and Related Offences, Centre for Employment and Labour Relations Law Working Paper No. 9, University of Melbourne, Parkville.

Russell, R. 1999, 'The Future: A Management View', in Mayhew, C. & Peterson, C.L., eds., Occupational Health and Safety in Australia: Industry, Public Sector and Small Business, Allen & Unwin, St Leonards, NSW.

Westpac Investment Management c2000, Reconciling Profitability & Responsibility - An Australian Perspective on a Global Phenomenon, Westpac Investment Management.

Wooden, M. Vanden Heuvel, A. & Gates, R. 1999, OHS Activity and Firm Performance, A report to the National Occupational Health and Safety Commission, NOHSC, Sydney, www.nohsc.gov.au.

WorkCover NSW 2000, Regulatory Impact Statement for the Proposed Occupational Health and Safety Regulation 2001, WorkCover NSW, Sydney, www.workcover.nsw.gov.au.