

# THE BUSINESS CASE FOR SAFE, HEALTHY & PRODUCTIVE WORK

Implications for resource allocation:  
Procurement, Contracting and infrastructure decisions



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## Foreword

Safe Work Australia is working closely with the International Governance and Performance (IGAP) Research Centre at Macquarie University, to standardise and improve work health and safety reporting by businesses and organisations. This work is being co-funded by the Safety Institute of Australia and CPA Australia.

Currently there is a lack of standardised and accepted indicators to measure the work health and safety performance of organisations and businesses at the organisational level. Work health and safety information can and is being reported on a voluntary basis, however reporting is often selective and inconsistent. This hinders comparisons of work health and safety performance and due diligence reporting over time and across organisations.

This paper is the third in a series of research papers on the Role of Accounting in Work Health and Safety Governance. The work is informing a broader three staged policy development project taking place over three years. The aim of the project is to develop a standardised set of indicators businesses can use in annual reports as well as guidelines for the development of lead and lag indicators relevant to the size and nature of the business.

Stage one involves developing a draft set of external and internal indicators to improve organisational level work health and safety reporting and to help Officers meet their due diligence obligations under the model Work Health and Safety Act.

Stage two involves testing of the work health and safety indicators and guidelines. Testing will be carried out using a mixed method approach involving case studies, interviews and surveys in selected businesses across Australia. A pilot test will be conducted and an assessment of the outcomes undertaken.

Stage three will involve a review of the research outcomes, which will be used to develop policy options for the consistent use of standardised work health and safety indicators and guidelines.

Safe Work Australia

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## Executive summary

For too long, the business case for investing in measures to ensure the health and safety of workers has been viewed in restrictive, financial terms and based on inadequate and inherently biased data. Rather than strategically examining the cost-benefit to business of *work health and safety*, the typical 'silo'-driven analysis produces a narrow focus on a very different concept; the cost-benefit to business of *health and safety interventions*. This has obscured much of the potential for improving organisational productivity and operational decision-making.

Even then, the quality of traditional cost-benefit analyses appears fundamentally poor. On the one hand, the direct cost of a health and safety intervention has a measurable impact on the bottom line. On the other, both the anticipated benefits of intervention and the costs of failing to intervene are difficult to quantify. Aside from the significant costs disregarded as 'externalities' and therefore deemed largely irrelevant, many of the costs and benefits to organisations are hidden. Others are consciously ignored because they are perceived as too difficult to quantify reliably or to tease out of aggregated cost categories. As a result, work health and safety decisions tend to rely on vastly incomplete financial data. This renders cost-benefit analyses partial and unreliable, and has a tendency to bias financial analyses against investment in work health and safety interventions.

In reality, the business case for investing scarce organisational resources (e.g. in a program or asset), may be grounded in any one or more of three approaches. It may be justified on legal grounds where the organisation is legally required to invest to achieve a particular objective or outcome. It may be justified on financial grounds where the financial benefits the business expects to accrue from the investment exceed the expected costs of that investment. Finally, an investment may be justified on strategic grounds where undertaking the investment is expected to help the organisation achieve additional strategic goals, such as maintaining strong reputational capital or attracting and maintaining preferred employee and supply chain relationships.

In Australia, the legal requirements alone present a clear business case for investment. Those conducting a business or undertaking have a primary duty to *ensure* the health and safety of workers (and others, including contractors). Cost-benefit or budgetary concerns generally provide no legal defence for failing to comply with this duty. Furthermore, potential fines and penalties for breaching the requirements are significant, and insurance options, such as director's and officers' insurance, have proven problematic and counter-productive.

In contrast, demonstrating the financial case for investment can be highly problematic. Not only are many relevant costs hidden or externalised, but the work health and safety implications of many operating and financing decisions are often overlooked because critical interdependencies between 'safe and healthy work' and the four P's of planning, procurement, production and performance (including productivity) are poorly understood. As a result, the management literature (and the internet) is peppered with evidence of corporate crises arising from inadequate management responses to health and safety risk; each of which illustrates both lingering reputational concerns, and the significant failure costs that far outweigh the foregone preventative cost of injury or illness.

Overall, this paper suggests a high level of consistency between the legal, strategic and financial business cases for organisational investment in work health and safety. Further, the paper clarifies the role of the business case in informing organisational investment decisions, including work health and safety decisions.

In summary:

1. The business case for work health and safety is generally misunderstood and poorly analysed;
2. The legal requirements for work health and safety provide a clear business case for investment;
3. The limitations of financial cost-benefit analysis make it inappropriate for informing decisions as to whether or not to invest in controlling risks to the health and safety of workers, however;
4. Financial (cost) analyses are likely to be useful for highlighting the most obvious and measurable work health and safety cost implications of operational and financing decisions – although to avoid misinterpretation must be accompanied by a caveat that recognises the incompleteness of estimated financial benefits. To this end, detailed research that can provide industry with guides to ratios of visible to hidden costs for various injury and illness outcomes are likely to be useful); and
5. Intervention cost analyses (as opposed to cost-benefit analyses) remain important for informing choices between equally effective risk controls.

## 1. Introduction

The business case for investments in work health and safety has been examined and debated for decades. Arguments that 'work health and safety is good for business' were increasingly offered during the 1980s and 1990s amid growing public attention to corporate social responsibility. Advocates cited intrinsic benefits of a safe, healthy and productive workforce and listed various cost categories associated with injury and illness, yet few provided empirical data to support their claims.

Intuitively however, clear links could be drawn between worker 'health and safety' and concepts of fitness for work, productivity and employee trust and engagement (or conversely between work-related injury or illness and workplace disruption, compensation and other business costs). Yet the financial reality of the business case proved challenging for accountants to demonstrate.

Accounting departments faced a number of hurdles. The first stems from problems in identifying and measuring the 'relevant' direct costs of work health and safety success and failure. Some, such as workers compensation expenditures and costs relating to lost production or replacement workers, were obvious and quantifiable. Other direct costs, such as costs of supervisor and management's time diverted from productive activity to incident investigations, or costs of human resource personnel having to manage workers compensation claims and follow up on injured and absent workers' progress, were far more difficult to capture in a meaningful way<sup>1</sup>.

Importantly, establishing a business case for injury and illness prevention has tended to prove much easier after-the-fact than before an incident occurred. Repeatedly, evidence from organisations both small and large, has demonstrated failure costs associated with an injury or incident substantially greater than the foregone cost of prevention. This suggests many failure costs are omitted from a priori cost-benefit analyses. Some are hidden, unrecognised and thus are excluded unintentionally while others are ignored due to active but incorrect judgements about the likelihood of their reality. These knowledge gaps in accounting analyses point to problems of information asymmetry that have much broader implications for work health and safety.

### 1.1. Accounting and information asymmetry

In many ways, accounting is central to the problem that information asymmetry poses for work health and safety. In recording and reporting the results of business decisions, accounting tends to be viewed as merely a performance measurement function. Yet in practice, accounting can either promote or subordinate WHS concerns because accounting processes not only measure WHS activity; they can also have significant influence on it. This is most evident when financial information is used in ways that create a 'production versus safety' trade-off, rather than focusing attention on safe, healthy and productive work.

These trade-offs and conflicts arise because organisational decisions about production and health and safety are often intertwined. Choices regarding production levels and methods, staff allocations and infrastructure, for example, each have the potential to increase (unnecessarily) the critical health and safety risks to which workers are exposed; risks which then, in turn, will require further allocations of organisational resources to health and safety interventions and controls.

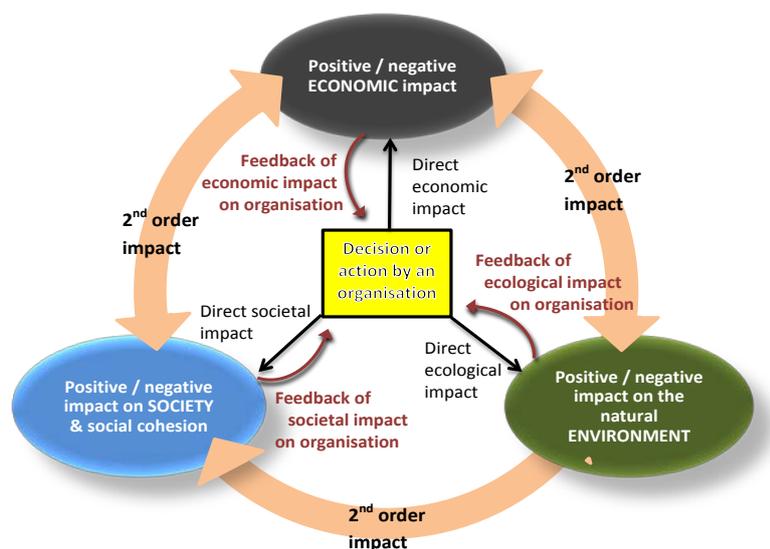
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<sup>1</sup> This is not to suggest these costs can't be captured, rather that there is a cost attached to tracing them.

As providers of the information upon which many organisational decisions are based, accountants must therefore understand how financial and work health and safety concerns interact to influence an organisation's critical health and safety risks. This requires active engagement because 'silos' created by personnel specialisation and the physical or administrative separation of functional groups tend to result in a lack of shared information between those responsible for accounting and work health and safety functions. In the absence of such knowledge, counter-productive decisions are promoted and the scope of the 'work health and safety business case' becomes limited to partial cost-benefit analyses of isolated health and safety interventions.

## 1.2. Accounting and externalities

A second challenge for accounting departments relates to the presence of externalities. Externalities arise where the decisions or actions taken within an organisation results in costs to parties outside the organisation. The magnitude of work-related injury and illness externalities is significant. For example, in Australia, approximately 95%<sup>2</sup> of the total economic cost of work-related injury and illness is externalised; the majority (74%) of economic costs are borne by injured workers and their families, with 21% borne by the taxpayers and community<sup>3</sup>. This does not include other externalities such as pain and suffering experienced by injured workers.



**Figure 1: Integrated model of organisational impact**

Source: Hopwood et.al (2010)

Accounting for externalities challenges a number of traditional accounting conventions. For example, the 'accounting entity' principle requires accountants to identify the boundaries of the organisation for which they are accounting and record only those transactions pertaining to that organisation. Externalities, such as an injured worker paying a pharmacist for pain-relieving medication, are not transactions involving the organisation even when the worker's pain was the result of a work-related injury. The accounting characteristic of 'reliability' is also important. It states that the information recorded by accountants should be captured faithfully, without bias or undue error, and be 'verifiable, neutral and complete'<sup>4</sup>. Externalities have typically therefore been excluded from the analysis because they were

<sup>2</sup> In this ex-post model, compensation premium payments are calculated as transfer costs to the community rather than employer costs. When counted as employer costs (ex-ante), employer costs were 16%. See, Safe Work Australia (2012s).

<sup>3</sup> See, Safe Work Australia (2009, 2012a).

<sup>4</sup> See, Hoggett et. al. (2009) and Kimmel et. al (2006).

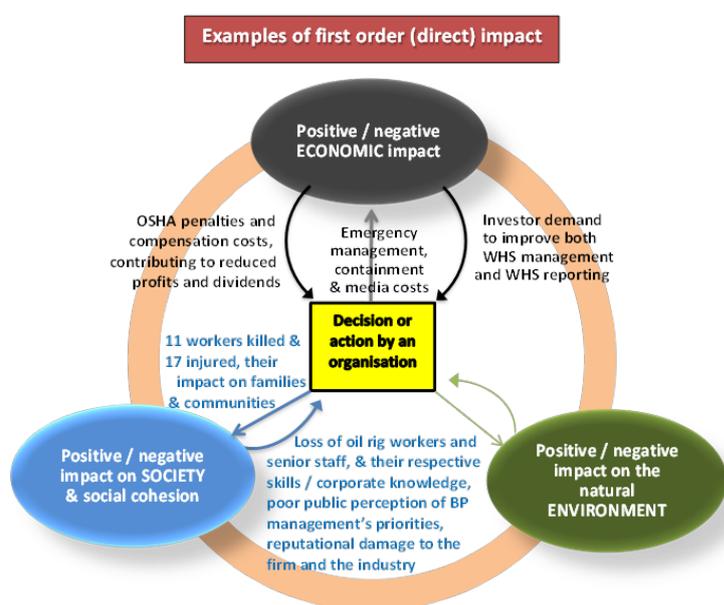
often uncertain, difficult to quantify, and perceived not to impact the financial position of the organisation itself.

Yet externalities have important second-order effects that can result in significant financial impact back on the organisation (see, Figure 1). Recent history has demonstrated how the externalities generated by organisations can drive stakeholder pressure for costly regulation and compensation.

The magnitude of externalities, coupled with an organisation's preventative capacity<sup>5</sup>, creates a clear potential for increased regulation and for reputational damage to the organisation, both of which can impact considerably on the bottom line and need to be considered in an integrated business case for work health and safety.

### Case: BP's Deepwater Horizon explosion

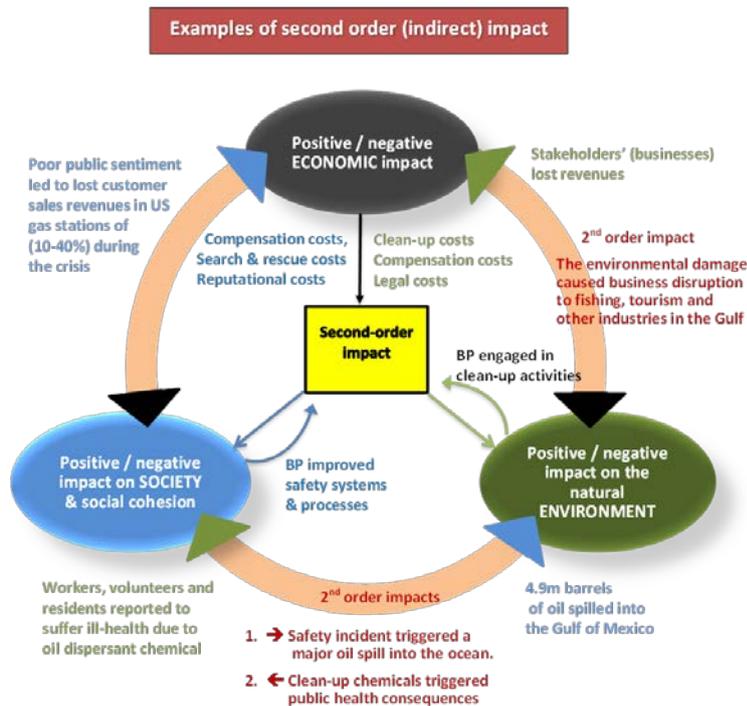
The following illustrations draw on examples of first order, second order (with feedback impact loops) from the 2010 case of BP's Deepwater Horizon oil rig explosion (a.k.a. the Macondo blowout).



**Figure 2: First order impact**

Source: Adapted from Hopwood et.al (2010)

<sup>5</sup> See, Chelius (1991), Ginter (1979)



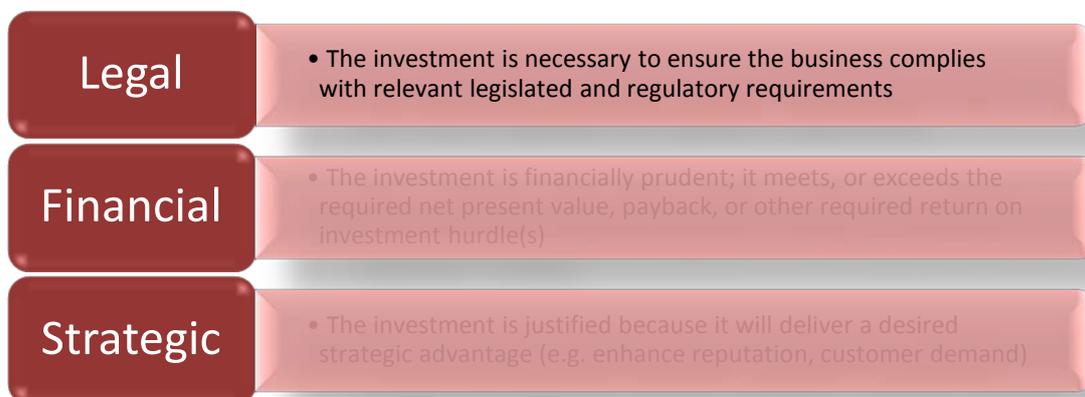
**Figure 3: Second order impact**

Source: Adapted from Hopwood et.al (2010)

Notably, BP's process safety failure resulted in various (substantial) safety costs and in a significant social and environmental impact on stakeholders; which in turn, each led to significant second order economic environmental and compensatory costs to the organisation. This example illustrates the need for a holistic view of the business case for safe and healthy work.

### 1.3. The business case for safe and healthy work

The business case that informs any organisational investment decision is therefore anchored in one or more of the following three justifications. As indicated in Figure 4, these are on legal, financial or strategic grounds. Similarly, a 'safety case', or the business case for investing in work health and safety, is also grounded in legal, financial and/or strategic considerations.



**Figure 4: Justifications for organisational investment**

The business case for work health and safety investment requires consideration of all three of the above categories because, as indicated previously (see, Figure 3), legal and strategic factors can have second order economic effects. In this way, the business case is broader and distinct from the financial case for investment in work health and safety. It not only considers those costs that fall within the traditional conventions of accounting practice, but also a range of future costs and benefits that may be difficult to quantify with any certainty.

The remainder of this paper is structured as follows. Section 2 explores the over-riding legal case for investing in work health and safety that exists under current regulatory requirements<sup>6</sup>. Given the difficulty of obtaining valid and reliable financial measures of the positive and negative impact of work health and safety, the law limits the use of financial concerns as the overriding consideration and instead focuses investment decisions on the human, rather than the financial, consequences.

Sections 3 first examines the financial case, adopting a traditional financial accounting approach in which the focus of cost-benefit analysis is largely directed by the relevant, reliable, historical cost information captured in the organisation's financial accounting information system. This recognises the boundaries of the organisational entity and seeks to capture those measurable costs and benefits incurred by the entity as a result of its operating, financing and administrative activities.

Then the financial analysis is extended by integrating strategic considerations. This recognises that the business case for work health and safety must consider influences that extend well beyond the boundaries of the organisation. Considerations need to include the range of potential economic, societal and ecological impacts, both in terms of direct costs and second order economic impact, if the business case is to focus on a meaningful analysis of safe healthy and productive work.

Finally, the conclusions are summarised in Section 4.

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<sup>6</sup> Harmonisation of WHS legislation in Australia has seen all jurisdictions (with the exception of Victoria and Western Australia) enact WHS legislation that essentially mirrors the model Work Health and Safety Act (2010).

## 2. The legal case

In Australia, WHS legislation<sup>7</sup> requires persons conducting a business or undertaking to **ensure**<sup>8</sup> the health and safety of workers (and other persons exposed to risk because of that work). This requirement clearly justifies an appropriate investment in the infrastructure and activities needed to deliver safe and healthy work. Specifically, legislation imposes a primary duty of care as follows:

### WHS Act, Division 2 (s19) Primary duty of care

- (1) A person conducting a business or undertaking must **ensure**, so far as is reasonably practicable, the health and safety of:
  - (a) workers engaged, or caused to be engaged by the person, and
  - (b) workers whose activities in carrying out work are influenced or directed by the person, while the workers are at work in the business or undertaking.
- (2) A person conducting a business or undertaking must **ensure**, so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking.
- (3) Without limiting subsections (1) and (2), a person conducting a business or undertaking must ensure, so far as is reasonably practicable:
  - (a) the provision and maintenance of a work environment without risks to health and safety and
  - (b) the provision and maintenance of safe plant and structures, and
  - (c) the provision and maintenance of safe systems of work, and
  - (d) the safe use, handling, and storage of plant, structures and substances, and
  - (e) the provision of adequate facilities for the welfare at work of workers in carrying out work for the business or undertaking, including ensuring access to those facilities, and
  - (f) the provision of any information, training, instruction or supervision that is necessary to protect all persons from risks to their health and safety arising from work carried out as part of the conduct of the business or undertaking, and
  - (g) that the health of workers and the conditions at the workplace are monitored for the purpose of preventing illness or injury of workers arising from the conduct of the business or undertaking.
- (4) If:
  - (a) a worker occupies accommodation that is owned by or under the management or control of the person conducting the business or undertaking, and
  - (b) the occupancy is necessary for the purposes of the worker's engagement because other accommodation is not reasonably available, the person conducting the business or undertaking must, so far as is reasonably practicable, maintain the premises so that the worker occupying the premises is not exposed to risks to health and safety.
- (5) A self-employed person must ensure, so far as is reasonably practicable, his or her own health and safety while at work.

(Source: model WHS Act (2010), emphasis added)

The most effective means of ensuring work health and safety is to *eliminate* the hazards that pose a risk to a person's health and safety. WHS legislation specifically requires work health and safety risks to be identified and the relevant hazards eliminated. Where eliminating the hazard is not possible, or is not reasonably practicable (see next page), then those risks to health or safety that are associated with that hazard must be minimised as far as reasonably practicable.

<sup>7</sup> As noted on page 5, Victoria and Western Australia have not enacted the WHS Act. However, their *Occupational Health and Safety Acts* each contain a similar requirement for an employer to ensure the health and safety of both workers and others at the workplace.

<sup>8</sup> Persons conducting a business or undertaking are required to ensure health and safety as far as is reasonably practicable.

## 2.1. Reasonable practicality

To assist managers in determining what is and is not reasonably practicable, s18 of the WHS Act provides the following definition.

### **WHS Act: s18 What is “reasonably practicable” in ensuring health and safety**

In this Act, reasonably practicable, in relation to a duty to ensure health and safety, means that which is, or was at a particular time, reasonably able to be done in relation to ensuring health and safety, taking into account and weighing up all relevant matters including:

- (a) the likelihood of the hazard or the risk concerned occurring, and
- (b) the degree of harm that might result from the hazard or the risk, and
- (c) what the person concerned knows, or ought reasonably to know, about:
  - (i) the hazard or the risk, and
  - (ii) ways of eliminating or minimising the risk, and
- (d) the availability and suitability of ways to eliminate or minimise the risk, and
- (e) after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

(Source: model Work Health and Safety Act, 2010)

It is important to note that the mention of cost (in point e) does not mean decisions as to *whether* and *how* to eliminate or minimise risk are primarily financial ones. Cost may be an over-riding consideration only where the cost is ‘grossly disproportionate’ to the risk of harm. By law, greater consideration must be given to the nature of risk than to cost-benefit analyses<sup>9</sup> or budgetary constraints. This legislative intent is summarised in Safe Work Australia’s *Guide to the Model Health and Safety Act* (2012) which states,

Costs may **only** be considered after assessing the extent of the risk and the available ways of eliminating or minimising the risk.

Ordinarily **cost will not be the key factor in determining what is reasonably practicable** for a duty holder to do, **unless** it can be shown to be ‘grossly disproportionate’ to the risk.

If the risk is particularly severe [the business] will need to demonstrate that costly safety measures are not reasonably practicable due to their expense **and** that other less costly measures could also effectively eliminate or minimise that risk.

(Source: Guide to the model Work Health and Safety Act (2012), p5. Emphasis added).

Safe Work Australia’s (2013) guidance statement reinforces that where a hazard poses a reasonably foreseeable risk of serious injury or illness, and methods of control are known, available and reasonably practicable, then financial constraints are unlikely to present an adequate excuse under the law for failing to implement those control measures. Safe Work Australia’s *Interpretive Guideline: The Meaning of Reasonably Practicable* states,

<sup>9</sup> Cost benefit analyses at the firm level are inherently misleading as many costs associated with work-related injury or illness are externalised, hidden, or difficult to measure reliably, making the full cost very difficult to quantify.

## CAPACITY TO PAY IS NOT RELEVANT

p1 This means that **what can be done should be done** unless it is reasonable in the circumstances for the duty-holder to do something less...

p5 **The more likely the hazard or risk is, or the greater the harm that may result from the hazard, the less weight should be given to the cost of eliminating the hazard or risk.**

(Source: Safe Work Australia (2013b). Emphasis added)

## 2.2. Hierarchy of control

Legal experts observe that while the concept of reasonable practicality qualifies the duty to 'ensure' health and safety, the WHS Act nevertheless "provides that workers and others are to be **provided with the highest level of protection** that is reasonably practicable"<sup>10</sup>.

Consistent with these objectives (see in particular, s17 Management of risks), ss35-36 of the WHS regulations mandates a three-tiered 'hierarchy of control' approach to dealing with hazards and their associated risks to workers' health and safety.

This establishes a clear framework for seeking the highest reasonably practicable level of protection. Officers must start at level 1 controls and work their way down each level of control as far as is reasonably practicable. Both the effectiveness (i.e. level of protection) and reliability of controls offered at each level decreases significantly from level 1 to level 3 controls. These are briefly summarised as follows:

- **Level 1 control – Eliminate the hazard.**

Eliminating the need for a hazardous item, situation or process may be achieved, for example, by devising alternative (safer) methods or processes for conducting the job or task, or modifying the work layout to eliminate the need for the hazardous item, situation or process. Once a hazard has been eliminated, there is no longer an associated risk to health and safety.

(Only) where it is **not** reasonably practicable to eliminate a hazard, **then** the work health and safety risks arising from that hazard must be minimised, so far as reasonably practicable.

- **Level 2 controls – Minimise the risk associated with the hazard.**

This may involve **substituting** the hazard with something safer (a less hazardous process or material); or **isolating** people from the hazardous work process, machine or substance by physically separating them from it (e.g. guard, enclosure), or **engineer** (modify) the plant or equipment to reduce the severity or likelihood of risk associated with the hazard.

- **Level 3 controls – Minimise any residual risk.**

Once the risk has been minimised as far as reasonably practicable using level 2 controls, any remaining risk must be identified and minimised, as far as reasonably practicable, using administrative controls (such as signage and training) and personal protective equipment (PPE). Most importantly, this means level 3 controls are supplements to, not substitutes for, level 1 and 2 controls.

<sup>10</sup> See, Tooma and Johnstone (2014), p31 (emphasis added).

Hazard elimination (level 1) and risk minimisation (level 2) controls may be more costly than simple administrative controls such as training and personal protective equipment, however they are also far more effective. By mandating the hierarchy of control approach, the legislation directs investment to those controls that are more effective in ensuring workers' health and safety, generally irrespective of the estimated cost-benefit relationship relative to less effective controls. This does not preclude choosing the most cost-effective solution where alternative controls are equally effective at eliminating a risk (or equally effective at reducing a risk).

### 2.3. Risk management strategies

Most business risks are managed using one of four strategies: avoid, reduce, transfer and accept. Work health and safety risk is different. The legal requirements outlined in Sections 2.1 and 2.2 mean two considerations distinguish work health and safety risk management from the practices used to manage other forms of business risk.

First, the choice of strategy available for controlling work health and safety risk is limited by law. Second the role that cost-benefit analysis plays in decision-making processes is significantly reduced. This comparison is briefly summarised in Table 1.

| Strategy    | Application for Business Risk   | Application to a work health and safety Risk  |
|-------------|---|---|
| 1. Avoid    | This involves a conscious decision to avoid a particular risk by discontinuing the activity that produces the risk.   | Equates to eliminating the hazard that poses the work health and safety risk (Level 1 control) This is consistent with legal obligations to ensure WHS.   |
| 2. Reduce   | Business risk may be reduced through internal controls and other programs designed to protect assets from loss or wastage and/or to minimise the impact of losses. Examples include security controls, audits.  | Equates to Level 2/3 controls, although reducing rather than avoiding risk is permitted <b>only</b> where elimination is not reasonably practicable. Even then, the work health and safety risk must not only be reduced, it must be reduced as far as is reasonably practicable.   |
| 3. Transfer | Transferring a business risk involves the contractual assignment of the consequences of any potential loss from the organisation to a third party. Typically, this involves financial cost shifting (through insurance) but also includes contracting or outsourcing arrangements that seek to transfer responsibility, and thus the business risk, to a third party. | <b>Risk cannot be legally transferred</b><br>Workers' compensation insurance is an important governance mechanism. However, the primary duty of care (to <b>ensure</b> the health and safety of workers) will continue to remain with the person conducting the business or undertaking, irrespective of any efforts to engage contractors or to purchase insurance. Consequently, work health and safety risks cannot legally be 'transferred' (see also section 2.4 below). |
| 4. Accept   | This is where a decision is made to simply accept the risk and its consequences. No further action is taken. Potential losses that may result from this decision are fully financed from within the business.<br><br>Whether accepting a risk is a conscious decision depends on the extent to which risks are identified.  | <b>Risk cannot be legally accepted</b><br>WHS law requires risk identification. The failure to then eliminate (level 1) or minimise (level 2 and 3) a risk to the health and safety of people at work constitutes non-compliance with the requirements of WHS legislation to ensure WHS.  |

Table 1: Risk management strategies

## 2.4. Compliance, penalties and insurance

The three reasons for non-compliance with health and safety regulation have been described as economic, dissidence or incompetence<sup>11</sup>. Economic reasons entail the pursuit of profit at the expense of safety. Dissidence entails disagreement with regulations or their enforcement (for instance, unreasonable or arbitrary). Incompetence refers to lack of awareness or inability to comprehend or implement compliance measures. These categories are applicable to all types of organisations in respect of WHS compliance, perhaps to a greater degree for smaller organisations.

The financial and custodial penalties for failure to comply with a health and safety duty are significant (see, Table 2). More than one person may be subject to a duty and different penalties apply to breaches by an individual, an officer or an organisation. Furthermore, a single individual may have multiple health and safety duties (e.g. a duty as a worker, and as an officer<sup>12</sup>, and as a PCBU; for example, a sole trader or partner). The maximum penalties are summarised in Table 2.

| Level of offence | Key elements of the offence   | Individual (e.g. worker)        | Individual who is an officer or a PCBU | Body Corporate (e.g. company) |
|------------------|---|---------------------------------|--|-------------------------------|
| Category 1       | <ul style="list-style-type: none"> <li>• Failure to comply with a health and safety duty</li> <li>• (and that failure) exposes an individual to risk of death, serious injury or illness,</li> <li>• and involves recklessness as to such risk</li> </ul> | \$300,000 and / or 5 years gaol | \$600,000 and / or 5 years gaol        | \$3,000,000                   |
| Category 2       | <ul style="list-style-type: none"> <li>• Failure to comply with a health and safety duty</li> <li>• (and that failure) exposes an individual to risk of death, serious injury or illness</li> </ul>   | \$150,000                       | \$300,000                              | \$1,500,000                   |
| Category 3       | <ul style="list-style-type: none"> <li>• Failure to comply with a health and safety duty</li> </ul>   | \$50,000                        | \$100,000                              | \$500,000                     |

**Table 2: Penalties for non-compliance**

In response to recent increases in the maximum health and safety penalties, there has been an increase in the availability and purchase of *directors and officers insurance policies*. These contracts claim to insure against criminal liability arising from non-compliance with the statutory duty. Although many companies pay the significant premiums, the policies are void against public policy and thus unenforceable if tested. Directors may also fail to appreciate the potentially detrimental impact of these policies on sentencing and on “escalating personal liability” for officers<sup>13</sup>.

It will not take regulators long to work out whether corporate defendants are insured... A Court, having had the deterrent effect of any penalty it imposes thwarted by the insurance cover may well be more amenable to harsher penalties... [and greater use of mechanisms such as] publicity orders.<sup>14</sup>

<sup>11</sup> See, Walters and Lamm (2003), p9.

<sup>12</sup> The WHS Act adopts the same definition of an officer as provided in the Corporations Act (2001).

<sup>13</sup> See, Tooma (2013) <http://www.lawchat.com.au/index.php/is-statutory-liability-insurance-damaging-by-michael-tooma/>

<sup>14</sup> Ibid.

These concerns have recently been realised, for example, in the decision in a South Australian case, *Hillman v Ferro Con* (2013). The case related to the death of a worker and was a first offence for the company and its director. Magistrate Lieschke was scathing of the Director's insurance arrangement and stated that while he accepted the Directors expression of remorse and regret:

In my opinion an expression of regret, remorse and an intention to alter behaviour assumes genuine acceptance of criminal responsibility and a preparedness to accept the full consequences of their wrong-doing as determined by the course of justice. In my opinion this necessarily includes an acceptance of the Court's punishment. Without this, contrition is hollow ...

[the Director] and [company] have taken positive steps to avoid having to accept most of the legal consequences of their criminal conduct as determined by the course of justice. This has occurred through [the Director] successfully calling on an insurer to pay his fine...

[These] actions have also undermined the Court's sentencing powers by negating the principles of both specific and general deterrence [and] are so contrary to a genuine acceptance of the legal consequences of his criminal offending that they dramatically outweigh the benefits to the justice system of the early guilty plea and statement of remorse. Accordingly it would be entirely inappropriate to grant any reduction of penalty...<sup>15</sup>

As a result, the sentences imposed by the Court were at the higher end of the \$300,000 maximum penalty; with both the sole director and his company each fined \$200,000 plus costs and a further \$20,000 to be provided in compensation to victims. The Director was also required to publish notices of the conviction and penalties to employees and in specified industry and mainstream media. He has since stated that he no longer holds this type of insurance policy.

Despite calls to make such insurance policies illegal, there is little indication of change to the WHS Act at this time. However, legal experts have concluded that in the event of work health and safety prosecution, "**persons insured against work health and safety penalties may receive higher penalties than uninsured persons**"<sup>16</sup>.

They further warn that the availability of insurance cover is likely to force Courts and regulators to fix their attention more directly on company officers and to apply more extreme remedies, including custodial sentences.

It is not inconceivable that [insurance cover], over time, fuels a rise in custodial sentences against individual directors in a last ditched effort to rebalance the general deterrence impact of sentencing for corporate offences."<sup>17</sup>

## 2.5. Financial benefits of regulatory inspections

While some perceive regulation and enforcement as unnecessary red tape, research has confirmed the positive benefits of regulatory inspections. A Harvard Business study<sup>18</sup>, published in 2012, examined hundreds of work sites that were subject to random regulatory inspections over a ten-year period from 1996 to 2006. Notably, the researchers found:

<sup>15</sup> See, *Hillman v Ferro Con* (SA) Pty Ltd (in liquidation) and Anor [2013] SAIRC 22

<sup>16</sup> See Flores-Walsh (2013) <http://www.nortonrosefulbright.com/knowledge/publications/100985/persons-insured-against-work-health-and-safety-penalties-may-receive-higher-penalties-than-uninsured-persons>

<sup>17</sup> Ibid.

<sup>18</sup> See, Hananel (2012)

9.4% of those companies reduced their injury claims with no discernable impact on profits.

Better yet, the same companies saved an average of 26 percent on workers' compensation costs in the four years following an inspection when compared with similar firms that were not randomly inspected.<sup>19</sup>

Analysts suggested the inspections helped reduce costs because inspectors discuss the problems and risks with managers and operators and then discuss ideas for solving them. Together this process was argued to, 'focus the minds of managers to create solutions'. The results were evident in the research data which revealed that,

(Compared to firms not subject to random inspection) inspected firms saved an average of about \$355,000 in injury claims and compensation paid for lost work over the following four years.<sup>20</sup>

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<sup>19</sup> Ibid.

<sup>20</sup> Ibid.

### 3. The financial case

At the heart of the business case is the issue of cost. Costs feature both as the financial benefits and savings that may be achieved through safe and healthy work and as the financial outlays required to achieve it. A failure to operate safely then results in a myriad of further costs (known as failure costs) being imposed on the organisation and on the broader society. This section explores the health and safety costs used to examine the **financial case for investment** in safe and healthy work.

#### 3.1. The mechanics of cost – benefit analysis

At an organisational level, a financial case for investment involves an assessment of the financial costs (expenditure) and financial benefits (either revenue increases or cost savings) associated with one or more proposed course(s) of action. The analysis aims to help decision-makers evaluate the financial impact on an organisation of a proposed change, purchase, program or initiative. Cost-benefit analyses typically inform decisions such as: whether or not to implement a new strategy, program or initiative; whether or not to purchase a new machine; or which machine to purchase.

**Applying cost-benefit analysis techniques to work health and safety decisions can be problematic.** First, there are over-arching legal obligations (as outlined in the previous section). Second, the financial costs borne by a business are merely a small subset of the overall economic (and human) impact of work health and safety success or failure. Consequently, the strict financial safety case is always a ‘partial’ (or incomplete) cost analysis, partly because data is limited to the subset of cash flows that meet the accounting definition of **‘relevant’ costs** and partly because some safety cash flows are omitted from the analysis.

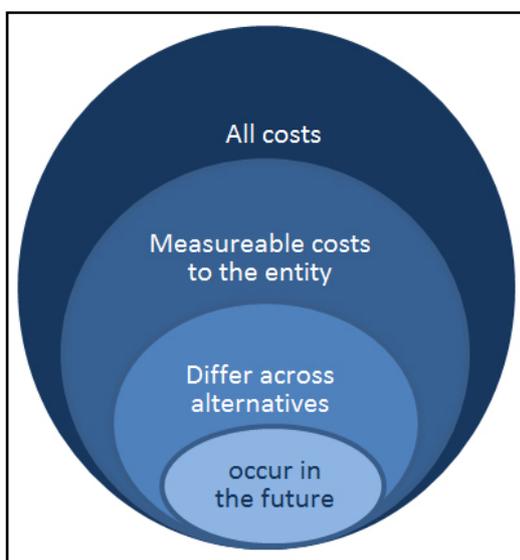


Figure 5: Relevant costs

##### 3.1.1. Relevant costs

In a financial accounting sense, costs that are deemed ‘relevant’ to any cost-benefit analysis are a subset of the organisation’s (i.e. the entity’s) total costs. Criteria for identifying relevant costs are:

1. They must be **cash-flows** that the **entity will, or expects to, incur**. (i.e. not externalities);

2. They must be **measurable**: i.e. receipts (inflows) and expenditures (outflows) that can be quantified in a reliable way;
3. They must **differ across the available choices** (i.e. across the courses of action being considered).

Note: If costs are identical under each available option then the decision will not affect them and they are 'irrelevant' to the analysis. For example, buying a sales representative a sedan or wagon is unlikely to change the rent expense for the display room. Therefore, rental costs will be irrelevant to the vehicle purchase decision. Extending this reasoning, any cost that has already been incurred (spent) is also irrelevant. The decision will not change it. Therefore, **past costs** are also irrelevant and are excluded since they add no value to the comparative analysis.

Relevant costs are therefore the subset of future expected cash flows that vary across the different options being considered. Strictly speaking, the **relevant health and safety costs** for a cost-benefit analysis should be the '**marginal**' costs. Marginal costs are the added costs that are incurred specifically for the purpose or pursuit of improved safety. These include the extra cost to add safety features to equipment or to purchase a safer model<sup>21</sup>. For example, if a new machine costs \$2 000 but a safer model costs \$2 400, the marginal safety cost used in the cost-benefit analysis is \$400.

In practice, safety is often a supplementary rather than primary consideration that attaches to broader production decisions and this can make it difficult to determine the marginal (safety) cost. Lack of information may also be a problem. In the simple decision whether, or not, to purchase a safer model of equipment, information about the additional price premium is required for a cost benefit analysis. It may also be unclear what the price of the alternative would have been, or indeed what the alternative model would have been, or to what extent safety was a contributing factor in the final purchase decision, particularly if the decision was made in another organisational department. Further challenges concern efforts to quantify non-financial impacts such as loss of life, disability and psychological impacts<sup>22</sup>.

The key considerations, and to some extent challenges, to conducting a cost-benefit analysis in relation to work health and safety are therefore:

- Determining the scope of benefits and costs (which costs are relevant to the analysis?)
- Quantification (how are they to be measured?)
- Attribution (what portion are marginal costs, i.e. attributable to health and safety?)
- Supporting evidence (can the costs be verified?).

Once relevant costs are identified, **various financial analysis techniques are available**. The choice of technique may be influenced by the type of investment, particularly whether the analysis relates to an operating (short term) or capital (long term) expenditure.

### 3.1.2. Operating versus capital expenditure

**Operating expenditures**, or 'operating expenses', are costs that have a short-term impact, (typically financial current year). These may be may be classified as either fixed or variable costs. 'Fixed costs' typically do not change over the current year and are not typically changed by variations in **cost drivers**. Cost drivers include production levels, or activities

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<sup>21</sup> See, British Safety Council (2013), pp.34-35.

<sup>22</sup> See, British Safety Council (2013), p.36, Smith (1988).

such as hours worked<sup>23</sup>. Fixed costs therefore include expenses such as rent, insurance premiums and salaries.

'Variable' costs are the expenses that vary with changes in business activity (the cost driver). For example: raw materials' cost varies with changes in production levels; wages cost varies with labour hours; unplanned maintenance costs vary with machine breakdowns; training costs vary with training hours; and incident investigation costs vary with number of health and safety incidents.

Increases in operating expenses have a direct impact on the 'bottom line' (i.e. profit<sup>24</sup>) in the year the expense is incurred. An expense is desirable (financially justified) if the total anticipated financial benefits accruing from that item or activity are greater than the total anticipated costs. Benefits may be increases in income (revenue) received or savings in costs (expenses) paid.

In contrast, **capital expenditure** decisions have a longer-term impact on the business. Capital expenditures refer to spending on assets that have an expected useful life beyond the current year. Examples include 'fixed' assets such as equipment, machinery, vehicles and buildings (or what accountants call PPE – property, plant and equipment). These typically long-term and often sizeable commitments affect both the profitability<sup>25</sup> and liquidity (i.e. solvency) of a business and so impact its financial flexibility.

As a result, financial appraisal techniques for evaluating and selecting proposed capital investments are typically more complex than for operating expenses because they try to account for additional factors such as the time value of money (inflation) and cost of capital required for the investment.

### 3.1.3. Investment appraisal methods

Various techniques are available for evaluating the financial merit of a potential expenditure, including investments to improve work health and safety. These techniques are based on assessments of total cash inflows (revenues or benefits) and outflows (costs) generated by the investment. The quality of analysis depends on the extent to which all relevant costs and savings have been identified, quantified and included<sup>26</sup>. Quantifying some safety costs and benefits can be difficult, but their omission can bias the results.

Relatively simple techniques used for establishing a safety case include the insurance model, the cost-benefit analysis model and the payback method<sup>27</sup>.

- **Insurance method**

The insurance method estimates safety costs simply on workers compensation insurance information. Many relevant costs are excluded from this analysis, which

<sup>23</sup> See, Hoggett, Edwards and Medlin (2006).

<sup>24</sup> Profit is the excess of revenues (income) over expenses. Increases in expenses will decrease profit.

<sup>25</sup> Asset costs are not expenses, so the initial purchase cost of an asset has no immediate impact on profit. However, an annual expense called 'depreciation' is generated as the asset is used. E.g., assume equipment purchased for \$90,000 has an expected life of 7 years, then will be sold for an estimated \$20,000. The expense would reduce profit by \$10,000/yr.

|   | 0<br>(purchase) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 |
|---|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Net asset value (Balance sheet)         | 90,000          | 80,000 | 70,000 | 60,000 | 50,000 | 40,000 | 30,000 | 20,000 | 20,000 |
| Depreciation Expense (Income statement) | 0               | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 0      |

<sup>26</sup> See further discussion on work health and safety costs and benefits in Section 3.

<sup>27</sup> See, Massey et al., (2007), pp.28-30; British Safety Council, (2013), pp.36-40.

undermines the benefits of the method's simplicity. Excluded costs include lost productivity, employee turnover and labour costs.<sup>28</sup>

| Option | Costs  | Benefits | Ratio          | Score | Rank |
|--------|--------|----------|----------------|-------|------|
| A      | 50,000 | 70,000   | 5:7 =          | 0.7   | 2    |
| B      | 80,000 | 60,000   | 8:6 (or 4:3) = | 1.33  | -    |
| C      | 30,000 | 50,000   | 3:5 =          | 0.6   | 1    |

**For example:** Estimated costs and benefits for three options are shown. The results indicate that option C is most financially acceptable and option A, next preferable. Option B is not financially acceptable.

**Table 3: Example - cost-benefit analysis comparison**

- **Cost-benefit method**

The cost-benefit approach provides a more comprehensive analysis because it considers a broader range of costs and benefits to the business. However, when costs are easily identified and measured but the benefits, (savings) are not, then the results are biased against investment.

A project or purchase is deemed acceptable where the ratio of costs to benefits is less than 1 ( i.e. where total benefits exceed total costs). When choosing between a number of potential options, the lowest ratio is the financially preferable option.

- **Payback method**

While cost-benefit analysis focuses on the profitability of the project, the payback method uses cost information to consider the time taken for the investment to generate positive cash flows<sup>29</sup>. That is, how many years it will take for the annual net cash inflows generated by the investment to accumulate to an amount that covers (pays back) the initial purchase cost. This method focuses on assessing the investment's impact on liquidity (cash) and ignores differences in the expected life (or timespan) of the project, its profitability and in the time value of money.

**Table 4: Example - payback investment analysis**

| Option                                      | 0              | Yr 1           | Yr 2           | Yr 3          | Yr 4     | Yr 5         | Yr 6          | Yr 7          | Yr 8          | Yr 9          | Yr 10         |
|---|----------------|----------------|----------------|---------------|----------|--------------|---------------|---------------|---------------|---------------|---------------|
| Initial investment                          | \$ -20,000     |                |                |               |          |              |               |               |               |               |               |
| Marginal revenues                           |                | 7,500          | 7,500          | 7,500         | 7,500    | 7,500        | 7,500         | 7,500         | 7,500         | 7,500         | 7,500         |
| Marginal costs                              |                | -2,500         | -2,500         | -2,500        | -2,500   | -2,500       | -2,500        | -2,500        | -2,500        | -2,500        | -2,500        |
| <b>Total safety savings</b>                 | <b>-20,000</b> | <b>-15,000</b> | <b>-10,000</b> | <b>-5,000</b> | <b>0</b> | <b>5,000</b> | <b>10,000</b> | <b>15,000</b> | <b>20,000</b> | <b>25,000</b> | <b>30,000</b> |
| <b>Projected payback period = 4 years ↑</b> |                |                |                |               |          |              |               |               |               |               |               |

**For example:** Say, a targeted risk awareness training program cost \$20,000 to develop and deliver and a further \$2,500 to run updated refresher courses each year. The safety savings generated by the training are estimated at \$7,500 / year.

While these simple analyses are helpful for short-term and low-cost investment decisions, they are less useful for evaluating long-term investments because they ignore differences in the time value of money (i.e. inflation). Their simplicity also ignores the impact on organisational profitability and liquidity when revenues or expenses vary at different points in time. Techniques such as the Net Present Value (NPV) and Internal Rate of Return (IRR)

<sup>28</sup> See, Massey et al., (2007), p.28.

<sup>29</sup> See, British Safety Council (2013), pp.36-40

methods seek to address these limitations. These methods also identify the impact of the purchase (or project) on future predicted cash inflows and outflows and map the cash flows across each year of the expected life of the asset or project. However, discount rates are then used to convert future dollars for each year into today's (present) purchasing power. The financial merit can then be determined. When choosing between two or more potential alternatives, the analysis is undertaken for each option and then the results are compared to identify the most (financially) desirable option or options.

- **Net present value (NPV)**

By adjusting the costs and savings for the time value of money, the NPV method allows a meaningful comparison of cash flows that occur in different years. First, the expected net cash flows generated in each year of the project are estimated. A discount rate (to account for inflation) is then used to calculate the present value of each of the cash flows, i.e. so each cash amount reflects 'today's' purchasing power. The various present values are then summed to give a total-project net present value (NPV). If the total NPV is greater than zero then the project is acceptable. If multiple projects or options are being considered, the preferred option is the one with the **highest NPV**.

- **Internal rate of return (IRR)**

Another technique that recognises the time value of money is the internal rate of return (IRR) method. Rather than using a predetermined discount rate to adjust cash flows to *present values*, the IRR method calculates the rate that would be needed to produce an NPV of zero (i.e. break-even). This rate is then compared to management's preferred return on investment rate. If the IRR is greater than the required return on investment, the project is acceptable. This method usually produces the same conclusions as the NPV method, however problems can arise when using IRR to assess mutually exclusive options or projects with multiple cash inflows and outflows in different years. The discount rate is the opportunity cost of capital, also known as the 'hurdle rate', the 'discount rate' and the 'required rate of return'.

## **3.2. Business drivers of health and safety risk**

### **3.2.1. Perceptions of risk**

Establishing a rigorous financial case for work health and safety investment requires an understanding of work health and safety risk including knowledge of both drivers and consequences. The organisation's perceptions of its own risks (i.e. as high or low) shapes perceptions of the benefits of compliance (i.e. reasonableness of compliance costs). Moreover, studies show that "[w]hat was important was not whether these perceptions of risk were accurate but that the companies *believed* them to be real and accurate". In other words, "actual industry risk was not always as influential as a company's own perception of the risk". This explains why perceptions of risk may vary significantly, even between companies in the same industry.<sup>30</sup>

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<sup>30</sup> See, NZ OSH (2001), p7, p25.

Research involving a number of case studies identified four main drivers of the perceived costs and benefits of investing in work health and safety.<sup>31</sup>

- a) perceptions on the seriousness of risks
- b) workplace culture (management commitment and worker participation)
- c) organisation size
- d) external health and safety structures (e.g. information from third parties or comparison with experience abroad).

Based on the findings, researchers determined that organisations could be divided into three categories: inactive, reactive and proactive organisations. **Inactive organisations** regarded both the benefits and costs of compliance as low, because they perceived their organisational risk to be low, and so perceived work health and safety with less importance and adopted a short-term, non-systematic compliance approach. **Reactive organisations** perceived costs to be high relative to benefits of compliance and regarded costs as driven more by legal concerns than by actual safety. They viewed safety compliance as excessive and a hindrance to their competitiveness. **Proactive organisations** perceived safety costs as an investment. They were more concerned with production disruptions and harm to employees than non-compliance costs and adopted a proactive approach to safety management that entailed high management commitment, employee participation, integration into business decisions and strong employee knowledge of work health and safety matters.<sup>32</sup> The researchers noted,

“People consistently estimate risk inaccurately, or have unstable risk perceptions. Personal experience and stories appeared to play a role in the development of each company's perception of risk, particularly for the inactive and reactive companies” (p.25).

The organisations examined tended not to quantify the costs of safety compliance or to separate them from ordinary daily operations. Hence, perceptions as to whether costs were excessive were influenced by perceptions of associated benefits. This becomes even more problematic with the use of techniques such as quantitative risk assessment (QRA) because the determination of inputs and tolerance thresholds entail subjective judgments<sup>33</sup> and “subjective perceptions are not just imperfect estimates of an objective reality. They exist independently of measured risk and may indeed influence it”<sup>34</sup>.

Furthermore, opinions of measured results are strongly influenced by perceptions of risk. For example, “[injury] rates may be [perceived as] low because the perceived risk is high and conversely, rates may increase because the perceived risk has declined.”<sup>35</sup> Consequently, QRA is criticised for adopting an underlying premise that accidents occur by chance rather than by cause, which does not accord with practice, and for an overreliance on models and historic data rather than actual reality<sup>36</sup>. As Hopkins (2004, p23) argues,

“The most significant risk is poor management and this is inherently unquantifiable. QRA is largely inappropriate, therefore, as a means of deciding whether risk has been driven to a sufficiently low level. In particular, it should never be allowed to over-ride sound professional judgments about necessary risk reduction measures. It can, however, have more modest uses, such as helping to determine priorities”.

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<sup>31</sup> *ibid*, pp.24-27.

<sup>32</sup> See, NZ OSH (2001).

<sup>33</sup> *Ibid*, p8.

<sup>34</sup> See, Hopkins (2004), p2-3.

<sup>35</sup> *Ibid*, p5.

<sup>36</sup> *Ibid*, (pp. 15-16 and 22).

### 3.2.2. Sources of risk

Understanding the drivers of work health and safety risk is critical to effective costing of injury prevention. However, incidents rarely have a single ‘root cause’. Recognising the essential and contributing factors<sup>37</sup> that pave the way for failure is important for cost-effective injury and illness prevention. Some risk drivers are easily identified through workplace inspections and incident analyses. Others are indirect and more obscure.

Critical risks are hidden, for example, in corporate processes of planning and resourcing. Hidden risks are also present where organisations operate in dynamic economic environments, engage in precarious employment and across supply chains. The implications of economic imperatives, for example, extend well beyond issues of under-investment in direct measures for health and safety. Competitive pressures, particularly during economic downturns, can encourage underquoting, reduced training, use of cheap or poorly maintained equipment, staff reductions, higher workloads, faster production and longer hours<sup>38</sup>. Each of these factors is well-known to pose important health and safety risks. Together they emphasise the importance of integrated management, safety leadership, safe design / planning and consultation.

Importantly, risk factors such as lean operations and unsafe procurement emphasise the need to actively consider the health and safety implications of planning/design, resourcing (human and financial), supply chain and purchasing decisions.

### 3.3. Business benefits of safe and healthy work

Safe and healthy work offers many benefits for organisations. Most widely recognised is, of course, the ability to avoid failure costs associated with work-related injury and illness. Also widely acknowledged are the personal benefits that accrue to individual workers from being able to return home each day in as safe and healthy a condition as they left. Indeed, advocates in the 1970’s were concerned that organisations had little incentive to manage safety risk because organisations bore the cost of prevention, while workers both gained the benefits of improved health and safety outcomes and alternatively, bore the costs of work health and safety failures<sup>39</sup>.

Illustrating this out-dated view of safety, one early scholar suggested,

“Safety programs do not contribute to income directly but make their contribution through prevention of losses... Actual loss is offset, in part, by insurance coverage. A form of cost-benefit analysis must be applied to proposed safety programs... The cost of the [safety] programs and their effects on the overall return on the project can be evaluated in terms of present value analysis. Alternative safety proposals can then be ranked, just as investment alternatives are ranked in traditional budgeting applications... Only safety programs which can be shown to provide contributions to profit will be implemented.”<sup>40</sup>

Since that time, understanding of the financial impact of work health and safety on an organisation’s bottom line has improved considerably. While many costs and benefits continue to be externalised to workers and other organisational stakeholders, analyses have demonstrated significant work health and safety benefits that accrue to organisations.

<sup>37</sup> See, McDonald (1985, 2006, 2014).

<sup>38</sup> See, Johnstone, Quinlan and Walters (2004), p.2.

<sup>39</sup> See, for example, Chelius (1991), Ginter (1979), White (1979).

<sup>40</sup> See, White (1979), p42.

Furthermore, where an injury or illness is catastrophic, the financial consequences for the organisation can bring about its financial ruin.

Extending beyond compliance benefits and failure costs, safe and healthy work can deliver real competitive advantage for organisations<sup>41</sup>. Research in the US construction industry, for example, reported positive benefits to corporate reputation (82% of responses), ability to contract new work (66%) and improvements in project quality (66%)<sup>42</sup>. While the sources and magnitude of costs and benefits may differ across organisations, the main categories are similar<sup>43</sup>. Economic incentives for business leaders to attach importance to work health and safety include improved (cheaper) access to insurance, labour and capital, as well as improvements in productivity and business goodwill. Also important, are the indirect business benefits that derive from strengthened relationships with workers, supply chain partners, external stakeholders and the broader community.

### **3.3.1. Avoiding failure costs**

Failure cost savings are perhaps the most readily measurable of the various benefits and cost savings to be achieved by ensuring safe and healthy work. Failure costs refer to those direct and indirect costs that result from an organisation's failure to ensure work health and safety. Given direct costs are those that can be traced to a cost driver in an economically feasible way, the direct failure costs of work health and safety are those costs that can be reasonably traced to the health and safety system failure, or incident (e.g. injury or illness) that generated the cost. Examples of direct costs include workers' compensation excess payments and premium increases, lost production, or the costs of regulatory fines and penalties.

Other costs, such as wage and salary payments relating to the time managers, supervisors and employees are diverted away from their productive work to deal with the aftermath of an incident, may theoretically be directly traceable to an incident. However in practice, sometimes it is not possible (depending on the organisation's accounting system) to isolate the relevant portion of those costs in an economically feasible way. Consequently, many hidden costs, such as these, are viewed as indirect rather than direct costs. Table 5 (next page) summarises examples of work health and safety failure costs. As noted above, some of those identified as direct costs could equally be viewed as indirect costs if an organisation does not have systems set up to trace the cost to an incident in an economically feasible way (and vice versa).

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<sup>41</sup> See, Massey, Lamm and Perry (2007), p.34.

<sup>42</sup> See, McGraw Hill Construction (2013), p.16.

<sup>43</sup> See, Brady et.al. (1997), Ucar (2011).

**Table 5 Work Health and Safety Failure Costs<sup>44</sup>**  
**(Continued next 2 pages)**

| Category                   | Examples of work health and safety failure costs  |   |
|----------------------------|---|---|
|                            | Direct costs  | Indirect costs  |
| <b>Immediate costs</b>     | <ul style="list-style-type: none"> <li>• <b>Wages for time spent by workers and supervisors:</b> <ul style="list-style-type: none"> <li>○ providing first aid</li> <li>○ transporting injured workers to medical care</li> </ul> </li> <li>• <b>Non-compensable payments relating to:</b> <ul style="list-style-type: none"> <li>○ first aid supplies and equipment</li> <li>○ ambulance or taxi charges</li> <li>○ emergency equipment or external contractors required to assist in making the area safe</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>• <b>Wages for lost productive time when workers, supervisors, WHS personnel or managers are redirected to:</b> <ul style="list-style-type: none"> <li>○ making the area safe</li> <li>○ communicating with management and victim's family</li> <li>○ arranging trauma counselling for witnesses (where required)</li> <li>○ other non-productive work time due to the incident</li> </ul> </li> <li>• <b>Lost opportunities as management attention and resources are diverted from strategy to WHS</b></li> </ul>  |
| <b>Compensation costs</b>  | <ul style="list-style-type: none"> <li>• <b>Increased payments to the workers' compensation insurer:</b> <ul style="list-style-type: none"> <li>○ increases in workers' compensation insurance premiums</li> <li>○ excess payments relating to a workers' compensation claim</li> </ul> </li> <li>• <b>Non-compensable payments to the injured worker:</b> <ul style="list-style-type: none"> <li>○ workers' compensation leave (e.g. for self-insurers)</li> <li>○ sick leave or other paid leave arrangements (e.g. where an insurance claim has not been lodged or was not accepted)</li> <li>○ reimbursed medical costs (not covered by insurance)</li> <li>○ payments for personal / family counselling</li> </ul> </li> <li>• <b>Wages for time spent by administrators on all aspects of self-insurers' claims management and compensation arrangements</b></li> </ul> | <ul style="list-style-type: none"> <li>• <b>Wages for lost productive time when workers, supervisors, WHS personnel, managers or administrators are redirected to:</b> <ul style="list-style-type: none"> <li>○ compensation claim preparation and lodgement</li> <li>○ ongoing claims management, including communications with, and reporting to, the insurer</li> <li>○ maintaining communications with injured and absent workers (e.g. to follow up on the progress to recovery)</li> <li>○ facilitating the injured worker's rehabilitation and return to work (e.g. arranging counselling, worker (re)training, workplace adjustments, medical reports)</li> </ul> </li> </ul> |
| <b>Investigation costs</b> | <ul style="list-style-type: none"> <li>• <b>Non-compensable payments relating to:</b> <ul style="list-style-type: none"> <li>○ obtaining legal advice</li> <li>○ obtaining specialist health and safety advice</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>• <b>Wages for lost productive time when workers, supervisors, WHS personnel, managers or administrators are redirected to:</b></li> </ul>   |

<sup>44</sup> Sources include: Blewett et. al. (2007), European Agency for Safety and Health at Work (2007), Massey et. al. (2007) Institute for Work and Health (2010), International Labour Organization (2012), British Safety Council (2013).

| Category                 | Examples of work health and safety failure costs   |   |
|--------------------------|--|---|
|                          | Direct costs   | Indirect costs  |
|                          | <ul style="list-style-type: none"> <li>▪ to assist in the incident investigation and analysis</li> <li>▪ to conduct external audits or inspections</li> </ul>  | <ul style="list-style-type: none"> <li>○ internal incident investigation and analysis</li> <li>○ coordinating external incident investigations</li> <li>○ communicating with independent auditors</li> <li>○ preparation of incident reports (e.g. workers and supervisors)</li> <li>○ consideration and acting on incident reports (e.g. managers)</li> <li>○ preparation, consideration and acting on management reports</li> <li>○ completing documents and preparing reports for the insurer</li> <li>○ meetings to discuss the incident</li> </ul>   |
| <b>Regulatory costs</b>  | <ul style="list-style-type: none"> <li>• <b>Non-compensable payments relating to:</b> <ul style="list-style-type: none"> <li>○ obtaining legal advice and representation</li> <li>○ statutory fines, penalties, legal costs and compensation</li> <li>○ enforceable undertakings, publicity notices etc</li> </ul> </li> <li>• <b>Wages for time spent by workers, supervisors and managers:</b> <ul style="list-style-type: none"> <li>○ consulting with legal representatives</li> <li>○ attending court</li> </ul> </li> </ul>  | <ul style="list-style-type: none"> <li>• <b>Wages for lost productive time when workers, supervisors, WHS personnel, managers or administrators are redirected to:</b> <ul style="list-style-type: none"> <li>○ discussions with witnesses and injured workers</li> <li>○ meetings to discuss the case</li> <li>○ completing documents and preparing reports for the court</li> <li>○ completing documents and preparing reports for regulators</li> <li>○ dealing with increased work health and safety legal compliance activities (follow up regulatory reports/inspections etc)</li> </ul> </li> </ul>                                  |
| <b>Remediation costs</b> | <ul style="list-style-type: none"> <li>• <b>Lost production (profits) relating to:</b> <ul style="list-style-type: none"> <li>○ production disruptions or mandatory closures</li> <li>○ costs of additional workers to replace absent (injured) workers and/or to make up for incident-related downtime: <ul style="list-style-type: none"> <li>– unplanned overtime hours (for existing employees)</li> <li>– casual labour hire wages (for additional replacement staff)</li> <li>– HR gap analysis, recruitment and selection costs for new (temporary or permanent) replacement</li> </ul> </li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Non-compensable payments relating to:</b> <ul style="list-style-type: none"> <li>○ minor repair and replacement of plant, property and equipment</li> </ul> </li> <li>• <b>Cost of wages for lost productive time when the focus of workers, supervisors, managers or administrators is redirected to:</b> <ul style="list-style-type: none"> <li>○ assess, repair (or coordinate the repair of damaged plant and equipment</li> <li>○ post-incident implementation of new or modified health and safety management systems, processes or equipment, including time for:</li> </ul> </li> </ul> |

| Category                           | Examples of work health and safety failure costs  |   |
|------------------------------------|---|---|
|                                    | Direct costs  | Indirect costs  |
|                                    | <p>workers</p> <ul style="list-style-type: none"> <li>○ induction and job-related training of replacement workers <ul style="list-style-type: none"> <li>– cost of both trainer and trainees' time</li> </ul> </li> <li>● <b>Non-compensable payments relating to:</b> <ul style="list-style-type: none"> <li>○ major repair and replacement of plant, property and equipment</li> <li>○ major clean-up costs, including parts, materials and supplies</li> <li>○ disposal of damaged equipment and inventory</li> </ul> </li> <li>● <b>Fees paid for expert advice:</b> <ul style="list-style-type: none"> <li>○ specialist health and safety advice and assistance with identifying and implementing risk controls and solutions / WHS system modifications</li> </ul> </li> <li>● <b>Work disruption due to industrial action</b></li> </ul> | <ul style="list-style-type: none"> <li>– consultation with workers and supervisors (in particular)</li> <li>– training or retraining (both trainer and trainees' time)</li> <li>○ providing modified duties for injured workers, including time to: <ul style="list-style-type: none"> <li>– consult (with injured workers, co-workers, supervisors, return to work coordinators and medical practitioners) and identify appropriate tasks and schedules</li> <li>– plan, design and communicate expectations as regards activities, goals, support systems and milestones</li> <li>– monitoring injured workers and revising plans as appropriate</li> </ul> </li> <li>○ staff receiving / offering counselling following an incident</li> <li>○ undertake minor clean up tasks and remediation</li> <li>● <b>Decreased productivity (in addition to the above) due to:</b> <ul style="list-style-type: none"> <li>○ issues of presenteeism and absenteeism</li> <li>○ mental distress and issues of moral culpability</li> <li>○ reduced workplace morale, culture and engagement</li> <li>○ loss of human capital, skills and corporate memory</li> <li>○ reduced innovation potential (as a result of the above)</li> </ul> </li> </ul> |
| <b>Critical second-order costs</b> |   | <ul style="list-style-type: none"> <li>● <b>Reduced ability to attract and retain quality employees</b></li> <li>● <b>Negative publicity, deterioration in goodwill and corporate image, including</b> <ul style="list-style-type: none"> <li>○ reduced investor confidence (e.g. fall in share price, sentiment)</li> <li>○ value of lost contracts (lost confidence of customers or suppliers)</li> <li>○ deterioration in relationships with stakeholders, e.g. regulators and unions</li> </ul> </li> </ul>   |

Despite the range of direct costs identified in the table above, the International Labour Organization suggests analysts commonly restrict their attention to direct costs to three categories of employer payments: payments to injury funds, to injured workers for wages during employment injury- or illness- induced absences and to injured workers for medical expenses<sup>45</sup>. Of these, the most material (significant) is insurance premiums.

Insurance premiums are generally a factor of the organisation's size, industry and claims experience, however in practice, insurance payments are typically treated as overheads (indirect costs) due to the inconsistent relationship between claims history and insurance costs<sup>46</sup>. Premium rates are complicated by factors including:

- **organisational size:** for example, premium rates for small organisations are largely unaffected by claims history.
- **competitive dynamics between insurers:** a portfolio of insurance products may be purchased from the one insurer, which can limit performance-based pricing, as the insurer may not wish to risk losing the broader portfolio of insurance sales.
- **limitations to litigation as a deterrent:** much of the 'sting' of litigation (e.g. damage to corporate reputation and goodwill) is avoided as most cases settle before reaching trial or a court ruling. Further, limitation periods on claims pose challenges for injuries and illnesses with long latency periods. Delays can mean that messages important to improving safety can be lost.
- **not all incidents result in claims:** estimates around the globe suggest between 40-60% of injuries are not reported to insurers<sup>47</sup>. There are a number of reasons for this. Most frequently the incidents are too minor to warrant a claim. In other cases, workers may be concerned about suffering adverse employment consequences after making a claim, or employers may seek to minimise their claims experience rating by covering the costs internally rather than lodging a compensation claim. Critically, if and when the premium impact of a claim deters reporting of the incident, the economic incentive has become dysfunctionally skewed; posing an incentive to prevent reporting (claims) rather than an incentive to prevent injury or illness. However, the avoided premium increase tends to be offset, at least in part, by higher direct payments of compensation to injured employees to cover work absences and medical costs.

Importantly, research confirms that because employers' health and safety strategies and resource allocations tend to be guided by their workers' compensation claim statistics:

"The negative effect that under-reporting has on *preventative health and safety measures* in the workplace is more damaging than the financial consequences".<sup>48</sup>

Under-reporting and under-claiming become even more problematic when compensation data is used to estimate total failure costs. Various 'rules of thumb', such as 'total costs are estimated at four times compensation cost', have been cited over the years. Yet despite typically failing to include costs associated with long-latency illnesses, a 2007 review of safety research revealed estimates of the hidden costs of workplace injury and illness

<sup>45</sup> See, International Labour Organization (2012).

<sup>46</sup> See, Clayton (2002).

<sup>47</sup> See, International Labour Organization (2012) and also Safe Work Australia (2009).

<sup>48</sup> See, Thompson (2007).

varying considerably across studies; up to 20 times salary and wage costs.<sup>49</sup> This suggests a one-size-fits-all rule of thumb is likely to be inappropriate.

Instead, relationships may exist between hidden costs and various injury characteristics, such as injury type or severity. Because hidden costs are potentially significant but difficult and costly for organisations to trace, cost-based research that seeks to track both the visible and hidden costs of injuries and illnesses of varying severities may provide more useful rules of thumb for industry.

This is important as hidden (and indirect) costs are particularly pervasive. They are not only more difficult to quantify than the visible, direct costs but also have broader and longer-lasting implications on organisations due to their negative effect on organisational culture.<sup>50</sup> Figure 6 reveals the distribution of hidden failure costs identified in a 2007 study of New Zealand firms<sup>51</sup>.

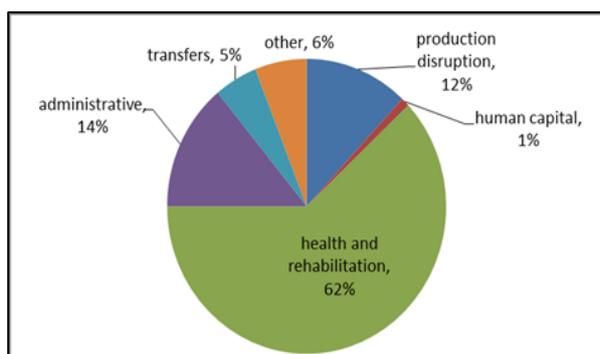


Figure 6: Indirect health and safety failure costs

### 3.3.2. Improved access to labour

Employee awareness of the quality of work health and safety culture and the effectiveness of health and safety systems has important implications for organisation's ability to recruit and retain quality staff. Research has demonstrated that developing strategies to address factors such as employees' work-life balance, learning and development needs and workplace health and safety issues enhance an organization's reputation, help them establish themselves as "employer of choice" and help attract and retain quality staff (including contractors)<sup>52</sup>. Similarly, studies have found health and safety training initiatives help to significantly reduce minor accidents, improve staff retention and enhance corporate reputation for professionalism<sup>53</sup>.

### 3.3.3. Improved access to capital

Publicity surrounding the significant costs of poor work health and safety has also attracted the attention of investors. Increasingly, investors are actively seeking information about the extent to which managers seek to identify and manage work health and safety risk, and about the effectiveness of those efforts<sup>54</sup>. This is grounded first, in the knowledge that companies who manage WHS risk well are likely to have more productive and engaged workforce and less likely to suffer significant failure costs, and second, in the knowledge that those managers are also attend to other forms of business risk.

<sup>49</sup> See, Massey, Lamm and Perry (2007), p.7-10.

<sup>50</sup> See, British Safety Council (2013) for approaches to ascertain and measure the impact of safety costs to the organisation, individual and society.

<sup>51</sup> See, Massey et al. (2007) p7-10.

<sup>52</sup> See, Zheng et.al. (2007).

<sup>53</sup> See, for example, Pollitt (2010) and Cohen (2006).

<sup>54</sup> See, for example, Prior (2013, 2014).

Conversely, cases both in Australia and around the world have demonstrated the negative impact that poor work health and safety performance can have on investor and creditor confidence. For example, researchers studying stock market reactions to the Union Carbide disaster in Bhopal identified a loss of investor confidence that affected share prices across the industry - although they also found the firms that had previously been more transparent with regard to reporting their social responsibility efforts and performance to shareholders suffered less significant falls in share prices<sup>55</sup>.

#### 3.3.4. Improved productivity

Various studies have identified increased productivity as a key benefit of safe and healthy work and strong health and safety as a key driver of high performing work environments<sup>56</sup>.

“In ‘excellent workplaces’ being safe takes on a new dimension and is a key driver underpinning quality working relationships... It is not possible to separate excellence in safety systems and the creation of a safety culture from the wider sense of excellence in the workplace. An unsafe workplace cannot be an excellent workplace. Excellence and safety are intertwined and connected at the roots.”<sup>57</sup>

Studies suggest sound work health and safety risk management leads to higher productivity because it fosters a positive workplace culture and enables alignment of individual workers’ goals and values with the organisation’s mission, instilling a sense of purpose and motivation. In turn, this can enhance an organisation’s reputation, which aides its competitiveness in the market for talent and for lucrative and/or high-profile projects. A ‘virtuous circle’ is created by safety investment through improving workforce wellbeing, which in turn encourages worker engagement and motivation, thus improving productivity and reducing costs, which lead to increased profits<sup>58</sup>. The implementation of a strong work health and safety management system can foster organisational improvements by enabling the following outcomes, many of which are interrelated and interdependent:

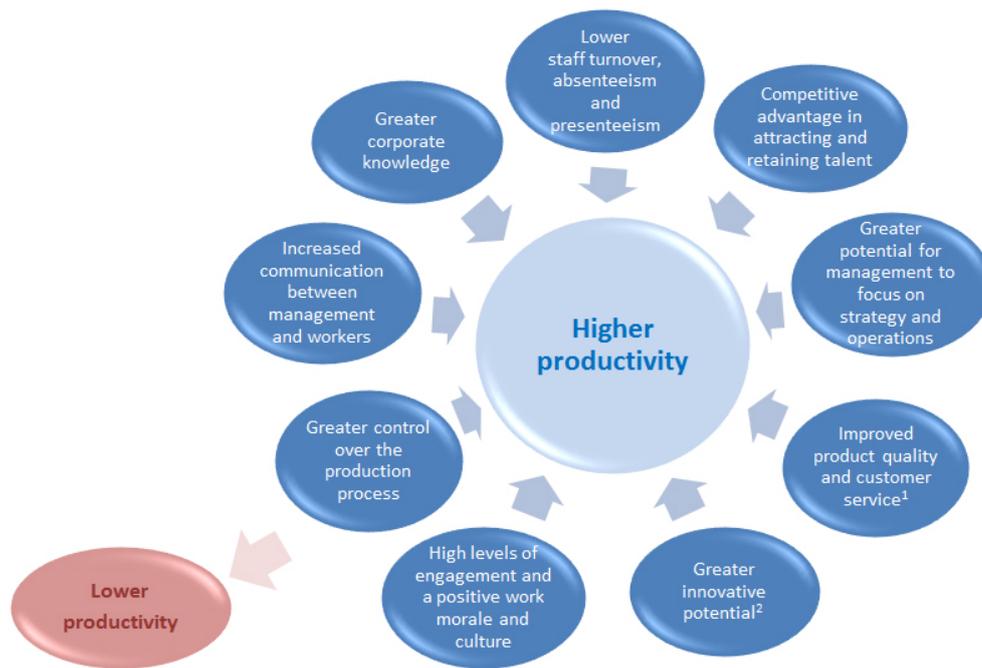
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<sup>55</sup> See, Blaconniere and Patten (1994).

<sup>56</sup> See, New Zealand Department of Labour (OSH) ‘NZ OSH’ (2001); British Safety Council (2013), UK Health & Safety Laboratory ‘UK HSL’ (2005), Hull and Read (2003).

<sup>57</sup> See, Hull and Read (2003).

<sup>58</sup> See, Massey et al. (2007), pp.23-24.



**Interdependencies:**

Note 1: Quality improvements are made possible through engaged staff and reduced disruptions.

Note 2: Innovation is facilitated by higher morale and reduced staff turnover.

**Figure 7: Impact of work health and safety on productivity**

(Source: developed by the authors from New Zealand Department of Labour 2001; British Safety Council 2013; UK Health & Safety Laboratory 2005; and Massey et al 2007)

A recent examination of occupational safety and health (OSH) interventions in small to medium sized enterprises (SMEs) reveals that “once SMEs understand the relationship between OSH and productivity, they are then able to see the link between OSH and economic performance”<sup>59</sup>.

As illustrated above, greater control of the production process has the potential to both increase and decrease productivity. This stems partly from a divergence between ‘work as imagined and work as performed’ in which local work practices had ‘drifted’ away from intended practices to alternative work practices that were more locally efficient, but unacceptably higher risk<sup>60</sup>. Identifying and terminating those unsafe short-cuts or ‘work-arounds’ and / or improving the quality of supervision may lead to some reduction in productivity. However, this presents an opportunity to explore the potential for other work process alternatives that are both efficient and safe.

<sup>59</sup> See, European Agency for Safety and Health at Work (2014).

<sup>60</sup> See, Borys et.al (2009), Dekker (2006), Antonsen et.al (2008).

Research studies have provided examples illustrating these links. A number are reproduced below:

#### **Examples:**

A Canadian study<sup>61</sup> of health outcomes, absenteeism, and productivity sought to evaluate the economic consequences of two ergonomic interventions: an ergonomically designed chair and an office ergonomics training program. The findings revealed that training alone had no statistically significant effect on productivity or health. However, when both the chair and the training were provided substantial reductions in pain and improvements in productivity were evident. (Note: neither the chair nor the training influenced sick leave).

Separate studies of the economic effects of musculoskeletal (back injury) prevention interventions undertaken in Australia<sup>62</sup> and the Netherlands<sup>63</sup> each reported positive economic benefits. The Dutch study of transport workers found that a tailored back injury prevention program reduced back injury-related absenteeism “by at least 5 days per year per employee” and that the positive outcomes were persistent over two years of follow up.

The results were consistent with another European study of responses to safety which found workers will reciprocate an employer’s efforts toward a high-quality relationship by engaging in ‘safety citizenship behaviour’, in which they would engage in increased efforts directed towards broader organisational safety, provided a conducive safety climate existed.<sup>64</sup> EU-OSHA (2009) suggests this reflects a ‘psychological contract’ between employers and workers which is useful in promoting WHS. That is, employers committed to providing a good work environment will be rewarded with greater employee commitment and performance.

Respondents in a U.S. construction industry study reported attention to safety had positive impacts on project scheduling (43%), project return on investment (51%) and project budgets (39%). In addition, 50% of those reporting positive impacts on project scheduling experienced benefits of at least one week; 24% of those reporting positive impacts on project budget experienced gains of at least 6%; and 20% of those reporting positive impacts on project return on investment experienced benefits of at least 6%.<sup>65</sup>

Further, a meta-evaluation of 62 research studies into the economic benefits related to work health and wellness programs reported numerous benefits. These included an average reduction of 25.1% in sick leave and absenteeism, 24.5% reduction in health costs and 32% in workers’ compensation and disability claim management costs.<sup>66</sup> Various other case studies and publications are publicly available that outline the business case for safety.<sup>67</sup>

### **3.4. Business costs of safe and healthy work**

The costs associated with efforts to ensure work health and safety are termed ‘compliance costs’ or, more appropriately, (injury and illness) ‘prevention costs’. Injury prevention costs relate to those efforts dedicated to promoting and managing work health and safety. They

<sup>61</sup> See, De Rango et. al. (2003).

<sup>62</sup> See, Tuchin and Pollard (1998).

<sup>63</sup> See, Versloot, Rozeman, van Son and van Akkerveeken (1992).

<sup>64</sup> See, Hofmann, Gerras and Morgeson (2003).

<sup>65</sup> See, McGraw Hill Construction (2013), p.4, 18-20.

<sup>66</sup> See, Chapman (2012) pp.8-9.

<sup>67</sup> See, for example Blewett, Shaw, Pisaniello and Moss (2007), British Safety Council (2013); Massey et al. (2007) and various regulatory agencies’ websites e.g. EU-OSHA, NZ OSH, Safe Work Australia, UK Health and Safety Executive (‘HSE’) and US Occupational Safety & Health Administration (‘US OSHA’).

include costs pertaining to those staff, resources and infrastructure dedicated to developing and continuously improving a work health and safety performance management system.

### 3.4.1. Injury and illness prevention costs

Work health and safety prevention costs include the following broad categories of expenditure:<sup>68</sup>

| Overheads - Category   | Examples   |
|--|--|
| <b>Staff costs</b>   | <ul style="list-style-type: none"> <li>• <b>Wages (and on-costs) for:</b> <ul style="list-style-type: none"> <li>○ specialist work health and safety personnel (in house or contracted)</li> <li>○ training (e.g. toolbox talks, debriefs, risk awareness)</li> <li>○ communication and consultation (e.g. risk analysis, suggestions)</li> <li>○ audit and inspection time (e.g. equipment and work-spaces)</li> <li>○ management system planning and administration</li> </ul> </li> <li>• <b>Temporary reductions in productivity due to changing methods of work</b></li> <li>• <b>Reductions in productivity due to no longer allowing high risk shortcuts</b></li> </ul> |
| <b>Infrastructure costs<sup>^</sup></b>  | <ul style="list-style-type: none"> <li>• <b>Health and safety purchases*:</b> <ul style="list-style-type: none"> <li>○ protective consumables (including PPE<sup>69</sup>)</li> <li>○ protective equipment (e.g. guarding, document trolley)</li> </ul> </li> <li>• <b>Price differences required to upgrade* to, or invest* in safer equipment, plant and machinery</b> (e.g. purchasing an ergonomic rather than standard chair, added safety features on a new vehicle etc)</li> </ul>  |
| <b>WHS program costs</b>   | <ul style="list-style-type: none"> <li>• <b>Work health and safety management system:</b> <ul style="list-style-type: none"> <li>○ development, implementation, administration and continuous improvement (including costs of consultants, administrative staff time, office space and equipment, audit and inspection costs)</li> </ul> </li> <li>• <b>(Proactive) external audit fees</b></li> <li>• <b>Incentives, rewards or activities offered to motivate achievement of safety goals or targets</b> (not necessarily injury-based targets)</li> </ul>   |
| <p><sup>^</sup> Other infrastructure costs, such as preventative maintenance, are not strictly work health and safety costs, although maintenance does have a significant ability to influence work health and safety performance outcomes.</p> <p>* Includes costs over the lifecycle of these assets – for example, costs relating to planning, consulting / design, purchase, installation, maintenance, disposal and training (both trainer and trainee(s)).</p> |  |

**Table 6: Prevention costs**

<sup>68</sup> See, for example, British Safety Council (2013); EU-OSHA (2007); Massey et al. (2007).

<sup>69</sup> In this context, PPE refers to personal protective equipment such as masks, gloves, earplugs, helmets etc.

### 3.4.2. Incentive effects of cost allocations

A key criterion of management performance reporting is 'controllability'. For this reason, decisions regarding those prevention costs to be charged to corporate overheads and those to be allocated to divisions or business units need careful consideration.

Prior studies suggest positive safety effects can be achieved by highlighting safety failure costs in the performance reports of relevant business units<sup>70</sup> because the incentive to reduce costs by reducing the number and severity of claims focuses the attention of managers on opportunities for injury prevention. Large organisations that self-insure have even stronger price signals to encourage them to prevent workers' injuries or illnesses<sup>71</sup>. However, *disincentive* effects may arise by also allocating *prevention* costs to business units, particularly where managers may perceive allocations to impact their cost centre less favourably than others with whom their performance could be compared.

Studies also reveal the importance of separate line items in budget allocations for preventative costs and supporting activities. A separate health and safety budget is shown to be associated with reduced staff stress, sick leave and compensation claims as well as greater productivity and morale<sup>72</sup>. Furthermore, research has shown allocations for preventative actions are more likely to be diverted to operating activities when costs are tight and managers have high budgetary discretion<sup>73</sup>.

### 3.5. Strategic considerations and implications

Strategic considerations need to play an important role in the business case that informs managerial decisions because externalities, including second order impacts, may pose current and future threats of a strategic or financial nature. As explained in Section 1, organisations do not bear externalised costs directly, however negative publicity, reduced stakeholder sentiment and increased political pressure can lead to costly regulatory penalties, lost sales, increased cost of capital, diminished relationships with employees and suppliers, and so on.

Consequently, efforts to be a safe, responsible and well-run company, to maintain reputational capital, to avoid customer sanctions, or simply to ensure regulatory compliance, may prompt investment in work health and safety over and above the levels justified by restricted analyses of the most easily quantified financial costs and benefits to the organisation. This is because incorporating strategic costs into the financial case brings attention to a broader range of relevant economic costs and benefits that are, in practice, often subjective – both in terms of magnitude and likelihood.

The need to consider the strategic case for work health and safety investment is underscored by the many costs and benefits externalised to individuals and the broader community. The U.K. Health and Safety Executive ('HSE'), for example, estimated that of the £13.8 billion cost of workplace illness, injury and fatalities in the UK in 2010-11, 57% was borne by individuals (and their families), 22% by the government and 21% by employers<sup>74</sup>.

Distribution of the economic cost of work-related injury and illness in Australia presents a stark contrast. Latest available data reveals employers bear a much lower portion of costs

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<sup>70</sup> Critics cite concerns that this incentivises under-reporting rather than focus management attention on injury prevention.

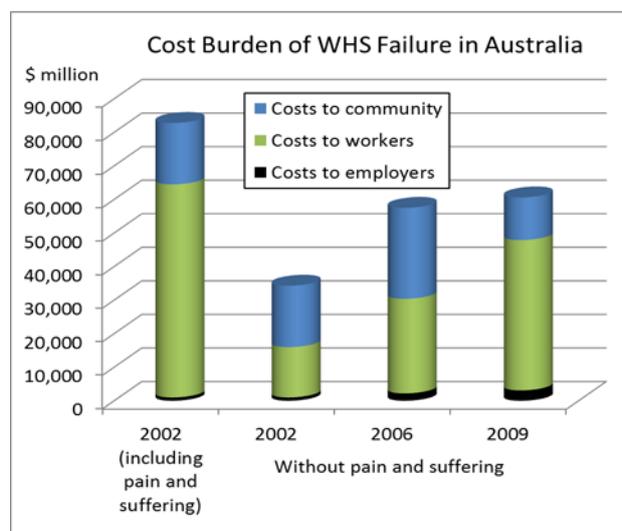
<sup>71</sup> See, Jamieson, Reeve, Schofield and McCallum (2010), p.15; NSW WorkCover Authority (2001).

<sup>72</sup> See, EU-OSHA (2009), p31.

<sup>73</sup> See, Jones and Walker (2007), Walker and Jones (2012).

<sup>74</sup> See, HSE (2013), p2-3.

(5% ex-post or 10% ex-ante<sup>75</sup>) while the portion transferred to injured workers has rapidly risen from 49% in 2005/6 to 74% by 2008/9 (see, Figure 7).



**Figure 8 Economic cost of injury and illness**  
(Source: Safe Work Australia, 2009a and 2012a)

The magnitude of the externalities, coupled with the preventative capability<sup>76</sup> of organisational decision-makers, creates substantial incentive for reputational and political pressure in response to poor organisational health and safety performance<sup>77</sup>. Lessons are to be learned, perhaps, from the rise of public concern over environmental externalities and the proliferation of environmental regulation and escalating penalties that emerged across developed economies over the last century.

In the modern information age, evidence suggests large organisations, in particular, are facing increased stakeholder scrutiny of the extent to which they meet social responsibility expectations and uphold the conditions of their 'social licence to operate'. As a result, health and safety incidents attract undesirable attention from media (including social media) and lobby groups, and also from employees, customers, suppliers, investors and other stakeholders in the organisational value chain.

### 3.5.1. Supply chain risk

Accountability mechanisms therefore place pressure on organisations to scrutinise not only their own operations but also that of their supply chains. This magnifies concerns relating to risk exposure in lean operations and just-in-time work environments. Outsourcing also creates a trend of smaller organisations, which reduces overall resources devoted to WHS because numerous smaller entities tend not to have the equivalent level of resourcing capacity for WHS of larger organisations<sup>78</sup>. While organisations can impose minimum safety performance records as a prerequisite to bidding on contracts, thereby creating an economic incentive to improve safety performance, competitive market conditions can lead to slim profit margins and safety shortcuts and competitive aspects of the (re)tendering process can

<sup>75</sup> The ex-ante approach redistributes compensation premium payments from community cross-subsidy to employer cost.

<sup>76</sup> See, Chelius (1991).

<sup>77</sup> See, Safe Work Australia (2012)

<sup>78</sup> See, Johnstone (2009) and Mayhew, Quinlan and Rande (1997)

produce a 'race to the bottom' on safety. This can be of particular importance for small businesses tendering for large contracts<sup>79</sup>.

Yet in a recent interview, senior managers from a large construction firm reflected on safety issues in their supply chain relationships, offering an illuminating contrast. They cited their ongoing efforts to examine the alignment between their legal obligations and their business objectives as a basis for determining strategy and objectives,

"Not only with our own employees and project teams... but also to what influence we have on the supply chain because we rely heavily on what they do. [They are a significant percentage] of the labour and supervision on our sites... It's almost like... a customer and supplier arrangement... If a customer or supply chain see us doing something, and we get excited by it, or we're looking to achieve that, and if they can play a part in it, well obviously it might mean we value their input"<sup>80</sup>

Interestingly, while prior research reported 22% of respondents (in the U.S.) perceived the impact of health and safety practices on project schedule as a concern<sup>81</sup>, the interviewees in this study identified strong benefits in early supply chain engagement and collaboration. Interviewees noted that early and effective communication enabled them to identify a broader range of potential problems 'up-front' (including safety problems). This integrated approach then allowed them to modify plans or ensure necessary back-up or redundancies were built into the project in a much more cost-effective way than if those problems had been discovered in later stages of the project.

"[Embedding OHS] is allowing that to be managed through the normal course of planning, procuring, designing a project. If the influence we can have on the up-front focus and planning the delivery of the project, involves the subcontractors and the like, that's a benefit. They may not have recognised that they're actually playing a big role in safety by participating at that stage, and we say that's OK. But they're definitely in there and they're doing that... which is critical to our strategy. [this level of engagement in planning] will generally translate to being even more productive anyway"<sup>82</sup>.

Other studies in the construction industry have estimated the ratio of cost savings to safety program implementation costs to be in the range of 5:1 to 9:1<sup>83</sup>. For smaller firms, studies suggest a client base inclusive of large organisations establishes credibility and assists with winning work from other large organisations. In turn, this can attract talent, creating a virtuous cycle of favourable clients, talented workers, reputation enhancement and profitability.

As supply chains become more complex and extended, increasing interdependence along the value chain highlights the business imperative for participants to coordinate and communicate effectively to avoid disruptions and ensure greater agility, flexibility, risk management and performance<sup>84</sup>.

<sup>79</sup> For instance, see, UK HSL (2005), p.4.

<sup>80</sup> See, Macquarie University, *Accounting for WHS Governance* study

<sup>81</sup> See, McGraw-Hill Construction (2013).

<sup>82</sup> See, Macquarie University, *Accounting for WHS Governance* study

<sup>83</sup> See, McGraw Hill Construction (2013), p.16.

<sup>84</sup> See, Wagner and Neshat (2012).

### 3.5.2. Business goodwill

Business goodwill is a means of recognising the value created by an organisation's reputational capital. It includes intangible assets such as the value of an organisation's brand and its strong customer, supplier, employee, investor and external stakeholder (community) relations. Goodwill is formally recognised as an asset only at the time an organisation is sold (purchased). At that time, it is valued (in the purchaser's accounts) as the premium paid above the cost of the business' physical assets.

Research suggests the potential for loss of business goodwill and fear of reputational damage poses a deterrence effect of prosecution for breaches of work health and safety regulation. The "shame of appearing in court, the concern to avoid moral condemnation, the fear of bad publicity", is a particular concern for large organisations.<sup>85</sup> :

Indeed, archival media is peppered with business case examples of poor management of work health and safety, work health and safety crises and responses to those crises<sup>86</sup>. These demonstrate the significant costs associated with work health and safety failure. More importantly, they demonstrate ever-lingering reputational damage and the ability for externalities to drive substantial political and regulatory pressure.

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<sup>85</sup> See, UK HSL, (2005) at pp.11-15; and also Bluff (2011), Jamieson et al. (2010)

<sup>86</sup> See, for example, the many published case studies relating to James Hardie (asbestos management), Ford Motor Company (1970s model 'pinto' recall) and BP (Deepwater Horizon).

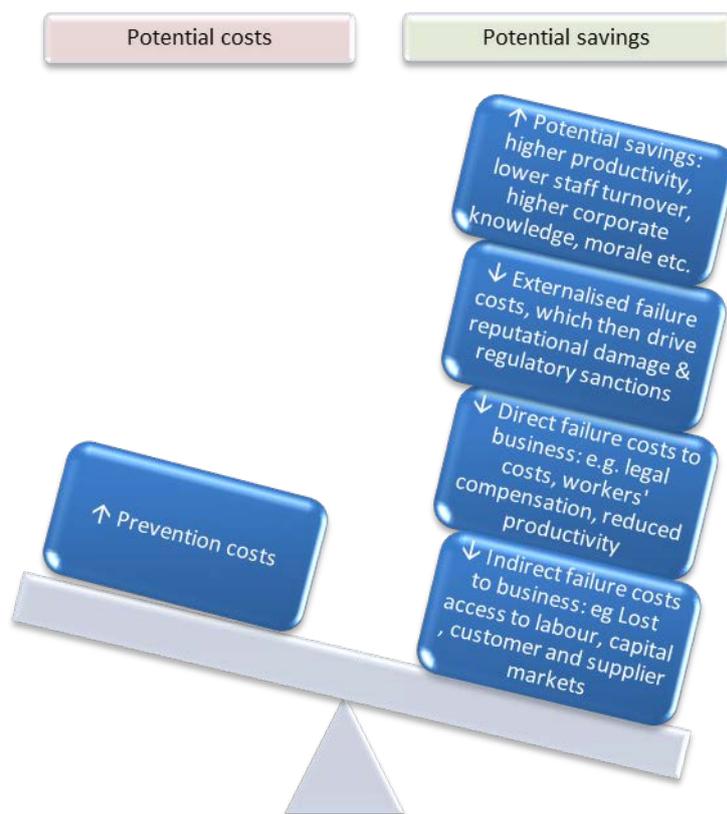
#### 4. Conclusion

Safe and healthy work is good for business. It has clear financial and non-financial benefits. While there is a measureable cost for injury and illness prevention, the costs of health and safety failure, in the vast majority of cases, will far outweigh those of prevention. These findings are not new.

Despite this, the financial costs of safety appear to be felt more acutely than the benefits. This likely stems from the fact that prevention costs are far easier to identify and isolate in the financial accounting system than failure costs. Instead, many failure costs are either, indirect and hidden, or are externalised to the organisation's stakeholders. But again, these findings are not new.

**The 'problem' of the work health and safety business case therefore appears to be in its interpretation and in its application to work health and safety problems.**

A business case for investment in work health and safety can be grounded in legal or financial considerations. Some health and safety investments show clear financial merit. However, the failure to demonstrate a favourable cost-benefit result doesn't necessarily mean it is without financial merit as hidden failure costs and highly subjective second order costs will bias analyses toward rejection.



**Figure 9: Cost versus benefits of WHS**

(Source: developed by the authors from data presented above)

The fact that many failure costs are indirect does not mean they cannot be traced and quantified. Indeed case studies demonstrate otherwise, with estimates citing failure costs that vastly exceed prevention costs by orders of 10:1. The more detailed and comprehensive

the analysis, the stronger the business case tends to be. However, variations in available estimates (from 2:1 to 20:1) reinforce both the subjectivity inherent in the exercise and the potential for the financial case to fluctuate across different risk profiles and injury severities.

To that end, the resources involved in undertaking a full cost-benefit analysis to confirm the business case for controlling each health or safety risk would outweigh the benefits of analysis<sup>87</sup>. Further-more, the exercise itself is not a value-adding activity<sup>88</sup> since the business case requiring health and safety risk to be eliminated (or otherwise minimised, as far as reasonably practicable) has already been established in law.

Where the financial (business) case is more appropriate, and instructive, is in comparing the investment (i.e. prevention) costs of two or more controls that offer *equally effective* risk mitigation. This is consistent with the intent of 'hierarchy of control' and, since the alternatives offer equal protection from harm, failure costs become irrelevant to the analysis thereby eliminating the problem of failure cost data quality.

As demonstrated in this discussion paper, analyses of failure costs are typically partial and tend to understate the business incentive to engage effectively and appropriately in health and safety risk management. Yet the cost burden of work health and safety failure is an important business cost. Those that are capable of capture in a reliable and cost effective way therefore remain important considerations in analyses of any broader business investment decision.

An integrated approach to the business case for operational planning and decision-making is critical. Unless decision-makers are mindful of the ways in which planning, procurement, production and performance can generate added health and safety risk, then operational efficiency gains may be financially counter-productive. For example, gains from increased productivity realised on one hand may be susceptible to elimination by safety failure costs on the other.

Together, this highlights the need to address issues of information asymmetry by ensuring that all organisational decision-makers, including accountants, understand the critical interdependency that exists between financial and operational risk, and understand the beneficial links between 'safe and healthy work' and productivity. Otherwise, important health and safety information will be excluded from strategic and resource allocation decisions and meaningful opportunities to enable safe, healthy and productive work will be lost.

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<sup>87</sup> Empirical research that seeks to examine the respective cost-benefits of a broad range of scenarios are likely to be informative to industry.

<sup>88</sup> See: Haefeli et al. (2005)

## Appendix

Model Work Health and Safety Act (2010)

Subdivision 2 – What is reasonably practicable?

### **18 What is ‘reasonably practicable’ in ensuring health and safety**

In this Act, ***reasonably practicable***, in relation to a duty to ensure health and safety, means “that which is, or was at a particular time, reasonably able to be done in relation to ensuring health and safety, taking into account and weighing up all relevant matters including:

- (a) the likelihood of the hazard or the risk concerned occurring; and
- (b) the degree of harm that might result from the hazard or the risk; and
- (c) what the person concerned knows, or ought reasonably to know, about:
  - (i) the hazard or the risk; and
  - (ii) ways of eliminating or minimising the risk; and
- (d) the availability and suitability of ways to eliminate or minimise the risk; and
- (e) after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk” (s18, WHS Act 2010).

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