FACULTY OF BUSINESS AND LAW

School of

ACCOUNTING, ECONOMICS AND FINANCE

School Working Papers – Series 2004

SWP 2004/07

Health, Safety and Environmental Issues and Reporting
also known as:
Management accounting and how we measure & report Occupational Health and Safety (OH&S) information

Courtney Clowes
School of Accounting, Economics & Finance,
Deakin University
Email: cclowes@deakin.edu.au

URL: http://www.deakin.edu.au/fac_buslaw/sch_aef/publications/default.htm

Health, Safety and Environmental Issues and Reporting
also known as:

Management accounting and how we measure & report Occupational Health and Safety (OH&S) information

Deakin Seminar Series, March 5th 2004

Courtney Clowes
School of Accounting, Economics & Finance,
Deakin University
Email: cclowes@deakin.edu.au

Why present at a seminar series?

There were several reasons why I asked to present today.

a) To let others in the school know what my PhD project is actually about

b) To present some of my most up-to-date work (which I haven't succeeded in doing due to time constraints, so my apologies)

c) To describe where my project is going in order to obtain advice and direction for the future

I don't expect you to read the whole paper, but if you are interested please read the introduction (so you have an idea about what my topic is) and the future development section at the end (which describes my planned method and approach for the future). Your comments and advice would be greatly appreciated.

Health, Safety and Environmental Issues and Reporting
also known as:

Management accounting and how we measure & report Occupational Health and Safety (OH&S) information

"You need to break a few eggs to make an omelette"

"Why do cool kids wear their helmets on the handlebars?"

"..from 25 cents to 50 cents of every dollar of net profit earned by American corporations pays for employee health, workers' compensation and disability costs." (Foster Higgins & Co. 1992, '1991 Health care benefits survey').

Abstract:
Over the past 250 years occupational health and safety (OH&S) has become more important because the industrial revolution and mechanisation that accompanied it are very effective at damaging and killing workers. Whilst there are many calls for more attention and investment to be given towards the issues surrounding OH&S it is often not beneficial or cost effective to invest in OH&S. *A priori* reasoning would indicate that if it truly was cost effective this attention would have occurred. It is possible that people are just a bunch of sissies looking for any excuse to complain about work. The obvious conclusion then is that whilst OH&S does create certain costs and other problems, these are still less than the resources required to address them effectively.

On a global level, it is estimated that over 5,000 people die every day due to accidents, injury or sickness contracted at work. For each fatality there is another 1,000 injuries which lead to incapacitation (Else, 2003). At a local level, in 2001 in Victoria 31 people were killed in workplaces in the Australian state of Victoria, and another 3711 were seriously injured (Victorian WorkCover Authority 2002). Putting on your Six Sigma Blackbelt Hat for a moment, in "quality speak" (i.e. defective parts per million) the results appear unacceptable and quite likely avoidable.

With these figures it is important to answer the question of whether this is a necessary side-effect of present day society, or the result of failure to address key issues. If these costs and issues are avoidable, then a key question that must be examined is why firms are pursuing a sub-optimal strategy. This paper examines this question by looking at the role of Management Accounting and how it measures and reports OH&S information within organisations. As the role of management accounting is to support managers with relevant information it is important to examine whether OH&S costs are accurately collected, collated, and communicated to ensure that appropriate strategies are pursued. By evaluating this we are able to better evaluate the claims regarding OH&S.

Introduction (part 1)

This paper represents a summary of my PhD which investigates and evaluates the current contributions by management accounting theory and practice in relation to the collection and internal communication of OH&S information. The focus is not external reporting of this information, neither is it focused on broader economic costs to society and the economy (although these are mentioned). For those economists and others who were misled by the tentative title please accept my apologies. There is also a section of interest to accounting history buffs.

This paper focuses on the first of the following three tasks which are the key components of my PhD thus far:

- determining the current theoretical descriptions of management accounting in general, and specifically its application to measuring and reporting on OHS;
- Empirically discovering and evaluating what actually goes on in practice (in Australia) (through broad based survey questionnaires and limited case studies); and
- Critically evaluating practices (in light of theoretical developments and recommended best practice).

Where does it fit?

OH&S is often viewed as an operational issue. The context for OH&S is actually much broader and is fits under the corporate governance umbrella, which is now receiving considerable attention. Corporations are expected to demonstrate sound corporate governance in the contemporary business environment. One key aspect of corporate governance is risk management (as illustrated by CLERP 9 and the AS8000 series), and OHS is a significant subset of this area. OHS presents key issues that must be considered by management with one major area being the level of monetary and social costs.

Compounding the importance of this issue is the growth in popularity of the ‘triple bottom line’ and ‘balanced scorecard’ concepts, which are examining entities from a broader perspective than just an economic, shareholder maximisation view. Thus, a firm’s performance in OH&S is not only an operational issue, but is indicative of management’s broader attitude and performance.

So what?

Briefly, corporate governance is now more important and onerous than ever. Accounting systems are often not designed to record and report OH&S information and practice appears to be lagging behind theory, with theory lagging even further behind reality. Meanwhile the costs are greater than ever in the contemporary business environment for failures in this area.

We are faced with the depressing statistics that over 500 Australians die every year in work accidents, with another 2300 dying of work-related illnesses per annum. This compares to a total population of approximately 20 million people. The United States loses 170 people daily from accidents and injuries sustained in the workplace, whilst 16,000 are injured or are made sick daily. On a global level, it is estimated that over 5,000 people die every day due to accidents, injury or sickness contracted at work (Else, 2003).

For management to effectively run an organisation and for a board to effectively discharge their governance responsibilities they must have useful information to question whether this is acceptable performance or not. If we have failed to effectively measure, record, and communicate direct and indirect costs (and just as importantly, direct and indirect benefits) in this area, it is argued that management accountants share some of the responsibility for the accidents and incidents that have damaged and destroyed property and life.

Therefore, the so what question may be answered from two perspectives.
From a purely economic rationalist viewpoint:
Better information ➔ better decisions ➔ (hopefully) more profit

From a more socially aware viewpoint:
Better information ➔ better decisions ➔ hopefully more profit & less dead people

In order for this to occur we need to know what accountants are doing, critically evaluate it, and (hopefully) improve it.

Structure of this paper

The rest of this paper is as follows. Following a brief introduction of the general area of research (corporate governance), we delve into some history that helps lay the foundations for a gently chaotic mosaic (description) of contemporary theory and practice. This paper concludes with a brief description of possibilities for the future, and a description of my PhD research plan.

Introduction (part 2)

Corporate Governance - General description

Corporate Governance describes the relationship between shareholders, the board of directors, and managers and also considers the role of other stakeholders and their influence on this relationship (Wheelan and Hunger, 200x). Other major stakeholders include auditors, employees, customers, suppliers and lenders. The size of present day organisations, coupled with the separation of ownership and control present many issues relating to the oversight of organisations.

Shareholder v Stakeholder perspective

Two major viewpoints about the role of the corporation lead to different perspectives of the role of corporate governance. The Shareholder perspective may be summarised as the belief that the sole role of the company is to maximise shareholder wealth. From this viewpoint, the role of corporate governance is to ensure that shareholder wealth is maximised, and other stakeholders are only considered based on their impact on this process. The Australian focus on Corporate Governance tends to follow the shareholder model. Pursuers of this model have sometimes forgotten that if you have no employees left because you accidentally knocked them off, then maximising shareholder wealth can be an issue.

The stakeholder perspective considers stakeholders more holistically and aims to represent each set of interests at a more equal level. Some will argue this point based on equity, whilst others argue that it is a pragmatic response to improve long-term shareholder wealth, with the reasoning being that this only derives from long-term satisfaction of all stakeholders.

What is management accounting?

Providing useful information to management that addresses issues of control, compliance or competitive support (Birkett 1986). Information is often classified into categories of

- score keeping,
- attention directing, and
- problem solving (Horngren, Datar and Foster, 2002)

Compliance v Performance

Broadly speaking, the two main roles of corporate governance are ensuring compliance and enhancing performance. Improvements in the OH&S area are usually related to legislated change which firms are forced to comply with. There has been little impetus to focus on OH&S as a performance enhancing tool. A simple analysis of this may be that accountants have been providing compliance based information and failing to provide useful information in relation to competitive support. Empirical research will help confirm this, and possibly lead to its rectification.

Accounting History – relevant & useful?

A key refrain that is constantly overhead in accounting circles relates to the lack of importance or relevance in regard to accounting history research. Some have even been known to suggest that research in this area is not on a par with the top tier accounting journals. Hopefully after reading the next section you will be converted to the accounting historian's belief that we need to delve into the depths of history to truly understand, appreciated and solve today's dilemmas.

The three most useful things to understand when looking through the history of management accounting and specifically its relation to OH&S are:

a) old buggers are running many firms
b) old attitudes were likely correct at the time
c) old attitudes die hard

Failure to investigate and understand these issues will lead to limited understanding of the present situation. It will also hinder any attempts to generate change and improvement.

Whilst new developments exist in management accounting, many senior managers appear to have been born before the Industrial Revolution. Whilst this may be an exxxageration the point is that many senior executives were born in the 1930s and 1940s. The attitudes they learned whilst growing up and in their workplace half a century ago may be so strongly ingrained that it is difficult to shift. These attitudes may well be present in their approaches to OH&S. To exacerbate the problem further, the senior managers of these senior managers are carrying around attitudes developed at the turn of the previous century. How important is this?

The following comments, recorded from the beginning of the 20th century are reproduced by Bird and Loftus (1982).
"I don't have money for frills like safety."
"some people are just accident prone and no matter what you do, they'll hurt themselves in some way."
"…90% of all accidents are caused by just plain carelessness."
"We're not in business for safety."
"…There's just no place for sissies in dangerous work."
"…I just can't see wasting money on safety."
"These stubs on my hand are just part of doing business."

We may disagree with these sentiments today, but bear in the mind some of the following points. Money may well have been wasted 100 years ago if safety investments were made. Employees were often less skilled, and more desperate for work so they were easily replaceable. Furthermore, compensation costs were only just starting to be incurred. The only problem is, the contemporary environment has changed but some of the attitudes have not. Employees are far more skilled and powerful and it is therefore more difficult and costly to replace them. In addition, compensation costs are huge and growing as governments try and legislate action.

There are multiple research implications for this. To truly address the issues raised in my PhD I believe there is a need to pursue a detailed historical analysis of both accounting techniques in relation to OH&S as well as the prevailing attitudes and causes of those attitudes. In addition, to help confirm analysis conducted cross-cultural comparisons may well be helpful or necessary.

OHS – TODAY & THE FUTURE

Over the last 250 years there have been significant developments in OHS, which align with the industrial revolution (roughly 1760-1830) and mechanisation of work and society. The machines brought with them a new set of risks and lead to increases in trauma and injuries through both repetitive actions and poor safety guards.

1802 in the UK saw the introduction of the world's first legislation that covered factories, including cleanliness and ventilation. With changes in public awareness and attitudes to OHS reformers were able to pass further acts relating to factories throughout the first half of the nineteenth century. 1912 saw Sweden's first workplace laws which focused on lowering work hours in order to reduce accidents (Armour, 2002). Gaither (1990) describes the development safety and loss prevention departments in the US, as well as the steady progression of workmen's compensation laws in the early 1900s, which provided specific compensation for injuries, without the worker having to bring suit through the courts or prove negligence of employers.

World War II provided greater impetus to focus on the interaction between men and machines, so that they could work more efficiently at destroying other men and machines. This formed the foundation for many studies in both worker safety and productivity.

The 1970's and 1980's saw a new found focus on OHS, especially due to spiralling costs. In 1971 the Occupational Safety and Health Administration Act was passed in The U.S.A., which officially recognised the basic right of all employees to a safe working environment (Gaither 1990).

This point is further emphasised when we move towards the Occupational Health and Safety literature which examines the cost of mangers failing to control this area effectively. 'The Executive's Guide to Controlling Health Care and Disability Costs' by Barbe and Carlson (1993) provides an interesting perspective. The following two extracts provide a brief example:

> "Organisations have been struggling with the costs of health care and workers compensation for at least the past 10 years. Despite repeated attempts at cost containment most organisations have continued to experience double digit annual cost increases….A common thread (in our experience) has been the significant ability of organisations to influence health and disability results. When management focuses directly on health and disability, employers find they can exert considerable leverage over health care and workers' compensation costs….Solutions from many disciplines are integrated….and include: quality management strategies and techniques; and financial management strategies and techniques including activity based costing…" (page v)
>
> "..from 25 cents to 50 cents of every dollar of net profit earned by American corporations pays for employee health, workers' compensation and disability costs. Health care costs alone accounted for 26% of corporate net earnings in 1989 and rose to 45% in 1990 (These figures come from Foster Higgins & Co. 1992, '1991 Health care benefits survey'). These costs have

increased so much…that they have become a key issue in both global competitiveness and national social policy." (page 1)

Despite prescriptive regulation for over 150 years, large numbers of accidents still occur as were described in the introduction. The direct cost of injuries and sickness in the US alone is estimated to be over US $170b per annum. Injury was not recognised as a national health priority in Australian until 1986 (Better Health Commission 1986), (Ozanne-Smith, 1995).

In Australia, the national Occupational Health and Safety Strategy (2002-2012) has set targets for the reduction of work-related fatalities by 20% and workplace injury by 40% by 2012. National priority areas have been developed to help achieve this which focus on five key areas including risk reduction and improved management to demonstrate the seriousness with which the government is approaching OHS. The next section looks at how management accounting has interacted with OHS developments, and the argues the need for improvement.

OHS AND MANAGEMENT ACCOUNTING

The economic costs of these events are significant (as are the social and environmental costs). Key tasks of management are to plan and control. Effective control in relation to occupational health and safety (OHS) includes preventing systems becoming out of control via excessive energy transfers to objects. The specific role of management accounting in this area is to provide information to management which allows appropriate action to be taken to eliminate or minimise these events. Yet, OHS costs are relegated to overhead cost pools (Langfield-Smith, 1999) and therefore receive minimal attention. "What gets measured gets managed", yet labour on-costs, including workers' compensation are often treated as manufacturing overhead rather that direct labour costs. This muddying of the waters makes it even more difficult to present an accurate picture of the situation.

Considerable effort has gone into measuring the cost of injury and a detailed analysis is provided by Cameron (1995). A detailed discussion of these concepts is beyond the scope of this paper, but a summary of the general findings include various estimates of fatalities all of which put the costs at several hundred thousand dollars (in either $US or $AUD).

There is often no contest from management as to the validity of these figures. Catch phrases are often bandied about including "good safety is good business", and "people are our most valuable asset" but the rhetoric often fails to be backed up with appropriate action. An explanation of management behaviour is provided by Berger (2002) who describes there actions as based on three quasi-economic, productivity-related pressures.

a) short-term notions of productivity and profitability are given priority over OHS
b) workers' fears of job loss is manipulated

c) managers deliberately place supervisors in an OHS versus productivity dilemma

This contrast between rhetoric and action is demonstrated by Armour (2002) in relation to the production of matches. White phosphorus was shown to lead to necrosis of the jaw, which could easily be avoided by using red phosphorus. However, many manufacturers persisted with using the white as it was cheaper. To counter any claims that criticism is unfair due to this behaviour being acceptable practice of the day note that the Salvation Army opened a factory in 1891 to demonstrate that red phosphorus was a viable alternative.

This does not appear to match the findings by the Liberty Mutual group, who found 95% of executives reported improved workplace safety has a positive impact on financial performance, and that 61% believed that companies received a ROI of $3 for each $1 invested in improving workplace safety.

The cost of safety is either too expensive, or else it is only perceived to be too expensive because appropriate information has not been effectively communicated to key stakeholders. Research with supports this argument includes Lipold (2001) who presents cases from the United States where specifically addressing problems allowed Bank One to reduce workdays lost to asthma by 1/3 and increased productivity. Otis Elevator focusing on problems of heavy lifting resulting in a saving of 20,000 employee hours per annum and Union Pacific Railroad provided an alertness program and succeeding in reducing fatigue by nearly 40% over 2 years. This resulted in both improved response time and motivation.

Social Cost

Whilst economic cost is usually the most salient aspect of OHS, the social costs and effects should also be considered as part of the accounting domain. Effectively measuring and reporting social costs is a difficult task as is currently seen by attempts to develop triple bottom line reporting. Agreement on what to report and how to report it is minimal and leads to various methods providing minimal comparability. The end result is that social costs may not be considered. If organisations believe that they do not bear the consequences of these results, but rather have transferred them society, then they will feel little obligation to improve.

Current State of the Art

Two key questions are

- what are we currently teaching in this area?, and
- what does the academic literature have to say

The short answers to these two questions are:

a) OH&S does not get a mention in cost and management accounting text-books and courses, yet these costs often represent a significant and controllable portion of an organisation's expenses.

b) I have been unable to find a single management or cost accounting article that addresses the recording or reporting of OH&S costs.

A survey of 10 current management accounting texts found that none even mentioned safety, let alone devoted significant attention to this area. Of interest was 'Management Accounting' (2000) by Hanson and Mowen which devoted a whole chapter devoted to *Environmental Cost Management*. This was the only text that did this. This chapter adopted the techniques used by management accountants for *Quality Cost Management* and indicates that the current popularity of the "triple bottom line" concept is starting to bear fruit. What is disappointing is that the 'triple bottom line' seems to be a 'double bottom line', which focuses on the environment and economic situation and does not really address the social situation in any depth.

TEXT	**Environment**	**OH&S**	**Quality**	**TQM**	**COQ**
1	x	x	√	√	√
2	√	x	√	√	√
3	x	x	√	√	√
4	x	x	√	√	x
5	x	x	√	√	x
6	x	x	√	√	x
7	x	x	√	√	√
8	x	x	√	√	√
9	x	x	√	√	√
10	x	x	√	√	√

Cost Management: Strategies for Business Decisions (2000) International Edition, Hilton R.W., Maher, M.W. and Selto, F.H. (2000) McGraw-H
Management Accounting (5th ed) (2000) Hanson, D.R. and Mowen, M.M.,South Western
Cost Accounting in Australia: A Managerial Emphasis (2002), Prentice Hall, Horngren, C.T., Foster, G., Datar, S.M., Black, T. and Gray, P.
Managerial Accounting (2001) John Wiley & Sons, Jiambalvo, J. New York
Strategic Management Accounting: Issues & Cases (1995) Butterworths, Sydney, Smith, M.
Management Accounting for Competitive Advantage 1999 Smith, M., LBC Information Services, NSW
Management and Cost Accounting 5th ed 2000, Drury, C., Business Press, Australia
Managerial Accounting 4th ed Int Ed 1999, Hilton R.W., MCGraw Hill, Boston
Management Accounting 1997 2nd ed, Atkinson, A.A., Banker, R.D., Kaplan, R.S. and Young, S.M. Prentice Hall, USA
Management Accounting: An Australian Perspective 2nd ed, Langfield-Smith, K., Thorne, H. and Hilton, R.W. McGraw-Hill (1999) Sydney

Management accounting sole purpose is to support management. Before we criticise a text, we need to evaluate what current management texts deem to be important and evaluate whether management accounting is focusing on these needs. The first book off the shelf (14 years old) indicated the importance of occupational health and safety (Productions & Operations Management, 1990, Gaither). A brief extract highlighting this point is now provided:

> "Hazards are inherent in most jobs…management has been concerned with the safety and health of employees.…employees can still be injured.

> Managers therefore establish safety and loss prevention departments. These and other activities are not just done because it is the law, but because it is also the right and ethical thing to do, and besides – it is good business. When working conditions are safe, employee morale and labour productivity tend to be higher and the direct costs of accidents tend to be lower."
> (Gaither, 1990, p670)

So it seems that accountants are lagging behind in regards to drawing senior management attention to such a significant area and it may be suggested that one main reason for this is they do not know how. It is not being taught or discussed and attributed any significance in accounting texts or courses.

The inability of management accounting theory to keep up with the needs of the contemporary environment is aptly demonstrated when we look at measuring and reporting quality costs. It took until 1987 for management accounting textbooks to include sections on the cost of quality yet these concepts originated in the 1950's. Wheldon and Ross (1998) point out that the slow adoption by the accounting discipline of the cost of quality concept is one of four main factors that have influenced the low rates of adoption of cost of quality reporting. To further emphasise management accounting's inability to adapt a brief examination of Australian Standard 2561 (1982) *Guide to the determination and use of quality costs* is helpful. This standard was produced in 1982 and looks identical to many management accounting texts today in regards to how to record, measure, present and control quality costs. Yet, this approach did not appear for another 5 years in textbooks.

FAILURES AND CONTRASTS

The waste and destruction of human life and physical capital through accidents and incidents that may have been prevented demonstrates neither a pursuit of excellence, nor appropriate use of society's resources. Australian Standard AS 1470 (1986) '*Health and Safety at work – principles and practices'* states: 'There are 3 main bases for concern for OH&S, viz:
a) ethical or moral: society strongly disapproves of those persons who show a lack of concern for the well-being of others.
b) legal: most enterprises are subject to a variety of statutes, regulations and common law duty of care
c) Economic: lack of safety imposes penalties such as the loss of earnings, the costs of insurance, lost production, overtime, damage to plant, and resulting industrial disruption.
To meet these obligations a key requirement is for a commitment to safety at the most senior level. ' (AS 1470 page 6).

Failure to act has led to increasing legislation and regulation, which in the United States alone is estimated to cost $91 billion per annum. Described as a hidden tax imposed on American citizens, the cost of this social regulation is second only to environmental regulations (National Association of Manufacturers, 2001). This is often a direct result of employers failing to effectively control OHS resulting in government intervention. This intervention demonstrates failure of professional to self-regulate and maintain autonomy and indicates an erosion of the social contract the profession maintains with society.

It seems that accounting has failed to adequately these concerns. Unrealised benefits also display a failure of professionalism. The focus on cost minimisation, rather than benefit realisation has led to an incomplete approach. Benefits (other than avoiding the obvious social and economic costs) of improving this area include performance verification, whereby systems can be monitored and audited to provide independent verification and sustainable competitive advantage (for example enhanced reputation, and increased ability to compete for contracts/tenders) (Victorian WorkCover Authority, 2002)

THE COST OF QUALITY – A COMPARISON

The following discussion demonstrates that whilst change takes a considerable period of time, management accounting is capable of measuring and reporting in a way that aids management. This may well provide a template for future methods to address the issues raised in this paper. The attitude toward quality has changed from the traditional way in which quality was seen as an impossible task and an extra cost. The present understanding of quality views it not only as an essential task, but a cost reduction when achieved. This change has taken several decades to occur.

Trying to shift the focus on spending towards inbuilt quality and prevention, rather than defect identification and rectification has taken 50 years, but progress has certainly been made. This approach is remarkably similar to the 10 step approach to hazard avoidance by Haddon that was presented earlier. By focusing proactively on events before incidents occur, less time and cost is spent focusing on repair and rehabilitation.

The parallel to quality developments is made quite explicitly by Barge and Carlson (1993) who suggest that an interesting aspect of the current situation (explosion of health and disability costs) is the similarity to the state of American manufacturing 10 years ago. As with health and disability costs today, the inferior quality of U.S. products had become a problem that could no longer be ignored. American manufacturers at that time frequently blamed their problems on external groups or macro-level causes.

The entire world, it seemed, was convinced that prevention of quality failure – at least on a grand scale – was highly desirable but completely unattainable and impractical (Crosby, 1979). This would easily sum up the attitude of many in regards to safety. Yet this attitude towards quality has been overcome. Part of this change is related to the cost of quality reports which record not only the costs of quality but classify them into prevention, appraisal, and failure costs.

Several reasons may exist in combination for the failure of management in general and accounting in particular to appropriately address OHS. The politicisation of OHS and its use as a political weapon is argued to have reduced effectiveness of attempts to improve performance. (Sherriff, 2002). Where work stoppages are called by union official and blamed on safety issues, when the real issue is industrial relations negotiations the integrity of the system is called into question. The cynicism that is generated may be translated into all further attempts to highlight OHS issues. A short-term focus on quarterly and annual performance that focuses on share-price rather than long-term sustainability may limit the attention devoted to OHS issues.

Cultural influences must not be ignored, and as highlighted by quotes provided earlier by Bird and Loftus (1982), where we see that injury was often seen as part of the job (by both employees and employers). It was not seen as feasible or preventable, just as quality was seen to be too expensive and unobtainable (Crosby 1979).

FUTURE DIRECTIONS
(very presumptive before the empirical evidence has been collected or analysed)

It may be argued that improvements in accounting information will lead to some if not all of the following benefits in relation to OH&S (not including obvious reductions in injuries).
a) due diligence: It helps management meet its legal requirements more effectively
b) consultation: a systematic approach ensures concerns are managed before they become problems
c) performance verification: systems can be monitored and audited to provide independent verification, with gaps able to be quickly identified and corrected
d) cost efficiencies: long-term cost efficiencies will be delivered by avoiding injuries and illness, as well as damage to property
e) competitive advantage: evidence is often required of an effective OHS program for contracts and tenders. (Victorian WorkCover Authority)

Three possible approaches that might help achieve these benefits are now described:

DEVELOPING A COST OF SAFETY MODEL

Techniques for measuring and reporting the cost of quality have been available for several decades. Hanson and Mowen (2000) amply illustrate how this may be modified to report and manage environmental costs. It would not take a considerable effort to modify this approach in the use of safety. Cost of quality has four main areas that are measured. They are costs relating to appraisal, prevention, internal failure and external failure. These same four categories can be used for environmental or safety costs. There are various relationships between these costs. Usually, the greater amount spent on prevention, an exponentially greater amount of reduction in internal failure, external failure and appraisal costs results.

The following examples show a sample Cost of Quality report, based on the above four categories and how it could be modified to support a Cost of Safety reporting function.

Table 1. Cost of Quality Report*

PREVENTION COSTS (PC)	**$**	**% of PC**	**% of Total**
Inspection planning	x	x	x
development of testing instruments	x	x	x
Quality Training - salaries	x	x	x
Quality Training - equipment	x	x	x
TOTAL	**xx**	**100**	**xx**
APPRAISAL COSTS (AC)	**$**	**% of AC**	**% of Total**
Incoming inspection	x	x	x
Supervision	x	x	x
laboratory costs	x	x	x
Final inspection	x	x	x
TOTAL	**xx**	**100**	**xx**
INTERNAL FAILURE COSTS (IFC)	**$**	**% of IFC**	**% of Total**
Scrap	x	x	x
Rework	x	x	x
TOTAL	**xx**	**100**	**xx**
EXTERNAL FAILURE COSTS (EFC)	**$**	**% of EFC**	**% of Total**
Returns	x	x	x
Warranty repairs	x	x	x
TOTAL	**xx**	**100**	**xx**
TOTAL COST OF QUALITY	**xxx**		100%

* adapted from Australian Standard 2561

Table 2. Cost of Safety Report

PREVENTION COSTS (PC)	$	% of PC	% of Total
Risk assessments	x	x	x
Process Redesign	x	x	x
Safety Training	x	x	x
Safety Equipment	x	x	x
TOTAL	xx	100	xx
APPRAISAL COSTS (AC)	**$**	**% of AC**	**% of Total**
Continuing risk assessments	x	x	x
OH&S inspections	x	x	x
Approvals by external agencies	x	x	x
TOTAL	xx	100	xx
FAILURE COSTS - ACCIDENTS (FCA)	**$**	**% of FCA**	**% of Total**
Workers compensation	x	x	x
Downtime	x	x	x
Retraining			
TOTAL	xx	100	xx
FAILURE COSTS - PROPERTY DAMAGE (FCPD)	**$**	**% of FCPD)**	**% of Total**
Replacement costs	x	x	x
Downtime	x	x	x
TOTAL	xx	100	xx
TOTAL COST OF SAFETY	xxx		100%

2. SAFETY PROCESS MANAGEMENT

Using the information obtained from a COS report as well as other organisational data, the next step is getting accountants involved in Safety Process Management (SPM). The technique involved for pursuing SPM is not new to accountants, but its application in the OHS arena is. Business Process Management (also known under various guises such as Total Quality Management, Continuous Improvement, Business Process Re-engineering or Redesign). The same techniques we teach to accountants to pursue Business Process Management (identifying problems, analysing the steps in the sequence, determining value-adding and non-value adding activities and the like) are also taught to OHS professionals. They have different names (Risk assessments, OHS audits) but the nature of the task is identical. Normally, we try and improve efficiencies, whilst OHS professionals attempt to improve safety aspects, but it is not often that the two groups work together. Thus, many benefits and efficiencies that may be taken advantage of are ignored. The benefits of this approach are described by Cooper and Phillips (1997) and Weinstein (1997).

By pursuing a specific strategy of safety process management, combined with effective reporting of safety costs, management accountants can add significant value to their organisations but socially and economically.

3. TRIPLE BOTTOM LINE REPORTING

The third and final direction that is available is that of effective triple bottom line reporting. This not only discharges an organisations' social responsibilities but becomes a source of competitive advantage. There are glimmers of hope in this area, as the focus on reporting for economic + environmental + social results has become and prominent area for discussion. Seeing the first chapter dedicated to environmental cost management and reporting in a textbook indicates that the ball is rolling. The only worry is that the ‘environmental’ portion of the triple bottom line is giving significant attention, whilst the social aspects (of which safety is only one component) is left untouched. But, if organisations can realise the benefits of efficient safety management then it offers them an area of considerable competitive advantage. To illustrate this point, consider BP. In their 2000 annual report they describe the Health, safety and Environmental performance. 23 workers died in 2000, which was down from 30 in 2001. Imagine if this number was reduced to 0. Imagine the marketing opportunities and the ability to promote as a ‘ethical investment’. Imagine the staff satisfaction at achieving such a radical goal and all the social and economic benefits that will flow from there

CONCLUSION
Future Development of my PhD:

Outline & Method introduced (current situation in practice)

The following tasks indicate
Literature Review
The key areas that need to be finalised are:

- the contemporary environment in Australia and worldwide that considers both theory and practice.
- The historical development of practices and attitudes

Methodology
Further review of the literature and development of my methodology (as opposed to the method).

Method
The planned method in relation to my empirical studies:
1. Survey questionnaire which focuses on contemporary attitudes and techniques.
    - Sample size to be decided
    - Sample industries to be decided
    - Sample location to be decided

2. Analysis of the survey in order to develop a framework of current attitudes and techniques. This will form the basis of several in-depth case studies. Previous work in this field includes classification of organisations by their OH&S management systems and ranking of their performance. This research will be grounded in this framework and analyse the role of the management accounting system in the different typologies.

3. Model and critically evaluate contemporary practice, with a focus on whether, where, and effective change is needed and may be effected.

Selected BIBLIOGRAPHY/REFERENCES

Armour, J. (2002) 'Ergonomics: Mopping up the mess', Chapter 33 in the Australian Master OHS and environment Guide 2003, CCH, Sydney

Atkinson, A.A., Bankler, R.D., Kaplan, R.S. and Young, S.M. (1997), *Management Accounting: 2nd edition*, Prentice Hall, USA

Australian Standard 1470, (1986), *Health and Safety at work – Principles and Practices*, Standards Australia, NSW

Australian Standard 1885.1, (1990), *Workplace injury and disease recording standard*, Standards Australia, NSW

Australian Standard 2561, (1982), *Guide to the determination and use of quality costs*, Standards Australia, NSW

Barge, B.N. and Carlson, J.G., (1993), *The Executive's Guide to Controlling Health Care and Disability Costs: Strategy based solutions*, John Wiley and Sons, New York

Bird, F.E., and Loftus, R.G., (1982), *Loss Control Management*, Institute Press, USA

Cameron, M. (1995) 'The cost of injury' In: Ozanne-Smith, J. and Williams F. eds. *Injury research and prevention: a text*. Melbourne: Monash University Accident Research Centre, 1995 (Chapter 6)

Collins, J. (2001), "5th Level Leadership: The Triumph of Humility and Fierce Resolve", Harvard Business Review, pp 66-73

CPA 107 'Reporting and Professional Practice' (2003), Published by Deakin University, Geelong

Crosby, P.B., (1979), *Quality is Free: The Art of making Quality Certain*, McGraw Hill, New York

Drury, C., (2000), *Management and Cost Accounting: 5th edition*, Business Press, Australia

Foster Higgins & Co. 1992. 1991 health care benefits survey. Princeton, NJ.

Gaither, N., (1990), *Productions and Operations Management: 4th edition*, Dryden Press

Greenwood, E. (1957) 'Attributes of a professional in social work', *Professional Ethics in Accountancy*, ed. S. Loeb (1988), Wiley, Santa Barbara, California.

Haddon, W. (1995) 'Energy damage and the 10 countermeasure strategies' *Injury Prevention*, 1: 40-44.

Hanson, D.R. and Mowen, M.M., (2000), *Management Accounting: 5th edition*, South Western

Haskins, C.W., (1904), Business Education and Accountancy, in Cleveland, F.A. (Ed.), Harper & Brothers, New York, NY: Reprinted (1978), Arno Press, New York,

Hilton, R.W. and Selton, F.H., (2000), *Cost Management: Strategies for Business Decisions*: *International Edition*, McGraw Hill

Hilton, R.W., (1999), *Managerial Accounting: 4th edition, International edition*, McGraw hill, Boston

Horngren, C.T., Foster, G., Datar, S.M., Black, T. and Gray, P., (1996), *Cost Accounting in Australia: A Managerial Emphasis*, Prentice Hall, Australia

Jiambalvo, J., (2001), *Managerial Accounting*, John Wiley and Sons, New York

Johnson, H.T. and Kaplan, R.S., (1987), *Relevance Lost: The Rise and Fall of Management Accounting,* Harvard Business School Press, Boston

McWatters, C., (1995), 'Management Accounting and the Calvin Company: a case study', *Accounting, Business and Financial History,* 5, 1:39-70

National Association of Manufacturers, (2001), Press Release: Study Analyses Cost of Safety and Health Regulations, (August 30, 2001), (http://www.sspc.org/site/regnews/regstats/regcosts.html)

Ozanne-Smith, J. (1995) 'The principles of injury prevention' In: Ozanne-Smith, J. and Williams F. eds. *Injury research and prevention: a text*. Melbourne: Monash University Accident Research Centre, 1995 (Chapter 1)

Smith, M., (1995), *Strategic Management Accounting: Issues and Cases*, Butterworth's, Sydney

Smith, M., (1999), *Management Accounting for Competitive Advantage*, LBC Information Services, NSW

Victorian WorkCover Authority, (2002), Press Release: 2001 Worksafe figures: 31 killed, 3711 seriously injured. (http://www.workcover.vic.gov.au/dir090/vw…/)

Victorian WorkCover Authority, (2002), *Worksafe Online: Frequently Asked Questions*. (http://www.workcover.vic.gov.au/dir090/vwa/home.nsf/pages/so_FAQ_mgtsyst

Wheldon, B. and Ross, P., (1998), Reporting Quality Costs: Improvement needed, *Australian CPA*

Worksafe Victoria, (2002), *Recent Prosecutions: Cases heard 1 January to 31 December, 2000*, Victorian WorkCover Authority