

# **AN ATTEMPT TO RE-BALANCE THE BALANCED SCORECARD TOWARDS A SUSTAINABLE PERFORMANCE MEASUREMENT SYSTEM**

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## **ABSTRACT**

Despite the use of new performance measurement systems (PMSs), such as Balanced Scorecard (BSC), organisations worldwide have collapsed, leaving few clues before their collapse. So, two questions arise: ‘Why does it happen?’ and ‘How can it be addressed and resolved?’ The motivation of this research paper is to address these two questions. The study is a ‘multi-case study’ comprise of four cases for which the ‘documentary review procedure’ has been used to analyse data. For the development of the proposed model, this study used ‘analytic generalisation’ where BSC is used as our initial template. This study found that strong business performance can quickly be negated if the associated risk factors in achieving KPIs are not taken into account explicitly. It is also found that ignoring or paying insufficient attention to all relevant stakeholders in designing PMS makes an organisation more vulnerable to collapse. The basic limitation of case study research is applicable to this study. Further research can be carried out to test empirically the validation of our proposed model in different geographical settings. The study uncovers the underlying weakness of existing PMSs which fall short of meeting the challenges of the 21<sup>st</sup> century. Based on the balanced scorecard, our proposed Performance-Risk Linkage Model (PRLM) will have the potential to demonstrate a revamped conduit in strategic performance measurement systems, which will enable practitioners to get a competitive edge in managing the performance of complex organisations. This is one of the very few studies that examine the scope of the integration of key risk factors and all relevant stakeholders

with performance measurement systems and, to our knowledge, the first of its kind in the Asia-Pacific Region.

**Keywords:** balanced scorecard, sustainable performance measurement system, risk, sustainable performance, stakeholder, performance risk linkage model, KPI-risk filter.

## **INTRODUCTION**

While many books and articles have been written and published on the topic of ‘performance measurement’, managers are still struggling to find a sustainable performance measurement system (PMS). In real life, the difficulty of determining which specific measures are critical to a firm and which measures will influence the manager to do the right thing at the right time, are still unresolved. This struggle is also clearly noted in academia where assessing organisational performance has been a major research topic for over thirty years (Maltz, Shenhar & Reilly, 2003).

The best explanation of why a performance measurement system, including the present form of BSC, becomes questionable is the sweeping changes (e.g. ever increasing of financial, business and technological risk) in the global arena, especially when managers confront the 21st century (due to fierce rivalry and inapt managerial incentives to perform). In today’s world, organisations cannot rely solely on financial measures to evaluate organisational success; rather, they use a range of non-financial measures as well. Financial measures are ‘lag’ indicators (i.e., they indicate past performance) whereas non-financial measures are ‘lead’ indicators that can capture future scenarios in addition to those of the past. To integrate these lagging and leading indicators, many academicians and practitioners have developed a number of frameworks – performance pyramid (Lynch and Cross, 1991), balanced scorecard (Kaplan & Norton, 1992), performance prism (Neely, Adams & Crowe 2001) – to name a few.

Despite the use of all of these new performance measurement systems (either fully or partially) and financial indicators being generally positive, organisations worldwide have collapsed. Most surprisingly, before their collapse, very few organisations leave any clue. Thus, two questions arise: ‘Why does it happen?’ and ‘How can it be addressed and resolved?’

The motivation of this research paper is to address these two questions. To answer the first question, ‘Why does it happen?’, this study analysed four cases in which organisations were performing well, however, all of them suddenly collapsed and left very few clues before their collapse. Previous literature suggests that ‘risk’ and ‘stakeholders’ are two important aspects (among many others) which need to be considered while designing a performance measurement system. This paper studied four case organisations to further understand *how important* these two perspectives – risk and stakeholders – are to companies in Australia and New Zealand. However, due to the unavailability of data related to their actual performance measurement system, it is beyond the scope of this paper to evaluate how effectively those case organisations managed these two issues – risk and stakeholders. This study found that for all the case organisations, risks were considered as a very important factor. For case organisation three (JHIL), in addition to risk, stakeholders were another key perspective.

To answer the second question, ‘How can it be addressed and resolved?’, this study proposes a revised balanced scorecard (BSC) incorporating *The Performance-Risk Linkage Model (PRLM)* which takes into account all the relevant stakeholders and risk factors involved in achieving an organisation’s key performance indicators (KPIs) simultaneously.

This study contributes significantly to the present literature of performance measurement systems as well as being useful to practitioners. Firstly, the study uncovers the underlying weaknesses of existing performance measurement systems which fall short of meeting the challenges of the 21st century. Secondly, this is one of the very few studies that examine the scope of incorporating key risk factors and all relevant stakeholders simultaneously into the performance measurement system. To our knowledge, this study is the first of its kind in the Asia-Pacific Region. Thirdly, our proposed *Performance-Risk Linkage Model (PRLM)* based on BSC will have the potential to demonstrate a revamped conduit in strategic performance measurement systems. None of the previous models has incorporated *all relevant* stakeholders and risk factors in an integrated manner, despite the presence of these two facets simultaneously being immensely important. Therefore, the incorporation of PRLM into BSC helps to rebalance the BSC. This will facilitate the measurement of organisational performance in a robust way.

The rest of the paper has been designed as follows: Section 2 provides a review of the published literature leading to the development of the research proposition. Section 3 describes the research method, together with a review of the measures used in the data analysis. The findings and their discussion are presented in section 4. Section 5 deals with our proposed model to address the existing research gap and our model's potential practical implications along with its limitations. The remaining sections present the conclusion, implications for the future and the limitations of the study.

## **LITERATURE REVIEW AND RESEARCH MOTIVATION**

Traditionally, firms relied almost entirely on financial measures such as budgets, profits and other accounting measures such as return on investment (ROI) and return on capital employed (ROCE) to measure performance (AICPA, 2001). But in the last decade, these 'traditional accounting measures' have been perceived as having major deficiencies in meeting an effective performance measurement system (Ittner & Larcker, 2001; Hoque & James, 2000). In their study, Kaplan and Norton (2001) found that the use of financial measures only has serious limitations because of their inherently backward-looking nature, their limited ability to measure performance and their tendency to focus on the short term. Ittner and Larcker (2001) highlighted that an effective performance measurement system should be tied to organisational goals and strategies, while Chenhall (2003) stated that an effective performance measurement system should also consider other organisational characteristics such as size, nature etc.

Because of these perceived inadequacies, there have been many attempts to develop an effective performance measurement system which will overcome the purported limitations in traditional performance measurement systems. Some examples of this innovation are the performance measurement matrix (Keegan, Eiler & Jones, 1989), the performance pyramid (Lynch & Cross, 1991), the balanced scorecard (Kaplan & Norton, 1992), and the performance prism (Neely, Adams & Crowe, 2001). An analysis of all these new systems reveals several common features; they incorporate both financial (lagging indicators) and non-financial (leading indicators) measures and link performance measures to an organisation's vision and strategy.

As these new systems are more capable of capturing and measuring organisational performance in a strategic way, organisations are moving towards these new measurement systems. Therefore, the new performance measurement systems have received much attention, and organisations across North America (50%), Europe (40%), Australia (top 30%) have adopted these performance measurement systems (Frigo & Krumwiede, 1999; McCunn, 1998). Organisations in developing countries have also adopted many features of these new performance measurement systems (Islam & Yahanpath, 2013; Salameh, Serdaneh & Zuriekat, 2009).

An understanding of the existing models is very important for our present study since different models have been developed along different lines and have captured some unique, as well as common features. The performance measurement matrix developed by Keegan, Eiler and Jones (1989) integrates different perspectives of performance and the matrix combines four items – internal, external, cost and non-cost. Although the main strength of the performance measurement matrix is that it seeks to integrate different classes of business performance (the four items of the matrix), it is not as well packaged as the balanced scorecard and does not make explicit links between each of its four items of the matrix (Neely, Bourne & Kennerley, 2000). Lynch and Cross (1991) developed another framework called the performance pyramid. They argued that there must be consistency between performance measurements at each management level, in ensuring that performance measures at operational level support the corporate strategy. Although the strength of this framework is that it connects the hierarchical view of business performance measurement with the business process view (Neely, Bourne & Kennerley, 2000), it fails to specify the kinds of measures and does not explicitly integrate the concept of continuous improvement (Striteska & Spickova, 2012). Another popular framework is the performance prism developed by Neely, Adams and Crowe (2001), which consists of five inter-related facets – stakeholder satisfaction, strategies, processes, capabilities and stakeholder contribution. This framework attempts to overcome previous models' limitations by including new stakeholders (such as employees, suppliers, intermediaries) who were generally disregarded previously, and by considering the stakeholders' contributions to performance. However, this framework offers little on how performance measures are implemented and there is an insufficient link between the results and the drivers (Striteska & Spickova, 2012).

The Balanced Scorecard (BSC) developed by Kaplan and Norton (1992) is the most used and applied framework at present, worldwide. Over 50% of large US organisations had adopted a new performance measurement system (in this case, the BSC) by end of 2000 (Downing, 2001). Nonetheless, BSC itself has some limitations and has, therefore, attracted some criticism from different academicians. One of the major weaknesses of BSC is that it captures only four perspectives of an organisation – financial, customer, internal business process, and learning and growth. These four perspectives may be considered sufficient during the 1990s (when it was developed) where the business world was less challenging and complex, and firms didn't have to face fierce competition of globalisation. But in the 2000s, firms have had to face these challenges and their complexity and, sometimes, the dreadful face of globalisation. This is the reason why today's firms need to consider not only the four perspectives mentioned in BSC but also other relevant perspectives which are necessary for sustainability. Atkinson, Waterhouse and Wells (1997) criticised the BSC model as being incomplete because it fails to adequately highlight the contribution of its employees, suppliers and the community when defining the environment in which it operates, and finally, it fails to identify performance measures to assess stakeholders' contribution.

All the above criticisms of BSC, highlight the need to capture a complex performance measurement system that will guide today's organisation in achieving its vision and strategy in a *sustainable way*. This is also clearly acknowledged by Kaplan himself. In an interview with De Waal (2003), when replying to a question about the suitability of BSC in ten years' time, Kaplan stated that:

*“... BSC will probably be around but there will have been developments ... we will also see ... a culture more geared towards using performance management because it matters more to organisations, stakeholders and society”.*

As a result of the ongoing cases of the collapse of the 'big-enough-not-to-collapse' organisations throughout the world, the buzz-word 'sustainability' has received a great deal of attention from business leaders and academicians. Although sustainability can be defined in many ways, the simplest and the most fundamental one is the capacity to endure.

Thus the sustainable performance is “performance that has the capacity to sustain, will be long-term oriented and must have considered all necessary aspects in achieving that performance”. In addition, sustainable performance measurement system is “a performance measurement system that has the capacity to measure the sustainable performance that will lead to the achievement of the organisation’s strategic goal”. It is evident from Epstein (2008) that management is increasingly asking how a company can improve its performance measurement system to develop sustainable performance. The inclusion of *key stakeholders* during the time of designing the performance measurement system may ensure its *sustainability* (Waddock & Bodwell, 2007; Laszlo, 2003). This view is also supported by the findings of Epstein and Wisner (2006) who argued that to measure sustainable performance, it is necessary to measure the impacts on all stakeholders (including social, environmental and economic) as it relates to multiple and differing objectives of complete sets of stakeholders. Since organisations are usefully viewed as a web of relationships between and among various stakeholders groups, as a ‘nexus of contracts’ (Atkinson, Waterhouse & Wells, 1997), it is imperative to satisfy all the relevant stakeholders. Based on this basic principle, Nickols (2011) developed a ‘Stakeholder Scorecard’ that integrates balances and satisfies the needs, the wants and the requirements of an organisation’s stakeholders. All of these, signify the importance of considering its relevant stakeholders in measuring the performance of an organisation.

Taking ‘*risk factors*’ into consideration, in a more explicit manner, may also ensure the *sustainability* of the performance measurement system. Some scholars in the performance measurement area also advocate incorporating risk factors in the performance measurement system. For example, Likierman (2005) stated “when judging company performance, risks are rarely mentioned. Nevertheless, risk assessment is a crucial part of any decision-making process and overall business success must be considered in the light of how well it is managed”. Risk perspective has received immense attention, especially as a result of the post-global financial crisis and the collapse of giant organisations such as Enron, WorldCom, Lehman Brothers, Polaroid, Washington Mutual, etc. The proven relationship between risk and performance also supports the incorporation of risk factors into performance measures. Some scholars have found a significant positive relationship (Aaker & Jacobson, 1987; Gilley, Walters & Olson, 2002) while others

have found a significant negative relationship (Miller & Bromiley, 1990; Bowman, 1984). Since the relationship between risk and performance is inseparable and significant (either positive or negative), it is vital to explicitly take into account risk factors when designing an organisation's performance measurement system.

Each of the performance measurement models discussed above looks at a different aspect of performance and each model can be very useful in particular circumstances. However, none of them provides a performance measurement framework that explicitly considers all aspects of performance – the full significance of all key stakeholders and the associated key risk factors. Therefore, the existing performance measurement models including BSC fall short in their ability in ensuring *sustainability*, especially in the 21st century's turbulent business environment.

## RESEARCH METHODOLOGY

This paper is based on a multi-case study made up of four cases from the Pacific region on the basis of information availability. In analysing the information, this study used the 'documentary information review procedure' (Yin, 1994).

This paper conceptualised a framework to incorporate the existing performance measurement systems in alignment with our research motivation. We then, synthesised previous literature to identify the gap, and proposed a framework to fill this gap. This paper used the analytical methodology to increase the level of clarity in our proposed model (Norreklit, 2000). Therefore, this study is a mix of the multiple-case study method and the analytical method. Yin (1994) posited that this method of generalisation is known as 'analytic generalisation'. He also stated that in order to validate the 'analytic generalisation', there should be a previously developed theory or model which is used as a template and, if two or more cases support the similar theory, then, a new theory or model can be developed. For that purpose, this study used the Balanced Scorecard (Kaplan & Norton, 1992) as our initial template since it is the most popular model at present and this paper proposed a revised BSC, incorporating, PRLM, on the basis of our understanding of case studies and previous literature.

## FINDINGS AND DISCUSSION

In this section, this study has analysed and discussed the selected case organisations. The case organisations are Pike River Coal Company, HIH Insurance, James Hardie Industries Limited, and OneTel.

### Case 1: Pike River Coal Company

Pike River Coal Company, based in Wellington, New Zealand, was a mining company listed in New Zealand and Australian stock exchanges. Its primary operation was the Pike River Mine. It began production in early 2008 and was initially expected to produce around one million tonnes of coal per year for about 20 years, making it the second largest export coal mine in New Zealand and the largest underground coal mine in New Zealand. (LG, 2008). Its trading on New Zealand stock exchanges was suspended on 22 November 2010 and it was placed in receivership on 12 December 2010 (Fisk, 2010). Before its collapse, the company had a market capitalisation value of around NZD400 million (Krupp, 2010). The report of the Royal Commission on the Pike River Coal Mine Tragedy, released in October 2012, concluded that the board of directors focused mainly on meeting its production target but failed to implement a company-wide risk framework.

In 2005, the board decided to proceed with the development of the mine and set a different performance target. But there were many issues (risk factors) that the board did not consider at the time of setting the performance target. The first issue was the health and safety risk of its workers. From the report of the Royal Commission (2012), it is evident that the company's workers were exposed to unacceptably high risk with regard to health and safety issues in its drive to produce coal. The second issue was effective methane management. Methane is an integral part of mine development. However, from the very beginning, there was no effective plan for methane management. Moreover, from the report, it is seen that in the 48 days before the explosion, there were 21 reports of methane levels reaching explosive volumes and those warnings were not heeded. One such example is the email of a reviewer to its management:

*“History has shown us in the mining industry that methane when given the write [sic] environment will show us no mercy. It is my opinion that it is time we took our methane drainage ... more seriously and redesigned our entire system (p.19-20)”.*

The third issue was the advance disaster planning. As a company in a high-hazard industry, it should have had a detailed advance plan with regards to any possible disaster that may occur, in order to achieve the set performance target. This is revealed by the report of the Royal Commission (2012, p.15) that concluded “...*although the rescue team was committed, the operation suffered from an absence of advance planning*”.

The above issues clearly highlight how risky the operation of the Pike River Coal Company was, and they justify the importance of incorporating the risk aspect into the achieving of performance targets. This case also supports the idea that organisations require a clear trade-off between risk and performance.

## **Case 2: HIH Insurance**

HIH Insurance, which was founded in 1968, was Australia’s second-largest insurance company. It collapsed on 15 March 2001 with debts in excess of AUD\$5 billion. Prior to its collapse, HIH was one of the largest Australian insurance firms with AUD\$7.8 billion assets (Owen, 2003).

The Royal Commission report authored by Owen, released in April 2003 provided timely insight into many aspects of how a company with award-winning corporate governance systems and policies, could get it wrong. The report identified two of the most important reasons for HIH’s failure. The first was “lack of attention to detail and skill”. HIH set different performance targets but failed to do a detailed analysis of each performance target and conduct post-implementation review. In one instance, during the 1990s, the Australian insurance business was challenging, and insurance companies had to change their strategies in order to remain competitive. During this difficult period, HIH made a risky investment in FA<sup>1</sup> and expanded its operation in the United States and the United Kingdom to achieve rapid growth. Rather than doing a detailed analysis of the short-term and long-term consequence of each initiative, HIH only considered the short-term perspective. The second reason was “lack of accountability for performance”. The board of directors took every initiative to increase the performance of HIH but none of them was held accountable for that action. There was no or very minimal culture of accountability. This is evident from a statement in 2008 (Feb) CCH [I, p.1] update:

*“It is interesting to note that one of the key findings of the Royal Commission was that a culture had developed within HIH that leadership decisions were not to be questioned, and that rather than fraud or embezzlement being behind the collapse, the primary reason for the failure was that HIH was mismanaged in the area of its core business activity, being insurance.”*

This suggests that the risk perspective of an action (to achieve the performance target) was not taken into account seriously and nobody questioned that. It is evident from the following statement that the HIH board of directors failed to consider risk perspective in a more serious manner but focused on the objective of rapid growth,

*“... HIH also broke the ‘minimum solvency requirement’ imposed by s.29 of Insurance Act 1973, which requires that the value of the insurer’s assets at all times exceed the amount of its liabilities by not less than the greater of \$2 million, 20% of its annual insurance income or 15% of outstanding claims provisions” (II, p.1).*

### **Case 3: James Hardie Industries**

Founded in Australia in 1888, James Hardie Industries Limited (JHIL) developed into a major Australian Company and the world leader in fibre cement building products.

JHI had different performance parameters to measure its performance. Among several other performance targets, “new product development” was one of its KPIs because of the need to keep up with constantly increasing competition and to secure its market share. Normally, at the time of developing a new product, there are certain risks associated with it – the health and safety of its workers, any health risk for its consumers, the financial risk of fund availability to support the product development, and some environmental risks, for example. Asbestos was one of the very harmful elements that caused significant health risks to its users and the workers involved in its production. Since the 1930s, industrial health concerns arising from exposure to asbestos have been officially recognised internationally in workers’ compensation claims, and the links between

asbestos and mesothelioma and other cancers have been firmly established since the mid-1960s (Knapp, 2011). JHI's deliberate negligence about the risky aspect of developing new asbestos-related products is fully evident from the following statement:

*“Unfortunately, Hardie executives knew of the risks associated with asbestos mines and exposure to the airborne fibres, but the company never warned asbestos miners or plant workers of the risks. Wastes from the Hardie plants were distributed throughout the community for use in playgrounds, driveways and park paths, and the asbestos-contaminated waste was even used to make “Hessian” bags that carried fruits and vegetables” [III, p.1].*

JHI suffered no short-term consequences for deliberately ignoring this risk. The development of such products allowed JHI to constantly increase its revenue and market share, and its performance also increased. But that ‘increased performance’ was not sustainable because massive problems arose later. JHI's difficulties began in 1975 when a worker named Tom Benson, from Port Adelaide, made the first common-law claim, and the flow of claims against JHI continued increasingly thereafter. Ultimately, to meet the ongoing liabilities raised by the claims, JHI was forced to establish the Medical Research and Compensation Foundation (MRCF) with a total fund of \$293 million in 2001 [IV] but it was not enough to save itself. The long-term consequence of paying insufficient attention to the risk factor of developing new asbestos products was so severe that JHI had to move its headquarters from Australia to the Netherlands in 2001 (Knapp, 2011).

From the case of JHI, it is also evident that stakeholders play an important role in a company's operation in a particular country. When it was proven that JHI was responsible for certain asbestos-related diseases of its customers and workers, there was huge criticism from people of all walks of life. The state government threatened to ban the product in Australia. Trade unions, environmental activists and customers as a whole also threatened to boycott the product if the victims did not get appropriate compensation from JHI. As a result of this threat, JHI was forced to negotiate a potential increase in funding (due to a shortfall) for MRCF and signed a Final Agreement with the NSW State Government to provide further funds (Knapp 2011).

## **Case 4: OneTel**

Established in 1995, OneTel was an Australia-based telecommunications company. Before going into receivership on 30 May 2001, it was the fourth-largest telecommunications company in Australia. Who imagined that a company operating in seven countries, and with annual sales of AUD\$653 million, would collapse? One of the main reasons for the collapse of OneTel was its desire to maintain growth at any cost. OneTel had a performance parameter of growth. But when this KPI turned into a strategy, it became a growth strategy at any cost (LongDog and associates, 2011).

The KPIs and the strategies of OneTel indicate that it was taking high risks in order to achieve its objective of rapid growth. One of the main risks of achieving a performance parameter of rapid growth is that the company may not have sufficient funds to support growth and expansion, which may lead to insolvency. This is what crystallised in the case of OneTel. In order to achieve its 'growth' performance parameter, its employees' and suppliers' expenses were AUD\$98.71m in 1996-97, AUD\$193.35m in 1997-98, AUD\$328.11m in 1998-99, and AUD\$648.80m in 1999-2000. In addition, OneTel's cash outflows in acquiring Non-Current Assets (NCA) were AUD\$4.9m in 1996-97, AUD\$10.8m in 1997-98, AUD\$32.2m in 1998-99, and AUD\$614.9m in 1999-2000 (Monem, 2010). To support the huge increment in employees' and suppliers' expenses, OneTel required more 'working capital' and to support the acquisition of NCA, it required more 'long-term capital'. It can be seen that from 1997 to 2000 (a total of three periods), OneTel went 'crazy'. The working capital requirement for employees' and suppliers' expenses increased by 96%, 70%, and 98% respectively during each of three periods, and the long-term capital requirement for the acquisition of NCA increased by 120%, 198%, and 1810% each year respectively during the same period. This shows clearly why risk factors should be considered more explicitly in measuring organisational performance. In other words, organisations should have an integrated approach to risks and returns.

## **PROPOSED MODEL**

In developing our proposed model, this study used the BSC (Kaplan & Norton, 1992) as our initial template. In the BSC, organisational

performance was captured from four perspectives – financial performance, customer relations, internal business process, and the organisation’s learning and innovation activities. The authors argued that BSC is not just a collection of different performance measures; rather, each of the performance measures should drive and reflect the company’s strategy and vision. They also argued that there is a cause-and-effect relationship among the four perspectives and they (the four perspectives) should not be viewed as separate phenomena (Kaplan & Norton, 1996a, 1996b).

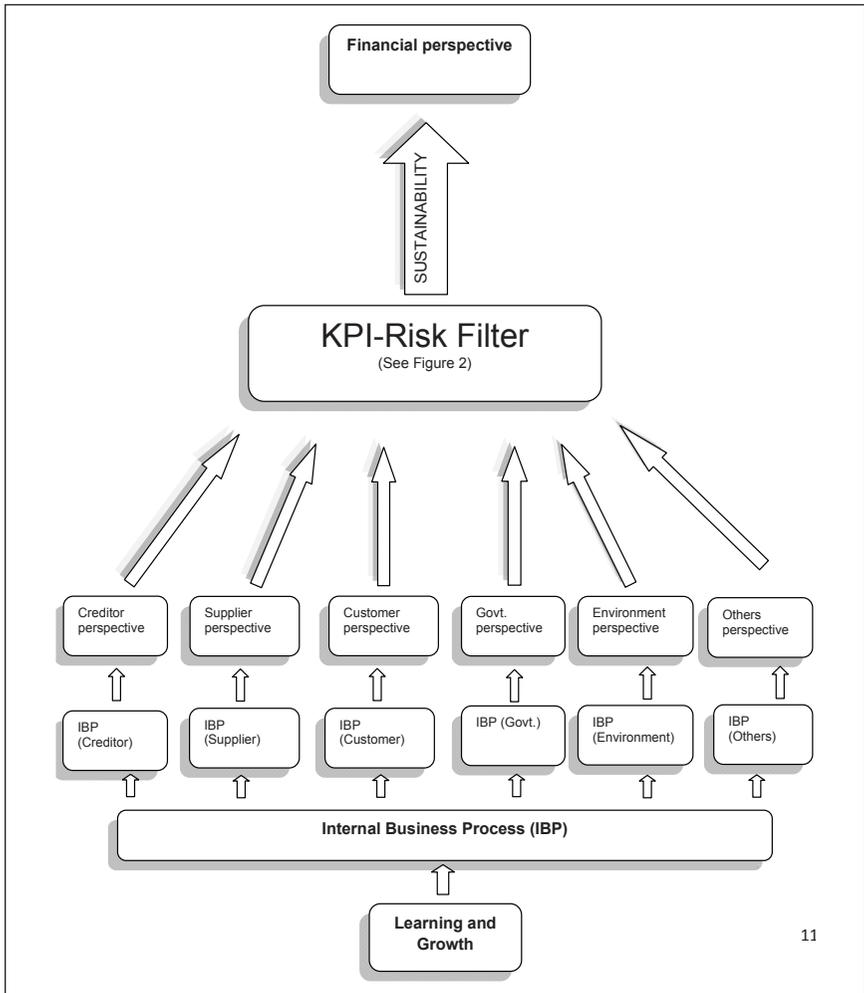


Figure 1: Performance-Risk Linkage Model (PRLM)

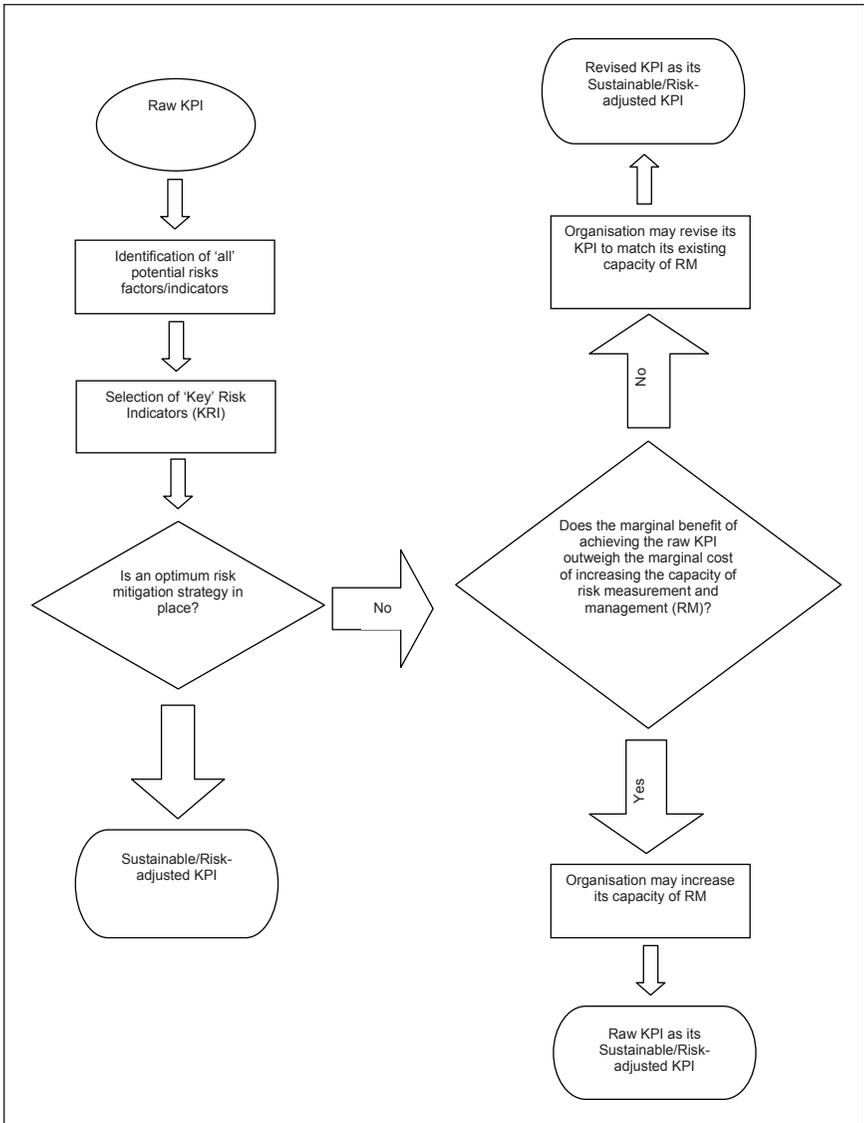


Figure 2: Process Flow Chart - KPI-Risk Filter

## **Description of Performance-Risk Linkage Model (PRLM)**

The case analysis provides several evidence that neglecting or paying insufficient attention to the relevant stakeholders and associated risk factors of achieving KPIs of an organisation could be a recipe for disaster. Therefore, this study advocates incorporating relevant stakeholders and the associated risk factors of achieving KPIs simultaneously when designing the performance measurement system. In order to incorporate relevant stakeholders, this paper suggests that ‘all of the relevant stakeholders’ should be included, followed by their corresponding internal business process (IBP), instead of taking into account the customer perspective only. In taking into account the risk factors, we suggest installing a KPI-Risk Filter between stakeholders’ perspective and financial performance.

From the discussion of the aforementioned cases and previous literature, it is evident that stakeholders play an important role in a company’s performance. By not giving proper attention to them, an organisation may suffer, especially in the long run. By ‘relevant stakeholders’, this paper mean those who are most important to the respective organisation. For example, the Government may be a vital stakeholder of a power and utility company (due to the regulation and monitoring of monopoly conditions, fair trading and people’s welfare) but may not have the same importance for a manufacturing company. In New Zealand, Telecom and its de-merger is a classic example of how government as a shareholder could have an impact on its performance. Again, a supplier may be a very powerful stakeholder of a garment or a construction company (due to high dependence on raw materials) but it may not have the same importance for a telecommunications company. In order to identify the relevant stakeholders, respective organisations may follow the model ‘Stakeholder Mapping’ developed by Mendelow (“Business Analysis”, 2011, p.147).

Once the organisation identifies its relevant stakeholders, it needs to develop its Internal Business Process (IBP) to address the KPI set for each relevant stakeholder. In BSC, the IBP has been developed to provide value to customers only. But in our proposed model, this paper advance IBP to provide value to all relevant stakeholders (e.g. customers, suppliers, creditors, government, etc.). From our study of selected cases, it is evident that if relevant stakeholders are not considered appropriately, companies

face difficulties and, in the long run, may collapse. For example, in the case of JHI, the government, trade unions and environmental activists were major influencing stakeholders who determined JHI's course of action with regard to asbestos product debacle. To address the relevant stakeholders appropriately, an organisation needs to develop its IBP in a timely and effective manner.

Once an organisation develops an IBP to provide value to each relevant stakeholder, it (the organisation) will take necessary initiatives to achieve those KPIs. Ultimately, achieving the KPIs of all relevant stakeholders will consequently lead in reaching the financial and non-financial performance targets of the organisation, in a resilient manner. In the BSC, it is seen that when the KPI for customer perspective is achieved, it leads to meet the financial target/performance of the organisation - but that is considered as a short term only and not sustainable, as can be seen in the cases discussed in this study. This is the main rationale for introducing the *KPI-Risk Filter* (Figure 2) between financial performance and the KPIs of all relevant stakeholders. This paper is advancing two categories of KPI; 'raw' and 'sustainable/risk-adjusted' KPI.

As suggested in PRLM, the KPIs that have been developed by performance measurement and management (PM) teams for all relevant stakeholders are known as raw KPIs. Once raw KPIs are in place, the PM team will consult with the risk measurement and management (RM) team to identify all the potential risks associated with each KPI. Then, both PM and RM teams will jointly decide and select key risk indicators (KRI). Once KRIs are selected, it is the decision of the RM team to ascertain whether an optimum risk mitigation strategy is in place or not. If the RM team is certain that an optimum risk mitigation strategy is in place, the raw KPIs can be considered to be sustainable/risk-adjusted KPIs, since the associated risk factors of achieving the KPI have been taken into account. Therefore, an organisation can strive for these sustainable/risk-adjusted KPIs. However, if the organisation has not achieved an optimum risk management strategy, then the PM team, RM team and other relevant top management teams should sit together and develop the following two options:

1. Option 1: The raw KPI needs to be revised (if revision of the KPI does not significantly hamper the achievement of the organisation's strategic

goal) in ensuring that the existing capacity of RM is sufficient to cover the associated KRI of achieving the specific KPI. The organisation may also need to revise the raw KPI if the marginal benefits of achieving the KPIs do not outweigh the marginal costs of increasing the capacity of RM. The revised KPI can be acceptable as a sustainable/risk-adjusted KPI since the associated risks have been factored in.

2. Option 2: The raw KPI will remain as it is if revision/modification of the KPI does significantly hamper the achievement of the organisation's strategic goal. This may make the organisation vulnerable to fierce competition, in which case the organisation has to develop or enhance the capacity of its existing RM to adequately cover the KRI since, in this scenario, the marginal benefits of achieving the KPI do outweigh the marginal costs of increasing the capacity of RM. Since the associated risk factors have been taken into account, the raw KPI can be acceptable as a sustainable/risk-adjusted KPI.

Although, in practice, the revision or non-revision of a KPI depends on the top management's decision in alignment with the organisation's strategic goal and vision, the above discussion suggests that our proposed PRLM, directly or indirectly, captures the organisation's strategy and vision. Moreover, whether the optimum risk mitigation strategy is in place or not, may also depend on judgemental effects which, in turn, influence the sustainable/risk-adjusted KPI. This is the rationale for suggesting separate measures from a risk perspective as well as from performance perspectives. Sometimes, maintaining a certain level of risk can be a key strategy in making a profit. In that case, this paper suggests some common risk measures to the RM team. The KPI-Risk Filter process should not be viewed as simply assessing the risk to achieve KPIs and managing those risks; rather, it is the process of filtering the raw KPI into a sustainable/risk-adjusted KPI in ensuring sustainable performance, and also a mechanism for aligning the PM and RM in a strategic way to achieve the corporate vision.

The placement of the KPI-Risk Filter below the financial perspectives should not be viewed as risk assessment related to the achievement of financial objectives only. It is important to be highlighted that risk is an integral part of a business and is associated with all objectives and activities. According to Ittner and Larcker (2003), the inclusion of different non-

financial objectives ultimately affects the long-term financial objectives of the organisation. In another study, Ittner and Larcker (2000) argued that non-financial measures can be better predictors of future financial performance. They provided an example to show that activities aimed at improving customer satisfaction can improve subsequent economic performance by increasing revenue and loyalty from existing customers, attracting new customers and reducing transaction costs. Since all the activities of the organisation directly or indirectly affect the long-term financial objectives of the organisation, placement of KPI-Risk Filter *below* the financial perspective and *above* the other perspectives will ensure that the associated risks of all the activities will be appropriately filtered before affecting financial performance which in turn will strengthen the sustainability of long-term financial objectives.

### **Performance-Risk Linkage Model (PRLM) and Sustainable Performance Measurement System**

This paper argues that performance targets and measures derived from achieving KPIs may not be termed ‘sustainable’ unless they take account of all aspects of the operation and associated risk factors of achieving that KPI. The performance of an organisation should take account of all aspects of its operation, as discussed before. Therefore, there should be KPIs for all relevant stakeholders in ensuring that the performance truly reflects all aspects of the organisation. However, this KPI is in the ‘raw form’ unless it is appropriately filtered by potential risk factors associated with achieving those KPIs. It can be seen from the case analysis, that organisations had KPIs in place; they (organisations) were striving to achieve those KPIs and were considered successful – but collapsed within a short period which implies that the KPIs were not robust. We believe the proposed KPI-Risk Filter is an appropriate mechanism to rectify this deficiency. This process will make the KPIs more robust and they can be termed ‘sustainable/risk-adjusted KPIs’ since they (KPI) are no longer in their raw form and have been appropriately filtered by considering the associated risk factors. Consequently, this ‘sustainable/risk-adjusted KPI’ will produce the performance that will have more capacity to sustain amidst of potential risk. Therefore, the performance that will be derived from ‘sustainable/risk-adjusted KPI’ can be called ‘sustainable performance’.

## **Practical Implications of Performance-Risk Linkage Model (PRLM)**

The revised BSC incorporated with PRLM has some additional practical implications in comparison to other performance measurement systems. Firstly, both the KPIs and associated KRIs are developed concurrently in the PRLM and are considered matters that cannot be dealt by the organisation's existing RM capacity to handle. Thus, it increases the quality and sustainability of the KPI and helps managers to measure the organisational performance in a robust way. Secondly, as mentioned above, organisations are forced to consider and balance; KPIs, competitive market environment and risk. The PRLM will highlight these checks and balances so that management can provide sufficient resources to develop and enhance the RM capacity, if necessary. This is another strategic goal of the organisation to achieve a competitive edge over others. Thirdly, a risk is associated with each and every facet of an organisation. When managers set KPIs, there is an inherent tendency to set KPIs for their (managers') own benefits (bonus, share option, awards, etc.) and which may lead to the tendency of taking excessive risks. This dysfunctional behaviour is somewhat similar to the 'agency problem' which is well documented in management literature. The proposed PRLM requires managers to discuss with the RM team and, if necessary (as mentioned above), with other relevant top-management teams to assess the associated risk factors (of KPIs) as well as the organisation's capacity to manage those risks. If any of the KPIs seems excessively risky and/or not aligned with the organisation's strategic goal, and have not been set in the best interests of stakeholders, then those KPIs need to be revised. Therefore, PRLM will provide some 'checks and balances' to reduce the 'agency problem' and dysfunctional behaviour of managers, as well as uphold the interests of all relevant stakeholders. Fourthly, RM is a separate function from PM and is generally carried out by different groups or people. In line with PRLM, both RM and PM teams will have to work together at some stages to bridge the existing gap between them and to create a linkage that can assist the organisation to formulate credible strategies to drive its vision. It is important to emphasise here, in assessing risk factors, the volatility and dynamic nature of the business environment should be incorporated, as they are intertwined with each other.

## Limitation of Performance-Risk Linkage Model (PRLM)

Although BSC is the most popular framework so far, there is no single model that has been universally accepted. This implies that each of the frameworks has its own implications and may not be appropriate in some conditions. While this paper does not claim that our proposed revised BSC incorporating PRLM has superiority over previous models (including traditional BSC), this paper does claim that by incorporating all relevant stakeholders and, at the same time, recognising risk in a more explicit manner, the sustainability of a performance measurement system is more realistic.

There might be a concern that the addition of many stakeholders and the KPI-Risk Filter may produce too many KPIs and KRIs which may complicate the total performance measurement system and may also reduce the model's usefulness. According to Finch (2012), CEO of Journyx<sup>1</sup>, a *key* performance indicator is 'key' which means that a KPI has to be one of the very few ways in which an organisation measures progress towards a strategic goal. If an organisation has 100 KPIs, it is probably not going to use any of them effectively to drive an organisation's behaviour since an organisation does not have 100 strategic goals. Although the number of KPIs is unique to each organisation and its strategy, fewer KPIs can better drive towards the strategic goal (PricewaterhouseCoopers, 2007). Similarly, in the case of a KRI, the indicator becomes '*key*' when it tracks an especially important risk exposure. Therefore, KRIs should also be very few, depending on the organisation and its strategy. This paper believes that the addition of all relevant stakeholders and fewer KPIs from each relevant stakeholder will provide a comprehensive set of performance measures that will help to reduce managers' pre-decision uncertainty and facilitate decision-making (Ittner & Larcker, 2003).

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<sup>1</sup> It's a privately-held company located in Austin, Texas, USA and involved in time management and automating key business process. Sources: <http://www.journyx.com/company>.

## **SUMMARY AND CONCLUDING COMMENTS**

Organisational success and the valid measurement of that success are two vital issues in today's performance-driven corporate world. With the passage of time, the corporate world faces new challenges in measuring and managing performance. In order to meet these new challenges, academicians and practitioners have proposed different performance measurement systems to suit the urgency of organisations. Thus, especially over the last two decades, many performance measurement systems have been developed such as the performance pyramid (Lynch & Cross, 1991), the balanced scorecard (Kaplan & Norton, 1992), and the performance prism (Neely, Adams & Crowe, 2001) – to name a few.

But the demand of today's corporate world has changed the business landscape in the 21<sup>st</sup> century with fierce competition, changing patterns of business and financial risk, and increased the power of different external stakeholders. The existing performance measurement systems are not fully capable of measuring and managing the performance of an organisation in a way which will ensure sustainability. It seems that something vital is lacking in existing performance measurement systems. Previous literature supports the incorporation of risk and stakeholders into designing the performance measurement system. This paper contains an analysis of four case organisations in understanding the importance of risk and stakeholders. The main motivation of this study was to develop a conceptual framework to incorporate relevant stakeholders and associated risk factors of achieving KPIs simultaneously into existing performance measurement systems. For this purpose, this study has used BSC as a template due to its present popularity.

In the present era of globalisation and liberalisation, there are unlimited business opportunities but they are pitted with risk. Each action to achieve a KPI can raise a possible risk and, even if you remain stagnant, that is in itself an action that can pose another possible risk. In case three, this study found that consideration of relevant stakeholders is one of the most important issues that the organisation should pay attention to, which is consistent with other studies (Neely, Adams & Crowe, 2001; Atkinson, Waterhouse & Wells, 1997; Epstein & Winsor, 2006). In all four cases, risks are indicated as an inseparable part of the organisation's daily operation. All organisations

should pay due attention to risk factors in achieving their performance targets. Our advancement of incorporating associated risk factors into the performance measurement system is supported by Likierman (2005). Therefore, our study attempts to add to the work of others by combining both the relevant stakeholders and associated risk factors. This led us to develop our proposed *Performance-Risk Linkage Model (PRLM)* based on the balanced scorecard (Kaplan & Norton, 1992) which has the potential to address the existing gap in the literature. In addition, our study has some potential practical implications for organisations and their managers. PRLM has the potential to produce sustainable/risk-adjusted KPIs which will assist managers to better measure the performance in a robust way. Moreover, PRLM has the potential to reduce the ‘agency problem’ and the dysfunctional behaviour of managers as well as to uphold the interests of all relevant stakeholders by aligning the PM and RM while facilitating top management’s achievement of the strategic goal and vision of the organisation. In addition, we believe that our study will stimulate new thinking regarding the development of a better framework for measuring and managing the performance of an organisation in different situations.

## **LIMITATION AND FUTURE RESEARCH SCOPE**

As in any other study of this type, this study is subject to a number of limitations. Due to the unavailability of all the relevant data regarding PM and RM, this study could not identify what actual PM and RM systems were in place for the said case organisations. Though the proposed model may be too complicated for small and medium-sized businesses, the concept of this model is still considered relevant and useful. Further studies can be carried out to test empirically the validity of the proposed Performance-Risk Linkage Model. In addition, there is further scope to replicate the study by considering case organisations from different regions (e.g. North America, Europe, Asia) to test the significance of the proposed Performance-Risk Linkage Model.

**Note:**

1. <http://ww5.cch.com.au/dpen/dpen264.html#io1266766.sl176921453> (accessed 10 January 2013).
2. <http://www.123HelpMe.com/view.asp?id=167702> (accessed 8 January 2013).
3. <http://www.asbestos.com/mesothelioma/australia/asbestos.php> (accessed 29 December 2012).
4. <http://www.australianasbestosnetwork.org.au/Asbestos+History/The+Battles/Battling+James+Hardie/default.aspx> (accessed 29 December 2012).
5. <http://www.cpaaustralia.com.au/cps/rde/xchg/cpa-site/hs.xsl/7884.html> (accessed 12 January 2013).

**REFERENCES**

- Aaker, D. A. & Jacobson, R. (1987). The role of risk in explaining differences in profitability. *Academy of Management Journal*, 30(2), 277-296.
- AICPA (2001). *Performance measurement practices survey results*. AICPA, New York, NY.
- Atkinson, A. A., Waterhouse, J. H., & Wells, R. B. (1997). A stakeholder approach to strategic performance measurement. *Sloan Management Review*, 38(3), 25-37.
- Bowman, E. H. (1984). Content analysis of annual reports for corporate strategy and risk. *Interfaces*, 14(1), 61-71.
- Business Analysis (2011). A textbook for ACCA P3 professional exam. Berkshire: Emile Wolf Publishing Limited.

- Chenhall, R. H. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations & Society*, 28(2-3), 127-168.
- De Waal, A. A. (2003). The future of the balanced scorecard: An interview with Professor Dr Robert S. Kaplan. *Measuring Business Excellence*, 7(1), 30-50.
- Downing, L. M. (2001). The global BSC community: A special report on implementation experience from scorecard users worldwide. Paper presented at *Balanced Scorecard European Summit*, Nice, May.
- Epstein, M. J. (2008). *Making sustainability work: Best practices in managing and measuring social and environmental impacts*. Greenleaf Publishing Limited, Sheffield.
- Epstein, M. J. & Winser, P. S. (2006). Actions and measures to improve sustainability. In Epstein, M. J. & Hanson, K. O. (Ed.). *The Accountable Corporation*. Westport: Praeger Publishers.
- Fisk, J. (2010, December 13). Receivers appointed to Pike River Coal Limited. *PricewaterhouseCoopers (Press Release)*. Retrieved from <http://business.scoop.co.nz/2010/12/13/statement-from-john-fisk-pike-river-coal-limited-receiver/>.
- Finch, C. (2012, May 16). Key performance indicators: How to use them for project success. *Projecttimes*. Retrieved from <http://www.projecttimes.com/articles/key-performance-indicators-how-to-use-them-for-project-success.html?Itemid>.
- Frigo, M. L. & Krumwiede, K. R. (1999). Balanced scorecards: A rising trend in strategic performance measurement. *Journal of Strategic Performance Measurement*, 3(1), pp. 42-44.
- Gilley, K., Walters, B. & Olson, B. (2002). Top management team risk taking propensities and firm performance: Direct and moderating effects. *Journal of Business Strategies*, 19(2), 95-114.

- Hoque, Z. & James, W. (2000). Linking balanced scorecard measures to size and market factors: Impact on organizational performance. *Journal of Management Accounting Research*, 12, 1-17.
- Islam, M. & Yahanpath, N. (2013). Evaluating the performance measurement system in financial service industry in developing country: The case of Bangladesh. *Asia-Pacific Management Accounting Journal*, 8(1), 65-88.
- Ittner, C. D. & Larcker, D. F. (2000, December 06). Non-financial performance measures: What works and what doesn't. *Knowledge@Wharton*. Retrieved from <http://knowledge.wharton.upenn.edu/article.cfm?articleid=279>
- Ittner, C. D. & Larcker, D. F. (2001). Assessing empirical research in managerial accounting: A value-based management perspective. *Journal of Accounting and Economics*, 32, 349-410.
- Ittner, C. D. & Larcker, D. F. (2003). Coming up short on nonfinancial performance measurement. *Harvard Business Review*, 81(11), 88-95.
- Kaplan, R. S. & Norton, D. P. (1992). The balanced scorecard - Measures that drive performance. *Harvard Business Review*, 70(1), 71-79.
- Kaplan, R. S. & Norton, D. P. (1996a). *The balanced scorecard: Translating strategy into action*. Boston, MA: Harvard Business School Press.
- Kaplan, R. S. & Norton, D. P. (1996b). Linking the balanced scorecard to strategy. *California Management Review*, 4, 53-79.
- Kaplan, R. S. & Norton, D. P. (2001). *The strategy focused organization: How the balanced scorecard companies thrive in the new business environment*. Boston, MA: Harvard Business School Press.
- Keegan, D. P., Eiler, R. G. & Jones, C. R. (1989). Are your performance measures obsolete?. *Management Accounting*, 71, 45-50.
- Knapp, M. C. (2011). *Contemporary auditing: Real issues & cases* (9th ed.). Oklahoma, OH: South-Western.

- Krupp, J. (2010). NZ Oil & Gas shares plummet. *Business Desk-NZX News*, Fairfax New Zealand Limited.
- Laszlo, C. (2003). *The sustainable company: How to create lasting value through social and environmental performance*. Washington DC: Island Press.
- LG - New Zealand Local Government (2008). Digging deep around New Zealand. May, Vol. 44, No. 5, pp. 18.
- Likierman, J. A. (2005). Assessing risk is key to good performance. *Financial Times*. Retrieved from [faculty.london.edu/ALikierman/assets/documents/11\\_Risk\\_\(FT\).pdf](http://faculty.london.edu/ALikierman/assets/documents/11_Risk_(FT).pdf).
- LongDog & Associates (2011). *How the collapse of OneTel and HIH Insurance changed corporate governance in Australia*. Discussion paper. Retrieved from <http://www.longdog.com.au/be-daring-not-risky/corporate-governance-and/collapse-corporate-governan.pdf>.
- Lynch, R. L. & Cross, K. F. (1991). *Measure up – The essential guide to measuring business performance*. London: Mandarin.
- Maltz, A. C., Shenhar, A. J. & Reilly, R. R. (2003). Beyond the balanced scorecard: Refining the search for organizational success measures. *Long Range Planning*, 36, 187–204.
- McCunn, P. (1998). The balanced scorecard: The eleventh commandment. *Management Accounting - London*, 76(11), 34 -36.
- Miller, D. & Bromiley, P. (1990). Strategic risk and corporate performance: An analysis of alternative risk measures. *Academy of Management Journal*, 33, 756-779.
- Monem, R. (2010). *The OneTel collapse: Lessons for corporate governance*. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1930730](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1930730).

- Neely, A. D., Bourne, M. & Kennerley, M. (2000). Performance measurement system design: Developing and testing a process-based approach. *International Journal of Operations and Production Management*, 20(10), 1119-1145.
- Neely, A. D., Adams, C. & Crowe, P. (2001). The performance prism in practice – Measuring business excellence. *Journal of Cost Management*, 5(2), 6-11.
- Nickols, F. (2011). The stakeholder scorecard: Keeping score regarding accountability. *Distance Consulting LLC*. Retrieved from [www.nickols.us/The\\_Stakeholder\\_Scorecard.pdf](http://www.nickols.us/The_Stakeholder_Scorecard.pdf).
- Norreklit, H. (2000). The balance on the balanced scorecard: A critical analysis of some of its assumptions. *Management Accounting Research*, 11, 65-88.
- Owen, N. (2003). *The failure of HIH Insurance, Volume 1 - A corporate collapse and its lessons*. Canberra: National Capital Printing.
- PricewaterhouseCoopers (2007). *Guide to key performance indicators*. Retrieved from [https://www.pwc.com/gx/en/audit-services/corporate-reporting/assets/pdfs/uk\\_kpi\\_guide.pdf](https://www.pwc.com/gx/en/audit-services/corporate-reporting/assets/pdfs/uk_kpi_guide.pdf).
- Royal Commission on the Pike River Coal Mine Tragedy: Commission's Report (2012). Wellington, New Zealand. October. Vol. 1. Retrieved from [http://pikeriver.royalcommission.govt.nz/vwluResources/Final-Report-Volume-One/\\$file/ReportVol1-whole.pdf](http://pikeriver.royalcommission.govt.nz/vwluResources/Final-Report-Volume-One/$file/ReportVol1-whole.pdf).
- Salameh, S., Serdaneh, A. & Zuriekat, M. (2009). Evaluating the consequences of performance measurements: Theoretical issues and descriptive analysis. *International Bulletin of Business Administration*, 4, 1-16.
- Striteska, M. & Spickova, M. (2012). Review and comparison of performance measurement systems. *Journal of Organizational Management Studies*, 2012, 1-13.

Waddock, S. & Bodwell, C. (2007). *Total responsibility management: The manual*. Sheffield: Greenleaf Publishing Limited.

Yin, R. (1994). *Case study research: Design and methods (2nd ed.)*. London: SAGE Publications.