TOWARDS INTEGRATING ENVIRONMENTAL PERFORMANCE IN DIVISIONAL PERFORMANCE MEASUREMENT

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Abstract

This paper suggests an integration of environmental performance measurement (EPM) into conventional divisional financial performance measures as a catalyst to enhance managers' drive toward cleaner production and sustainable development. The approach is conceptual and normative; and using a hypothetical firm, it suggests a model to integrate environmental performance measure as an ancillary to conventional divisional financial performance measures. Vroom's motivation theory and other literature evidence indicate that corporate goals are achievable in an environment where managers' efforts are recognised and thus rewarded. Consequently the paper suggests that environmentally motivated managers are important to propel corporate sustainability strategy toward desired corporate environmental governance and sustainable economic development. Thus this suggested approach modestly adds to existing environmental management accounting (EMA) theory and literature. It is hoped that this paper may provide an agenda for further research toward a practical application of the suggested method in a firm.

Keywords: Performance Measurement, Environmental Governance, Environmental Performance; Sustainable Economy, Environmental Accounting, Management Accounting

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Introduction

Industrial activities are widely believed to contribute to contemporary environmental problems (Kaufman, et al., 2002). Literature evidence indicate that some corporate approach to dealing with pressure for environmental responsibility may be reactive and/or diversionary through environmental politicking Bullock (2012), Jacques et al, (2008) –a strategy whereby firms prefer to lobby against national and international environmental and/or climate regulations. However given growing environmental problems with concomitant climate change, societal pressure, regulations and consumer green awareness, firms are beginning to recognise the business implications of changing environment and or/climate with attendant impact on corporate competitive positioning (Berry and Rondeinelli, 1998). Consequently environmental agenda is evolving as a core constituent of modern corporate strategy (Berry and Rondeinelli, 1998). Thus aside from traditional economic profit goal, corporate responsibility has expanded to include the satisfaction of environmental demands. This expansion in corporate responsibility also means that managers' responsibility has been expanded from divisional economic profit goal to also include divisional environmental performance. This is important given that a corporate entity may not achieve desired environmental performance without mangers' environmental goal congruence. However, management accounting literature recognises the shortcomings of traditional managerial performance measurement systems as not holistic in capturing actual managerial performance; hence suggestions such as the balanced score card has emerged to improve managerial performance evaluation. However, with the expanded responsibility of the firm toward the environment, environmental management accounting (EMA) literature has been silent regarding the implication of environmental performance on managers' performance evaluation. This paper seeks to bridge this gap by proposal how managers' environmental performance may be recognised and integrated in conventional divisional performance evaluation.

Therefore the question that motivates this paper is: how may managers' environmental performance be integrated into conventional managerial performance measurement system, and how would such integration affect managers' environmental drive? Consequently the objective of this paper is to suggest a model to integrate managers' environmental performance into conventional performance measurement systems.

This paper is deemed significant given that the journey towards corporate environmental responsibility has not been easy as firms have been accustomed to traditional economic goal; therefore corporate environmental performance has to be driven by managers, and managers' environmental goal congruence may be motivated if environmental performance of managers is recognised. This is pertinent given that environmental performance is also becoming a critical factor upon which firms' performance are measured by socially responsible investors (Ladd and Noble, 1992).

This paper is organised as follows: the next section presents related literature; this is followed by a brief theoretical framework. The next section presents a suggested model approach for integrating environmental performance into conventional divisional performance measurement system; this is followed by a brief discussion on the implication for environmental management and sustainable economic development; the paper ends with conclusion.

Related Literature

According to Kaplan and Norton (1992, p.71) "*what you measure is what you get*". Although this 1992 research proposition by Kaplan and Norton was centred around balanced score card as a measure that drives performance; nevertheless this assertion has an implicit managerial performance measurement implication toward divisional environmental management and governance. In their study, balanced score card is seen as an amalgam of performance measures (aside profit), that drives corporate competitive strategy, such as customer orientation, response time, quality, teamwork, new product development, long term view of corporation and avoidance of sub-optimisation (Kaplan and Norton, 1992).

Concurrently extant literature supports the view that performance evaluation gingers managerial motivation to high effort and goal congruence toward corporate goal; but this would depend on the fairness Hartmann and Slapnicar (2012), Liao and Rupp (2005) of performance measures. Achieving consistency, accuracy and justice in performance evaluation is an overwhelming concern to researchers (Hartmann and Slapnicar, 2012; Liao and Rupp, 2005). This disquiet is even more pronounced given growing interest and expansion of corporate strategy toward environmental orientation. Hence it has been suggested that since sustainability is becoming a vital aspect of corporate governance strategy (Figge *et al.*, 2002; Esty and Porter, 1998), performance evaluation should be made to recognise divisional environmental and/or sustainability management practices (Accenture and CIMA, 2011; CGMA and CIMA, 2012; Figge *et al.*, 2002). Thus experts believe that if accountants and managers focus their performance evaluation only on the ratios of financial profit, this may constitute a setback to corporate environmental governance, but the inclusion of environmental initiatives is pertinent to propelling desired sustainable economic development Collins *et al.*, (2010) because non-financial measures contribute to enhance a an equitable evaluation of divisional managers (Lau and Moser, 2008), and hence the satisfaction of managers (Lau and Shohilin, 2005). Consequently scholars have recognised that management control systems impact environmental performance (Schaltegger and Burritt, 2011). Similarly Henri and Journeault (2010) find that the inclusion of performance measurement and environmental concerns in incentive systems enhances environmental performance.

In their concern for improving corporate eco-efficiency Burritt and Schaltegger (2001) proposes the integration of eco-efficient practices in corporate planning and control; Burritt and Schaltegger stress that there are values accruable from corporate environmental practice and that this creates the necessity for integrating the value added from environmental management into corporate planning and control. Similarly Günther & Sturm (2004) believes that corporate environmental management is measurable, hence they propose five stage process in measuring corporate environmental management; but none of the five stages captures that divisional environmental management commitment must be measurable to enhance overall corporate environmental management, this paper attempts to fill this gap by suggesting the measurement of divisional environmental performance. Also in a quest toward environmental measurement, Tyteca (1996) presents a literature review of environmental measurement systems and highlights the need for inter-plant environmental performance measurement, and concludes on the need to assess the effect of corporate environmental management on environmental sustainability. In the same vein, James (1994) suggests that corporate performance measurement systems should be extended to include sustainability management performance – highlighting that measurement is a veritable motivation for continuous spurring of corporate environmental management initiative; but this suggestion is also pitched at the corporate level.

Previous literatures have not suggested how environmental performance may be integrated in traditional divisional performance evaluation; consequently this paper attempts to propose how divisional environmental performance may be integrated in performance evaluation to enhance fairness in performance evaluation and to motivate environmental and sustainable business practices of divisional managers and to enhance corporate environmental governance.

Theoretical Foundation

This paper is rooted on the motivational theory of Vroom (1964), which emphasizes that managers' effort is driven by expectations of recognition and reward and that such expectations, if met, promote motivation to higher achievements. Hence motivation is widely recognised in management literature as an important contributory factor that drives mangers and/or workers to achieve corporate goal (Qayyum and Sukirno, 2012; Boswell *et al*., 2008; Porter *et al*., 2003). Accordingly this paper reasons that since contemporary corporate objectives includes environmental sustainability, managers environmental goal congruence may be enhanced if divisional managers' environmental efforts are recognised in addition to financial efforts.

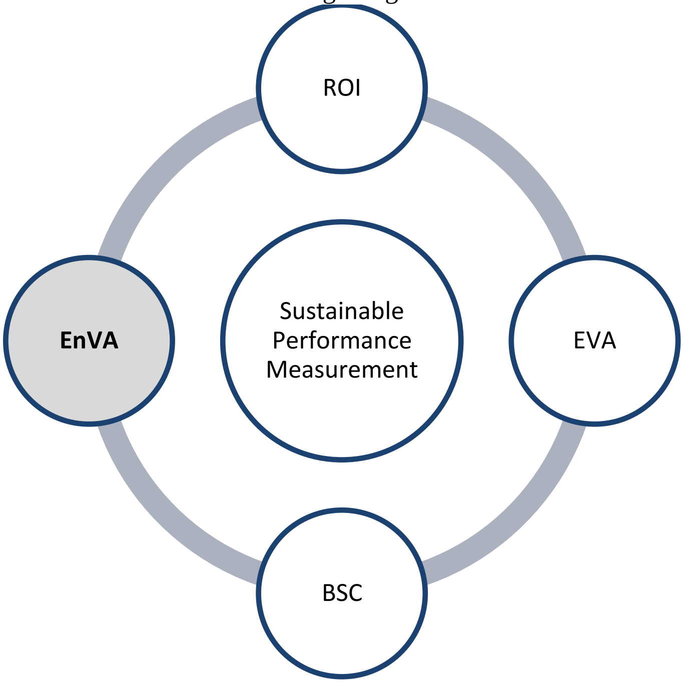
Methodology

A hypothetical company –Responsible Ltd, is used to demonstrate and suggest how environmental management performance may be integrated into conventional managerial performance measurement systems. This paper does not categorise environmental management performance as this may be relative amongst firms. It uses environmental expenditure, excluding fines and penalties to represent a divisional manager's environmental initiative. A hypothetical illustration has been used by experts in the field of environmental accounting to usher new methodology for integrating environmental issues in corporate accounting; a typical example is Burritt and Schaltegger (2001) – in which they used a hypothetical illustration of their suggested model – *material and energy activity based budgeting* (MEABB) to show how eco-efficiency can be integrated into corporate budgeting. The same conceptual suggestion method was used by (Hervani, Helms & Sarkis, J. (2005) to propose a performance measurement model for green supply chain. Accordingly with reference to the above previous hypothetical methodologies, this paper thus uses a hypothetical illustration to show how divisional environmental management can be integrated into corporate performance evaluation.

A. Toward a Model for Integrating Environment Performance in Divisional Performance Measurement

Environmental investment committed today has the propensity to yield future positive returns to the firm (WBCSD, 2010). Such future environmental values may include *inter alia,* an expansion in market share – derivable from an increase in green consumer patronage; competitive advantage (nationally and internationally) from product differentiation; proactive prevention of environmental regulatory risks, and resiliency in the face of climate change impacts. It follows therefore that the more the firm is prepared to invest part of its assets in the environment, the more the firm would expect to benefit from in the near future (WBCSD, 2010). Thus if a division is investing in the environment today, it is likely that the divisional current profitability may not be as high as another division that is reluctant to invest in the environment, reason being that assets that could generate current profit is being invested in the environment in the environmentally conscious department. Consequently divisional performance evaluation may be somewhat asymmetry if the environmentally investing division is rated as a less performing division because of seemingly current low financial profit. Divisional performance measure may therefore be more objective and equitable if consideration is given to the amount of environmental investment committed by a division. Thus this paper suggests that, in addition to current divisional financial measures such as ROI and EVA, the ratio of divisional environmental investment to total assets should be considered as an ancillary measure of performance for the environmentally investing division. By adopting this stance in divisional performance evaluation, an additional index of performance measure which, in this paper, is referred to as environmental value added (EnVa) would be added to existing traditional measures of performance (financial and non-financial) – return on investment (ROI), economic value added (EVA) and balanced score card (BSC). This addition may make the overall performance more sustainable, hence the inscription at the centre of figure 1 –sustainable performance measurement. This proposed additional measure to the existing measures is depicted in figure 1. EnVa (in grey circle –Figure 1) is thus suggested in this as an additional measure similar to BSC that captures corporate strategic goals (including the environment).

Figure 1. Divisional performance measurement integrating environmental value added (EnVa)



Where:
ROI: return on investment
EVA: economic value added
BSC: balanced score card
EnVA: Environmental Value Added (Suggested additional measure).
EnVA: Environmental Value Added: may therefore be captured in a formula:

$$EnVA = \frac{IEI}{IA} \times 100 \tag{1}$$

Where IEI - Integrated Environmental Investment (the sum of environmental expenditure in a fiscal year less environmental fines and penalties); IA - Investment in Total Assets.

Note: fines and penalties should be deducted from the total of environmental expenditure as they are incurred out of environmental negligence.

B. Hypothetical Illustration: Responsibility Ltd

Division A: Invested assets: $1 000 000; Cost of capital: 10%; current profit: $200 000; environmental management expenses before profit: $150 000.

Division B: Invested assets: $1 000 000; Cost of capital: 10%; current profit: $300 000.

Table 1. Performance Evaluation Integrating Environmental Management

	Division A	Division B
Invested Asset (IA)	$1 000 000	$1 000 000
Current profit	$200 000	$300 000
Cost of capital (10%)	$100 000	$100 000
Environmental management expenses (already deducted before current profit):	$150 000	$ 000
ROI : Profit/Invested Asset	20%	30%
EVA : Profit – Cost of Capital	$100 000	$200 000
EnVa: IEI/IA	15%	0%

Table 1 above shows the performance evaluation of the two divisions in Responsible Ltd using the ROI, EVA and environmental value added (EnVa). The $150 000 environmental expenses in division A shows that the division engaged in environmental management activities during the fiscal year and this contributed to low ROI percentage and less EVA amount compared to division B with zero amount of environmental commitment during the period. Since the environmental commitments of division A would likely generate positive value to the firm in the near future; it is thus suggested that the ratio of Division A's environmental expenditure on to the invested assets should be calculated as an ancillary measure of performance which is 15 per cent for division A and zero per cent for division B. This approach may instil fairness and equity in performance evaluation; and would also be environmentally motivating to divisional managers. If this additional evaluation is applied, Division A may not feel marginalised since its environmental initiative would been recognised.

Motivational Implication for Environmental Management and Sustainable Economy

Drawing from Vroom's motivational theory Vroom (1964), divisional managers should expect a recognition of and compensation for their efforts. Therefore in contemporary global drive for environmental and/or sustainable economic development; divisional environmental investment should not be relegated to the background as a less managerial effort and/or achievement. This is because environmentally committed managers constitute the pivot upon which corporate sustainability effort rotates. It follows therefore that without environmental drive at the divisional level; overall corporate environmental stance may dwindle with attendant negative impact on sustainable economic development. Consequently if divisional managers' environmental or sustainability commitments are recognised, measured and rewarded similar to financial profit achievements; such managers would be motivated to engage more toward the environment and society. The cumulative result would be a sustainable corporation that fosters sustainable economic development.

In contemporary global quest for sustainable economic development, business is an important partner to government for the actualisation of sustainable economic development. Hence according to a 2010 report titled "*Business and development: challenges and opportunities in a rapidly changing world",* by the World Business Council for Sustainable Development (WBCSD) (2010); the rapid increase in urbanisation is a huge threat to sustainable economic development of the developing nations and emerging economies. This is because increase in population and urbanisation is galvanising pressure on the systems that supply desired energy demand, food, water transportation and healthcare in developing countries (WBCSD, 2010). Hence in its report, the WBCSD stresses that transition to a sustainable economic future may be impossible "*without business as a committed partner and solution provider"* (WBCSD, 2010, p.3). But pragmatic business sustainability initiative relies on environmentally conscious managers; consequently an enabling management control system that recognises measures and rewards environmental efforts of divisional managers is *sine qua non* to achieving corporate sustainability. A sustainable economic development is thus achievable where managers' economic goal is balanced with environmental demands.

Conclusion

This paper proposes the integration of environmental management performance to the conventional corporate divisional performance measurement. The objective is to motivate environmental commitment in corporate divisional managers which would ultimately promote overall corporate environmental commitment and governance, and thus provide enabling business support to sustainable economic development. It suggests how divisional environmental investments might be evaluated and recognised as an ancillary to traditional divisional financial measures. Consequently drawing from expectancy theory, the paper asserts that environmentally committed managers would expect that their environmental commitment warrants recognition. Thus it becomes apposite that the management accounting system be made to integrate divisional environmental effort and/or investments as an additional ratio of performance which this paper refers to as environmental value added (EnVa). Overall implication for sustainable development is emphasized with the prospect that such performance recognition would boost the environmental or sustainability penchant of divisional managers. The spinoff of environmentally committed corporations therefore would promote the goal of sustainable economic development of a country. In line with the WBCSD (2010), the transition to sustainable economic development may not be achievable without the support of corporations; and without the support of sustainable divisional managers, the corporation would continue to operate in an unsustainable and environmentally unfriendly trajectory. But management accounting may offer desired boost to managerial incentive to environmental friendliness; thus this paper suggests that integrating environmental performance to conventional performance measurement may assist in boosting the environmental morale of managers. The hypothetical illustration in this paper may provide an agenda for a field research to apply such environmental performance measurement practically in a firm. It is expected that this suggested addition of divisional performance measurement (EnVa), would provoke academic and research debate in the field of environmental and/or management accounting.

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