



# Greening the balanced scorecard

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## KEYWORDS

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**Abstract** Environmental management issues have received an increased amount of attention in recent years, as have various performance measurement systems (PMS) such as the balanced scorecard (BSC). However, implementation of these systems is challenging due to the differences found amongst the companies and users of PMS. This study investigates how the presence of particular supporting factors served to facilitate a PMS change that incorporated environmental measures. Utilization of extant change models enables us to investigate different change factors like advancing and hindering forces, momentum, and the leaders of change. We found two models appropriate for investigating environmental management accounting change, even though the change factors can be either dynamic or static. The study also proposes that company culture should be carefully taken into account when companies are changing their PMS. Technical changes to PMS are far easier to accomplish than are changes to a dominant culture. Finally, we suggest that utilizing the BSC for the purposes of environmental management is a worthwhile pursuit.

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## 1. Incorporating a greener aspect into scorecards

Environmental issues have received considerable attention in the literature over the past few years; consider, for example, Burrit (2004), Hopwood (2009), Hubbard (2009), Masanet-Llodra (2006), and Schaltegger and Wagner (2006), to name but a few. Several factors have motivated companies to investigate and improve environmental performance (Lämsiluoto & Järvenpää, 2008). Stakeholders,

such as customers and shareholders, increasingly may require consideration of the environment (Callens & Wolters, 1998; Hopwood, 2009; Hubbard, 2009; Lämsiluoto & Järvenpää, 2008). Furthermore, legislation may force companies to consider environmental issues when they plan investment in new production plants. Improved environmental performance may also benefit companies by improving profitability, enabling economic growth or decreasing costs (Azapagic, 2004; Laine, 2005; Porter & van der Linde, 1995).

Environmental management systems (EMS) are required in order to develop, implement, manage, coordinate, and monitor environmental issues (Melnyk, Sroufe, & Calantone, 2003). ISO 14000 (ISO, 2009) and the Global Reporting Initiative

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(GRI, 2009) are two popular frameworks that can be used for constructing EMS in practice. As articulated by Figge, Hahn, Schaltegger, and Wagner (2002), environmental issues can also be integrated into existing performance measurement systems (PMS). There are several different PMS available but the most popular is the balanced scorecard (BSC), developed by Kaplan and Norton (2005). According to Malmi (2001), there are three different ways to utilize a BSC. First, it can be used to focus on management by objectives. Secondly, a BSC can be an information system. Finally, the BSC can be used to visualize the cause and effect relationships between different measures.

There can be several reasons for integrating environmental issues into existing PMS. First, if companies are already using a BSC framework, it can be easier to use the same familiar framework to implement environmental objectives and measures (Hubbard, 2009; see also Chenhall & Euske, 2007; Wilkinson & Dale, 1999). The integration may also allow the reduction of costs (Wilkinson & Dale, 1999). Second, the organization's strategy should include components of environmental issues so that the BSC may be used for implementing the chosen strategy (Kaplan & Norton, 2005; Wilkinson & Dale, 1999). Environmental issues may become strategic because they have an influence on a company's image, profitability, competitiveness, markets, and products, which will affect its future economic survival (Dias-Sardinha & Reijnders, 2005; Schaltegger & Wagner, 2006).

Companies often have to change their PMS if they want to pay more attention to environmental issues. Making changes to a performance measurement system, and enduring the subsequent effective implementation of the revised system, are challenging tasks—despite the choice of several different PMS available (Chenhall, 2003; de Waal, 2007). For instance, de Waal (2007) found that almost 60% of PMS implementations do not meet expectations. One reason for these challenges is that the implementation of PMS cannot be identical in different companies; after all, firms vary in terms of decision-making culture, the environmental uncertainty under which they operate, norms, size, strategy, organizational structure, and values (Burns & Scapens, 2000; Chenhall, 2003; Chenhall & Euske, 2007; Verbeeten & Boons, 2009). Therefore, a smaller company operating in a stable local market needs a different performance measurement system than a larger company working in an uncertain environment and the global market. Users of PMS also vary in terms of their experience (Pihlanto, 2003) and information needs (Chenhall & Euske, 2007). Furthermore, the barriers to successful implementation and the forces advancing PMS

change vary across organizations (Kasurinen, 2002; Länsiluoto & Järvenpää, 2008). This means that PMS implementation is challenging because there is no single available PMS solution that performs in all circumstances.

Despite the challenges involved in PMS implementation, there are some change models that offer useful guidance (Burns & Scapens, 2000; Cobb, Helliar, & Innes, 1995; Innes & Mitchell, 1990; Kasurinen, 2002). However, these models have not been applied in practice to investigate how PMS are changed to reflect environmental issues. Furthermore, Hopwood (2009, p. 439) explicitly recommends that an organization “[seek] to explore the role and functioning of accounting in the environmental and sustainability spheres.” To this end, our study uses a case company to investigate how a balanced scorecard was changed to incorporate environmental issues. The purpose of the study is to explore what the change factors are for environmental management and for PMS change. We also illustrate how these two change processes link together.

## 2. Different models for investigating the change process

Wider organizational, environmental, and social changes can force firms to alter PMS (Cobb et al., 1995; Hopwood, 1987, 2009; Innes & Mitchell, 1990; Verbeeten & Boons, 2009). For instance, Hopwood (1987) illustrated how PMS changes were affected by interrelated changes in markets, production policies, organizational structures, and information systems. The increased attention on environmental issues can also drive changes to PMS (Hubbard, 2009; Länsiluoto & Järvenpää, 2008). This study utilizes three change models that particularly focus on PMS change: Innes and Mitchell (1990), Cobb et al. (1995), and Kasurinen (2002).

Innes and Mitchell (1990) suggest that the major factors which relate to PMS change may be classified as motivators, catalysts, and facilitators. *Motivators* relate to change in a general sense and—according to Innes and Mitchell—competition, organizational structure, and technology generally motivate change. Furthermore, *catalysts*—such as poor profitability or a decreasing market share—are factors directly associated with the change. *Facilitators* are necessary conditions in the change, but are not alone sufficient to force it. Innes and Mitchell present accounting staff resources and computer facilities as examples of facilitators.

Cobb et al. (1995) further developed the PMS change model of Innes and Mitchell. Moreover, Cobb

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