

Integrating Sustainability Measures into Strategic Performance Measurement Systems: An Empirical Study

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USING SURVEY DATA FROM CONTROLLERS OF 79 LARGER COMPANIES, THIS STUDY EXAMINES THE EXTENT TO WHICH FIRMS INTEGRATE SUSTAINABILITY MEASURES INTO THEIR STRATEGIC PERFORMANCE MEASUREMENT SYSTEMS (SPMS) AND ALIGN THESE MEASURES WITH STRATEGY. THE AUTHORS EXPLAIN WHY PRACTICES VARY ACROSS COMPANIES.

As the rapidly increasing number of corporate social responsibility reports attests, global companies are publicizing their efforts to promote their environmental, social, and economic (otherwise known as sustainability) performance. Faced with rising pressures to develop more environmental and social responsibility, companies are developing new communication approaches in conjunction with attempts to incorporate sustainability measures into strategic performance measurement systems (SPMS) such as the balanced scorecard (BSC). Sustainability measures are evolving, and the Global Reporting Initiative, sponsored by the United Nations, has developed one of the most coherent

and widely used sets of sustainability measures (www.globalreporting.org). Although attempts to add multiple nonfinancial measures to SPMS have long been under way, the inclusion of sustainability measures in SPMS is recent. Few empirical studies have investigated whether sustainability measures are incorporated into SPMS, which help business managers implement strategy.

We have set out two objectives:

- ◆ The first one is to evaluate to what degree companies incorporate sustainability measures in their SPMS and align them with strategy. By focusing on SPMS and not on environment management systems, we are deliberately concentrating on how

business managers, not environmental experts, incorporate sustainability concerns into the inevitable trade-offs among revenue, profit, and sustainability objectives.

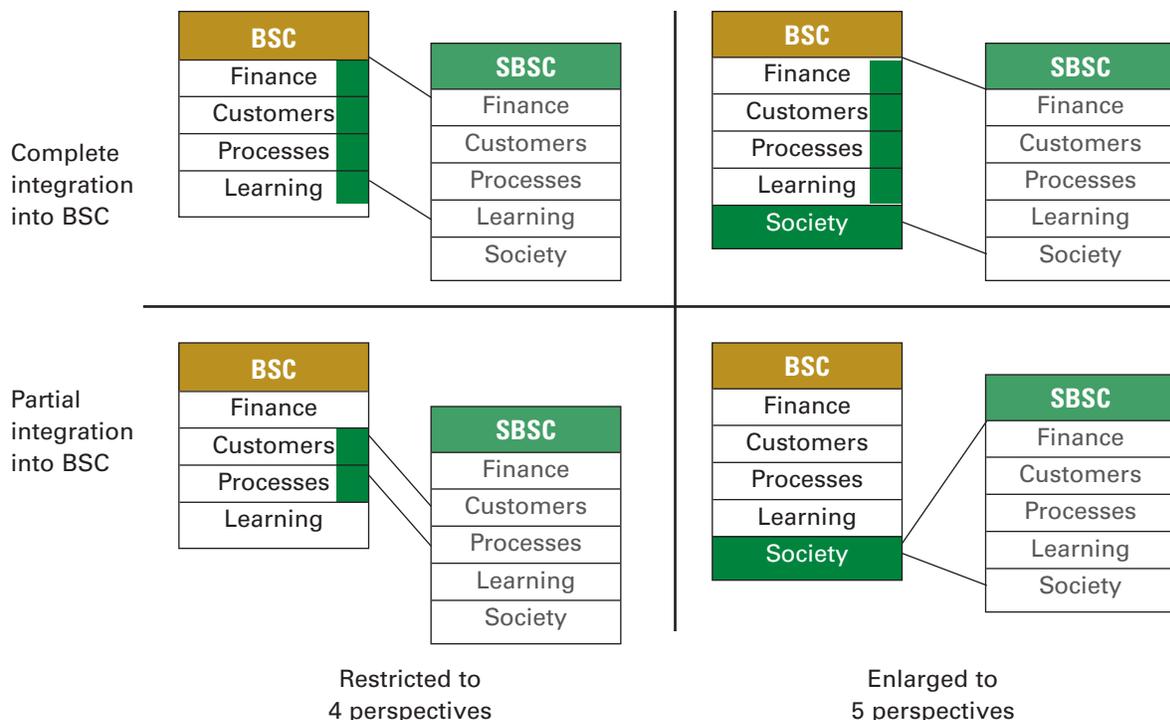
- ◆ The second is to examine which factors explain why these practices vary across companies. We examine four factors (strategy, industry sector, stock market listing, and nationality) to explain why the presence of sustainability measures in SPMS and their alignment with strategy vary across companies. The results show that sustainability measures have a small presence in the SPMS compared to other categories of measures. Industry and stock market listing explain why sustainability measures are more likely to be present in SPMS and align with strategy. Finally, we describe the three challenges managers must address when integrating sustainability measures into SPMS.

SUSTAINABILITY AND STRATEGIC PERFORMANCE MEASUREMENT SYSTEMS

Several approaches to integrating sustainability measures into SPMS have been developed. Most are derived from the balanced scorecard, which structures performance according to four perspectives: financial, customer, internal business processes, and learning and growth.¹ Consequently, there are four ways to integrate environmental and social dimensions into the balanced scorecard (see Figure 1).²

Environmental and social indicators can be integrated into the causal chain that links the axes of the balanced scorecard without creating a specific perspective dedicated to sustainability measures. The integration could be partial (i.e., limited to certain axes, such as customer and internal business processes on the lower left of Figure 1), or it could be extended completely to all axes (on the upper left). This last way may be used, for example, to cross the GRI's Sustainability Reporting

Figure 1: **Four Possibilities to Integrate Sustainability into the BSC**



Source: Thomas Bieker and Bernhard Waxenberg, "Sustainability Balanced Scorecard and Business Ethics," paper presented at the Greening of Industry Network Conference, Göteborg, Sweden, 2002.

Guidelines with the BSC's four perspectives by combining the three components of sustainability reporting (economic, environmental, and social) with the BSC measurements framework.³

Because the way the balanced scorecard is constructed reflects an economic vision of the company's role, which may not allow the integration of all environmental and social aspects, a third approach has been developed. In addition to the four perspectives of the BSC, a fifth dimension—society—can incorporate environmental and social aspects that reveal nonmarket societal mechanisms (for example, mechanisms from the socio-cultural or the legal sphere—lower right)⁴. Finally, a fourth approach is to develop a balanced scorecard dedicated to environmental and social issues that are superimposed on the traditional BSC. This option of a derived scorecard focused on sustainability is particularly interesting for management departments that are dedicated to environmental and social issues and are mainly concerned with cross-sectional and coordination management tasks.⁵ In sum, there are numerous possibilities to incorporate sustainability measures into SPMS, but companies' actual practices and the factors that explain their practices remain largely unexplored.

DATA COLLECTION

We conducted an empirical study of a sample of large companies operating in France, including companies listed on the French stock exchange and foreign subsidiaries. We first tested a survey questionnaire with management control experts. Then we sent the survey to 400 management controllers: 83 were returned (for a response rate of 20.75%) of which 79 were usable. Industrial companies represented 57% of the sample, service companies represented 25%, and distribution companies totalled 18%.

The measures we used in the survey instrument were:

Independent Contingency Variables

Strategy. We selected the instrument developed by Robert H. Chenhall and Kim Langfield-Smith to measure company strategy.⁶ We asked respondents to rate on a five-point Likert scale the degree to which they agreed with 10 items covering strategic orientation of the firm. We undertook a factor analysis to identify the strategies of the companies in the sample. Three factors were

retained with eigen values of 3.23, 1.81, and 1.1, and the degree of variance explained is 32.28%, 18.12%, and 10.22% (in total 60.62%). The first factor is a product differentiation strategy based on product and service quality, availability, and on-time delivery. The second factor is a strategy based on cost leadership. The third factor is a product differentiation strategy centered on innovation.

Other Independent Contingency Variables. We asked respondents:

1. The type of SPMS (tableau de bord or balanced scorecard) used to pilot performance,
2. The sector (industrial, service, distribution), and
3. Whether or not the company is listed on a stock exchange.

To evaluate to which degree the strategic performance measurement system covers various performance dimensions, including those relating to sustainability, we asked respondents to indicate the degree of presence of financial performance measures as well as those for customers, internal processes, innovation and learning, and sustainability in the SPMS on a five-point Likert scale from 1 (very weak) to 5 (very strong). In order to improve clarity, we gave examples for each category of performance measure.

Similarly, we asked respondents to evaluate to what degree the four categories of nonfinancial measures were linked to their company's strategic objectives on a five-point Likert scale from 1 (very little) to 5 (very strongly).

SURVEY RESULTS

Table 1 presents the average level of presence of five categories of measures in companies' SPMS. Overall, the results show that sustainability measures have a small presence in the SPMS. On average, they are much less present than any other category of measures.

In Table 2, results show that sustainability measures are more present in companies listed on a stock exchange. Also, industrial companies are more likely to have sustainability measures than are distribution companies. Finally, there is no significant relationship between nationality and the presence of sustainability measures in SPMS.

Also, Table 3 shows that there is no relationship between strategy and the presence of sustainability measures in SPMS.

Table 1: **Average Level of Presence of Performance Measures by Category**

	Financial	Customer	Internal Processes	Innovation and Learning	Sustainability
Level of presence of measures	4.25	2.75	2.85	2.40	1.65

1=very low; 5=very high

Table 2: **Comparison Tests of Mean Level of Presence and Standard Deviations of Sustainability Indicators by Contingency Variable**

Contingency Variable	N	Mean Level of Sustainability Indicator #	s.d.	Mean Difference
1a Listed on stock market	38	1.92	1.17	
1b Not listed on stock market	41	1.61	0.91	0.31*
2a Industrial companies	45	1.93	1.05	
2b Distribution companies	14	1.50	0.76	0.43*
3a Industrial companies	45	1.93	1.05	
3b Service companies	20	1.55	1.19	0.38
5a French companies	58	1.67	1.02	
5b Non-French companies	21	2.00	1.14	0.33

*p < .05; + p < .10

1=very low; 5=very high

Table 3: **Correlations between Strategy Type and Level of Presence of Sustainability Measures in Performance Measurement Systems**

	Level of Presence of Sustainability Measures
Quality strategy	-0.04
Cost leadership strategy	-0.10
Innovation strategy	0.007

All correlations are not significant.

Table 4: **Mean Level of Alignment of Categories of Performance Measures with Strategy**

	Financial	Customer	Internal Processes	Innovation and Learning	Sustainability
Degree of alignment with strategy	4.00	3.68	3.06	2.95	2.22

1=very low; 5=very high

Table 5: **Comparison Tests by Contingency Variable of Mean Level of Alignment of Sustainability Measures with Strategy**

Contingency Variable	N	Degree of Alignment of Sustainability Measures with Strategy		Mean Difference
			s.d.	
1a Listed on stock market	38	2.39	1.30	
1b Not listed on stock market	41	2.00	1.00	0.39**
2a Industrial companies	45	2.40	1.16	
2b Distribution companies	14	2.00	1.23	0.40**
3a Industrial companies	45	2.40	1.23	
3b Service companies	20	1.95	1.27	0.45
5a French companies	58	2.12	1.10	
5b Non-French companies	21	2.29	1.11	0.17

**p < .01

1=very low; 5=very high

Table 4 reveals that, of all five categories of performance measures, sustainability measures are the least linked to a company's strategic objectives. This result confirms observations that the link between sustainability measures and strategy very often is not effective.

Nevertheless, Table 5 illustrates that alignment of sustainability measures with strategy is significantly correlated with companies listed on the stock market and with industrial companies.

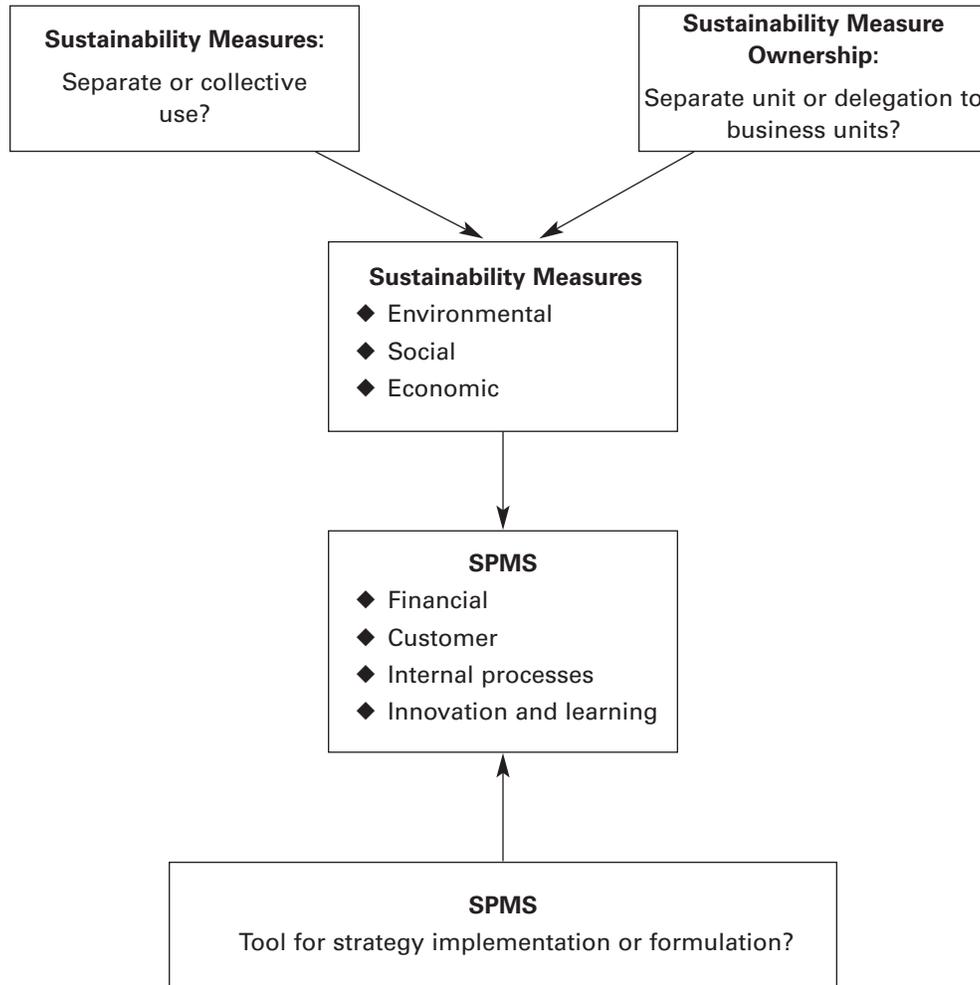
DISCUSSION AND MANAGERIAL IMPLICATIONS

In examining whether sustainability measures are present in the SPMS and whether they are aligned with

strategy, we note that the evidence suggests that, when compared to four other performance measurement categories (financial, customer, internal processes, and innovation and learning), sustainability measures have the weakest presence. In addition, sustainability measures are hardly aligned with strategy.

The results also show that industry and stock market listing influence the integration of sustainability measures into SMPS. One interpretation of this pattern of results could be that among industrial companies there are sustainability factors, especially environmental, that impact the firm's valuation to the extent that investors and management require sustainability measures to be monitored and reported internally and externally. While

Figure 2: **Integrating Sustainability Measures into SPMS**
Three Issues to Resolve



industrial sector companies might report environmental impact to stakeholders other than investors, the need to report the impact of sustainability factors on their valuation appears to play a decisive role in determining the inclusion of the factors.

Moreover, the growth of socially responsible investing and its shareholder activism to obtain better sustainability reporting can explain why companies listed on a stock market are more likely to incorporate sustainability reporting into their SPMS.

We propose several reasons why the presence of sustainability measures is not related to strategy and companies' nationality. Broadly, a strategic SPMS requires that the performance measures should derive from a company's strategic mission, but because sustainability is just now entering into an increasing number of companies' strategic missions, the connection between the strategic planning process and the creation of the performance measurement system needs to be very close to not disconnect the measurement system from the

company's sustainability strategy. As for the link between sustainability measures and nationality, despite a French law known as NRE, which stipulates that public, listed companies should report sustainability measures, there is no legal sanction if this law is not followed. In this context, the first results in 2003 of the law's application were uneven: Some companies applied the law to the letter without respecting the spirit of the law, others respected the spirit but did not respect the formal requirements, and others simply ignored it. One could hope that compliance with this law improves with each annual reporting cycle.

There are three fundamental issues to address in the future when building an SPMS that includes sustainability measures effectively. The first issue concerns whether the SPMS is a tool for strategy implementation or formulation. Sustainability measures can provide valuable feedback for double-loop learning that could aid in the process of strategy formulation based on the external environment. This, however, requires that the company use its SPMS to adjust its strategy (see **Figure 2**).

The second issue pertains to whether the most suitable approach to sustainability measures is to treat them collectively or in separate categories such as environmental, social, and/or economic. A company's approach could determine how these issues are integrated into business activities. This suggests that future research could focus on how the role and composition of SPMS change as a company adopts a strategy embracing different elements of sustainability.

A third and related issue is whether sustainability activities and measures should be "owned" by a separate unit in the company or delegated fully to business managers. Moreover, additional research could investigate how sustainability measures are used—not only by top management, but especially by operating managers and the workforce. These are practical issues that need to be addressed when incorporating sustainability measures into SPMS.

Regardless of their level, managers could be helped to balance sustainability goals with their traditional revenue and profit goals by incorporating sustainability measures into their company's SPMS. Otherwise, management runs the risk that its strategic sustainability goals will remain disconnected from operations. Man-

agement's commitment to improve its sustainability performance will then be shown to be just another public relations exercise. ■

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ENDNOTES

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- 4 Frank Figge, Tobias Hahn, Stefan Shaltegger, and Marcus Wagner, "The Sustainability Balanced Scorecard—A Tool for Value-Oriented Sustainability Management in Strategy Focused Organisations," paper presented at the Eco-Management and Auditing Conference, Nijmegen, the Netherlands, 2001.
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- 6 Robert H. Chenhall and Kim Langfield-Smith, "The Relationship between Strategic Priorities, Management Techniques and Management Accounting: An Empirical Investigation Using a Systems Approach," *Accounting, Organizations and Society*, Vol. 23, No. 3, 1998, pp. 243-264.