CORPORATE SUSTAINABILITY, STRATEGY AND ACCOUNTING CONTROLS: AN EXPLORATION OF CORPORATE PRACTICES

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Résumé

La littérature en comptabilité et contrôle démontre le rôle clé joué par le contrôle de gestion en matière d'implémentation stratégique. Cependant, malgré plusieurs appels à contributions émanant de la littérature en comptabilité sociale et environnementale (Parker, 2000; Chung and Parker, 2008), jusqu'à ce jour, très peu d'études ont exploré comment le contrôle de gestion supporte l'implémentation d'une stratégie durable en pratique.
Sur base du modèle de Malmi and Brown (2008), ce papier explore l'existence d'une sélection de mécanismes de contrôle de gestion de nature comptable (planning, contrôles cybernétiques et systèmes de compensation) pour supporter le déploiement d'une stratégie durable. Concrètement, sur base de l'analyse qualitative de sept cas, cette recherche étudie quels types de contrôles comptables existent dans les entreprises multinationales pour soutenir l'implémentation d'une stratégie durable explicite.

Mots-clés: durabilité, implémentation stratégique, contrôle de gestion, mécanismes de contrôle comptables

Abstract

The accounting and management control literature demonstrates the key role of management control to support strategy implementation. However, despite several calls in the social and environmental accounting research (Parker, 2000; Chung and Parker, 2008), to date, very few studies have explored how management controls support the implementation of a sustainability strategy in practice.

With reference to Malmi and Brown framework (2008), this paper explores the existence of a selection of accounting-based controls (planning, cybernetic control as well as reward and compensation systems) to support sustainability strategy deployment. Concretely, based on the qualitative analysis of seven cases, it investigates what kind of accounting-based management controls exists in multinational corporations to support the implementation of an explicit sustainability strategy.

Key words: sustainability; strategy implementation; management control; accounting-based control mechanisms

1. INTRODUCTION

A large-scale study carried out by the UN Global Compact in partnership with Accenture (2010) reveals that 93% of CEOs are convinced sustainability issues will be critical to the future success of their business and that 96% believe these issues should be fully integrated into the strategy and operations of a company. However, 49% cite complexity of implementation as the most significant barrier to embedding sustainability. Indeed, with the increasing interest in sustainability comes the challenge of not only developing corporate sustainability strategy and related objectives but also of achieving effective implementation (Chung and Parker, 2008).

In this context, based on an exploration of firms' practices, this paper investigates how accounting-based management controls support the implementation of a sustainability strategy in multinational corporations.

Previous research has underlined that management control plays a key role in shaping processes of (sustainability) strategy implementation (Anthony, 1965; Simons, 1990; Figge et al., 2002; Epstein and Wisner, 2005; Schaltegger and Wagner, 2006; Gond et al., 2012). Some researchers have stressed the particular role of formal and accounting-based controls in implementing a (sustainability) strategy (Dent, 1991; Langfield-Smith, 1997; Brisbe and Otley, 2004; Gond and Herrbach, 2006; Epstein and Roy, 2007; Gond et al., 2012).

However, while the relationship between management control systems and strategy has widely been investigated in the traditional accounting and control literature (Simons, 1990; Langfield-Smith, 1997; Ferreira and Otley, 2009; Tucker et al., 2009), this is much less frequent in the context of research related to the concept of sustainability. Indeed, until recently, social and environmental accounting research has predominantly paid attention to external reporting and accountability (Gray, 2002; Thomson, 2007; Albelda, 2011). Conscious of this situation, several researchers have stressed the need for research on the interrelation between sustainability, strategy and control (eg. Parker, 2000; Chung and Parker, 2008).

Despite these calls, to date, apart from some conceptual (and often normative) proposals (Epstein and Wisner, 2001; Figge et al., 2002; Van der Woerd and Van den Brink, 2004; Schaltegger and Wagner, 2006: Leon-Soriano et al., 2010; Schaltegger, 2011), few studies have investigated firms' management control practices with reference to sustainability. Especially, very few papers have analysed how specific management controls support the implementation of a sustainability strategy in practice (Epstein and Roy, 2001; Norris and O'Dwyer, 2004; Epstein and Wisner, 2005; Durden, 2008; Riccaboni and Leone, 2010; Albelda, 2011). After an examination of this restricted body of literature, it comes out that none of the case-based studies identified proposes an exploration of practices in several multinational corporations. Furthermore, the selection of controls under investigation in these studies is either not clearly developed or limited to one or two control mechanisms.

With reference to a broad and practice-oriented management control approach proposed by Malmi and Brown (2008), this paper explores firms' practices. It concentrates on the existence of a selection of largely accounting-based controls (planning, cybernetic control as well as reward and compensation systems) to support sustainability strategy deployment.

Concretely, it investigates what kind of accounting-based management controls exists in multinational corporations to support the implementation of an explicit sustainability strategy.

This exploratory study is based on the qualitative content analysis of primary and secondary data. Primary information was collected during semi-structured interviews with the sustainability managers from a heterogeneous sample of seven multinational corporations. This information was completed with the collection of secondary information (publicly available information like sustainability reports or statements on the websites as well as internal written documents like budgets or lists of indicators). This documentary research was useful to ensure a triangulation of the data (Yin, 1994; Arhens and Chapman, 2006) and thus to validate (or invalidate) the answers given by the sustainability managers.

This research contributes to the (sustainability) accounting and control literature in two ways.

Firstly, there is a limited amount of empirical research on how management control supports a sustainability strategy implementation (Epstein and Roy, 2001; Norris and O'Dwyer, 2004; Epstein and Wisner, 2005; Durden, 2008; Morsing and Oswald, 2009; Perego ad Hartmann, 2009; Riccaboni and Leone, 2010; Albelda, 2011). Our knowledge about how firms really design and develop controls to support a sustainability strategy needs to be extended.

This research contributes to fill in this gap by exploring multinational corporations' control practices. It shows that, although scepticism about the development of control mechanisms to support the implementation of a sustainability strategy has sometimes been underlined in the literature (Norris and O'Dwyer, 2004; Gond et al., 2012), multinational corporations have developed a selection of accounting controls. However, some of the controls observed are primary mechanisms, most sampled firms have not developed a complete package of accounting controls and these controls are generally kept separate from the "package" of management control systems used to manage the organization.

Secondly, this paper explores management control practices with reference to Malmi and Brown (2008) framework. This broad and practice-oriented framework is well known in the traditional management control literature (it is currently one of the most downloaded paper published in "Management Accounting Research") but it has not been used in previous empirical research dedicated to management control and strategy implementation in the context of sustainability. Indeed, when they refer to a specific theoretical framework, most previous publications on the association between sustainability, strategy and MC uses the balanced scorecard (Kaplan and Norton, 1992, 1996, 2001) or Simons' framework of levers of control (Simons, 1987; 1990; 1991; 1995). However, these frameworks are not appropriate to investigate the accounting controls that multinational corporations have designed to support the implementation of sustainability strategies in practice.

Besides its scientific interests, the present exploratory study is also driven by a practical need. Indeed, researchers and practitioners seem to agree on the fact that many organisations are still confronted to difficulties in "operationalizing" sustainability and in translating their strategic aspirations for sustainability into practice in the midst of many other business pressures (Epstein and Roy, 2001; Schaltegger and Wagner, 2006; Taplin et al., 2006; UN Global Compact - Accenture Research, 2010). This paper provides thus interesting insights and recommendations for practitioners.

The remainder of this paper is organized as follows. In the next two sections, we review the relevant literature (section 1) and present the framework used to explore firms' control practices (section 2). We then describe our exploratory research methodology (section 3) and present our key findings (section 4). Finally, we propose a discussion of our results (section 5). The last section of the paper is dedicated to our conclusion.

2. LITERATURE REVIEW

This section briefly reviews the literature on the association between management control and strategy implementation in the context of sustainability.

Management controls include all the devices and systems managers develop and use to ensure formally and informally that the behaviours and decisions of their employees are consistent with the organisation's objectives and strategies, but exclude pure decision-support systems. Any system, such as budgeting or a strategy scorecard, can be categorised as a management control system (Malmi and Brown, 2008). The accounting and control literature traditionally distinguishes between the design (existence) of controls and their use (adoption, utilization and implementation) (Langfield-Smith, 1997; Tucker et al., 2009).

Management controls encompass formal as well as informal controls (Ouchi, 1979; Otley, 1980). Formal controls consist of purposefully designed, information based and explicit sets of structures, routines, procedures and processes (Maciarello and Kirby, 1994) that help managers ensure that their organizations strategies and plans are carried out or, if conditions warrant, that they are modified (Merchant, 1998; Simons, 1995a). Accounting controls are a category of formal controls, which has frequently been studied in previous research (Langfield-Smith, 1997). Informal controls, in contrast to formal controls, do not control behaviour through explicit, verifiable measures. They consist of shared values, beliefs, and traditions that guide the behaviour of group members (employees) (Ouchi, 1979; Falkenberg and Herremans, 1995; Norris and O'Dwyer, 2004). Employees acquire the values, beliefs and traditions through a subtle reading of signals relayed by supervisors and co-workers.

Previous research has underlined that management control plays a key role in shaping processes of (sustainability) strategy implementation (Anthony, 1965; Simons, 1990; Figge et al., 2002; Epstein and Wisner, 2005; Schaltegger and Wagner, 2006; Gond et al., 2012). Some researchers have stressed the particular role of formal and accounting-based controls in implementing an innovative (sustainability) strategy (Dent, 1991; Langfield-Smith, 1997; Brisbe and Otley, 2004; Gond and Herrbach, 2006; Gond et al., 2012).

It is worth mentioning that, with reference to the distinction between the deliberate and the emerging approaches of the strategic process (Mintzberg, 1979; Mintzberg and Walters; 1985), an increasing number of researchers (Simons, 1990; Langfield-Smith, 1997; Kober et al. 2007; Tucker et al, 2009; Gond et al., 2012) agree on the fact that management controls are not a simple outcome of strategy, since a complex two-way relationship should be recognised. Management control has a key role in strategy implementation but also in strategy formulation. However, in this research, as Epstein and Wisner (2005) or Riccaboni and Leone (2010), we focus our attention to the first aspect of the two-way relationship between strategy and management controls. We analyse if and to which extent large firms have developed

accounting-based controls to translate a sustainability strategy into action (**strategy implementation**).

While the relationship between management control systems and strategy has widely been investigated in the traditional accounting and control literature (Simons, 1990; Langfield-Smith, 1997; Ferreira and Otley, 2009; Tucker et al., 2009), this is much less frequent in the context of sustainability. Indeed, until recently, social and environmental accounting research has predominantly paid attention to external reporting and accountability (Gray, 2002; Thomson, 2007; Albelda, 2011). Conscious of this situation, several researchers have stressed the need for research on the interrelation between control, strategy and sustainability (eg. Parker, 2000; Chung and Parker, 2008).

Despite these calls, to date, apart from some conceptual (and often normative) proposals (Epstein and Wisner, 2001; Figge et al., 2002; Van der Woerd and Van den Brink, 2004; Schaltegger and Wagner, 2006: Leon-Soriano et al., 2010; Schaltegger, 2011), few studies have investigated firms' management control practices with reference to sustainability. Especially, very few papers have analysed how firms develop specific management controls to implement a sustainability strategy (Epstein and Roy, 2001; Norris and O'Dwyer, 2004; Epstein and Wisner, 2005; Durden, 2008; Morsing and Oswald, 2009; Perego and Hartmann, 2009; Riccaboni and Leone, 2010; Albelda, 2011).

In particular, a very limited number of case-based studies investigating practices in multinational corporations have been identified while previous research shows that this type of organizations are more inclined than their smaller counterparts to develop sustainability strategies (Chrisman and Archer, 1984) as well as to design management control systems (Widener, 2004).

Amongst the limited number of papers identified, Norris and O'Dwyer (2004) explore the perceived influence of formal and informal control systems on socially responsive managerial decision-making through one in-depth case study in a large UK firm. Based on the case study of Novo Nordisk A/S, Morsing and Oswald (2009) explore to what extent it is possible to influence sustainability at the operational level by contemporary management control systems in integrating the perspective of organizational culture. Riccaboni and Leone (2010) rely upon the case of Procter & Gamble to explore how MCS work in order to translate sustainable strategies into action and how they should be modified when a strategic chance in a sustainable direction occurs.

After an examination of this restricted body of literature, it comes out that previous case-based publications are based on one single case study. None of these empirical studies proposes an exploration of practices in several large firms while multiple case study studies are judicious because of their generation of cross data and causal relationships that enable replication (Masanet-Llodra, 2006). Furthermore, the selection of controls under investigation in these studies is either not clearly developed or limited to one or two (formal and/or informal) control mechanisms.

This exploratory study proposes to fill in the gaps identified above in exploring what kind of accounting-based management controls multinational corporations have designed to support the implementation of an explicit sustainability strategy. To do that, this research analyses seven cases with reference to the broad practice-oriented approach of management control proposed by Malmi and Brown (2008).

3. FRAMEWORK

Different management control approaches and frameworks have been used in previous research. The main ones are briefly presented below.

Firstly, the balanced scorecard model of Kaplan and Norton (1992, 1996, 2000) proposes a comprehensive approach to strategy implementation that links key success factors, key performance indicators and incentive systems to successfully improving performance. This performance-oriented model is mobilized in a large majority of the papers dealing with management control and strategy implementation in the context of sustainability (Figge et al., 2002; Van der Woerd and Van den Brink, 2004; Schaltegger and Wagner, 2006; Leon-Soriano et al., 2010). Nevertheless, most of these papers develop conceptual (often prescriptive) proposals for integrating sustainability into the balanced scorecard: they do not propose any exploration of firms' control practices.

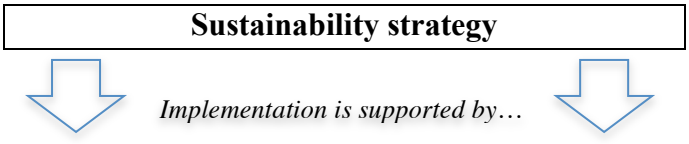
Secondly, the "levers of control" model of Simons (1990; 1991; 1994) has recently emerged as an influential framework. Simons' (1990; 1991; 1994) framework of management control describes four 'levers' of control that help an organization successfully implement and formulate strategy: belief systems, boundary systems, diagnostic control systems and interactive control systems. This framework has only been adopted in Gond et al. (2012) yet but it is discussed in other papers like Bonacchi and Rinaldi (2007) or Perego and Hartmann (2009).

Finally, a few papers like Norris and O'Dwyer (2004) refer to traditional control theories such as Ouchi (1977); Otley and Berry (1980); Merchant (1985) or Falkenberg and Herremans (1995).

This paper aims at characterizing accounting control practices that multinational corporations have designed to support the implementation of sustainability strategies. With reference to this research question, the balanced scorecard model of Kaplan and Norton (1992, 1996, 2000) or to the "levers of control" model of Simons (1990; 1991; 1994) are not appropriate frameworks. Indeed, this research does not investigate management control (practices) in relationship with performance issues and it does not consider the role of management control in strategy formulation.

Consistent with the research question investigated in this paper, the model proposed by Malmi and Brown (2008) has been chosen for three reasons. Firstly, this model focuses on the implementation role of management control (Malmi and Brown, 2008, p.290). In addition, with reference to Malmi and Granlund (2009) call for using more practice-oriented theories in management control, this framework is particularly relevant to study firms' control practices, especially the existence of a selection of control mechanisms. Finally, it proposes a broad conception of MC (as a package), which allows a broader understanding than other practice-oriented models as the balanced scorecard or the value-based management (Malmi and Brown, 2008).

While Malmi and Brown (2008) framework is well known in traditional management control literature (it is currently one of the most downloaded paper published in "Management Accounting Research"), it has not been used yet in empirical research on the association between management control and strategy implementation in the context of sustainability.



Cultural Controls				
Clans		Values		Symbols
Planning		**Cybernetic Controls**		**Reward and Compensation**
Long Range Planning	Action Planning	Budgets	Performance Measurement Systems including Financial Measurement Systems, Non-Financial Measurement Systems and Hybrid Systems	
Administrative Controls				
Governance Structure		Organization Structure		Policies and Procedures

Figure 1: Management Control System Package (slightly adapted from Malmi and Brown, 2008, page 291)

With reference to this "package" of management control mechanisms (Malmi and Brown, 2008), we have chosen to explore the **existence** (not the use) of a selection of **accounting-based controls** to support sustainability strategy implementation in large multinational corporations. With reference to Langfield-Smith (1997) we have chosen a broad definition of accounting-based control mechanisms, which includes cybernetic controls, reward and compensation systems but also planning.

Concretely, our exploratory research studies if and to which extent seven multinational corporations rely on the following control mechanisms to implement their sustainability strategy:

- Planning
  - Long range planning
  - Action planning
- Cybernetic controls
  - Budgets
  - Performance measurement systems including
    - Financial measurement systems
    - Non-financial measurement systems
    - Hybrid systems
- Reward and compensation system

As mentioned before, other formal or informal control mechanisms (such as administrative or cultural controls) play a role in sustainability strategy making and there are interrelations between the various elements of the control "package" (Malmi and Brown, 2008). Nevertheless, with reference to Gond et al. (2012), this choice was informed mainly by two criteria: (1) scientific relevance based on previous research and (2) pragmatic reasons. Firstly, Brisbe and Otley (2004), Epstein and Roy (2007) and Gond et al. (2012) outline the importance of formal and accounting controls in implementing a sustainability strategy. Secondly, the choice to focus on accounting controls (in contrast to other systems such as administrative or cultural controls) was informed by pragmatic reasons (see also the works of Bisbe and Otley, 2004; Gond et al., 2012). If semi-structured interviews and documentary

research allow to collect relevant information about tangible and formal control mechanisms, it is much more difficult to investigate other mechanisms (such as clan controls) by using these methods.

4. RESEARCH METHOD

We have carried out a qualitative analysis to explore if and to what extent these accounting controls exist in large firms to support the implementation of a sustainability strategy.

4.1. Sample

Our sample consists of seven large multinational firms signalling high sustainability engagement and operating in various industries in Europe.

These firms were selected as follows. In June 2010, we contacted the managers in charge for sustainability issues (hereafter, the sustainability managers) of all firms that are members of one national partner of CSR Europe in order to identify those who would be interested in participating in an empirical research on the association between sustainability, strategy and management controls in large firms. We got a positive feedback from the sustainability managers of seven firms: they were very motivated to take part to this research project.

All the sampled firms are multinational corporations: they operate in several countries and they are large firms with reference to the criteria proposed by the European Commission (2003)[1].

Table 1 summarizes some key characteristics of our sample (industry and size in terms of personnel and turnover).

	A	B	C	D	E	F	G
Industry	Telecom	Food	Energy	HR Services	Chemicals	Logistics	Bio-pharma
Workers	17.000	138.000	200.000	26 970	19.000	160.000	9.000
Global Turnover (2009)	6.1 billion	19.9 billion	79,91 billion	12,4 billion	8.5 billion	10.4 billion	3.1 billion

Table 1: Characteristics of the sampled firms

4.2. Data collection

Semi-structured interviews were conducted with the sustainability managers of these seven firms between September 2010 and December 2010. Each interview lasted between 1 hour and 1 hour 30 minutes. Detailed written notes were taken because, in some firms, we were not allowed to record the interviews.

[1] The EU defines a large company as one with a headcount of more than 250 people; turnover greater than €50m; or a balance sheet greater than €43m.

Our interview guide contained questions about their sustainability strategy (description, motivation) and about the existence of a series of accounting-based control mechanisms to support this strategy in their firm:

- Planning
    - Long range planning
    - Action planning
- Cybernetic controls
    - Budgets
    - Performance measurement systems including financial, non-financial and hybrid systems
- Reward and compensation system

Additional data sources were used to supplement interviews and by way of triangulation (Yin, 1994; Ahrens and Chapman, 2006). Publicly available information was collected before and after the interviews (annual reports, sustainability reports and website information such as a presentation of sustainability statements or sustainability activities). A copy of relevant internal written documents was requested during the interviews (long range plans; action plans; list of indicators; description of the reward and compensation system; etc.).

4.3. Data analysis

The data were analysed according to the principles of the qualitative content analysis (Glaser and Strauss, 1967; Eisenhardt, 1989; Miles and Huberman, 1994). In a first time, the data collected were organized and classified into several categories in a systematic analysis grid. Three themes were distinguished: (1) *sustainability strategy (description, motivations)* (2) *reporting* and (3) *accounting controls.* In order to focus more on this last theme, we divide it into three different categories with reference to Malmi and Brown (2008) *(1) planning (long range planning and action planning), (2) cybernetic controls (budget, financial, non-financial and hybrid systems) and (3) reward and compensation system*. The categorization of the data is a crucial step in the data analysis process because it allows the comparison of the data. In a second time, a content analysis of the data was carried out: in-depth horizontal and vertical analyses were successively undertaken (Eisenhardt, 1989). The horizontal analysis consists in a detailed analysis of each case in order to understand it completely while the vertical analysis focuses on the identification of the similarities and of the differences between the cases.

5. FINDINGS

This section is organized into two main parts. Key observations about the sustainability strategies of these firms are made in section 4.1. Then, in the next section, relevant findings about their accounting-based controls are presented. These findings are discussed in section 5.

Appendix 1 summarizes our main findings.

5.1. Key observations about the sustainability strategies

Firstly, all interviewees insist a lot on the fact that environmental, social and economic dimensions are strategic for their firms and that they are strongly linked to (or even integrated into) their core business (strategy).

Secondly, all the interviewees argue that their firm is engaged in a sustainability strategy for many reasons (Bansal and Roth, 2000).

All interviewees mention the following motivations:

- Market reasons (competitiveness, customers' demand and other economic motives)
- Human resource reasons (motivation of internal stakeholders)
- (Anticipation of) Legal constraints
- Consistence with corporate values and with the (ethical) values of the top management team members (top management leadership).

In addition, six out of seven interviewees mention clearly that marketing is also one of the motivations for their firm to be engaged in a sustainable strategy. They make it very clear that one of the reasons why their firm is engaged in such a strategy is to improve its reputation and image.

Finally, one sustainability manager mentions that an important motivation for his firm's engagement into a sustainability strategy is the creation of synergies and the sharing of best practices amongst the various business units.

Thirdly, the seven firms report a lot, externally and internally, on their sustainability strategy and their related activities.

As far as external sustainability reporting is concerned, all firms diffuse information via their website: a specific section of their website is dedicated to sustainability matters. All firms publish an annual sustainability report. Sustainability information is (partly) integrated into the annual report of five firms (firms A, C, D, E, F). Furthermore, specific external events dealing with sustainability issues (such as specific workshops or dinners) are organised by five firms (firms A, B, C, E, F) in order to ensure the diffusion of information about their sustainability practices. Finally, other communication means such as leaflets for associates, in-store communications, printed brochures or press releases are used in most of these firms.

As far as internal reporting is concerned, the intranet is widely used by the sampled firms to share information regarding their sustainability strategy and practices with all the categories of workers. In addition, five firms organize specific internal events and three of them tend to sensitize internal members to sustainability via emails about sustainability. Finally, the majority of the interviewees have also evoked magazines, internal notes or newsletters as a frequent mean of internal communication.

To sum up, the findings presented in this section underline that all the large sampled firms have an **explicit** sustainability strategy (Hart, 1995; Figge et al., 2002): they report a lot (internally and externally) on their sustainability strategy and related activities (via their annual reports, their website, etc.). In addition, all interviewees argue that sustainability is a central issue in their firm and that it is strongly related (or even integrated**)** to their core business (strategy).

5.2. Key observations about accounting controls

Table 2 summarizes categories of accounting controls that have been observed in the sampled firms.

Accounting controls / Sampled firms	Planning		Cybernetic controls		Reward and Compensation
	Long Range Planning	Action Planning	Budgets	Performance Measurement	
Firm A	X		X	X	
Firm B	X	X	X	X	
Firm C	X	X	X	X	
Firm D	X		X	X	
Firm E	X	X	?	X	
Firm F	X	X	X	X	X
Firm G	X	X	X	X	X

Table 2: Summary of the accounting controls observed in the sample

5.2.1. Aggregate observations

Firstly, a selection of (more or less developed) accounting controls has been observed in all the seven large firms. Actually, it comes from our explorative study that all interviewees are really conscious of the importance of (accounting) control mechanisms to support the implementation of their sustainability strategy.

Nevertheless, most of them recognize that, while social and environmental goals are related and aligned to their core corporate/business strategy, social and environmental issues are still not integrated into their traditional management control systems. In fact, the sustainability department is, in most case, responsible for the collection, analysis and reporting of this information. Especially, in most firms, we observe a clear divide between traditional management controls and sustainability management controls.

"*The CSR goals are related and aligned with the firm's core business and strategy. However, the CSR performance is not yet integrated into the firm's control systems*" (Interview – Firm G)

Most interviewees clearly stress that they are aware of the importance of this integration and that this will be their next challenge.

In addition, it is interesting to mention that the majority of the sustainability managers were "uncomfortable" with some questions related to accounting-based controls.

In some cases, they were not informed about the existence of such a kind of accounting-based mechanism in their organization (lack of information). "*I do not know if we have this system in our company*" "*I am not sure that social and environmental issues are considered by the team responsible for traditional budgeting*"

In some other cases, they had never heard about specific sustainability control mechanisms (lack of understanding). "*I don't understand what you mean with "full cost accounting systems" – I have never heard about that*"

This observation underlines again that, in practice, there is limited (technical, organizational or cognitive) integration of sustainability controls within traditional controls (see Gond et al, 2012 who propose this classification). This separation is even more accentuated in firm C

where social and environmental issues are managed and controlled distinctively by two different departments: the "CSR department" manages social issues and the "Sustainable Development department" is responsible for environmental issues.

Finally, with reference to Appendix 1, when considering the existence of formal accounting controls and their support to sustainability strategy deployment, it is obvious that different **control patterns** can be distinguished amongst the sampled firms.

For example:

- In firm F, a much more complete set of accounting controls exists to support the sustainability strategy (formal planning translated at all levels of the firm, specific budgets, sustainability compensation system) than in firm A (unclear translation of corporate goals, reward and compensation system based on economic aspect only). In addition, in firm F, we observe a stronger integration of social, environmental issues with economic ones into management controls (eg. implication of people of different departments in the performance measurement system).
- In firm D, the development of accounting controls to support the sustainability strategy is clearly still an on-going process.

Different potential explanations for this observation are given in section 5 with reference to previous literature. Nevertheless, it would be relevant to investigate further the existence of these **distinct sustainability control patterns** in a future research.

5.2.2. Observations about individual controls (Malmi and Brown, 2008)

This section presents key observations about specific accounting controls that may "push" the sustainability strategy into these organizations. With reference to Malmi and Brown (2008), planning (long range and action planning), cybernetic controls (budgeting and performance measurement systems) as well as reward and compensation systems have been explored in each sampled firm.

- Planning
  - Long range planning

A formal strategic planning system has been developed in each firm at the top management level (strategic process based on a top-down approach).

"*Five strategic priorities have been set at the Group level"* (Interview – Firm B)

"*Our CSR goals are formulated in our management system, on the highest level and embedded in our mission and philosophy*" (Interview – Firm E)

  - Action planning

In five firms, the formal planning system clearly envisages the translation of these corporate strategic goals at all the levels of the company (different business units, operating units and departments), often by considering their specificities such as markets or geographical locations.

"These corporate goals are translated at different levels. At operating company level, other areas falling outside the Group strategic priorities (i.e. waste reduction, packaging, water)

are managed and can be linked to specific local operating company's goals" (Interview – Firm B)

- Cybernetic controls
  - Budgets

In six firms, the sustainability managers mention that sustainability issues are considered in the traditional investment plans or budgets of their firms.

"*Investments are foreseen to reduce our environmental footprint*" (Interview - firm A)

"*Social and green budgeting is part of our overall budgeting process*" (Interview – firm F)

"*Each industrial investment project includes an important HSE dimension*" (Interview – firm G)

A specific sustainability budget (i.e. budgets dedicated to future investments and charges related to environmental or social aspects) has been clearly identified in two firms only.

"*A specific budget is allocated for the Group CR strategy implementation, then reflected at operating company level*" (Interview - Firm B)

  - Performance measurement systems (financial, non-financial or hybrid systems)

Hybrid systems considering both financial and non-financial measures have been developed in all the sampled firms. Nevertheless, none of the interviewees mention that the financial and non-financial measures are really combined in their system.

In most firms (6 firms), the sustainability team(s) is responsible for the measurement of a series of financial and non-financial indicators. In contrast, in firm F, people from different departments clearly contribute to the development and follow-up of the sustainability performance measurement system.

Global Reporting Initiative (GRI) is presented as the reference to develop these indicators in most firms. Our exploratory results show that the performance measurement systems developed in these large firms are still mainly determined by reporting considerations (cf "outside-in approach" developed in Schaltegger and Wagner, 2006).

It is interesting to note that four sustainability managers mention that they have developed (or are developing) a sustainability balanced scorecard (SBSC) at the corporate-level (firms D and F) or at the operating unit-level (firms B and G).

Nevertheless, after further investigations (documentary analysis), these systems are rather traditional lists of indicators than "balanced scorecards" as defined in the literature (Kaplan and Norton, 1992, 1996, 2001; Figge et al, 2002; Schaltegger and Wagner, 2006). These lists of financial and non-financial indicators do not reach the level of sophistication expected for a BSC. For example, no cause and effect chains are made (Figge et al., 2002) between the various dimensions considered. This confusion can be explained by the fact that the BSC is a highly popular tool (Hubbard, 2009) and that sustainability managers lack technical knowledge about this tool and how it should be constructed.

No other specific measurement systems have been identified based on our interviews or based on our documentary analysis. The performance measurements systems developed in these firms consist thus mainly in a rough list of sustainability (financial and non-financial) indicators.

- Reward and compensation system

Whereas all firms have reward and compensation systems related to the achievement of economic objectives, only two sampled firms also consider social and environmental aspects in their compensation systems (firms F and G). In firm F, these societal aspects are even included in the appraisal system for their subcontractors.

"*CR/CSR is part of managers bonus schemes and is part of all employees appraisal weight frame. Social and environmental issues are also included in the appraisal system for subcontractors"* (Interview – firm F)

6. DISCUSSION

While scepticism about the development of control mechanisms to support the implementation of a sustainability strategy has been underlined in the literature (Norris and O'Dwyer, 2004; Gond et al., 2012), our findings highlight that these multinational corporations have developed a selection of accounting controls. All these firms have long range plans concerning sustainability issues and most of them (5 out of 7 firms) translate these long-term plans into concrete action plans. In addition, six firms consider sustainability aspects in their budgeting (in an integrated way or not). Finally, all these firms have a hybrid performance measurement system to track their sustainability performance and to control the achievement of their sustainability objectives.

However, based on the literature, we observe some gaps in firms' practices: (1) some of the controls observed are primary mechanisms, (2) most sampled firms have not developed a complete package of accounting controls and (3) these controls are generally kept separate from the "package" of management control systems used to manage the organization.

Firstly, even if these firms have developed some accounting controls, it is worth mentioning that these are, in a lot of cases, primary mechanisms.

Even if the top management sets a series of strategic goals related to sustainability issues in each sampled firm, how these (aesthetic?) goals should be translated and deployed at the different levels of the organization is not always clarified.

In addition, the performance measurement systems developed in these large firms are, in most cases, underdeveloped and mainly determined by reporting considerations. Most firms only rely on a set of financial and non-financial indicators based on GRI guidelines. More sophisticated systems promoted in the literature - like the SBSC - have not been developed in most firms yet. Despite this observation, based on a documentary analysis, it is worth mentioning that four sustainability managers tell they have developed a SBSC. This confusion can be explained by the fact that the BSC is a highly popular tool (Hubbard, 2009) and that sustainability managers lack technical knowledge about this tool and how it should be constructed.

Secondly, only two sampled firms have developed a complete package of accounting controls to support the implementation of their sustainability strategy. Indeed, only two firms have developed an reward and compensation system (firms F and G) whereas previous researchers like Carroll (1978), Lothe and Myrtheit (2003) or Epstein and Wisner (2005) underline that

these control systems play a key role in sustainability strategy implementation. On the one hand, they provide information to managers/workers about the relative importance of often-competing objectives, helping employees to focus their efforts. On the other hand, they motivate employees to work towards a defined goal in order to achieve the rewards. Bonus or incentive compensation is one management control tool that aligns the interests of those who define the strategy with the interests of those who execute the strategy (Govindarajan and Fisher, 1990; Simons, 1987).

Thirdly, the integration of sustainability control mechanisms into mainstream ones is seen by prominent researchers as the final stage in the evolution of management control to assist strategic thinking within the firm (Kaplan and Cooper, 1998; Schaltegger and Burritt, 2000). However, as underlined by other researchers such as Epstein (1996), Schaltegger and Burritt (2000) or Perdersen and Neergaard (2008), the selection of accounting controls which support the sustainability strategy are generally kept separate from the "package" of management control systems used to manage the organization.

This exploratory research underlines that, in practice, there is limited (technical, organizational or cognitive) integration between sustainability controls and traditional controls. For example, the sustainability department is, in most cases, the unique department responsible for the collection, analysis and reporting of sustainability information. This separation is even more accentuated in firm C where social and environmental issues are managed and controlled by two different departments.

As Pedersen and Neergaard (2008) argue, as these issues are not absorbed in the mainstream management systems used by the majority of these large firms, environmental and social issues are still, in most cases, a peripheral add-on activity which is not integrated in all the core business functions.

Based on these key observations, we can thus state that, as Masanet-Llodra (2006) or Perdersen and Neergaard (2008) observed, there are **incongruities between aspirations/ explicit goals for sustainability strategies and the current state of implementation**. Indeed, officially, all these firms have a sustainability strategy that strongly relates (or even integrates) social, environmental and economic issues. Nevertheless, an exploration of intra-organizational practices reveals that, in most cases, the selection of accounting controls supporting this strategy is very basic/underdeveloped and that social, environmental and economic controls are not integrated. Such incongruities reveal that firms assume to be highly sustainability committed while from facts this commitment is not so highly observed: there is a gap between official declaration and actual organizational behaviour. This observation is consistent with the observation made by Pedersen and Neergaard (2008). Many large firms diffuse statements of sustainability, explicit CSR commitment or overall sustainability policies but few of them are able to prove that they follow their principles. In addition, due to the lack of linkages between societal issues and mainstream management (tools and framework), these issues are likely to remain at the level of empty mission statements and isolated add-on activities.

Based on previous literature, we identify a series of potential reasons for this situation.

1. Sustainability managers are not aware of the importance of management control to support the implementation of a sustainability strategy yet (unconsciousness). Nevertheless, this explanation should be excluded because all interviewees mention

they are conscious of this importance and that the integration of environmental and social management controls into their mainstream management control systems will be their next challenge.

2. As already stated by Carroll (1978), some firms don't really want to implement this strategy within their organization (unwillingness). This explicit sustainability strategy mainly serves as a "window-dressing" (Durden, 2008) to improve and/or maintain the firm's image and reputation.
3. As underlined by Epstein and Roy (2001), Schaltegger and Wagner (2006), Taplin et al. (2006) or the UN Global Compact – Accenture Research (2010), managers in these firms are confronted to difficulties in translating these strategic aspirations into practices (inability). Using the three dimensions identified by Gond et al. (2012), technical, organizational or cognitive barriers to overcome could be distinguished.

   Examples:

- *Technical barriers*: (sustainability) managers may lack knowledge about sustainability accounting control mechanisms and about how to develop them (they don't know how). Distinct information systems or data sources could also exist within the organization (Brown et al, 2005).
- *Organizational barriers*: most firms are traditionally organized in silos while sustainability issues are a transversal matter. As underlined by Norris and O'Dwyer (2004), the dispersed and decentralised authority of a divisional corporate structure is probably well suited for attaining economic goals but not for achieving societal goals. An adequate sustainability strategy deployment requires these issues to be considered by all departments and at all levels of the organization, not only by the sustainability department or top management teams (Mc Williams et al, 2006).
- *Cognitive barriers*: different patterns of thinking, mind-sets and practical viewpoints with regard to sustainability can be observed (Heidmann et al., 2008). This can lead to a lack of understanding of the business rationale for sustainability and to a reluctance of some managers to act in favour of the deployment of such a strategy.

4. With reference to Mintzberg and Walters (1985), we can also imagine that, in some cases, sustainability is rather an *emerging process* that is progressively formalized in a top-down approach. For example, Bieker and Gminder (2001) or Dias-Sardinha et al. (2007) assume that the bottom-up implementation of balanced scorecards within business units can encourage the development of corporate sustainability strategies. As we have chosen to concentrate on the existence (or absence) of formal accounting controls and their support to sustainability strategy deployment (see page 8), this exploratory research does not provide clear insights about this point. It would be relevant to investigate this point further in a future research.

Our study reveals also that the sampled firms rely on **different combinations of accounting controls (**see Table 2 and Appendix 1). Different typical sustainability control patterns should thus be distinguished. For example, firm F has a much more complete set of accounting controls to support its sustainability strategy (formal planning translated at all levels of the firm, specific budgets, sustainability compensation system) than firm A (unclear translation of corporate goals, reward and compensation system based on economic aspects only).

Some potential explanations for the observation of distinct control patterns could be found above. Indeed, we can imagine that, in some firms, the technical, organizational or cognitive

barriers are much more difficult to overcome than in others or that, in some firms, there is an unwillingness to really implement this strategy. The fact that sustainability could rather be an emerging process in some firms could also partly explain these different profiles. Nevertheless, as our explorative research is limited to seven cases, further investigation of these distinct patterns (and potential contingency factors) is essential in future research.

CONCLUSION

While scepticism about the real development of control mechanisms to support the implementation of a sustainability strategy has been detected in the literature (Norris and O'Dwyer, 2004; Gond et al., 2012), this exploratory research shows that multinational corporations have developed a selection of accounting controls. However, some of the controls observed are primary mechanisms, most sampled firms have not developed a complete package of accounting controls and these controls are generally kept separate from the "package" of management control systems used to manage the organization.

Globally, our findings show thus that there are still incongruities between explicit speeches and sustainability strategy deployment and that the translation of these strategic aspirations into practices is still not optimal.

Different potential reasons for this situation have been discussed. Firstly, sustainability managers could not be aware of the importance of management control to support the implementation of a sustainability strategy yet. Secondly, some firms could not really want to implement this strategy within their organization. Thirdly, some firms could be confronted to difficulties in translating these strategic aspirations into practices (inability) due to technical, organizational or cognitive barriers. Finally, sustainability could rather be viewed as an emerging process that is progressively formalized in a top-down approach.

The insights provided by this study have both scientific and managerial relevance.

Based on an original control framework (Malmi and Brown, 2008), this research fills in a gap identified in previous literature. Based on the observation that our knowledge about how firms really design and develop controls to support a sustainability strategy needs to be extended, it explores multinational corporations' accounting control practices.

Besides its scientific interests, the present exploratory study is also driven by a practical need. Until today, several researchers have argued that many organisations are still confronted to difficulties in "operationalizing" sustainability and in translating their strategic aspirations for sustainability into practice in the midst of many other business pressures (Epstein and Roy, 2001; Schaltegger and Wagner, 2006; Taplin et al., 2006). Our exploratory research confirms these observations and proposes interesting insights for practitioners.

The study contains a number of limitations that suggest caution should be exercised in relying on these findings without conducting further research.

Firstly, this study is *exploratory* in nature. It is based on the analysis of seven cases and primary data were collected through interviews with the sustainability managers only. It would be useful to confront these exploratory findings with answers given by sustainability

managers of another sample of large firms as well as with the answers of other members in these organizations (such as members of the accounting or control department).

Secondly, we have chosen to focus this research on the *existence* of *accounting-based* controls to support sustainability strategy making in large firms. This choice implies that this study does not investigate how key actors *use* their control mechanisms to push the strategy into the organization. Furthermore, by concentrating on formal accounting-based management control systems, this study does not consider informal controls or other formal control systems such as cultural or administrative controls (Malmi and Brown, 2008). However, prior research states that formal and informal controls are interrelated and work together, as complements or supplements, to support strategy (Albernethy and Chua, 1996; Tucker et al, 2009).

Thirdly, while it is demonstrated that management controls have a key role in strategy implementation but also in strategy formulation (Simons, 1990; Gond et al., 2012), in this research, as Epstein and Roy (2001), Epstein and Wisner (2005) or Riccaboni and Leone (2010), we have decided to focus our attention on the first aspect of the two-way relationship between strategy and management controls. We analyse if and to which extent large firms have developed accounting-based controls to push their sustainability strategy into their organization.

Despite these limitations, we are nevertheless convinced that this exploratory study brings new insights, which are relevant for scholars and practitioners. A number of directions for future research can be drawn from this research.

On the one hand, it would be interesting to develop additional case-based research in order to improve our knowledge about the role of management controls in sustainability strategy making. For example, it would be judicious to carry out an in-depth (longitudinal) case study exploring how the support of management controls to sustainability strategy implementation evolves over time and how some firms succeed in overcoming technical, organizational and/or cognitive barriers. In addition, a research analysing how formal and informal management controls are developed and interact over time to support a sustainability strategy could be interesting directions for future research. Finally, a case-based research exploring further distinct sustainability control patterns and related contingency variables would bring relevant new scientific insights.

On the other hand, a survey-based research on the role of (formal) controls in sustainability strategy making would add generalizable findings to this body of literature. Indeed, due to the particular nature of the data, there are very few quantitative studies on the association between management control and strategy in the context of sustainability.

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	Motivations	**Reporting**	**Planning**	**Budgets**	**Performance Measurement**	**Reward and Compensation**
A	Market Human Marketing Legal Strong belief	Integrated report Website and specific events Intranet, internal events and emails	Formal long range planning but unclear translation: General goals are set at the top mgt level without no clear instructions about how this "aesthetic" objectives should be translated into action	Societal issues are considered in traditional budget (eg. investment plans)	Follow up of financial and non-financial indicators by the CSR team (CO2 emissions, electricity savings, employee satisfaction, CSR assessment of employees, etc) Sustainability performance measurement is mainly determined by reporting Hybrid systems (like SBSC) not yet developed	Objectives and bonuses are only related to economic aspects
B	Market Human Marketing Legal Strong belief *+ Creation of synergies and sharing of best practices among the Group*	Decoupled report Website and specific events, Intranet, internal events and emails	Formal strategic planning at the group level. Corporate goals are translated at business-unit level and operational level (with possible adaptations in function of the specific contexts)	Budget is allocated for the Group CR strategy implement ation, then reflected at operating company level	Follow up of financial and non-financial indicators by the CSR teams Indicators set is based on a mix of approaches looking externally and internally The CR team at Group level collects the data from the CR managers and relevant departments at Operating Company level Hybrid systems (SBSC) have been developed independently by some operating companies	Objectives and bonuses are only related to economic aspects
C	Market Human Marketing Legal Strong belief	Decoupled report with integration of some info's in the annual report Website and specific events Intranet and internal events	Formal strategic planning at the group level (top mgt). Corporate goals are translated in all business units and at all levels of the	Specific budgets for social and environ issues	Follow up of financial and non-financial indicators by the CSR teams - two separate departments (the CSR department focuses on social issues and the "sustainable development" department focuses on environmental	Objectives and bonuses are only related to economic aspects

			company, in considering specificities		issues)	
D	Market Human Legal Strong belief	Decoupled report with integration of some info's in the annual report Website and specific events Intranet and internal events	Formal strategic planning at the top mgt level	Societal issues are considered in traditional budget (eg. investment plans)	Follow up of financial and non-financial indicators by the sustainability department, which reports directly to top management On-going development of a SBSC	On-going Reward and compensation policy is planned to be based, in the future, on a mix social, environ. and economic dimensions
E	Market Human Legal Strong belief	Decoupled report with integration of some info's in the annual report Website and specific events Intranet and internal events	Vision of top mgt and formal corporate objectives, which are translated at all levels	?	Follow up of financial and non-financial indicators by working group in direct relation with the Communication and the Sustainable Development manager Indicators set is based on a mix of approaches looking externally (expectations of stakeholders such as rating agencies) and internally (performance improvements)	Objectives and bonuses are only related to economic aspects
F	Market Human Marketing Legal Strong belief	Integrated report Website and specific events Intranet	Formal strategic planning at the top mgt level. Corporate goals are translated at all levels of the company	Societal budgeting is part of the overall budgeting process	Follow up of indicators (including GRI indicators) via an "*overall SBSC*" Different functions have different roles and responsibilities	Reward and compensation system is based on a mix social, environ. and economic dimensions (also in the appraisal system for subcontractors)
G	Market Human Marketing Legal Strong belief	*Decoupled* report Website and specific events Intranet	Formal strategic planning at the top mgt level Corporate goals are translated at all levels of the company	Each industrial investment project includes an important HSE dimension	HR and HSE *balance scorecards* by operating units, reported monthly at corporate level.	Reward and compensation policy is based on a mix social, environ. and economic dimensions

Appendix 1: Summary of the findings