

Management Control for Sustainability: The Development of a Fully Integrated Strategy

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Preliminary: Please do not quote or cite without permission.

Abstract

Managers struggle to translate sustainability strategies into actions. This study examines the use of a management control system (MCS) and sustainability control system (SCS) to support the implementation of an integrated sustainability strategy. It is based on in-depth interviews with key finance and sustainability managers in a Swedish global industrial company. We draw upon the levers of control (LOC) concept to analyze the organization's use of MCS and SCS. The interactive components of the firm's SCS are characterized by dialogue between strategic and tactical level managers in a non-invasive environment. Thus, the firm deploys these strategic performance controls in an enabling as opposed to a constraining fashion. Strategic validity controls, however, are only well-developed for a subset of the firm's products and services. These findings suggest that the manner in which an organization deploys interactive controls within its SCS is influenced strongly by the organization's culture and the industry in which it operates. The organization's MCS and SCS exhibit technical integration, but faces challenges with respect to organizational and cognitive integration. Yet, technical integration appears to compensate in part for the lack of integration along the other two dimensions. This study contributes to an emerging body of research that adapts management control frameworks to examine the relationship between strategy and sustainability.

Keywords: Strategy, management control, sustainability, corporate social responsibility, levers of control

1. Introduction

Managers increasingly recognize the potential for corporate sustainability to yield a competitive advantage (Porter and Kramer, 2011). Ninety-three percent of more than 1,000 CEO respondents to the most recent Accenture (2013) corporate sustainability survey regard sustainability as a key to success. Further, KPMG's (2013) most recent study of corporate responsibility reporting practices finds that 83% of the G250 companies state that they have a corporate responsibility strategy.

Despite these findings, there seems to be a disconnect between management views about the efficacy of sustainability as a success strategy and the degree to which CEOs have actually incorporated sustainability into their business plans. Indeed, the Accenture (2013) survey refers to "...business caught in a cycle of 'pilot paralysis' — individual, small-scale projects, programs and business units with an incremental impact on sustainability metrics (p. 11)." Thus, substantial challenges to the adoption of comprehensive, integrated sustainability strategies remain.

Managers struggle to translate sustainability strategies into action, since they perceive that sustainability impacts are difficult to measure and believe that financial and sustainability objectives often conflict with each other (Hart and Milstein, 2003; Epstein et al., 2010; Porter and Kramer, 2011). Responding to social responsibility demands requires strategic renewal and extensive organizational learning and change (Crutzen and Herzog, 2013). Since traditional management control systems (MCS) are oriented towards achieving the economic goals of organizations, they are viewed as "limited...in addressing environmental and social issues as well as their interrelationships with financial issues (Gond et al., 2012, p. 208)". At the same time, organizations have developed control systems that are oriented towards achieving environmental (Henri and Journeault, 2010) and social (Norris and O'Dwyer, 2004; Durden, 2008) objectives. Following Gond et al. (2012), we refer to these as sustainability control systems (SCS). SCS are a potentially important tool for facilitating the renewal, learning, and change processes needed to respond to social responsibility demands. As with MCS, it is important that SCS be designed to support the strategy development and implementation process (Gond et al., 2012; Arjaliès and Mundy, 2013).

Research has only begun to explore the nature and mode of interaction between MCS and SCS (Durden, 2008; Gond et al., 2012; Arjaliès and Mundy, 2013). Gond et al. (2012) indicate that the configuration of an organization's MCS and SCS can enable an organization to effectively manage two potential barriers to full integration of sustainability into its business strategy. The first of these barriers is the risk that managers do not manage the strategic uncertainties related to sustainability. This may occur when SCS are configured and used in a diagnostic as opposed to interactive fashion. In other words, the organization may be managing short-term sustainability goals with information

generated as part of the SCS, but does not perceive and manage strategic uncertainties associated with sustainability. The second barrier is the possible lack of integration between an organization's MCS and its SCS. This integration should occur along three dimensions: (1) technical, (2) organizational, and (3) cognitive. Technical integration includes the alignment of activities and systems designed to support management and sustainability control. Organizational integration occurs when responsibility for financial and sustainability objectives is shared within the organization. For example, this type of integration might occur when accountants become specialists of sustainability reporting and control, or when sustainability managers acquire financial accounting skills. Finally, cognitive integration includes working towards a common perspective regarding the relationship between financial and sustainability objectives.

Therefore, this study attempts to obtain an understanding of how an organization uses its MCS and SCS to integrate sustainability into its operations. It also identifies and examines challenges to integrating the MCS and SCS. The study took place at "MECH," a Swedish multinational industrial organization, during 2013 and 2014. uses its SCS to support the implementation of its current sustainability strategy. The company's stated strategy includes full integration between financial, environmental, employee safety / well-being, and social goals. The study is based on semi-structured interviews with 14 managers from the strategic and tactical levels within the organization.

Using Simons' (1994, 1995) levers of control (LOC) framework, we first describe how the organization uses its SCS to support the implementation of its current sustainability strategy. We then discuss the degree to which the organization's MCS and SCS are or are not integrated and identify and discuss challenges to the full integration of the company's MCS and SCS. This discussion is organized along the technical, organizational, and cognitive dimensions of integration.

From a theoretical perspective, examining these issues is important, since research that examines how MCSs and SCSs support implementation of sustainability strategies is only beginning to emerge (Ballou et al., 2012; Crutzen and Herzig, 2013; Arjaliès and Mundy, 2013; Rodrigue et al., 2013) and there is little research into how SCS develop and evolve (Searcy, 2012). Further, research has only recently begun to adapt management control frameworks to examine the relationship between strategy and sustainability (Crutzen and Herzig, 2013). Specifically, both Arjaliès and Mundy (2013) and Rodrigue et al. (2013) have employed Simons' (1994) LOC as a theoretical framework. Our study adds to this body of work by using the LOC to analyze how an organization that has adopted an integrated sustainability strategy uses its SCS to support that strategy. In addition, research regarding the integrative use of MCS and SCS is just beginning to emerge. While Gond et al. (2012) provide brief descriptions of the configuration of several organizations' MCS and SCS, we are unaware of any research that examines an organization's configuration of these systems in-depth. Therefore, an additional contribution of this study is that it addresses this gap in academic research.

Further, it is of interest for practitioners who struggle to translate sustainability strategies into actions (e.g. in Porter and Kramer, 2011; Accenture, 2013; KPMG, 2013) to learn about the development of an organization's SCS and the challenges associated with its integration with the MCS to implement and support a sustainability strategy that is aligned with the organization's economic objectives (Porter et al., 2011). This study shows how an organization has deployed its MCS and SCS to support its sustainability strategy. It discusses the perceived challenges associated with implementing a fully interactive SCS that manages strategic uncertainties related to sustainability and with full integration of the organization's MCS and SCS.

The remainder of the paper is structured as follows. The next section provides background information about the development of the company's sustainability strategy. The following section describes the role of MCS in executing a sustainability strategy. This is followed by a description of the methods used in the study and the presentation of our results. The final section summarizes the results and discusses the implications of this study.

2. MCS, SCS, and sustainability strategies

2.1 Overview

Corporate sustainability, broadly speaking, "refers to a company's activities...demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders (van Marrewijk and Werre, 2003, p. 107). Managers currently have an awareness of the need to address sustainability; therefore, organizations have been working to develop a growing range of different types of accounting and accountability practices to support organizations' sustainability efforts (Unerman and Chapman, 2014). Indeed, there is a key strand of sustainability accounting and accountability research that engages with business and other organizations to foster making changes to the way they operate in order to achieve more sustainable operations (Unerman and Chapman, 2014). Despite this level of interest, research has only recently begun to examine specifically how organizations use MCS to develop and execute their sustainability strategies (e.g., Riccaboni and Leone, 2010; Gond et al., 2012; Arjaliès and Mundy, 2013; Rodrigue et al., 2013). Indeed, Crutzen and Herzig's (2013) review of research in management control, strategy and sustainability concludes that our current knowledge of how management control is designed and used in order to support sustainability strategy is limited and that research on this topic is still in the developing stage.

Searcy (2012) states that a corporate sustainability performance management system (SPMS) is a key component in the successful execution of an organization's sustainability initiatives. The SPMS should focus on the triple bottom line issues of economic, environmental, and social performance. In reality, however, many organizations' systems for addressing sustainability and

financial issues are still separate (Gond et al., 2012; Searcy, 2012). Recognizing these circumstances, Gond et al. (2012) adopted the term SCS to describe control systems that are oriented towards shaping and executing an organization's sustainability strategy. This usage distinguishes SCS from MCS, which are generally oriented towards the achievement of an organization's financial objectives.

2.2 LOC as a perspective for understanding the role of SCS in supporting a sustainability strategy

Gond et al. (2012) characterize the configuration of control systems for the support of sustainability initiatives along three dimensions: (1) the degree to which the organization uses its MCS diagnostically versus interactively, (2) the degree to which the organization uses its SCS diagnostically versus interactively, and (3) the degree to which the MCS and SCS are integrated. They argue that a company's configuration of MCS and SCS can significantly influence a company's "triple bottom line" (TBL) performance, or the degree to which it achieves financial, environmental, and social objectives in an integrated fashion. Gond et al.'s (2012) typology incorporates the diagnostic and interactive control systems components of Simons' (1994) LOC. We argue, however, that it is not sufficient to focus exclusively on diagnostic and interactive controls when evaluating the configuration of a SCS. For example, Arjaliès and Mundy (2013) document how all four elements of the LOC are important in managing organizations' CSR strategy. Further, there are certain interdependencies among the four LOC, which indicate that when evaluating the configuration of a SCS, it is not sufficient to focus exclusively on diagnostic and interactive controls. Rather, it is important to examine the degree to which all four LOC systems are present and the degree to which the systems interact in order to make a conclusion whether a SCS system is primarily diagnostic or interactive.

Simons (1994) states that MCS are the "formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities (p. 170)." While Simons' (1994) view is somewhat narrower than other views that include informal controls such as organizational culture (Norris and O'Dwyer, 2004; Durden, 2008; Malmi and Brown, 2008; Curtis et al., 2015), it provides a parsimonious framework for analyzing the implementation of sustainability-related controls in a given organization. The LOC framework describes four key processes or "systems": beliefs, boundary, diagnostic control, and interactive control. *Belief systems* define, communicate, and reinforce the basic values and direction of the organization. They are implemented through formal documents such as mission statements and statements of purpose. *Boundary systems* establish limits to employees' search for strategic opportunities. They are commonly expressed in negative or minimum terms and are communicated through documents such as codes of conduct and operating directives. Risk avoidance is an important component of the design and implementation of boundary systems. *Diagnostic control systems* compare performance against

targets. Development and analysis of key performance indicators (KPIs) is the core element of these systems. *Interactive control systems* include two-way dialogue between top management and subordinates. These systems make top management aware of local knowledge about strategic uncertainties that can be used to modify or develop strategic plans. In addition, both Arjaliès and Mundy (2013) and Rodrigue et al. (2013) suggest that external stakeholder views might be incorporated into interactive control systems when examining these in the context of managing organizations' sustainability strategy.

As stated above, it is important to consider interdependencies among the LOC when analyzing a SCS. The management accounting literature indicates three such interdependencies. The first is the idea that the beliefs system positively influences the other three systems. Simons (1995) indicates that the belief system surrounds the use of diagnostic and interactive controls, and Widener (2007) provides empirical support for a positive relationship between the beliefs system and the other three systems.

The second is bi-directional relationships between beliefs and interactive systems on the one hand and boundary and diagnostic systems on the other (Simons, 1995; Gond et al., 2012). Simons (1995) labels beliefs and interactive systems as "positive" controls that manage performance and boundary and diagnostic systems as "negative" controls that manage compliance with organizational guidelines. More recently, Tessier and Otley (2012) have suggested the terms "enabling" and "constraining" in lieu of positive and negative. The Tessier and Otley (2012) labels allow for some ambiguity in the classification of individual control procedures. For example, while a corporate code of conduct is usually thought of as a constraining boundary control, it might also serve as a tool to foster management best practices, therefore serving instead as an enabling control.

Finally, there is a strong relationship between diagnostic and interactive controls. Simons (1994, p. 171) states that "Any diagnostic control system can be made interactive by continuing and frequent top management attention and interest." In addition, Chenhall and Morris (1995) argue that structure is necessary for interactive type controls to be effective. It is likely that a well-developed diagnostic control system will provide this structure. Consistent with this argument, Widener (2007) finds that the interactive system is inter-dependent with the diagnostic use of performance measures.

These interdependencies indicate that when evaluating the configuration of a SCS, it is not sufficient to focus exclusively on diagnostic and interactive controls. Rather, it is important to examine the degree to which all four LOC systems are present and the degree to which the systems interact, in order to make conclusions regarding the degree to which a system is operating in a diagnostic versus interactive fashion.

2.3 Integration of MCS and SCS

Gond et al. (2012) define three dimensions of integration between MCS and SCS. The first is *technical integration*. A key part of this dimension is the degree to which systems for producing and reporting sustainability data are integrated with those used for financial data. Thus, an information system that simultaneously gathers, processes, and reports financial, environmental, and social performance data would possess a high degree of technical integration.

The second dimension is *organizational integration*. Gond et al. (2012, p. 209) state that:

Rather than seeing regular and sustainability management control just as something organizations have...integrating sustainability into management control and strategy should...be approached as something people do.

Thus, in an organization with a high degree of organizational integration, managing a sustainability dimension should not be done by an isolated group of specialists. Instead, management accountants might become knowledgeable about sustainability reporting and control. Alternately, sustainability specialists might become knowledgeable about management accounting and financial reporting. This type of convergence is similar to the integration of financial and managerial accounting functions described by Taipaleenmäki and Ikäheimo (2013).

The third dimension is *cognitive integration*. This refers to a shared understanding between managers working on mainstream financial strategy and control and those working on sustainability issues. One important aspect of cognitive integration is whether managers throughout the organization view sustainability with the same cognitive frame. For example, Hahn et al. (2014) describe a “business case” frame, which views sustainability and financial goals as being aligned, and contrast this with a “paradoxical” frame, where managers accept that there are tensions between economic, environmental, and social concerns and attempt to accommodate these.

3. Research Site

This study was conducted at MECH, an international manufacturing company that operates in more than 100 countries. MECH was the subject of a previous study that described the formulation and implementation of the company’s sustainability strategy from 2004 through 2013 (Egels-Zandén and Rosén, 2015). MECH is recognized for the quality of its high-precision mechanical products; it is a market leader in product performance and market share; and it is generally profitable. MECH

...is a well-recognized international industrial company represented in more than 100 countries. It controls the design, development, manufacturing, sales, distribution, and after-market service of various components, subassemblies, and subsystems used in a variety of applications in many industrial sectors. One of the key characteristics of MECH’s core high-tech mechanical product is its ability to reduce energy consumption in the industrial applications in which it is used. MECH also has a long history of addressing sustainability, and has consistently been ranked as a sustainability leader in the Dow Jones Sustainability Index and the FTSE4Good Index. (Egels-Zandén and Rosén, 2015, p. 3)

In addition, the company has externally reported sustainability measures according to the Global Reporting Initiatives (GRI) guidelines for several years.

MECH has a well-developed, interactive MCS. The company has an informal policy known as “go and see,” where top-level managers are strongly encouraged to visit operating facilities and engage in dialogue with middle management. This is consistent with four of the five characteristics of interactive controls identified by Bisbe et al. (2007), namely: (1) an intensive use by top management, (2) an intensive use by operating managers, (3) a pervasiveness of face-to-face challenges and debates, and (4) a non-invasive, facilitating, and inspirational involvement. The company also closely follows trends that influence the demand for its products. This is consistent with Bisbe et al.’s fifth characteristic of interactive control systems, which is a focus on strategic uncertainties. Thus, MECH’s interactive MCS meets Gond et al.’s (2012) first condition for an overall control system configuration to support an integrated sustainability strategy.

As reported by Egels-Zandén and Rosén (2015), MECH has a long history of addressing various challenges that nowadays are framed as “sustainability.” For example, the company has provided healthcare centers, financial support services and vocational training for employees since its foundation. MECH issued its first environmental policy in the end of the 1980’s. During the 1990’s the company first reported environmental data in its external annual report. At the same time, it obtained ISO14001 certification and launched several initiatives to reduce the environmental impact from the company’s operations. In the early 2000’s, MECH issued its first code of conduct.

MECH started the formulation of its “Positive Impact” strategy in 2004. The CEO initiated the development of this strategy, after having attended a meeting between business leaders and academics on global warming. The new strategy was launched in 2005. The basic thinking behind Positive Impact was to reduce the negative impact from MECH’s manufacturing operations, while at the same time increasing positive impact from new customer innovations, so that the net result would be positive overall. While the original intention was to take a broad sustainability perspective, including economic, environmental and social issues, Positive Impact soon came to focus on economic and environmental issues. From 2005 and onwards, the new strategy was supposed to be implemented, but the company struggled in providing concrete examples and evidence of the business case for it. In the autumn of 2006, a new sustainability staff function was formed in the company. It started to promote sustainability initiatives from the top downwards, while at the same time facilitating the emergence of bottom-up sustainability initiatives in areas such as manufacturing and product development. Clear targets were defined on the reduction of negative impacts from MECH’s own operations, such as the reduction of greenhouse gas emissions from the factories, and sustainability control systems were put in place to measure results and report on progress.

In addition to Positive Impact, which focused on integrating environmental issues into business strategy, MECH towards the end of 2006 also launched an overall sustainability concept called “MECH Concerns”. It consists of four elements: business, environment, employees and society.¹ Around the same time, MECH’s management explicitly added sustainability to the company’s list of strategic drivers. In the beginning of 2007, MECH launched the first “E-line” products as clear examples of the Positive Impact strategy. However, there were different opinions regarding the real “business case” of these “green” products. Many middle managers believed this to be a technological push in response to top management’s new emphasis on sustainability as a strategic driver rather than a market pull effort driven by customer demand. Signals from the top were clear, however, that this was an important business strategy for the company and that further similar product development projects were to occur. The development of additional E-line products was soon initiated and pushed from the top downwards. These were launched to the market during 2008; however, the struggle to identify clear customer demand for these products persisted.

From 2010 to 2013, *MECH* scaled up investments in the Positive Impact strategy and in 2013, “the work moved beyond individual products into work on an environmental portfolio of products and services” (Egels-Zandén and Rosén, 2015, p. 6). In parallel to the crystallization of Positive Impact, the work to adopt a unified view of sustainability through communicating the MECH Concerns to company employees was proceeding. The company’s CEO had determined that sustainability was important to the company’s future business success. Economic, environmental and social responsibility was to become fully integrated with the company’s operations. MECH’s fully integrated sustainability strategy was launched in 2013. This study examines data gathered over a one-and-a half-year period after the company’s adoption of this strategy.

4. Methodology

Unlike the earlier study, which adopted a longitudinal approach, the present study gathers data from a fairly short period (June 2013 through November 2014). This was done in order to obtain a picture of the organization’s control systems relevant to sustainability at a relatively fixed point in time, after the adoption of an integrated sustainability strategy. A case study method was used because we wanted to obtain an in-depth understanding of key actors’ perceptions about the configuration of sustainability-related controls across various dimensions. This approach is similar to that applied by Mundy (2010), who examined the configuration of controls across multiple issues or “cases” within the same organization. The study was supported by the senior manager at the Department of Corporate Sustainability, and is based on 26 interviews with 14 different managers at

¹ The term “concern” and the labels for the four dimensions have been modified from their original wording in order to preserve the company’s anonymity.

MECH headquarters. The researchers discussed with the senior sustainability manager who would be suitable to interview. The interviewees included the organization's CEO and other managers who worked at either the strategic (i.e., upper management) or tactical (i.e., middle management) level within the organization. By interviewing a range of participants, we avoided the concern raised by Crutzen and Herzig (2013) that a majority of previous studies of the relationship between control systems features and sustainability strategy effectiveness are based on the responses of one organization member, typically at or near the top management level. Interviewee titles and interview details are presented in the Appendix.

As shown in the Appendix, interviews lasted from 25 to 96 minutes each, with an average of 60 minutes per interview. In 23 out of 26 interviews, two interviewers were present. Eighteen of the interviews were recorded and fully transcribed, while in the remaining eight, notes were taken by both interviewers. The content of the interviews was summarized immediately and discussed in order to make sure that things were understood properly. Interviews that had been conducted in Swedish were translated to English to ensure the full participation of all authors in data analysis. Two of the authors reviewed the transcript of each interview and coded the content for presence of: (1) any of the LOC with respect to MECH's SCS and (2) discussion of any of the three dimensions of integration between MECH's MCS and SCS. The authors discussed each other's codings and resolved any discrepancies.

In addition to interviews, we reviewed MECH's annual reports, its Code of Conduct and sustainability policies, and summaries of internal presentations that members of management had made regarding sustainability issues. In April 2015, we conducted a follow-up meeting with a subset of interviewees to review our results. We obtained feedback during that meeting regarding the accuracy of the information reported in the paper.

5. Findings

The presentation of findings is organized into two sections. The first section discusses the configuration of MECH's SCS along the lines of Simons' (1994) LOC. It ends by assessing to what extent the SCS is interactive versus diagnostic. The second section discusses the degree to which the MCS and SCS are integrated along technical, organizational, and cognitive dimensions, as well as the challenges to integration of the organization's MCS and SCS.

5.1 SCS Configuration

Table 1 provides a brief definition of each of Simons' (1994) LOC and briefly summarizes its implementation within MECH's SCS.

Table 1

Levers of control and their application within MECH's SCS.

	Belief System	Boundary Systems	Diagnostic Control Systems	Interactive Control Systems
Definition (adapted from Simons, 1994 and Arjalies and Mundy, 2013)	Explicit set of organizational statements that communicate the organization's values and provide a coherent strategic agenda	Formally stated limits and rules that must be respected	Comparing performance against targets in order to correct deviations from standards of performance	Processes that are used to manage strategic uncertainties, includes frequent communication between management and subordinates
Implementation in MECH's SCS	Sustainability is a strategic driver for MECH Approach to sustainability communicated to employees and other stakeholders (such as investors) through four "concern" dimensions	Within the organization: MECH Code of Conduct as an enabling control For suppliers: Supplier Code of Conduct, supplier certification requirements, risk-based supplier audits as a constraining control	Development of integrated systems for reporting financial, environmental, and EHS data Periodic review of key performance indicators produced by these systems	Frequent dialogue between top management and subordinates regarding sustainability issues Subordinates starting to initiate dialogue Data for environmental products portfolio used to manage strategic uncertainty

5.1.1 Sustainability belief systems

Sustainability is a strategic driver for MECH's operations. MECH's management has a strong commitment to integrating sustainability into all aspects of its operations. As one respondent states,

... the approach to achieving a more sustainable business and its [concern] has been to first of all, define what we mean by sustainability in a fairly clear and pragmatic way...the reality is that we have been doing this in parallel, but then to just figure out how we can look at all of our different activities and processes and operations and integrate those issues into the way we do things...You talked about integration at the beginning. I think if you try and summarize a strategy...it is that we currently have a sustainability strategy, but our objective is to have a sustainable strategy, alright, period. And the sustainability strategy that we have as a group is about getting to that phase of having a totally seamless integration with the overall strategy in the business. (Respondent 4)

MECH initially experienced difficulty communicating the concept of sustainability to employees because of its complexity. Therefore the concept "MECH Concerns" was developed.

One of the reasons we changed the word from sustainability over to MECH Concerns, it was not just about communication, which I think is an important element of that, because sustainability is not an easy word for everybody, but also because many definitions of sustainability, honestly much of the emphasis on sustainability from [investment] funds is on environmental issues, rather than on the broader issues. (Respondent 1)

There are four dimensions of MECH concerns: *business, environment, employee, and society*. Business concern relates to traditional financial objectives, while the other three concerns inform internal and external stakeholders regarding the organization's sustainability performance. Under the MECH concern framework, the company strives towards a fully integrated approach to addressing the challenges and opportunities presented by sustainability. *Business concern* is about

dedicated customer focus and on delivering a strong, sustainable, financial performance and the right return for shareholders, while following high standards of ethical behavior. *Environmental concern* is MECH's responsibility to continually strive to reduce the negative impact on the environment from its own operations and those of its suppliers. *Employee concern* assures a safe working environment, and promotes the health, education, and well-being of employees. *Society concern* defines MECH's activities which make positive contributions to the communities in which the company operates.

The employee concern dimension can be further divided into two areas, which are separately managed within the organization.

We can say that we have two dimensions. The first one is health, safety, accidents, et cetera. The second part of employee concern is that we actually make sure that our employee develops well, that they have an inspiring environment, that they have the opportunity to develop their competence, and grow as people. (Respondent 3)

Throughout the rest of the paper, we refer to the first sub-area under employee concern as "health and safety." We refer to the second sub-area as "employee well-being."

Management clearly believes that sustainability concerns (i.e., environmental, employee, and society) need to be integrated with the business concern:

To me, I go back to the issue of integrating it (sustainability) into our business. If companies keep it as a separate thing because there is legislation from governments or from NGOs, or from investors, to report things separately, if that is the requirement, that is something that will be cut in difficult times. If you don't integrate it into your business, if you don't see it as part of your competitive advantage in your business...then it's something that will easily be cut. (Respondent 1)

The company communicates its sustainability priorities to employees through its intranet and encourages frequent communication regarding sustainability activities:

...what we are doing more and more is that we, on the intranet, there we show different examples of what kind of [community concern] activities people have been doing. (Respondent 6)

Senior management has been especially involved in these internal communications:

I think it is somewhat important, that [the company's CEO] has developed his own page on our intranet, where all information from him [about employee well-being issues] is collected on one page and there is also a function where you can ask him questions...He answers at a frantic speed if he is available...But, there is a structure to make sure everyone gets the same opportunity (Respondent 6)

In addition, management realizes the difficulties associated with communicating MECH's values with respect to sustainability in a large, multi-national organization. The company operates in countries with varying cultural norms and regulatory policies with respect to sustainability. Management is strongly committed to ensuring that the company's values with respect to sustainability are communicated and understood throughout the organization.

I mean of course it's a challenge to run a global company with all the different cultural perspectives, but I think we are rather good at it. This is going to sound terribly arrogant, but I mean that's kind of MECH, not

just in relation to sustainability but MECH has over the years been able to transmit the culture...across different cultural boundaries. (Respondent 4)

Similar policies pertain to companies that are newly acquired by MECH.

It's always hard to integrate a new company in all the different aspects, but with sustainability it's non-negotiable...So, having a very clear commitment from the MECH group management...when we acquire companies helps really to make it very clear from day one. This is not an optional thing; it's just basically how we do it. (Respondent 4)

5.1.2 Sustainability boundary systems

MECH's principal boundary control system for employee sustainability activities is its Code of Conduct (henceforth, the "Code"). The Code, for the most part, frames the firm's sustainability strategy in positive terms, as opposed to listing risks to be avoided. For example, the Code guidance on the environmental concern states that the organization has a firm commitment to ecologically sustainable development, strives to understand and improve the environmental performance of its operations, and will develop and provide innovative solutions that help improve environmental performance. The Code states that MECH's responsibility regarding employee concerns involves respecting employees and their rights, valuing their contributions, promoting employee well-being, and facilitating continual competence and skill development. Regarding community concern, the Code states that MECH goes beyond its basic obligations in order to realize lasting positive impacts for the communities in which it operates. Indeed, the only negative, or risk management language that appears in the Code relates to ethical behavior in achieving MECH's business concern objectives and to certain aspects of people concern, such as avoidance of discrimination and harassment, and compliance with child labor laws and minimum wage standards.

This approach contrasts to the risk mitigation approach to sustainability issues followed by the majority of Arjaliès and Mundy's (2013) respondent firms. In some cases, CSR managers at these firms chose to frame CSR concerns in terms of risk out of a perception that this approach would be more likely to attract a positive response from senior managers. Thus, MECH's positive framing of sustainability issues in its Code of Conduct may be largely due to the fact that senior management at this organization already places a high priority on sustainability and has communicated that priority through its beliefs system.

The organization recognizes that employees in other cultures may not fully understand MECH's conduct principles, despite the existence of the Code, and of numerous policies and guidelines based on the Code. Therefore, they have taken steps to ensure that employees worldwide understand and comply with the Code.

But we are trying to convey our Swedish values; our "code of conduct" is built on a western, Swedish concept. And the further away we come from the Swedish culture, the more we have to work with the people to make them adapt to it. For some it is different from what they are used to. One thing for

example, we think it is very important that you do not hire anyone in your family, but in other cultures, it is ethical to take care of your family. (Respondent 9)

MECH also actively manages environmental and employee concern risks with respect to its suppliers. In order to do so, MECH has developed a specific code of conduct for its suppliers.

Most businesses have a code of conduct for their own operations and then we developed a version of that for suppliers which is focusing more on the key issues for suppliers, somewhat stripped down. So we call it 'responsible sourcing,' but it's basically about making sure that the suppliers understand and live up to the expectations that we set out in that document...which is social, environmental and business behavior, ethics and so on. (Respondent 4)

All suppliers must agree to abide with this code of conduct. In addition, major suppliers are required to have ISO 14001 certification, while major suppliers that are energy-intensive also must have ISO 50001. New suppliers not only need to agree with MECH's supplier Code of Conduct, but also must provide confirmation that they meet the Code requirements. In addition to these provisions, MECH performs risk-based compliance audits on its suppliers. MECH's supplier risk management program has evolved from a function that was partially overseen by the sustainability department to one that is now fully integrated with purchasing.

It started off as a project basically run between purchasing and my department, corporate sustainability, and then gradually evolved into a department, not within corporate sustainability but within the purchasing function. That department has been growing, and the activities of that department are driven and governed by the purchasing organization. (Respondent 4)

To summarize, MECH's sustainability boundary system takes an enabling approach regarding the organization's members (Adler and Borys, 1998; Adler and Chen, 2011; Tessier and Otley 2012) by framing the firm's sustainability strategy in positive terms, rather than as risks to be avoided. On the other hand, the boundary system takes a constraining approach with the company's suppliers through an extensive supply risk management program.

5.1.3 Sustainability diagnostic control systems

The organization's head of sustainability reviews quantitative environmental, health and safety (EHS) data from the business unit level each month. Each business unit performs monthly review of qualitative information about how well the unit is integrating EHS in their production, and this report is directed to the head of sustainability:

For example, measures, yes, I have different colors and am judging the maturity level I would say. My business unit does a maturity judgment on every factory and how well they integrate EHS in their production, that it is not a separate function that is side by side, ... and that report is very qualitative. ... Yes, they use a very productive program and then it is first like this if you get the questions: - How does your proactive safety work look? Then they should be able to answer those questions in different parts: - This is how the program looks; this is how we measure the program. We demand that all factory managers are able to answer that question. (Respondent 14)

The Board of Directors receives a Safety and Health report every quarter, and reviews this information in its meetings. In addition, senior managers receive a detailed energy and CO₂ emission

report covering the company's two largest divisions. The reports also track supplier ISO 50001 certification (i.e., energy management system) and a number of internal energy measures. Senior management reviews progress towards the company's energy use supplier certification goals on a quarterly basis. In addition to these reporting and review activities, managers are also subject to three different types of audits related to EHS activity:

...every division has their internal audits where they cover their entire year, and we are a bunch of people working in the center of the group. We use a special function called Group Policy Auditing, an organizational tool we use to visit and audit every facility, at least each alternate year. I am one of those who do the visits, and totally, we are around ten people doing it. ... Then we also have, of course, a third party doing the audit (for external certification purposes). We are doing that every third year. So they are visiting around 30-40 facilities a year. (Respondent 8)

While the diagnostic feedback process for the environmental and employee health and safety concerns is fairly structured, the process for giving feedback and following up on reported results is much less formalized for employee well-being.

You could [follow up on the employee well-being survey results]...because if you want to know how satisfied and engaged your employees are, this is a way to understand how your employees feel. I think that is also a way to understand the employee [concern] part. Some units have this, an indicator to follow up, but we don't make it mandatory. I think that at [MECH] we don't make anything mandatory, unless it's really absolutely mandatory. So the units can choose if they want to use that indicator [employee well-being] or not and the follow up. (Respondent 7)

5.1.4 Sustainability interactive systems

MECH management stresses the importance of dialogue and frequent interaction with subordinates with respect to sustainability issues. The "go and see" procedure that is an integral part of the company's MCS is also widely applied in its SCS.

When I visit the operations, I don't just look at the financials. I want to look at the accident rate. I want to look at how we are serving our customers. I want to see what we are doing for our community area, we have that valuable whenever it's possible. And it's not all that easy to get an answer for it. Whatever possible, I say, let's go and see your hospital here - or looking after how the children are affected by AIDS in South Africa, let's go and have a look at them and that's an important message. (Respondent 1)

Go and see means that, in average, about 1 hour per week, managers go out to the plants and check and then [if there are problems] you go and see if an explanation is found in other plants, which they call "learning". (Respondent 14)

In response to management's initiatives, line managers are starting to initiate dialogue regarding sustainability issues.

In an operation review meeting, three years ago, nobody talked about environmental issues, it wasn't really discussed. Unless it was a major accident or something like that, it wasn't really a major issue of discussion as it is now. They talk about, where are we with the revenues of the environmental portfolio and how that is developing. They talk about the accident rates, they talk, different issues I would describe as under the social, environmental umbrella. But I think there's still more to do over there. (Respondent 4)

Finally, the tone chosen internally to develop sustainability overall is the one of "dialogues and discussions" rather than using "policy documents".

From Headquarters, we need to say this is what we would like to do. And then, it's a dialogue about how it should be done, what it means in the concrete work in different functions, in different areas around the world. And it is our colleagues who have to say: okay, for me, it means that, I'll do this and that. We want to provide new perspectives, but then we cannot say exactly what everyone should do. That would be wrong. The ideas must come from us, but it will best be achieved in workshops, discussions, dialogues and an open climate that allows that things are questioned and discussed rather than to come up with policy documents that say: this is how it works. (Respondent 14)

Overall, four of the five characteristics of interactive controls identified by Bisbe et al. (2007) appear to be present across all sustainability dimensions. These are: (1) an intensive use by top management, (2) an intensive use by operating managers, (3) a pervasiveness of face-to-face challenges and debates, and (4) a non-invasive, facilitating, and inspirational involvement. Tessier and Otley (2012) note that the first three of these characteristics address the intensity of communication, and retain the "interactive" label to refer to these. They characterize non-invasive involvement as an enabling control, which is consistent with the way that MECH deploys its boundary controls in the sustainability area.

Bisbe et al's (2007) fifth interactive control characteristic, a focus on strategic uncertainties, is generally not present across sustainability dimensions. The one exception is MECH's e-line product portfolio, where management closely monitors the factors that drive the demand for these products.

One of the challenges we have with the E-line portfolio...is, they [the sales force] struggle to say, if I come up with savings of .2 percent or .5 percent energy, they [the customer] just won't pay for that. So therefore, part of our task is to try to help them [the sales force] sell the value of energy-saving, and then understand the value of that for their customer. To do that, we've got to go to the end customer. (Respondent 1)

Tessier and Otley (2012) refer to a focus on strategic uncertainties as a strategic validity control. Further, Curtis et al. (2015) argue that a focus on strategic uncertainties is the only theory-defined element of Bisbe et al's (2007) interactive control system characteristics. They also suggest that while the other elements are practice-informed, these elements may or may not focus organizational attention on strategic uncertainties. Thus, while MECH's SCS exhibits a majority of the interactive control characteristics identified by Bisbe et al. (2007), the e-line product portfolio is the only area where there appear to be well-developed strategic validity controls.

5.2 Integration of the Organization's SCS and MCS

Table 2 summarizes where integration of MECH's SCS and MCS has begun to occur on the technical, organizational, and cognitive dimensions. It also summarizes challenges to integration along each of these dimensions.

Table 2

Progress Towards and Challenges to Integration of the Organization’s SCS and MCS.

	Technical	Organizational	Cognitive
Progress towards integration	Integrated CPM system which produces both business and sustainability concern indicators	Potential for financial personnel to eventually manage both financial and sustainability diagnostic control systems	Strategic level management promotes a business case frame
Challenges to integration	<p>Sustainability indicators viewed as less well-developed than financial indicators</p> <p>Difficulties with mapping “soft” sustainability indicators onto profitability</p> <p>Certain sustainability indicators are not reported as frequently as financial performance indicators</p>	<p>Evaluation done in silos:</p> <ul style="list-style-type: none"> – Financial separate from sustainability – Various dimensions of sustainability evaluated separately <p>Knowledge about sustainability in the heads of experts</p>	<p>Need for integration of paradoxical-case to enhance creativity and innovative responses</p> <p>Short-term financial vs. longer-term sustainability perspective</p> <p>Incentives not linked to sustainability performance</p> <p>Cultural conflict between sustainability as the “right thing to do” and a risk to be managed</p>

5.2.1 Technical Integration

MECH has developed an integrated CPM (Company Performance Management) system. This system produces monthly reports that, since the middle of 2014, include both business and sustainability concern indicators.

I absolutely think so - it is what we are doing! I have not mentioned that all this sustainability information that is in our annual report that is something we have been collecting before to, besides our financial system - this CPM [Company Performance Management System]. But, we are actually trying to include this into the CPM, because we said that it is better to use the same system because then we have one source for the information. Then we can make sure the quality is right, for example, we actually saw that in our financial reports, I cannot really remember what part, I wonder if it was scrap loss. We had that in one of our financial reports and we realized that sustainability took in that report too, with somewhat different definition then of course. We did that manually and so we said that we had to change that, it is even the same information we gather from two different parts. So this is what we are trying to do right now, make sure everything gets connected into the same system, with a purpose of getting the controllers more locally involved in the financial parts. But also make sure the source of information is good enough. We are doing this right now. I think we are changing history at this point. (Respondent 2)

MECH’s portfolio of environmental products and services continues to be an important company initiative, even after the adoption of an integrated sustainability strategy. There is a high degree of integration between the MCS and SCS for this portfolio.

We measure how much money we actually spend on developing products that we can add into our environmental portfolio, which are our environment friendly products for the future, we also measure how this portfolio is developing in sales value, we have one objective that says that we shall have X billion, we

are right now around Y billions, and we want to reach Z billion in 2016, how we now are going to do that, but that is another issue. (Respondent 6)

Calculations, that they are doing calculations on a special product type (e-line Alpha), what environmental effect it has. And also, the sales and such things, that is [the impact] on the business areas (Respondent 12)

Comments from the feedback meeting conducted after the initial round of interviews confirm that the company continues to make progress on technical integration of its MCS and SCS across the rest of its operations.

It [the company's new control performance management system] is all up and running, so we are using financial data to create KPIs within the environmental, health, and safety area, so we are combining data from financial data and reporting in the safety, to get different KPIs and so on. So it is fully up and running, you know... Yes, it [the data from the sustainability system] is fully moving [to the control performance management system]. But then we are using the data that comes from the controlling community, financial data, like our worked hours or value added that we use to combine with the information that is coming in from the sustainability area, to combine this information in order to create KPIs that we follow. Before that, we had a double reporting. (Respondent 6)

While MECH is now reporting financial and sustainability KPIs through the same internal system, there are remaining technical challenges to integrating the company's MCS and SCS. Managers express concern that the financial metrics used to assess business concern performance at MECH are much better-developed than those used in the sustainability concern areas.

I get a little jealous sometimes of the finance department that measures and reports on those things...they have lived there so long, they've been around for so long and they are talking about yield, return on capital employed, return on capital, marginal profit and such things. There are so clear definitions, it has been around for so long and everyone knows what it means, type. And we sit and we still try to find, especially within the social area, really good KPIs. If there are damn good KPIs to work with, it is more likely that you can create relevant KPI's at business unit level, factory level, or office level or workgroup level or whatever. That we want to achieve! I think it has been easier, or I should not say that it has been easier, but the financial goals have been with us for a long time and have been more constant over time, even though you change expectations and you raise the bar so there have, nevertheless, been the same definitions over a long time. And this of course has to do with communication, ..., unless it's something that is communicated and talked about in the same way during a long time, it creates problems. And if you do not set goals, you might be afraid that it will not be relevant. (Respondent 11)

Further, while there are well-developed procedures for recognizing financial revenues and the associated costs, the methods for measuring the costs and benefits for sustainability initiatives are only starting to develop.

Beyond that there are also many systems, for example heating processes; there we have big ovens that are running all the time. It really does not matter how many components that go through it, sure it is somewhat more material that has to be heated up, but the main thing is to get them heated and keep that heat, and that is not really related to value-added. On a corporation level this is the only variable, that we have seen this far, just because we produce so many different things, but if you start looking at more details, then it is quite meaningless. Then it is better to look at a specific process and look at what it contains. If you for example look at heating in a building, the size and amount of days will make up of that. If you look at lighting, then it is rather the hours people spend there, how much energy do they consume per hour, etc. That is a challenge because it easily,, when we have set up a goal, then that demands knowledge for it to give something back, and for that to be helpful and how to make sure we know how to follow-up. (Respondent 2)

The company's diverse product lines also pose a challenge to measuring and following up sustainability investment payback.

In our case, when we look at corporation level that [measuring payback] is unreasonable because we manufacture [different products]. That variation makes it unreasonable and that is why we have seen this value-added, just because we freeze all other parameters and that is usually made over a three-year basis. You recalculate historical data into the new standard cost, so it is recalculated for the prior year, two year back plus this year, so everyone know that this is the level we can compare to ... Between factories, you cannot brag about your value-added, because it depends on what you manufacture. We can however brag about that we reduced costs 5% from the previous year, there you compare with yourself and ... that is not relevant... the absolute number does not tell you anything if you compare between factories. (Respondent 12)

The technical challenges of integrating the MCS and SCS are especially pronounced for concern areas where there are only “soft” measures of sustainability performance. For example, many MECH managers believe that there is an association between employee satisfaction and profitability, but it has been difficult to quantify the implications of employee well-being for the business concern dimension. Similarly, the relationship between social concern initiatives and business performance is not clear.

If you drive employee engagement and motivation...developing the right talent and the right people, profitability will come...If you measure the factories, what drives employees so that they want to stay until eight o' clock at night? What makes them inspired? What makes them want to go the extra mile for MEC]?...It's a very radical thinking to present to the management team...You can't tell them that let's stop measuring profitability, we only measure employee engagement—this is not going to happen. Can we actually measure the employee engagement? Because if you drive this, I think profitability will improve as well. (Respondent 7)

So there are both financial and non-financial objectives, maybe above all environmental concerns if I should be honest, not that much around the other ones, well yes business [concerns] then of course but not the other ones, not employee concern or community concerns, we don't have objectives in the same way there as I can see it. (Respondent 6)

In particular, the boundary between social concern and public relations initiatives is at times difficult to discern.

The sports event sponsored by MECH is...partly social concern and it's partly communication activity or via sponsorship activity...you can question if this is really a social concern activity or basically more of a sponsorship of MECH branding...For the long term, I hope to see MECH social concern taking the next step ...not just on the sports event, but rather where we can drive, for example, youth employment in countries where we set up educational training, as in Africa. (Respondent 7)

A final challenge to technical integration between the MCS and SCS is that while MECH produces monthly reports on financial, environmental, and employee health and safety key performance indicators (KPIs), information on other measures is available less frequently. For example, the company's comprehensive survey of employee well-being measures occurs once every eighteen months.

Exactly, so I think that, when we are trying to push this into one way of reporting then some of the things that might be very interesting to follow does not fall into the monthly reporting very well and then instead you know, I think we have some kind, what should I call it, mismatch here. Because these questions are

more long-term than the financial ones and so on. So perhaps it is a mistake to do it, actually, so I think we have a conflict there, actually, but I believe and we will see when we try to do this in some way.
(Respondent 6)

...but if we could go into the softer side, into motivation, engagement, well-being and so on, that is not as easy applied into a monthly basis because it would take more time. I think, if you would involve more of like emotions, the feeling, it is hard, it becomes a little bit like, does it really give any value if we would say monthly how you feel working at this place, I mean for me you can go up the roof and next month down the roof, I mean that is a thing that is much harder to control, in such terms like emotions, so I think that the limitation could be a little bit harder to define, but if we try to have a much clearer scope as the accidents, then that is not a problem to apply in a monthly or shorter cycle. (Respondent 7)

Gond et al. (2012) mention a common calculability infrastructure to gather information for both MCS and SCS as an important aspect of technical integration. The fact that MECH now reports financial and sustainability KPIs through the same control performance measurement system is a significant step towards achieving a common calculability infrastructure. Yet, multiple challenges to technical integration remain. These include the facts that the methodology for calculating financial KPIs is more mature than that for determining sustainability KPIs, there are difficulties assessing the association between certain more subjective sustainability KPIs and financial performance, and some sustainability KPIs are produced on a relatively infrequent basis.

5.3.2 Organizational Integration

One of MECH's sustainability project managers indicates that financial personnel should eventually be able to manage both financial and sustainability diagnostic control systems.

...what we also see when it comes to follow-up, it is mainly those qualities controllers have, we need that firstly. They firstly have an eye for the right numbers in the right place but also that they are made with quality, accuracy etc. Also, an eye for numbers and so they can start to see differences and ask questions about why they see that trend? They actually don't need any environmental knowledge to do that, because it is only numbers. Maybe they will just need an introduction anyway, if we look at the energy example, then you need a little understanding about what the number stands for, just so you can have some feeling for it. Then it is a lot about understanding what is going on when looking at the data and asking questions.
(Respondent 12)

Other respondents, however, see organizational challenges to full integration of the MCS and SCS. Apparently, much of the diagnostic follow up done at MECH is still follows the established routines of mostly functional patterns, and occurs in "silos." This practice does not allow the full picture of how the sustainability dimensions are connected to each other or how they are connected to business (financial) concerns to emerge.

We talk about business, environment, employee and society but the follow up is made in silos. If you read the annual report you can see that we should achieve X% operating margin, a growth of Y% and Z% return on capital employed. This is what we should achieve by applying [MECH-concern]. Therefore we need increased knowledge how to grow in cooperation with [MECH concerns]." (Respondent 5)

Well, I don't know if you can put it that way. A factory manager have the entire picture and much more, but of course, if you go to a EHS-manager down here at the factory, then someone would talk environment, health and safety, or maybe environment only, they have divided them like that, or someone only talks about safety. (Respondent 14)

Another organizational challenge pertains to a “knowledge gap” among MECH personnel with respect to sustainability issues. In particular, there is a demand for managers to be knowledgeable and able to ask critical questions of operating personnel. It is important that sustainability knowledge not be only in the heads of experts.

The problems associated with sustainability are that management needs to be able to ask better questions out in the factories ... in each step of the life cycle approach you should be thinking in terms of investments and understand the entire energy issues. You should also pass on this mindset to operators. (Respondent 14)

Thus, while MECH management appears to believe that organizational integration of the company’s MCS and SCS is feasible, challenges to integration currently exist. The fact that diagnostic follow up for the business, environment, employee, and social concern dimensions currently occurs in “silos” is one challenge. The other substantial challenge is that while financial and operations personnel are starting to become aware of sustainability concerns, much of the knowledge about sustainability is still perceived to be held by experts.

5.3.3 Cognitive Integration

At the strategic level, MECH’s management clearly promotes the idea through the organization’s beliefs system that sustainability outcomes are aligned with financial performance.

And that is why we define our MECH concern as being, making profit, you have to make a profit. And I think that is another idea, that sometimes is, especially in the sustainability area, that profit is a dirty thing. But if you think about it, if you do not make a profit you cannot make any of the other things. But it is not just about how you make the profit, all of the profit you make, it is about how you make profit - that is what we talk a lot about here. I think they go hand in hand, and I also think that as a part of the development we have made as a group, it has been driven by the fact that we have been able to integrate sustainability into our operations. (Respondent 1)

Consistent with this outlook, managers at the tactical level speak of sustainability in value-added terms.

[My personal mission is] to understand the different impacts that we have as a business...not just in financial terms, but in social terms and environmental terms and the different potential impacts we can have. To really try and find ways to reduce the negative impacts or to avoid them altogether, and at the same time find ways to create additional value...so to be able to do those things and prove that a business that does these things successfully is economically very robust and actually performs better than businesses that don’t. (Respondent 4)

That [integrating sustainability into business operations] is what we are trying to do, but there is also a mix because it is easy doing this together with the people who value it. Some do it really well, but if there are some who think they have so much to do and this is not prioritized, then it unfortunately, the only way is to make sure it comes from higher levels. Then we can,,, because if it first comes from higher levels, then we can go in and be like: we can do this together, do you want to,,, then we can act as a consultant instead, even though we were the ones starting this and made them start this mission. (Respondent 12)

These statements regarding the alignment of sustainability and financial outcomes are consistent with the business case frame described by Hahn et al. (2014).

Not all managers express this viewpoint, however. Some perceive that there are tensions between business and sustainability concerns that should be managed, but it is unlikely that these can be eliminated. This is the paradoxical frame described by Hahn et al. (2014).

Because the stock market is extremely focused on money...if you have and earn a certain sum of money, then you can also afford working with sustainability and such in a more structured way. If you are much pressured with profitability, then I think you are more focused working with that as opposed to other issues. So I am wondering if we ever can merge the two together. I think they are good supplements for each other. (Respondent 2)

Hahn et al. (2014) and Hahn and Aragon-Correa (2015) argue that the presence of these different cognitive frames among managers in an organization does not indicate an impediment to developing a shared viewpoint regarding the integration of the SCS and MCS. Indeed, Hahn and Aragon-Correa (2015, p. 257) argue that "a dominance of business case-driven interpretations narrows the scope of sustainability issues that are considered since it discards those environmental and social issues that cannot be easily aligned with financial outcomes." They suggest that the presence of both business case-driven and paradoxical thinking regarding corporate sustainability can enhance creativity and innovative responses.

Another cognitive integration challenge relates to the difference in temporal perspectives between finance and sustainability functions. The financial markets typically demand short-term results, while the perspective on sustainability issues tends to be across a longer time horizon.

Some departments still work for next quarter, this is the way it is in the world as such as well, and they are only interested in the next quarter. That is why it is important with the CEO role and a management team that applies holistic system thinking, sees the entirety, and can put together all the different parts... there [sustainability] is a very long-term job...some of them [sustainability initiatives] have been more short-term, but when I say short-term then that could be 5 years. We have for example responsible sourcing that we started five years ago and that is still at its starting point. (Respondent 11)

A third cognitive integration challenge concerns employee incentives. Currently, employee compensation is linked to financial, not to sustainability performance.

It is very easy today to lean against the financial targets and instruments, because they are the ones we've had with us the longest. We have a form of variable compensation linked to the Group's profitability. My department, which is a corporate staff, is linked to the Group's profitability. If you are in a sales unit, you are clearly compensated on your group's performance. They [bonuses] are actually purely financial. (Respondent 2)

There is a perception that individuals may not be motivated to support the company's sustainability initiatives if they are compensated based on financial performance.

You cannot have an organizational structure and governance that says one thing and then a reward and compensations system indicating something else and makes the employees act in accordance to what is best for the individual and not what is best for the company. This we need to reconsider. (Respondent 5)

At the same time, managers recognize the technical issues associated with basing bonuses on sustainability performance.

In the future I can imagine us making this a bonus system, but then I would have to fulfill some kind of acceptable way of measuring it, just so it would be a fair reward system. If we cannot measure it well enough, if it does not really show your individual effect that gives result, then we cannot include it. (Respondent 13)

Indeed, there are certain sustainability issues where providing bonuses might lead to dysfunctional incentives.

...that I prohibited bonuses connected to zero accidents.... the culture should be to look at reporting as a positive thing ... that should be the mentality, but if you put up a bonus for zero accidents, then you get punished if something happens. (Respondent 14)

Thus, there is a potential conflict or paradox between top and middle management's views regarding compensation with respect to sustainability issues. Top management believes that there should not be separate, sustainability-based bonuses. This is consistent with management's vision that "we currently have a sustainability strategy, but our objective is to have a sustainable strategy (Respondent 4)." On the other hand, some middle managers recognize the fact that it may be difficult to motivate performance on sustainability dimensions without related incentives. This compares to the situation observed by Norris and O'Dwyer (2004), where an organization managed to engage in socially responsive decision-making, despite a formal, profit-based incentives system occasionally operating in opposition to the organization's informal values with respect to sustainability. In the case of MECH, management thus far has made a conscious decision not to have sustainability-based bonuses. Thus, there is a potential conflict between the profit-based incentives embedded in the company's MCS, and the formal diagnostic controls in its SCS.

A final cognitive integration challenge relates to differing cultural attitudes towards sustainability. For example, Swedish managers tend to view sustainability as the right thing to do, whereas in the United States managers tend to view sustainability more from a risk management and cost reduction perspective. With respect to this issue, a company employee health and safety manager states:

For example, if someone gets hearing problems, then they usually sue MECH in the US, because then they can indicate that they did not get the right hearing protection...But, foremost, we as a company want to make sure that we don't expose our employees for noise that could hurt. So that is more ethical, if you can say so, that is stronger, but in the US it is more about avoiding to get sued. That is an expense and then they see the hearing protections as an investment that is one way to view it. (Respondent 14)

In other words, US managers tend to view employee health and safety as a risk area to be managed by constraining controls, whereas Swedish managers tend to view it as an ethical responsibility to be managed by enabling controls.

6. Discussion

MECH attempts to manage the strategic uncertainties related to sustainability through its SCS. The SCS incorporates elements from all four components of Simons' (1994) LOC framework to

support this strategic management process. With respect to the SCS beliefs system, MECH's senior management has explicitly communicated the importance of an integrated "sustainable strategy." They developed the "concern" framework to facilitate understanding the elements of this strategy among the organization's employees and outside stakeholders. MECH's primary SCS boundary control is its Code of Conduct. Instead of the negative, or constraining nature of sustainability boundary controls often seen in organizations (Arjaliès and Mundy, 2013), the Code of Conduct serves as an enabling control (Tessier and Otley, 2012) for the company's sustainability initiatives. The company's SCS diagnostic controls incorporate formalized periodic reviews of environmental and employee health and safety concern metrics. Diagnostic review of employee concern metrics is less formalized and occurs on a relatively infrequent basis.

The organization uses interactive controls across the various sustainability concern dimensions. Dialogue between different levels of management on sustainability issues occurs in a non-invasive and facilitating fashion. Thus, interactive dialogue serves as an enabling control over sustainability, consistent with MECH's boundary controls. This enabling approach contrasts with Arjaliès and Mundy's (2013) finding that boundary controls over sustainability tend to describe CSR-related risks to be avoided, therefore adopting a negative, or constraining frame. In addition, the "go and see" interactive protocol used at MECH is less formalized than the structured interaction regarding sustainability issues that tends to occur at the firms in Arjaliès and Mundy's (2013) sample.

At present, MECH does not appear to have strong strategic validity controls across sustainability dimensions. The only exception is its environmental products and services portfolio, where management actively monitors the factors and conditions that shape demand for these products. This contrasts to the situation documented by Rodrigue et al. (2013) for a firm operating in an environmentally sensitive industry. In this case, consistent with an interactive control perspective, the firm's outside investors influence the firm's choice of environmental performance indicators, given that these indicators may point towards emerging threats and opportunities. On the other hand, the fact that MECH's SCS only has strategic validity controls for its e-line portfolio is consistent with Arjaliès and Mundy's (2013) observation that many organizations' interactive SCS processes are triggered by the perceived long-range opportunities, such as the development of green chemicals or hybrid cars. Thus, it appears that MECH's use of strategic validity controls in its SCS may be driven by whether a product line presents an opportunity for future value-added through sustainability, as in the case of the e-line portfolio.

These findings suggest that the nature of interactive controls within an organization's SCS is driven in part by organizational culture and in part by the industry in which the organization operates. MECH has a long tradition of enabling interactive controls in its MCS, therefore, it is not surprising that similar controls exist in its SCS. Results from this study and from Arjaliès and Mundy

(2013) suggest that at least in the manufacturing industry, the use of strategic validity controls in an organization's SCS may be driven by managers' perceptions regarding the value to be gained by addressing strategic uncertainties related to sustainability.

The differential use of strategic performance and strategic management controls across sustainability dimensions at MECH also suggests that the recent analysis and debate about the nature of interactive MCS in the academic literature also applies to SCS. Tessier and Otley (2012) retain the "interactive" label for control characteristics that involve intensity of communication among organizational personnel, regardless of whether the dialogue directly addresses management of strategic uncertainties. They use the label "strategic validity controls" to refer to controls that focus on strategic uncertainty. Curtis et al. (2015) take a somewhat different approach, arguing that management of strategic uncertainties is the only theory-based characteristic of interactive control. They state that the other characteristics of interactive control "do not have any theoretical underpinnings and merely capture how Simons' observed internal control systems operating in his studies (Curtis et al., 2015, p. 20)." Indeed, there is a risk of conflating the intensive use of information with evaluating the adequacy of the organization's strategy (Ferreira and Otley, 2009). Both Tessier and Otley (2012) and Curtis et al.'s. (2015) arguments suggest that is important to separate intensity of communication from management of strategic uncertainties when evaluating interactive SCS. While interactive dialogue is important for focusing attention and promoting learning regarding sustainability issues, the control characteristic by itself is not sufficient for managing strategic uncertainty related to sustainability.

MECH's MCS and SCS exhibit a high degree of technical integration, given that the organization now reports financial and sustainability KPIs through the same control performance measurement (CPM) system. Yet challenges to technical integration remain. These include methodological challenges for computing certain sustainability KPIs, difficulties assessing the association between subjective sustainability KPIs and financial performance, and relatively infrequent assessment of some sustainability KPIs, especially in the employee well-being area. The methodological difficulties experienced by MECH are not unlike the technical difficulties with calculation and interpretation of environmental performance measures documented by Hahn and Figge (2013) and Virtanen et al. (2013).

MECH's MCS and SCS have somewhat lower levels of organizational and cognitive integration. While MECH management seems to believe that organizational integration is feasible, diagnostic follow-up across the company's various concern dimensions currently occurs in "silos," and much of the knowledge regarding the sustainability dimensions is still perceived to be held by experts. Strategic-level managers and many managers at the tactical level appear to perceive a strong business-case view for corporate sustainability, consistent with a high degree of cognitive

integration. Yet, there are some managers who perceive a paradoxical-frame towards sustainability. It remains to be seen if the presence of these varying perspectives can enhance the organization's ability to engage in creative dialogue regarding sustainability issues. There are a number of additional challenges to cognitive integration, including the difference in temporal perspectives between finance and sustainability functions, the lack of clear financial incentives for sustainability performance, and differences in cultural perspectives across the different countries in which MECH operates.

The findings regarding challenges to integration of MECH's MCS and SCS are consistent with Gond et al's (2012) assertion that technical, organizational, and cognitive integration can co-exist in the same organization and may compensate for each other in bridging MCS and SCS. In MECH's case, technical integration appears to be the least challenging of the three areas. In fact, respondents from MECH who participated in a feedback meeting on an early draft of this paper reported that the organization had made substantial progress in the development and selection of appropriate sustainability key performance indicators (KPIs) since the interviews were conducted. Therefore, strong technical integration between MECH's MCS and SCS may compensate in part for some of the challenges the organization faces with respect to technical and organizational integration.

Our findings indicate that an organization may be able to successfully execute an integrated sustainability strategy without full integration of its MCS and SCS; however, they do not indicate if there is indeed an "optimal" level of integration. There are potential drawbacks to full integration of the MCS and SCS, such as attempts at technical and organizational integration that result in "over-bureaucratization" of sustainability management through complex control systems (Gond et al., 2012). Similarly, attempts to achieve cognitive integration through adopting a "business case" approach, which assumes that sustainability pays off financially and ignores other perspectives, may constrain debate regarding an organization's sustainability strategy and suppress managerial creativity in addressing sustainability-related problems (Hahn et al., 2014; Hahn and Aragon-Correa, 2015). Thus, it will be important eventually to understand if and how an organization can integrate sustainability into its strategy without full integration of its MCS and SCS.

7. Concluding Comments

Using a case study approach, we examine how "MECH," a Swedish multinational industrial organization, uses its MCS and SCS to support the implementation of an integrated sustainability strategy. First, we examine whether the company's control systems effectively manage the strategic uncertainties related to sustainability. Second, we examine the degree to which the company's MCS and SCS are integrated and discuss barriers to full integration.

The company's SCS fully incorporates belief systems, boundary controls, and diagnostic system controls from Simons' (1994) LOC framework. The SCS applies interactive controls that involve intensity of communication and non-invasive involvement across the organization's sustainability concern dimensions. The interactive element of MECH's SCS is most fully developed with respect to its E-line portfolio of "green" products, as there was evidence not only of intense communication, but also the application of strategic validity controls to assess and manage demand for these products. This finding is consistent with other research which suggests that organizations in the manufacturing industry may focus on strategic uncertainties related to sustainability only with newly developed or future products (Arjaliès and Mundy, 2013).

MECH's MCS and SCS have a high degree of technical integration. They exhibit a lower degree of organizational integration, with diagnostic follow-up across the company's various concern dimensions currently occurring in "silos," and sustainability knowledge perceived to be in the hands of "experts." These challenges, however, may eventually be overcome as more of the company's managers receive training regarding sustainability issues. It is along the cognitive dimension where the most substantial challenges to integration appear. However, it may be desirable to allow different cognitive perspectives regarding the integration of financial and sustainability objectives to persist within the organization, as these differences may facilitate debate and foster creativity in addressing sustainability problems (Hahn et al., 2014; Hahn and Aragon-Correa, 2015).

There are, of course, certain limitations to our study.

The first is that the study was conducted over a fairly short amount of time at a single company. Thus, we were unable to observe how the configuration of MECH's MCS and SCS might have changed as the organization's integrated sustainability strategy evolved. In addition, by examining a single company, we are unable to make an objective assessment regarding the success of the company's integrated sustainability strategy, nor were we able to determine if or how its control system configuration facilitated that success. This indicates a need for large sample studies of the relationship between control system configuration, strategy, and sustainability. The detailed descriptive findings from this study might be used to design survey instruments for use in such studies, along the lines of empirical LOC research such as Widener (2007) and Kruis, Speklé, and Widener (2014).

A second limitation is that this study is focused entirely on MECH's internal sustainability management process. Therefore, it does not examine stakeholder influence on the SCS. While other studies have examined stakeholder influence on the choice and development of environmental performance measures (Marquet-Pondeville et al., 2013; Rodrigue et al., 2013), we are unaware of any studies that examine stakeholder influence on the configuration of an SCS across all the dimensions of sustainability. This suggests an interesting opportunity for future research.

Third, this study has focused primarily on formal controls, since these are the basis of Simons' LoC framework. Such an approach is appropriate for organizations such as MECH, where informal controls related to sustainability, such as the company's values, have been formalized through frequent internal communications (a belief system) and the organization's code of conduct (a boundary system). Even so, there is evidence that in some cases, organizations which claim to have sustainability as a key part of their corporate strategy do not have well-developed formal sustainability controls, and are instead relying extensively on informal controls to support their sustainability efforts (Norris and O'Dwyer, 2004; Durden, 2008). An interesting topic for future research would be to examine if and how formal sustainability controls emerge in such organizations.

Finally, this paper focuses on a relatively narrow set of issues, specifically, the management control processes that an organization implements in order to more fully integrate corporate social responsibility (CSR) practices into its overall strategy. While we use the term "sustainability" to describe these CSR practices, Bebbington and Thomson (2013) argue for a broader concept of sustainability that goes beyond corporate value creation to examine how accounting and business practices might promote sustainable development. At the same time, these authors recognize that much of the current stream of research on sustainability and management control remains focused on CSR and firm value issues. Even so, it is worthwhile to consider how MCS and SCS configurations might at some point go beyond a value maximization perspective to promote sustainable development.

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Appendix: Interview Respondents

Respondent	Level	Position	Date	Method	Duration
1	Strategic	Overall Executive Responsibility	3-11-2014	Interview/Transcript	65 min
2	Strategic	Finance Director	5-5-2014	Interview/Transcripts	50 min
3	Strategic	HR Director	20-11-2014	Interview/Transcripts	25 min
4	Strategic	Sustainability Director	8-1-2014	Interview/Transcripts	70 min
5	Strategic	Finance Manager	16-1-2014	Interview/Transcripts	55 min
6	Strategic	Group Controlling Manager	11-6-2013 17-10-2013 26-11-2013 18-12-2013	Meeting/Notes Meeting/Notes Interview/Transcripts Meeting/Notes	70 min 60 min 60 min 80 min
7	Strategic	HR Manager	31-10-2013 21-11-2013 4-4-2014 27-10-2014	Meeting/Notes Interview/Transcripts Interview/Transcripts Interview/Transcript	70 min 60 min 59 min 92 min
8	Strategic	EHS Manager	27-11-2013 24-10-2014	Interview/Transcripts Interview/Transcripts	50 min 60 min
9	Strategic	Group Compliance Manager	21-11-2013	Interview/Transcripts	45 min
10	Strategic and Tactical	Project Manager Sustainability and "Positive Impact"	19-8-2013 27-11-2013 18-12-2013	Interview/Transcripts Meeting/Notes Meeting/Notes	60 min 50 min 60 min
11	Strategic and Tactical	Sustainability Project Coordinator	27-11-2013	Interview/Transcripts	70 min
12	Strategic and Tactical	Sustainability Project Manager	27-10-2014	Interview/Transcripts	67 min
13	Tactical	Sales Unit Manager	26-11-2013	Interview/Transcripts	55 min
14	Tactical	Sustainability and EHS Manager	17-10-2013 28-11-2013 17-04-2014 25-11-2014	Meeting/Notes Interview/Transcripts Telephone-interview /Transcripts	70 min 60 min 32 min 65 min