A MANAGEMENT CONTROL PERSPECTIVE OF SUSTAINABILITY REPORTING IN HIGHER EDUCATION: IN SEARCH OF A HOLISTIC VIEW

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Abstract. *Higher education institutions have been actively attempting to integrate sustainability in their curricula, research, operations, and outreach activities over the last decades. Despite the efforts undertaken, it is currently still challenging for their stakeholders to assess an institution's sustainability-related activities and the extent of their implementation within the different activities of higher education. Since sustainability reporting in higher education is currently still in its early stages, and because a systemic approach to sustainability integration in higher education is often lacking, this paper researches possible contributions of management control to sustainability reporting and the sustainability integration process in higher education. The paper adheres to a management control approach by applying Simons' (1995) Levers of Control framework to the field of sustainability in higher education, in search for a framework for integrating sustainability on a strategic level into higher education. The research stresses the need for a holistic approach, including the four types of controls, and for further in-depth study into how sustainability reporting is used in higher education in relation to strategy, in order to assess its potential for organisational learning.*

Keywords: *Management control, levers of control framework, sustainability in higher education, sustainability reporting, social responsibility, performance management, management control systems.*

Introduction

Over the last decades, the concept of sustainable development (SD) has received more attention, due to global problems of, amongst others, population growth, climate change, and financial crises the world has been confronted with. This aspiration of achieving a society that creates value on an economic, social, and environmental level has inspired many actors in society to take action. Higher education institutions (HEIs) are among these actors, and they hold a unique position in society, because of their potential to facilitate, promote, and encourage societal response to a diverse array of sustainability challenges facing communities around the world (Stephens, Hernandez, Román, Graham, & Scholz, 2008).

HEIs have engaged in promoting SD by educating future leaders, decision makers, academics, and politicians, sharing thoughts and ideas via conferences (e.g., the Halifax Conference on University Action for Sustainable Development in 1991, the Johannesburg Summit in 2002, and the UNESCO World Conference on Education for Sustainable Development in 2009), and the subsequent development and signing of declarations (e.g., Stockholm Declaration, Talloires Declaration, or Ubuntu Declaration) (Lozano, Lukman, Lozano, Huisingh, & Lambrechts, 2013; Wright, 2002). Despite the array of SD initiatives undertaken by HEIs—e.g., the development of SD courses, teacher trainings on SD, or "campus greening" initiatives)—it is still challenging for their internal and external stakeholders to assess an institution's sustainability related activities and the extent of their implementation within its different functions [i.e., education, research, operations, and community outreach (Cortese, 2003; Lidgren, Rodhe, & Huisingh, 2006; Velazquez, Munguia, Platt, & Taddei, 2006)]. Some HEIs have been voluntarily reporting their efforts of SD integration via SD reporting, following the upsurge of this type of reporting in the corporate world (Daub, 2007). Nevertheless, SD reporting in HEIs is currently still in its early stages, both in terms of the number of institutions reporting, as well as the level of detail in which they are reporting (Lozano, 2011).

Transparent and standardised reporting on sustainability performance should provide a clear view of HEIs' current state of progress towards sustainability for internal and external stakeholders (Lozano, 2006a), clearly increase cross-institutional comparability, in addition to providing managers with tools for strategic management of SD integration in the organisation (Burritt & Schaltegger, 2010). In their research on the integration of SD reporting in management practices, Adams & Frost (2008: 288) indicate that, *"there has been surprisingly little research into sustainability reporting processes and the extent to which data collected is used in decision-making in organisations."* This paper offers a conceptual study on SD integration and reporting in higher education, viewed from a management control perspective. The research aims at providing answers to the following research question: *"How can management control contribute to the process of sustainability reporting in HEIs when integrating sustainability on a strategic level within the organisation?"* The innovative character of the paper is its connectivity with two different fields of study, i.e., the field of higher education for sustainable development (HESD), and the field of management control (MC).

On the one hand, the emerging field of HESD has been criticised for not always providing solid theoretical frameworks and offering various case studies of strongly differing quality (Barth & Thomas, 2012; Karatzoglou, 2013). On the other hand, within the field of MC, there is an increased interest in studies on control models, on new forms of organisation, and on the concept of sustainability (Berry, Coad, Harris, Otley, & Stringer, 2009). Moreover, Berry et al. (2009) stress the essential need to combine theory and practice in management control research, and to place more emphasis on the study of real control systems. Because until today, MC topics have not been analysed in depth specifically for HEIs, focus will be set on the possible contributions of MC to SD reporting and the SD integration process in HEIs. Simons' Levers of Control framework (Simons, 1995), a seminal and still frequently used theory from the MC literature (Berry et al., 2009), will be applied to the HESD context. This seminal framework has been used particularly in business environments, and has currently not been applied to the field of HESD. Nevertheless, the following sections will show that there is a potential for synergies between these topics. Although this paper presents a conceptual study, it offers a set of managerial implications, and can provide a basis for further empirical research on SD reporting in higher education, grounded in organisational reality.

The structure of the paper is as follows: in the next sections, a critical analysis of the relevant literature on MC and SD reporting in HESD will be provided. Afterwards, by finding the interconnections between these different topics, a theoretical framework will be sought on the contributions of MC to SD reporting when integrating SD on a strategic level into HEIs. Finally, some paths for further research will be presented.

Management Control Systems for Strategic Control

Research within the field of MC has evolved strongly since the application of the classical, accounting-based management control theories from the 1960s (Hewege, 2012). In this period, Anthony (1965, in Langfield-Smith, 1997) defined MC as, *"the process by which managers assure that resources are obtained and used effectively in the accomplishment of the organisation's objectives."* Nevertheless, an important shift has occurred throughout the years, i.e., *"the change from a focus on business planning to a wider focus on business strategy and strategic control processes"* (Otley et al., 1995 in Berry et al., 2009), making this one of the most important and often discussed emerging themes in the current MC literature (Berry et al., 2009). A more recent definition of MC reflects this shift; Merchant & Van der Stede (2012) state that MC is, *"the third of management functions along a process involving objective setting, strategy formulation, and management control"*, or in other words, *"the back end of the management process."* The latter also clearly distinguish between "strategic control" and "management control", because the authors view strategic control as a management process in relation to the external environment of the organisation, while according to them MC is focused on execution and has an internal focus (Merchant & Van der Stede, 2012).

Management control systems (MCS) should be understood in this context, and can be more specifically placed within the field of performance management for strategic control. Analogously with the concept of MC, many different definitions exist of the concept of MCS. Simons (1995) defines MCS as*, "the formal, information-based routines and procedures managers use to maintain or alter patterns in organisational activities."* Contrarily, Merchant & Van der Stede (2012) define MCS broadly, *"to include everything managers do to help ensure that their organisation's strategies and plans are carried out or, if conditions warrant, that they are modified."* Often discussed in the literature is what is called the "integrated approach" towards studying performance in MCS. Otley (1999, in Berry et al., 2009) states that, *"examining objectives, strategy, measures, incentives, and information flows, as well as contextual issues, e.g., external environment, organizational culture, social controls and history,"* are all part of studying this topic in an integrated manner.

There are different models present in literature that bring together these components, or in other words, that study performance management in MCS in an integrated or holistic way (Berry et al., 2009):
- strategic performance measurement systems (SPMS), e.g., Kaplan and Norton's balanced scorecard (Kaplan & Norton,1996);
- Simons' Levers of Control (LOC) framework (Simons, 1995); and
- Ferreira and Otley's performance management and control (PMC) framework (Ferreira & Otley, 2009).

Of these different control models for performance management, Simons' LOC framework has been very influential and has been often applied, but is also still under discussion and in the process of being further developed. Although the development of the framework stems from the beginning of the 90s, its applications are still part of the emerging literature on MC (Berry

et al., 2009). Because of its influential status and applicability to the field of HESD and SD reporting, the framework will be used for this conceptual study.

Simons' Levers of Control Framework

Simons' LOC framework was constructed in the early 1990s as a reaction against traditional philosophies of management and control, where strategy was imposed top-down, standardisation and efficiency were rule, and results had to be according to plan (Simons, 1995). Simons' (1995) framework, contrarily, allowed more space for flexibility than traditional management control systems, in times where new types of organisations were forming, strategies became more driven by the external environment, and continuous improvement and empowerment became key.

Simons' LOC framework starts from the idea that every organisation distinctively uses four types of MCS to control its business strategy (Simons, 1994), and that the mix of these MCS applied in the organisation should be studied in an integrated way, looking at the whole system rather than solely focusing on certain (accounting) controls (Tuomela, 2005). Central to the LOC framework are the opposing forces that occur within MCS between the following concepts (Simons, 1995: 4): freedom vs. constraint, empowerment vs. accountability, top-down direction vs. bottom-up creativity, and experimentation vs. efficiency. An organisation's business strategy can be controlled by finding a suitable balance between the tensions induced by these opposing forces, represented in the four levers of control (Mundy, 2010; Tessier & Otley, 2012). Since the LOC framework balances the need for innovation and constraints within an organisation (Tuomela, 2005), it contributes to managing organisational performance (Mundy, 2010).

Elements of the Framework

According to Simons (1994), MCS used in organisations can be clustered into four different types, according to their relationship to strategy and their use by top managers. Together, these four controls form the LOC framework:
-       beliefs systems;
-       boundary systems;
-       diagnostic control systems; and
-       interactive control systems.

The first two levers of control, i.e., belief and boundary systems, are about framing the strategic domain of the organisation. On the one hand, Simons' (1995) belief systems are *"used to inspire and direct the search for new opportunities"*. They are about giving employees a certain direction, by offering them a mission and vision to adhere to when working for the organisation. On the other hand, his boundary systems are *"used to set limits on opportunity-seeking behaviour"*. They clarify where the boundaries of this strategy are for the organisation, and they provide direction on the risks and activities to be avoided within the organisation.

Simons' (1995) diagnostic control systems are *"used to motivate, monitor, and reward achievement of specified goals"*. They are formal negative feedback systems designed to ensure predictable goal achievement, by allowing measurement, comparison to standards or goals, and corrective action. This implies that via these systems, and after setting up relevant critical performance variables, managers can relatively easily, or without constant oversight, verify whether the decisions made and actions undertaken within the organisation are in line with the organisational goals and intended strategies set out in the beliefs and boundary

systems. Simons (1995) stresses the importance of the selection and training of workers in an organisation that have the capacity to adequately deal with diagnostic control systems.

The interactive control systems of Simons' framework are *"used to stimulate organisational learning and the emergence of new ideas and strategies"*. They stimulate dialogue and organisational learning, and allow new strategies to emerge from different parts of the organisation. They are a response to the strategic uncertainties that arise in an organisation, and that demand strategy adaptation and managerial attention. Interactive controls also provide feedback, but focus on the emergent, instead of on the intended, organisational strategies. Simons (1995) stresses that by focusing attention on these strategic uncertainties, interactive control systems can guide and shape emerging, bottom-up processes.

Further Developments

Since the development of Simons' (1995) LOC framework, different authors have been presenting further developments or applications of the framework. Among those authors are: Gond, Grubnic, Herzig, & Moon, 2012; Mundy, 2010; Tessier & Otley, 2012; Widener, 2007. In 2007, Widener presented an empirical study of the relation between MCS and firm performance, and used Simons' framework to support its theoretical model. Some of the main results of the research are that (1) two levers of control—i.e. diagnostic and belief systems— facilitate the efficient use of management attention, while interactive control systems consume management attention (or can be seen as costs of control) and (2) organisational learning is enhanced by emphasis on the beliefs system and by use of the diagnostic system.

Mundy's (2010) research aimed at understanding how organisations balance the dynamic tensions between the controlling and enabling uses of MCS, as represented in Simons' framework. The author used a single case to study MCS in an organisation in depth, and identified and explained a number of factors that influence an organisation's ability to balance the different uses of MCS. The study showed, amongst others, that interactions between different uses of MCS are potentially impacted as much by "absence of use" as by "inappropriate use" (e.g., by suppression). Moreover, the research found that certain levers of control can persistently determine the use of other levers, regardless of specific contingent factors influencing the organisation.

Tessier and Otley's (2012) conceptual paper covered a thorough examination of Simons' LOC framework. The authors offered a revised LOC framework, with a set of 14 differences or clarifications to the original framework. One of the most important elements of the revised framework was the division between management intentions and employee perceptions, indicating that there is a distinction between the choices managers make regarding the use of certain control systems on the one hand, and on the other hand, the way employees, after presentation of the controls, react to these controls. The paper concludes that in-depth research should be performed on the topic of the distinction between the two, and that further studies should also study MCS from a holistic point of view.

Also in 2012, Gond et al. presented a conceptual study theorising the integration of strategy and SD. The authors approached SD from an organisational point of view and relate it to organisational strategic renewal. Moreover, they claimed that although many organisations have embedded sustainability in their mission statements and external reporting, there is a lack of examples of organisations implementing sustainability in their management systems, and of research on the potential impacts of doing so. Therefore, Gond et al.'s (2012) aim was to clarify the relationship between MCS and sustainability control systems, and to research how, on a strategic level and from a management control perspective, the integration of SD in organisations can be either facilitated or prevented. The authors extended Simons' LOC framework to the domain of SD, and approach management control from a strategic

perspective when trying to integrate management control systems with sustainability control systems. A possible path for further research on this topic was, according to Gond et al. (2012), the identification of more contingency factors affecting an organisation's capacity to use and integrate management control systems.

Sustainability Reporting and Management Control

Sustainability reporting, according to the GRI (2011: 3), can be described as: "the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development". Daub (2007: 76) clarified that a sustainability report—an outcome of sustainability reporting—must, "contain qualitative and quantitative information on the extent to which the company has managed to improve its economic, environmental and social effectiveness and efficiency in the reporting period and integrate these aspects in a sustainability management system". These definitions clearly refer to two elements of SD reporting: (1) reporting of SD initiatives for external communication purposes, and (2) reporting with the aim of improving management practices towards SD integration. It is mainly the second element, i.e., reporting with the aim of improving management practices, which is a central issue in the research of this paper.

A specific link of Simons' (1995) LOC framework to the different uses of SD reporting by managers was made by Gond & Herrbach (2006). According to the authors, SD reporting can be either used as a diagnostic tool, or as an interactive tool, leading respectively to SD adaptation or SD learning processes. In the first case, top management's commitment to SD reporting is weak, and only employees involved in the process as part of their regular jobs will be affected by the procedure of reporting. In the second case, there is a high commitment to SD reporting on all levels of the organisation, leading to an emergent perspective on strategy, with room for bottom-up processes and innovation.

Gond & Herrebach (2006) indicated that certain aspects of SD reporting—as compared to SD reporting as a whole—might be used interactively or diagnostically, depending on their strategic importance as viewed by management. The authors suggested the need for further empirical research addressing these topics, in addition to looking at specific external elements (e.g., market turbulence, industry norms, or legislation) or organisational characteristics (e.g., size, culture, or the strategic importance of SD), that could affect this relationship.

Sustainability Integration and Reporting in Higher Education

HEIs hold an important exemplary function in society, since they are educating future citizens, policy makers, and world leaders (Ceulemans & De Prins, 2010; Lozano, 2011). Although HEIs have been called upon to integrate SD into these different functions, actual implementation remains difficult (Thomas, 2004; Velazquez, Munguia, & Sanchez, 2005); there are a number of barriers and challenges to SD integration in HEIs that are apparently hard to overcome (Lozano, 2006b).

Table 1 presents an overview of the most important barriers found in the higher education for sustainable development (HESD) literature. Within Table 1, the barriers and challenges of SD integration in HEIs have been divided into different categories, and the main articles mentioning these issues are added. Among the barriers found in the literature, a distinction can be made between barriers on the level of the individual, of different groups within the organisation, and of the whole organisation (i.e., the HEI).

Table 1: Major Barriers to SD Integration in HEIs found in the HESD Literature

Major Barriers to SD Integration in HEIs	Authors from HESD Literature
On the individual HEI stakeholder level:	
- a fundamental lack of **awareness**, **interest**, and **involvement** in the SD topic among management, staff, and students;	*Fenner, Ainger, Cruickshank, & Guthrie, 2005; Jabbour, 2010; Lidgren et al., 2006; Thomas, 2004; Velazquez et al., 2005*
- a lack of **understanding** of the SD concept and a **perceived difficulty** of implementation;	*Jabbour, 2010; Lidgren et al., 2006; Sibbel, 2009; Thomas, 2004; Velazquez et al., 2005*
- a feeling of **not being supported** by management for SD integration;	*Thomas, 2004; Velazquez et al., 2005*
- a lack of **time** due to other primary responsibilities within the HEI; and	*Fenner et al., 2005; Velazquez et al., 2005*
- a general **resistance to change**.	*Ferrer-Balas et al., 2008; Lidgren et al., 2006; Lozano, 2006b; Velazquez et al., 2005*
On the HEI group level:	
- the **divide** between the education, research, and service functions of HEIs, leading to sometimes varying or competing orientations and priorities in terms of SD, differing modes of engagement towards SD, and an often diffuse focus; and	*Bero, Doerry, Middleton, & Meinhardt, 2012; Krizek, Newport, White, & Townsend, 2012*
- the **discipline oriented divisions** within the educational and research departments, with little intra-departmental interaction and an academic culture of specialisation and individual academic freedom.	*Fenner et al., 2005; Ferrer-Balas et al., 2008; Lidgren et al., 2006; Sibbel, 2009; Thomas, 2004; Velazquez et al., 2005*
On the HEI organisational level:	
- a lack of **integration** due to decentralised management and power concentrations at different levels, bureaucracy, students and faculty turnover, non-standardised processes;	*Krizek, Newport, White, & Townsend, 2012; Velazquez et al., 2005*
- a general lack of **policies** to promote SD in HEIs, e.g.:	*Velazquez et al., 2005*
* the **incentive structure** within HEIs (salaries, promotions, and granting of tenure), which does not take SD efforts into account;	*Ferrer-Balas et al., 2008; Lidgren et al., 2006; Thomas, 2004*
- regarding the presence of **resources** and information, i.e.:	
* a lack of **financial resources** to invest in sustainability issues;	*Bero, Doerry, Middleton, & Meinhardt, 2012; Jabbour, 2010; Krizek et al., 2012; Velazquez et al., 2005*
* a lack of availability of trained and skilled **staff** and **experts** to deal with SD issues;	*Jabbour, 2010; Lidgren et al., 2006; Thomas, 2004; Velazquez et al., 2005*
* the lack of, the inaccuracy of, and the inaccessibility of **data** on SD issues within HEIs;	*Sibbel, 2009; Velazquez et al., 2005*
* the lack of **performance indicators** for monitoring progress towards SD;	*Velazquez et al., 2005*
* the lack of **communication** on SD initiatives and progress;	*Velazquez et al., 2005*
- a lack of **pressure** from society to change institutional behaviour.	*Ferrer-Balas et al., 2008; Lidgren et al., 2006*

On the level of the individual internal HEI stakeholder, the typical barriers prevailing are, amongst others: a lack of awareness or involvement for SD, a perceived difficulty of implementation of SD initiatives within the individual job context, and a general resistance to any type of change within the institution. On the group level, the barriers occurring can be related to the typical organisational structure of HEIs. On the one hand, there is a divide between the different functions of HEIs, which implies that mainly communication between the educational and research departments and their counterparts of the service departments is often difficult or non-existing. Because these groups within the organisation are often managed separately, this divide leads to varying interests and priorities between the different groups, also in terms of engagement for SD. On the other hand, there is also a large divide

within the educational and research departments in terms of the different disciplines, resulting in a lack of management interaction, interdisciplinary cooperation, and communication. Moreover, this is reinforced by the tendency towards specialisation and individual academic freedom prevailing in higher education.

These group level barriers, along with other issues like frequent student and faculty turnover or bureaucracy, result in a lack of integration on the organisational level of HEIs. Other barriers on the organisational level are a general lack of policies promoting SD in HEIs, and the lack of certain resources and information, like financial means to invest in SD initiatives, skilled staff and SD experts, and data to inform SD management within the institution. Besides the lack of data, their inaccuracy, or their inaccessibility within HEIs, there is also a lack of performance indicators for monitoring the progress towards SD integration in higher education.

Since many of the above mentioned problems, barriers, and challenges—especially the ones on the group level—are specifically inherent to HEIs, they require an adapted approach (Lidgren et al., 2006). In 1976, Weick already pointed out this specific situation of HEIs and their challenges on the group level, by calling them "loosely coupled systems", that consist of different, separately operating departments and faculties with their own identity and functioning, and that are therefore difficult to manage as a whole and require the development of a contextual methodology (Weick, 1976).

Approaches to Strategic SD Management and Management Control in HEIs

Within the field of HESD, many papers report on the critical need of management support for SD integration in HEIs (Lidgren et al., 2006; Lozano, 2006b), but the actual topic of how to put this into practice is not often discussed. Nonetheless, some management approaches to SD integration are presented in the HESD literature. Velazquez et al. (2006) and Lukman & Glavič (2006) respectively presented their own "sustainable university model" and "process and elements of a sustainable university", both clearly top-down models based on a quality management approach. Lidgren et al. (2006) indicated that a systemic approach to SD integration in HEIs is required, but also stated that the traditional "results control" approach—as usually applied when implementing an ISO 14001 environmental management system—does not seem to be effective for use in HEIs, mainly because of HEIs' specific organisational structure. The authors claimed that "intra-university learning" is recommended to intervene in the system, but do not specify how this can be achieved.

While in the HESD literature, only a few examples can be found of the use of MC or MCS for SD integration, more papers are found discussing environmental management systems (EMS) in HEIs. Clarke's (2006) research on the EMS cycle in practice at Dalhousie University discussed the necessity of the distinction between deliberate and unrealised strategies, and the inclusion of emergent strategies in EMS cycles within HEIs, and stated that there is often no clear distinction between planning and implementation phases of the EMS. In this article, strategic management theories were linked with an EMS model, and a more realistic model for environmental management at HEIs was offered, based on the author's own campus experiences (see Figure 1) (Clarke, 2006).

Figure 1: EMS Cycle with Emergent Content (Source: Reprinted from Clarke, 2006: 386)
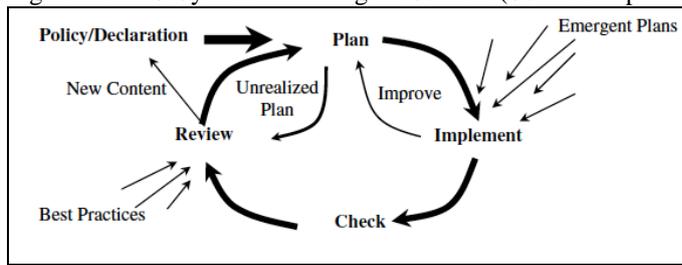
Clarke & Kouri (2009) further theorised on Clarke's (2006) findings and discussed the decisions HEIs have to make when implementing an EMS. The authors presented some unique key features of EMS for HEIs, derived from the literature and from a comparison of the presented frameworks. According to Clarke & Kouri (2009), an EMS for HEIs:

- involves a continual improvement cycle with emergent plans, unrealised plans, best practices feeding into the review, and interactions between planning and implementation (see also Figure 1);
- can be used for both internal and external purposes (going from compliance, cost savings, and quality management to stakeholder engagement and partnerships);
- requires a structure that matches the decision-making structures of the HEI (e.g., an environmental officer aligned with the operations side of the HEI or with the academic side);
- requires policies that match the decision-making structures (e.g., overarching policies or separate ones for the different HEI dimensions);
- needs specific roles and responsibilities (e.g., an environmental officer, departmental contacts, an auditing team, a multi-stakeholder committee); and
- prefers less EMS documentation, and a sector-specific environmental assessment.

The key features of EMS specified by Clarke and Kouri (2009) offer insights that can also be applied to general sustainability management (e.g., the fact that an EMS requires structures and policies matching the decision-making structures also counts for sustainability management). What is important about these features, is that they offer a contextual approach, adapted to the HEI situation, and that they provide advice that can facilitate practical implementation of management systems in HEIs.

Top-down versus Bottom-up Approaches to SD Integration

Traditional approaches to MC are mostly top-down oriented, and investigate ways for the management to control the behaviour of their employees in order to achieve certain organisational goals (in this case SD integration in HEIs). Nevertheless, certain authors within the HESD literature also critically comment on this managerial approach. For example, Thomas (2004) and Fenner, Ainger, Cruickshank, & Guthrie (2005) stressed the importance of bottom-up initiatives by individuals within the university to promote curricular change (e.g., staff members or students), besides the necessary top guidance to sustain this change. Lozano (2006b) addressed ways of tackling the SD integration barriers in an incremental way, including the engagement and empowerment of convinced individuals. Ceulemans, De Prins, Cappuyns, & De Coninck (2011) also referred to the top-down/bottom-up debate, and concluded that a good balance between top-down and bottom-up initiatives seems to be the most beneficial for sustained SD integration efforts.

Since Brinkhurst, Rose, Maurice, & Ackerman (2011) saw bottom-up change as change initiated by student movements only, they stressed the necessity of the "institutional middle" (in this case faculty and staff, as opposed to top/management and bottom/students), as a way

to enable "middle out change." But as in most of the HESD literature, actual strategies to implement SD initiatives initiated by the institutional middle are not further specified. In their research on EMS, Disterheft et al. (2012) made a distinction between the implementation of such a system via a top-down approach, versus participatory approach, or a mix of both. According to the authors, the use of a participatory approach or a mix of top-down and participation is more effective when aiming for more than just the implementation of EMS, but also creating the necessary settings for a paradigm shift to sustainable practices in all the dimensions of a HEI's system (Disterheft et al., 2012).

Research on SD Reporting in HEIs

Due to the importance of sustainability reporting in the corporate world, and because of the need for transparency on SD integration efforts, some HEIs have begun sustainability reporting in the last decade. Nonetheless, only a few relevant articles can be found in the HESD literature discussing SD reporting in HEIs, and among them, none of the articles discussing SD reporting as the core topic of the research currently make a connection with the field of MC.

Within both Velazquez et al. (2006) and Lukman & Glavič's (2006) top-down models for SD integration, SD reporting is shortly addressed. Velazquez et al.'s (2006) model stressed the need for sustainability audits, assessment and reporting as a way to monitor, analyse, and control the performance of sustainability initiatives. Lukman & Glavič (2006) specifically stressed that the improvements achieved in the entire process of SD integration should be included in a sustainability report, thereby facilitating both effective monitoring and communication for SD integration, as well as comparison and benchmarking of HEIs. In both of the articles control and monitoring are addressed, but the SD reporting process is used in a diagnostic rather than an interactive way.

Lozano (2006a), Madeira, Carravilla, Oliveira, & Costa (2011) and White & Koester (2012) addressed SD reporting as a core topic of their research, and discuss the use of (diagnostic) SD reporting methodologies that are specifically adapted to the context of HEIs. In 2011, both Lozano and Fonseca et al. addressed the state of SD reporting for HEIs, respectively throughout the world and within Canada. Lozano (2011) reported a low level of the SD reports found, when compared to corporate SD reporting. Fonseca, Macdonald, Dandy, & Valenti (2011) found that in Canadian HEIs SD reporting is an uncommon and diverse practice. The research also points out that the potential value of the SD reports currently studied is very limited as a tool to inform SD oriented decisions.

Albrecht, Burandt, & Schaltegger's (2007) research is the only article addressing SD reporting in relation to organisational learning—but not MC nor the interactive use of the reporting process are discussed. The article discussed the potential of SD projects for organisational learning, and used the SD reporting process in Lüneburg University as one of the cases studied. The research concluded that SD reporting can be a driver for organisational learning in HEI, because of its potential to mobilise HEI actors and to allow for incremental and fundamental learning. Nevertheless, more research is necessary on this theme to draw further conclusions, since the case of SD reporting was not addressed in a very detailed matter, and since SD reporting was not the central theoretical concept researched within the study. White & Koester (2012) also shortly referred to the potential for organisational learning through the implementation of SD reporting tools in conjunction with SD assessment tools, but do not offer any further insights into the matter.

Discussion: In Search for a Management Control Framework for Sustainability Integration and Reporting in Higher Education

Within the HESD literature, some attempts have been made to relate the topic of SD integration in general to (aspects of) MC (Lidgren et al., 2006; Lukman & Glavič, 2006; Velazquez et al., 2006). Nevertheless, most of the discussed articles do not manage to offer a systemic view on the topic, provide concrete strategies to improve management practices in HEIs, or offer space for bottom-up approaches to SD integration. Applying Simons' LOC framework to SD reporting and integration in HEIs offers a potential for the HESD literature and practice, because of its holistic approach, its aims of improving management practices while focusing on employee empowerment and flexibility, its potential for a practical approach through the use of sustainability reporting, and because of the possibility to provide links with a large number of the SD integration barriers. These elements will be further discussed in this section.

Since Simons' framework was developed for business environments, it focuses on combining creative innovation with predictable goal achievement for achieving profitable growth. The framework can be adapted and used in non-profit environments, and can be focused specifically on strategy development for SD in HEIs. This provides an analysis of Simons' (1995) framework for the contingency factor "type of organisation" (i.e., HEIs), as suggested by Gond et al. (2012). The adaptation implies that, although important for any type of organisation, less focus will be on the achievement of profitable growth, and on the notion of competition, since there is a common goal for HEIs to direct their organisations towards SD, rather than strong competition to do so, or than the need to relate this to profit making. Nevertheless, this still leaves the necessary space for HEI managers to develop unique and distinctive SD strategies when striving towards SD integration in their institutions.

Beliefs and Boundary Systems for SD Integration in HEIs

When striving towards SD integration, a clear SD vision and mission statement should be present in the organisation, which can be provided by the belief and boundary systems of an MCS. Important is that these statements are defined broad enough to make sure that all types of personnel members can identify with them and understand their meaning (Simons, 1995). When looking at the SD integration barriers, belief systems—when actively used in the organisation—could tackle some of the barriers on the individual level (see Table 1), e.g., the problem of the feeling of absence of management support for SD (Thomas, 2004; Velazquez et al., 2005). Moreover, they can create awareness, interest, and involvement in SD topics among all university stakeholders, which can also be an important barrier to SD integration (Fenner et al., 2005; Jabbour, 2010). Also, a clear definition of what the SD concept signifies for the organisation (Lidgren et al., 2006; Sibbel, 2009) could help tackling the lack of understanding of SD, and therefore links to the boundaries of the SD integration strategy. Or in other words, implementing SD initiatives could be simplified when the limits to what can be done or which activities one can invest in are made clear in the organisation.

As Lee, Barker, & Mouasher (2013) and Lozano et al. (2013) stressed, top-level commitments, such as mission and vision statements or the signing of declarations, should translate into concrete actions on all levels of the HEI. Moreover, within a modern MC approach, an SD strategy is formed through engagement with internal and external stakeholders, via the concept of materiality, where both the significant impacts for the organisation, as well as for their stakeholders count and develop mutually into strategic SD goals. As some research has been performed on the importance of mission statements and

declarations, the main challenge here is to integrate and use this research within a holistic MC approach to SD integration in HEIs.

SD Reporting as Diagnostic and Interactive Tool for SD Integration in HEIs

SD reporting—in any type of organisation—is fundamentally about communicating the SD message to a wide range of stakeholders. Nevertheless, by linking the reporting process to Simons' (1995) LOC framework, SD performance can also be facilitated, and a potential arises for organisational learning (Gond & Herrbach, 2006).

Regarding diagnostic controls, SD reporting offers an entire range of indicators to measure and monitor SD integration in an organisation, especially when using the Global Reporting Initiative (GRI) Guidelines[1]. Nevertheless, when applied to HEIs, only the operational functions of HEIs are covered by the GRI indicators (Lozano, 2006a). In order for the diagnostic indicators to judge SD integration in HEIs, some specific indicators for SD integration into the education, research, and outreach functions should be integrated into SD reporting standards such as the GRI (Lozano, 2006a; White & Koester, 2012). Some of the most relevant tools for SD integration covering the core activities of HEIs are: AISHE (Roorda, 2001), GASU (Lozano, 2006a), STAUNCH (Lozano, 2010), and STARS (AASHE, 2012).

Using SD reporting as a diagnostic tool also has the potential to address other integration barriers to SD integration in HEIs. Diagnostic controls can help tackle some of the barriers on the organisational level (see Table 1), e.g., the presence of resources and information in the organisation (Bero, Doerry, Middleton, & Meinhardt, 2012; Krizek, Newport, White, & Townsend, 2012). More specifically, they link to the need for performance indicators, and for accuracy and accessibility of data on SD issues (Sibbel, 2009; Velazquez et al., 2005). As one of the barriers to SD integration is the lack of trained and skilled staff on SD issues, staff development is also crucial for being able to tackle SD integration within HEIs, and for internal stakeholders to know what to teach and how to monitor SD performance. This need has also been stressed in the recent HESD literature (Barth & Rieckmann, 2012; Ceulemans & De Prins, 2010), as well as by Simons (1995) as one of the requirements for the functionality of the LOC framework.

Although the use of a particular set of diagnostic indicators is necessary within a MCS, the potential for organisational learning of SD reporting only arises through interactive use of the reporting process (Gond & Herrbach, 2006). Therefore, SD reporting should be used as an interactive tool on all levels of the HEI. For example, regarding internal stakeholders, SD reporting offers them the chance to get to know what others do in relation to SD, and learn from each other. Addressing the group level barriers of SD—i.e., the divide between the core business and service functions of HEIs, and the discipline-oriented divisions between the educational and research departments (Bero et al., 2012; Fenner et al., 2005; Krizek et al., 2012)—through SD reporting has the potential to facilitate better communication between the different departments within an HEI, which is important considering the loosely coupled organisational structure of HEIs (Weick, 1976). This is, amongst others, because all of these staff members have to be involved in the process of data collection and engagement, and because the results are visible for everyone in a concrete report. Nevertheless, as Clarke & Kouri (2009) stressed, in order to be functional in HEIs, the structure of the platform for SD reporting processes should match the decision-making structures in HEIs, implying that all

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[1] The GRI Guidelines are considered to provide the most detailed, competent, and prescriptive set of indicators for SD reporting (Daub, 2007; Fonseca et al., 2011; Lozano, 2006a; Velazquez et al., 2006).

the departments and faculties should be in some way included. An SD report can be used interactively within the different departments, allowing for bottom-up processes to arise, which are considered an important part of the SD integration process (Brinkhurst et al., 2011; Ceulemans et al., 2011).

The report can also guide the stakeholder dialogue included in the SD reporting process with internal and external stakeholders. Setting up an interactive dialogue with stakeholders, especially when following the GRI guidelines, enables an organisation to respond to the reasonable expectations, interests, and important challenges present inside or outside the organisation (GRI, 2011), in addition to the formal requirements or demands set up by direct stakeholders such as accreditation bodies. Consequently, it can provide space for emergent strategies (as stressed by Clarke, 2006) to develop into realised strategies within HEIs.

The SD reporting process also offers synergies with the beliefs and boundary systems of the LOC framework, because the reporting process can help clarify and communicate the beliefs and boundaries throughout the organisation and to external stakeholders. Simons (1995) also refers to the importance of involving employees when setting up belief statements in the organisation. SD reporting could provide assistance for this type of exercise, since it provides a process of internal and external stakeholder engagement and strongly emphasises the materiality of certain SD topics to an organisation.

Importance of Holistic Approach and Continuous Management Cycles

This paper offers a MC framework for SD integration in HEIs, amongst others through presenting the use of SD reporting as a diagnostic and interactive tool within the organisation. This results in an approach to SD integration that gives clear top-down directions towards SD strategy development while providing the necessary space for bottom-up initiatives to be developed within higher education, and importantly, turns SD reporting into more than solely a communication tool for SD initiatives implemented in the organisation. In order for the approach to be holistic, the LOC framework should be approached holistically, which means that the four different controls should be used and researched in conjunction with each other.

Therefore, empirical research should address this framework holistically (Tessier & Otley, 2012), with specific attention to the different aspects addressed within the framework. Some of these aspects are: the translation of SD mission and vision statements or declarations to operational levels, the concept of materiality in relation to the beliefs and barriers, the development of training initiatives for HEI staff, the adaptation of the diagnostic control indicators for HEIs core activities, and organising interactive stakeholder engagement processes included within the SD reporting process. These issues are represented in Table 2, in conjunction with the LOC framework. Although all the elements included in the framework are important, it is the combination of the different elements, or the holistic approach, that might determine whether SD integration progresses move in the desired direction. And since all HEIs are different, tailoring SD integration and the controls to the specific situation of the HEI might be necessary (Lidgren et al., 2006).

Table 2: Linking Simons' (1995) LOC Framework with SD Integration and Reporting in HEI

Belief and Boundary Systems
- Importance of Materiality to Form Beliefs and Set Boundaries - Implementation of SD Mission and Vision Statements through Operational Activities
Diagnostic Control Systems
- Adaptation of SD Reporting Indicators to HEI Core Activities and Practical Use in HEIs - Training in SD Knowledge and Skills for HEI Staff
Interactive Control Systems
- Importance of SD Stakeholder Dialogue, with Communication between HEI Departments and Input from External Stakeholders - Room for Emerging Strategies through Use of Bottom-up Approach in SD Reporting Process

In order to allow for continual improvement, the framework can be linked with repeating management cycles. Clarke (2006) and Clarke & Kouri (2009) clearly stressed the need for subsequent management cycles and for continual improvement and adaptation of SD strategies, and therefore offered a clear representation of these cycles in higher education. Clarke's (2006) management cycle can be easily adapted to general SD integration instead of EMS, and added to the SD integration framework, but nevertheless, some new elements should be added, in order to move away from the traditional results control (Lidgren et al., 2006), and allow for organisational learning through the use of sustainability reporting.

Figure 2: Management Cycle for SD Integration and Reporting in HEIs (Adapted from Clarke, 2006)
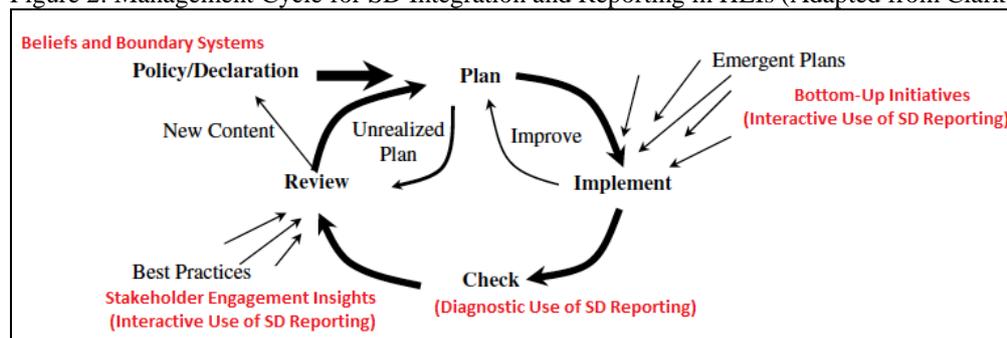
The cycle starts from the "policies and declarations", representing Simons' (1995) beliefs and boundary systems, and then moves to the implementation of intended and emergent strategies, as was also referred to by Simons (1995). Reporting, used as a diagnostic tool, should be added to the cycle in the "check" phase. The "emergent plans" Clarke (2006) refers to in Figure 1 can be seen as the bottom-up initiatives coming from faculty staff and students, while insights from the stakeholder engagement process can be added to the phase where "best practices" join the reviewing process. Both of these elements can be seen as interactive uses of the SD reporting process. Adding these new elements to the management cycle generates an adapted SD management cycle as represented in Figure 2.

Paths for Further Research

Although in-depth research on SD integration and reporting based on solid theoretical frameworks is currently scarce in the HESD literature, future research can build on this framework to further develop it and to test its applicability in practice. Since only a limited number of HEIs are currently reporting on their SD activities and addressing SD integration strategically, future empirical research should be focused on some of these institutions and use their experiences as pilot studies. When carefully selected, single case studies—such as Mundy's (2010)—and preferably longitudinal ones, can be undertaken within HEIs.

Such case studies could cover an in-depth study of the implementation of SD reporting and integration within certain HEIs, and test whether the four controls are put in practice and how they are used in conjunction with each other. This can point out how certain combinations of the different controls are used and what their benefits, challenges, and potential for improvements are. An important issue to study within this process is how SD reporting is used in HEIs in relation to strategy, or in other words whether SD reporting is used interactively, in order to test its potential for organisational learning towards SD. These suggestions for further research can provide interesting insights to the topic, both for theory development, as well as for providing managers with practical advice for SD integration in higher education.

Conclusion

Within our society, the general interest in SD is increasing, due to a number of challenges on the global level, such as climate change, poverty, or financial crises. As HEIs are an important actor in our society, they should be addressing these issues as a priority within their educational, research, and outreach activities, as well as in their physical operations. Whether HEIs actually practice what they preach regarding the implementation of SD issues, can be assessed by their internal and external stakeholders through the process of SD reporting. Nevertheless, as this paper emphasises, SD reporting has the potential to be more than solely a tool for communicating efforts towards SD integration: it can set in action a larger process of real engagement and change towards SD within the internal management of the HEI.

This paper offers theoretical insights on the contributions of MC to improving SD integration in HEIs. It applies Simons' (1995) LOC framework and stresses that it is the combination of its different elements, or the holistic approach, that determines whether the SD integration process moves in the desired direction. By using SD reporting as an interactive tool within the organisation, opportunities are created for organisational learning towards SD. And as HEIs are essentially institutions for learning, this is a fundamental issue they should be pioneering in, instead of their current situation of, in many aspects of SD integration, lagging behind the corporate sector. Therefore, besides aiming at facilitating further research on the topic of SD reporting in HEIs, the paper also intends to motivate HEI managers to engage in SD reporting within their institutions, and to offer their staff members the necessary space and tools to put this into practice.

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