

SUSTAINABLE GLOBAL SUPPLIER MANAGEMENT: THE ROLE OF DYNAMIC CAPABILITIES IN ACHIEVING COMPETITIVE ADVANTAGE

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Organizations face increased pressure from stakeholders to incorporate a plethora of corporate responsibility (CR) and sustainability aspects in their business practices. Legal and extra-legal demands are dynamically changing; almost no organizational function is unaffected. Owing to the outsourcing wave of the last decade, in particular purchasing and supply management (PSM) plays an ever more important role in assuring sustainable production of the firm's products offered in the marketplace. The supply base of many Western firms has become increasingly global and spend volumes have shifted towards emerging countries. In order to avoid the risk of reputational damage to the buying company, the PSM department must ensure that their international suppliers comply with their corporate codes of conduct and that environmental and social misconduct at supplier premises does not occur. In this paper, "sustainability" refers to the pursuit of the tripartite of economic, environmental, and social performance. We contribute to prior research in the fields of sustainability and CR by extending insights of the dynamic capabilities view to analyze how the PSM function integrates sustainability aspects in its global supplier management processes. Based on four case studies in the chemical industry, we propose that profound sustainable global supplier management (SGSM) capabilities are a source of competitive advantage. These capabilities are path dependent and particularly valuable when organizations are receptive to external stakeholder pressure. Early movers in the field of SGSM reap competitive benefits to a notable extent as a result of resource accumulation and learning processes over time.

Keywords: corporate responsibility; sustainability; environmental and social issues; supplier management; case studies

INTRODUCTION

As a response to increased competition and cost pressure in sales markets, firms increasingly rely on a global supply base (Krause, Pagell and Curkovic 2001). This predominantly cost-focused strategy has led to the emergence of truly global supply chains (Trent and Monczka 2003; Steinle and Schiele 2008). Nevertheless, sourcing from a global supply base also exposes the buying company to a notable set of risks that require active management (Craighead, Blackhurst, Rungtusanatham and Handfield 2007; Monczka, Trent and Petersen 2008). Hence, the

mitigation of risk via risk management has become a critical performance driver for global sourcing (Kamauff and Spekman 2008; Manuj and Mentzer 2008).

While the risks and effects of supply interruptions as well as feasible mitigation strategies have been widely discussed (Kleindorfer and Saad 2005; Tang 2006; Tomlin 2006), the risks stemming from supplier irresponsibility, in terms of violation of ethical and environmental standards, have only recently become a prominent topic within the field of purchasing and supply management (PSM) and global sourcing (e.g., Koplin, Seuring and

Mesterharm 2007; Darnall, Jolley and Handfield 2008; Baden, Harwood and Woodward 2009).

The current corporate responsibility (CR) movement exerts pressure on firms to attain sustainability beyond their own organizational boundaries. For the purpose of this paper, we define the term *sustainability* as the tripartite pursuit of economic, ecological, and social performance, which is also referred to as the triple bottom line of the organization (Kleindorfer, Singhal and van Wassenhove 2005; Carter and Rogers 2008). Accordingly, firms must also verify that sustainable operations exist at supplier premises, since irresponsible supplier behavior of any kind may be extended to the buying firm, causing adverse publicity, reputational damage and costly legal obligations (Carter and Jennings 2004; Koplin et al. 2007).

The frequent changes in the plethora of environmental and social standards issued by regulatory bodies and nongovernmental organizations (NGOs) cause dynamic swings of stakeholder interests and continuous alternations in the type of pressure exerted on firms (Hall 2000). In responding to this pressure, firms must create organizational capabilities that allow them to detect changes in CR requirements and to incorporate these changes in their sourcing and supplier management processes in a timely and rigorous fashion in order not to be considered "irresponsible" (Porter and van der Linde 1995; Litz 1996; Hall 2000). Extant literature suggests that organizations which pursue activities not solely focused on economic return, but also consider the impact of their actions on the environment and society, will attain a long-term competitive advantage (e.g., Hart 1995).

To address the reputational risks resulting from global sourcing, in particular Western multinational corporations (MNCs) voluntarily establish corporate codes of conduct for suppliers and demand self-declarations from suppliers that they comply with these codes (Baden et al. 2009). Suppliers should demonstrate transparency of their social engagement and their undertakings to reduce the impact of their business activity on the natural environment. However, product recalls due to environmental hazards (Handfield, Walton, Sroufe and Melnyk 2002) and continuous violations of human rights, especially in emerging countries (Lobel 2002), provide the evidence that sustainability criteria are still not sufficiently and effectively embedded in MNCs' global supplier management processes. Thus, sustainable supplier management must go beyond supplier self-declaration to foster responsible behavior of the entire supply base.

The management of suppliers requires Western MNCs to build up particular capabilities (Min 1994; Trent and Monczka 2003) which enable them to ascertain and implement CR standards within their steadily growing global supply base (Handfield et al. 2002; Carter and Rogers 2008; Baden et al. 2009). However, knowledge as to *how* buying firms can design and structure such processes to assure sustainable supplier operations is limited

(Carter and Rogers 2008). Therefore, it is of strong academic and practical relevance to investigate *how* firms — in particular those pursuing successful and genuine sustainability practices — integrate economic, ecological and social criteria in their sourcing processes and sourcing decisions. In line with our definition of sustainability, we will refer to the joint integration of environmental and social criteria into economic supplier management processes as *sustainable global supplier management* (SGSM) throughout the course of this paper. The following research questions will be addressed in this paper:

1. How do successful sustainable firms design and configure SGSM processes to dynamically respond to changing sustainability requirements?
2. How can SGSM capabilities be a source of competitive advantage to the buying firm?

In order to approach these research questions, we elaborate on our research framework from the dynamic capabilities view (DCV) of the firm (Teece, Pisano and Shuen 1997; Eisenhardt and Martin 2000), a sub-stream of the resource-based view (RBV) (Wernerfelt 1984; Barney 1991). We seek to enhance knowledge on SGSM by elaborating on Litz's model of adaptive behavior which integrates CR capabilities with the RBV (Litz 1996). This model of adaptive behavior enables us to study the response of the PSM function to the dynamic changes in stakeholder pressure. The applied research framework, depicted in Figure 1, commences with the perception of an external stimulus for sustainability, continues with deliberation of response for SGSM processes and their content, and terminates with the performance of the selected SGSM response.

The remainder of the article is structured as follows: we present a review of extant literature on the concept of sustainability in global supplier management, linking it to the assumptions of the DCV of the firm. The research method, a multiple case study approach in the chemical industry, is elaborated upon. The analysis of our findings on SGSM processes are presented, leading to empirically testable propositions. The paper concludes by highlighting managerial implications and paths for further research.

LITERATURE REVIEW AND THEORETICAL BASIS

CR and SGSM

Throughout the course of this paper, we rely on Campbell's (2007) definition of CR: companies act responsibly and genuinely when "they do not knowingly do anything that could harm their stakeholders" and "they [. . .] rectify it whenever the harm is discovered and brought to their attention." According to this definition, firms, which are able to detect and correct misbehavior and accommodate changing attributes of CR requirements, experience competitive benefits over their competitors (Campbell 2007). Moreover, responsible

FIGURE 1
Research Model (adapted from Litz 1996)



business practices can improve firms' operational processes and decrease risk exposure to negative publicity and reputational damage, ultimately leading to enhanced competitive advantage (Christmann 2000; McWilliams and Siegel 2001). Owing to the growing influence of CR on corporate strategy decisions and the increased reliance on a global supplier base as part of global production networks, it has become imperative for the PSM function to deal with green and social issues in global sourcing processes and decision making (Carter and Rogers 2008; Pagell and Wu 2009).

Research in the field has identified three key processes of supplier management: supplier evaluation, supplier selection and supplier development (Braglia 2000; Schiele 2007). The three capabilities have been recognized to positively impact operational and financial performance (Carr and Pearson 1999; Sánchez-Rodríguez, Martínez-Lorente and Clavel 2003). Although global sourcing decisions and processes are generally more complex, they are very similar to the extensively researched generic supplier management processes (Chan, Kumar, Tiwari, Lau and Choy 2008).

Until this point in time, the triple bottom line has received imbalanced attention in the global sourcing literature. The focus has been primarily on the capabilities that generate economic performance in global sourcing (Petersen, Frayer and Scannell 2000; Trent and Monczka 2003). Owing to the outsourcing wave of the past, suppliers largely determine the quality, cost and margin of products and services which the buying firms offer in the market place (Tsoufias and Pappis 2006). Thus, research regarding the issue has been incisive, identifying cost and quality as dominant evaluation and selection criteria (Dickson 1966; Braglia 2000; Huang and Keskar 2007). Consequently, literature on the economic benefits of the buying firm's efforts to increase suppliers' capabilities to meet the buying firm's needs is prevalent (Hahn, Watts and Kim 1990; Krause and Ellram 1997). The impact of the quality of such supplier development processes on the success of the development engagement has been highlighted (Forker, Ruch and Hershauer 1999; Hartley and Jones 1997) and is even regarded as a strategic weapon of buying firms (Krause, Handfield and Scannell 1998).

Until the turn of the millennium, green and social criteria had very limited relevance in supplier evaluation and selection research. Green, Morton and New (1996) were the first to elaborate on environmental criteria in supplier evaluation and found that rigorous environmental supplier evaluation enables a better distinction and choice of compliant suppliers. Noci (1997) identified evaluation criteria, such as green competence, environmental efficiency, green image and life cycle cost, as valuable to establish an environmental performance and compliance measurement. Similarly, Humphreys and Chan (2003) presented a green supplier selection approach, applying quantitative and qualitative criteria. Handfield et al. (2002) identified an intersection of the most valuable and the most assessable environmental selection criteria.

This discussion highlights the fact that the environmental dimension has been more extensively researched than the social dimension with respect to supplier selection and evaluation. Only some notable exceptions focus on social responsibility under the umbrella of "ethical sourcing" or "purchasing social responsibility" (Roberts 2003; Carter and Jennings 2004; Carter 2005; Hutchins and Sutherland 2008).

Maignan, Hillebrand and McAlister (2002) made an early contribution, combining green and social supplier selection criteria in their discussion. Pedersen and Andersen (2006) discussed the utility of codes of conduct as legal instruments to ensure compliance in global supply chains. This notion is confirmed by Boyd, Spekman, Kamauff and Werhane (2007), who highlighted the need for supplier monitoring and reward systems to enforce CR principles of the buying firm in supplier operations. Recently, the joint research of environmental and social issues in SGSM has gained increased attention, highlighting the synergies available from such integration (Matos and Hall 2007; Carter and Rogers 2008; Pagell and Wu 2009). Despite these notable contributions, our understanding of how to integrate the triple bottom line in existing supplier evaluation and selection structures and criteria is still at an early stage (Koplin et al. 2007).

Compared with literature on sustainable supplier evaluation and selection, contributions on environmental

and social supplier development are scarce although green supplier development capabilities have been identified as a core competence (Nagel 2003). Lee and Klassen (2008) found that supplier support and development initiatives initiated by the buying firm are a major driver of improvement for small- and medium-sized suppliers. Baden et al. (2009) argued that social issues are treated as an order qualifier to protect buyers from reputational risk, thereby, explaining the negligence of social supplier development initiatives.

The Dynamic Capabilities View and SGSM

When referring to sustainability and competitive advantage, strategic management scholars have mostly neglected the dynamic aspects of the business environment and the stakeholder demand for CR. In the sense of Barney's (1991) definition of a strategic resource, the capability of an organization to detect variance in stakeholder demands for ecological and social responsibility and to subsequently derive proper actions has not been considered as such (Litz 1996).

Consistent with traditional RBV assumptions, more recent works stress that a firm's competitive advantage lies in resource deployment and capability building in accordance with dynamic market demands as opposed to the traditional focus of the RBV on resource identification and resource picking. Owing to dynamics in the business environment, long-term competitive advantage can only be achieved when firms develop and apply capabilities "sooner, more astutely, or more fortuitously" (Eisenhardt and Martin 2000, p. 1117) than competitors. This stream of reasoning is also referred to as the dynamic capabilities view (Teece et al. 1997; Makadok 2001).

Accordingly, dynamic capabilities are defined as a firm's capacity to integrate, build and reconfigure internal and external resources using organizational processes to respond to changes in the competitive environment and to design new value creating strategies (Teece et al. 1997; Eisenhardt and Martin 2000). Dynamic capabilities exhibit common features across firms and may only be idiosyncratic in their specifics because best-practices spread within and across industries. Still, the idiosyncrasy within organizational routines differentiates their ability to deploy resources and the productivity of other resources possessed by the firm from its major competitors. Such capabilities are most valuable and difficult to imitate when they (Dierickx and Cool 1989; Prahalad and Hamel 1990; Teece et al. 1997; Makadok 2001):

- Provide the firm with cospecialization and learning economies allowing for diversification towards related and embedded processes;
- are path dependent upon previous asset accumulation processes; and hence

- are socially complex and tacit, preventing decomposition in all its lower level routines, resources, and skills.

Indeed, scholars stress that extra legal strategies, such as "green supply chain concepts" stock firms with a difficult to imitate capability, which can serve as a source of competitive advantage (Hart 1995; Litz 1996; Russo and Fouts 1997).

Despite the paralleling evolution of research about dynamic capabilities and CR, the two streams have seldom been merged (e.g., Hart 1995; Russo and Fouts 1997). In a noteworthy contribution, Hart (1995) argues that the natural environment imposes limits to future economic growth at the current level of production technology. He considers traditional RBV thinking as outdated since strategic considerations should solely be based on internal firm resources. Given the emerging debate about ecological sustainability, social legitimacy and reputation, the capabilities that facilitate sustainable activities must play an increasingly important role for internal strategy considerations (Hart 1995).

In the context of PSM, the assumptions of the DCV appear to suit the issue at hand. In order to reap the direct cost benefits available from global sourcing without having to bear the risk of lower CR standards at global suppliers, firms need to integrate measures of sustainability in their supplier evaluation and development initiatives both for legal and voluntary reputational reasons (Walker, Di Sisto and McBain 2008). Firms must be responsive to the changes in regulations and stakeholder demands to adapt the content of their SGSM so that they effectively address these requirements. Not explicitly referring to supplier management, but the supply chain as a whole, Kleindorfer et al. (2005) call for the development of externally focused process capabilities that secure long-term sustainability. Recognizing the contributions of previous literature and inspired by Litz's (1996) approach, we combine the model of adaptive behavior with aspects of DCV to structure our research on SGSM capabilities (see Figure 1).

RESEARCH METHODOLOGY

Research Design

We opted for an inductive multiple case study approach because research on *how* firms adopt SGSM practices in their purchasing organization is still in an exploratory stage (Basu and Palazzo 2008). Building on the theory of dynamic capabilities and applying the adaptive behavior model to the field of SGSM, the multiple case study design provides us with a good fit to the theories we elaborate on (Dubois and Araujo 2007). Furthermore, case study research allows for investigating complex phenomena, which cannot be illuminated by, for example, surveys alone because it allows the researcher to interact with the informant and to draw on multiple sources of information, leading to information-rich cases (Crane 1999; Yin 2009). This ap-

proach appeared to be adequate since the definitions of ecological, social, and environmental sustainability and corresponding attributes differ in literature and practice necessitating clarification, which could be addressed best in the course of interviews. By means of triangulation, we seek to elude the social-desirability bias inherent in the CR topic (Crane 1999). Further proactive methods to control for social-desirability bias were taken during data collection. An overview of measures followed in order to address the concerns regarding validity and reliability throughout the course of our research process is provided in Table I.

Case Selection

We chose to focus our study on the chemical industry (Standard Industrial Classification [SIC] code 28) for two reasons. First, environmental protection is of strategic relevance because its costs are among the highest of all industries. Second, the industry's high profitability and a series of partly fatal incidents in the 1980s and 1990s make responsible environmental and social behavior particularly important for stakeholders (Christmann 2000; Cheah, Chan and Chieng 2007). For example, a recent study on water pollution caused by chemical drug

TABLE I

Validity and Reliability Addressed Throughout the Course of Research^a

Reliability/Validity Criterion	Research Phase			
	Design	Case Selection	Data Gathering	Data Analysis
Reliability (<i>demonstrating that the operations can be repeated, with the same results</i>)	Develop case study protocol	Selection based on notation in DJSI and FTSE4Good indices	Shared questionnaire for all interviewers Development and utilization of case study database	Involvement of authors who have not been in the field gathering the data Coding checks
Internal Validity (<i>establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships</i>)	Foundation of our research model, previous literature, and a theoretical framework Elaboration from the DCV perspective	Sampling criteria recorded in case study protocol	Multiple informants Recording of factors that might lead to alternative explanations Control for social desirability bias	Pattern matching Triangulation of questionnaire, semistructured interview and secondary data Discussion between authors to attain interrater agreement
Construct Validity (<i>establishing correct operational measures for the concepts being studied</i>)	Adoption of questions from previous research in the field of SGSM	NA	Multiple sources of information Multiple interviewers	Interviewees reviewed the case protocol
External Validity (<i>establishing a domain in which the study's findings can be generalized</i>)	Sample within SIC 28 Multiple indicators as sample criteria	Clear description of case firms' context and situation	Comparison of available secondary CR data of nonparticipants with those of participants	NA

^aBased on Yin 2009; Gibbert, Ruigrok, and Wicki 2008

production in India proves that Western MNCs must take responsibility beyond local regulation in order to comply with western environmental standards (Larsson and Fick 2009). Hence, we expected to find information-rich cases with a set of advanced SGSM practices.

The case selection followed a multilevel process in order to purposefully maximize the richness of information while minimizing the number of cases necessary to gain comprehensive insights (Perry 1998). Based on the reviewed literature and preliminary interviews with experts, we developed a sampling frame. In order to gain information from the most advanced companies in CR in the industry (Pagell and Wu 2009) we only included companies which were listed in the Dow Jones Sustainability Group Index (DJSI) and the FTSE4Good (López, Garcia and Rodriguez 2007). In order to obtain a sample with homogenous antecedents for the development of CR initiatives, we only included firms from central Europe, which had previously experienced considerable environmental or social incidents in the 1980s or 1990s. We chose the PSM function as the unit of analysis because that is where SGSM practices are implemented and executed.

Based on the sampling criteria, we approached the purchasing executives of the top ten European chemical companies listed in both indices (Howard, Nash and Ehrenfeld 1999) via e-mail and follow-up telephone calls. Out of the 10, four firms agreed to participate in our study, providing access to purchasing executives and archival data. Among the participants were the FTSE4Good Super Sector Leader and the DJSI Leading Chemical Company. The characteristics of the participating firms and informants are summarized in Table II. Of the six companies which did not participate, four named time constraints as reason, while two mentioned data sensitivity concerns. In order to address the issue of nonresponse bias, we analyzed and subsequently compared the publicly available CR data of the nonparticipants with those of the participants, including the companies' CR and sustainability reports and information provided by DJSI and FTSE4Good. Furthermore, we studied media archives to determine whether incidents within the last 12 months were reported relating to the nonparticipants. None of the above actions revealed information that made us doubt the companies' reasoning to decline participation.

Data Collection

Primary data were collected in two phases between August and November 2008. First, the potential interviewees were asked to complete a self-administered questionnaire inquiring about themselves, the purchasing organization and the degree of SGSM implementation. This approach allowed us to assess the char-

acteristics of the potential interviewees, for example, their hierarchical position within the organization, their experience on the job and with sustainability-related processes. Moreover, questions regarding SGSM at this early stage of the research process gave us the opportunity to identify preliminary similarities and differences among the companies and to compare the answers given with openly available documentation from the companies, such as sustainability reports. Second, based on the interviewees' responses and the information retrieved from the firms' sustainability reports, guiding and probe questions for the semistructured interview were developed to form the interview guide (Eisenhardt 1989; Perry 1998) (see the appendix for the core questions of the interviews). The interviews lasted between 1.5 and 2 hours and were jointly conducted by the same two authors. All of the interviewees were senior executives. The most senior researcher purposefully did not conduct the interviews since numerous studies have demonstrated that information from interviews can be biased in a socially desirable way when interviewer and interviewee are similar with respect to social standing (Williams 1969; Nederhof 1985). In total, two to four interviews were conducted per company, of which all but one took place at the company sites (see Table II). To ensure that new aspects which arose in the course of an interview could be addressed at the other participating companies, there was a sufficient time-lapse between the appointments with informants from the same company.

Notes of the answers and presented documents were taken during the interviews and immediately written-up by each interviewer. These observations were checked against each other by the team of authors and supplemented or corrected if necessary. Whenever new or interesting facets were identified, the interview guide was adjusted to ensure that in subsequent interviews these aspects were included. In order to account for reliability, we continuously kept track of our proceedings in a protocol, for example, quoting dates of the interviews and information on our interviewees, individual settings of each interview, and where and how archival data were collected. Furthermore, we established a case database where we stored every single observation, for example, individual notes, transcripts from the interviews, the questionnaires, content from the companies' websites, as well as sustainability and annual reports (Yin 2009). Using multiple data types, respondents, and researchers helps to mitigate social-desirability bias, single-informant bias and the bias of the individual researcher, such as *a priori* beliefs. The analysis of the collected data is presented in the following section.

DATA ANALYSIS

Once all primary and secondary data were collected, we commenced with open coding procedures in order to

TABLE II
Case Characteristics

Firm	Alpha	Beta	Gamma	Delta
Firm size ^a	55,091	54,613	99,495	95,175
Size of purchasing department ^a	350	500	800	650
Informant job titles	Vice President International Sourcing Purchasing Manager Sustainable Procurement	Head of Sourcing — Global Sites Project Adviser Sustainable Sourcing (former CPO)	Chief Purchasing Executive Germany Vice President Purchasing — Enabling and Steering	Director of Global Strategic Sourcing Purchasing Manager ^b
Emerging country sourcing ratio ^c	10%	10%	15%	20%
Incidents of “irresponsible behavior” at own or supplier production site	Draining fire water from fighting major fire at Alpha’s warehouse leads to contamination of nearby river, extinguishing flora and fauna for years	Discharge of considerable amounts of dioxin by tanker explosion impacts on neighborhood, thousands need to abandon their homes	Gas leakage at production plant leads to hazardous rainout Methanol explosion at another production site severely injures numerous workers	Major fire at chemical production plant discharges hazardous materials to nearby neighborhoods Dioxin leakage at production plant endangers neighborhood but is disclosed 20 years later
FTEs ^d dedicated to SGSM	2	1–2	2–3	5
Experience with SGSM	5 years	7 years	5–6 years	10 years
^a Size measured as the number of employees. ^b Telephone interview. ^c Ratio of spend volume in emerging countries to total volume. ^d Full-time equivalents.				

structure the available information. Beginning with the first case, the same procedures were repeated for all of the three other cases. Subsequently, key categories were identified, further refined and expanded in an incremental process. After every step, the results of the individual authors were compared and discussed. Differing interpretations were addressed and analyzed in order to control for investigator bias and assure interrater reliability. Overall, data analysis was conducted in two

phases. First, we focused on within-case analyses and the development of individual profiles in order to get acquainted with each case. Second, we conducted cross-case analysis and relied on tabular displays to detect differences and common patterns of SGSM processes across the studied cases (Eisenhardt and Graebner 2007; Yin 2009). To elucidate the findings, the following sections will be structured according to the previously introduced research framework. We elaborate on the

characteristics and processes displayed in Table III. In subsequent sections we highlight the common features of SGSM processes across firms and their differences in terms of content and structure.

Perception of Stimulus and External Responsiveness

This section elaborates on the triggers or stimuli that influence companies to maintain and expand their sustainability efforts, leading to SGSM capabilities. At all four companies, the informants highlighted that the perception of external stimuli is not a unique, but a recurring event with frequently alternating characteristics. The stimuli that trigger the PSM function to engage in sustainability efforts vary across cases in number, origin (internal and external to the PSM function), and sustainability dimension, as presented in Table III. Notably, customers were not the number one driving factor of SGSM. As the purchasing executive of *Gamma* stated:

“Our customers primarily demand pharmaceuticals that can cure and not necessarily green and ethically responsibly produced substances.”

Instead, NGOs have continuously gained importance and become a major source of information on firms' sustainability performance. As opposed to regarding NGOs as pressure groups, *Beta* and *Delta* began to actively approach and cooperate with critical NGOs in their sustainability efforts in order to be at the forefront of external developments.

Given the different pressure perceptions, the PSM function at all four companies initially focused either on the ecological or social dimensions of sustainability. For example, as the only company out of four, *Beta* primarily focused on the social dimension within its SGSM processes. Still, it follows risk-impact assessment and applies supplier development processes comparable to those of the PSM functions of the three other companies which primarily focus on the green dimension. Thus, while the content of sustainability efforts is dependent on the kind of external stakeholder pressure, the configuration of SGSM processes, i.e., supplier selection, evaluation and development, is not. Although this finding seems partly counter-intuitive there is empirical support from previous research that firm managers do not differentiate their response according to the stakeholder group exerting pressure on them. Managers tend to rely on publicly known best practices to tackle growing pressure for sustainability at supplier sites (Murillo-Luna, Garcés-Ayerbe and Rivera-Torres 2008). While this finding is necessary to follow the development of later propositions, more importantly at the current stage of analysis, we will now present the driving arguments underlying our first proposition.

Triggered by incidents in the 1970s and 1980s and subsequent stakeholder pressure from employees, the

community and local activist groups to increase environmental, health and safety (EHS) measures, the case companies increased ecological and social measures at local production sites. Improved and continuously revised regulatory measures additionally lead to a decreased threat to local stakeholders. The growth of global sourcing volume increased the number and variety of stakeholders affected by the buying firm's actions. Simultaneously, the steady decrease of communication costs enabled NGOs to become a proxy of those stakeholders' interests. They either reward (e.g., issuing certificates) or punish (e.g., boycott, strike) actions along the triple bottom line anywhere in the world. Hence, companies sourcing globally are forced to overcome their previously internal and regional focus and account for their triple-bottom line impact on different groups of globally dispersed stakeholders caused by tier supplier production. As companies' resources to detect stakeholder demands and cases of misconduct are limited, the responsiveness to and the integration of external resources, such as NGOs, for the purpose of stimuli perception is vital in order to derive risk-mitigating actions. The cooperative and structured relationship with NGOs leads to a linear progression of knowledge, enabling the PSM function to respond more effectively to new requirements and supplier misconduct. *Alpha* and *Gamma* did not establish such close ties with NGOs, whereas *Beta* and *Delta* executives stated that their respective cooperation processes strongly determine the content of sustainability topics and, thus determine the effectiveness of SGSM processes.

This observation is in line with research in the field of the DCV which states that the value of a capability for competitive advantage lies in the resource configuration it creates (Eisenhardt and Martin 2000). Hence, the stimuli perception and external responsiveness are major ingredients of dynamic SGSM capabilities and will be rewarded. Thus, we formulate our first proposition:

Proposition 1: PSM's capability to respond to alternating stimuli from globally dispersed stakeholders determines the effectiveness of SGSM to mitigate sustainability-related risks in global sourcing.

Path Dependence of the Deliberation of Response

While *Beta*'s stakeholder perception led to the incorporation of social concerns in its SGSM processes, the other firms (*Alpha*, *Gamma*, and *Delta*) focus on environmental matters. At *Beta*, the perception of shareholder pressure to provide transparency of their compliance with labor standards and anti-discrimination regulation caused them to initially focus on the social dimension of sustainability. As a founding member of the United Nations Global Compact (UNGC), *Beta* initiated an internal compliance program with UNGC standards for all subsidiaries and plants leading to the establishment of

TABLE III

Sustainable Global Supplier Management Characteristics for Each Case

Firm	Alpha	Beta	Gamma	Delta
External pressure	Regulatory body UN Global Compact Customers	Shareholders UN Global Compact PSCI ^a Other NGOs	Regulatory bodies PSCI ^a	Shareholders and customers REACH ILO ^b Other NGOs
Internal drivers	Top-management PSM function	Top-management PSM function	Top management	Top-management Compliance dept.
Content priorities	1. Air emissions 2. Water and energy efficiency 3. Waste 4. Worker health and safety 5. Child/forced labor	1. Child/forced labor 2. Discrimination 3. Trait license abuse 4. Worker health and safety 5. Pollution	1. Carbon impact 2. Air emissions 3. Water efficiency 4. Child/forced labor 5. Worker health and safety	1. Worker health and safety 2. Child/forced labor 3. Pollution 4. EMS at suppliers 5. Corruption, bribery, freedom of association
Purchasing categories most affected by SGSM	Raw material Packaging Life sciences Logistics services Transportation and fleet	Contract manufacturing Raw material Packaging Life sciences Logistics services	Raw material Contract manufacturing IT equipment Textiles Office supplies	Specialty raw material Renewables Noble metals Mine products Packaging Life sciences
Non-compliance risk assessment	1st level Supplier reputation Spend category Production process Geographic location 2nd level Supplier self-assessment	1st level Geographic location industry sector Judgment of supply manager 2nd level Supplier self-assessment	1st level Geographic location (key driver of further actions) 2nd level Supplier self-assessment	Properties of goods (physical/chemical) Geographic location Self-assessment of suppliers, Consolidation of scores on a scale ranging from 0 to 100
Non-compliance impact assessment	Absolute revenue affected purchasing volume	Strategic status of supplier purchasing volume	Purchasing volume	Business impact is not considered as prioritization criterion for SSM initiatives
SGSM related auditing	Purchasing experts in cooperation with quality assurance and EHS ^c experts	External audits focusing on labor standards and human rights	Internal EHS and operations experts in cooperation with external audit firm	Purchasing experts in cooperation with internal EHS, labor, and human rights experts
Geographic focus of development initiatives	Asia	China, India, Southeast Asia	China and India	Worldwide

^aPharmaceutical Supply Chain Initiative.

^bInternational Labor Organization.

^cEnvironmental, Health, and Safety.

internal auditing capabilities for these standards. Cooperating with these internal functions and the resulting learning curve effects triggered and enabled timely upstream control towards suppliers. Measures to assure supplier compliance were integrated into SGSM processes as discussed in later analysis.

A comparable path of development, yet focusing on the ecologic dimension, could be observed at *Delta*. Perceiving the main pressure from shareholders and customers for high ecological standards, *Delta's* top management committed to the implementation of an environmental management system (EMS) for its value chain within the firm's boundaries. Over time, capabilities evolved, which provided the PSM function with a deep pool of knowledge to draw from. The collaboration with the production function enabled the expansion of the EMS to include *Delta's* suppliers.

The benefits of internal integration have also been suggested by the RBV and DCV literature (e.g., Peteraf 1993; Teece et al. 1997). Firms that are able to integrate with internal capabilities accumulate SGSM capabilities faster and with less resource consumption than competitors. Those companies without sustainability-related capability stock or poor cross-functional management capabilities in PSM develop SGSM capabilities more slowly (Hart 1995; Pagell and Wu 2009). The two cases of *Beta* and *Delta* demonstrate that the content of SGSM processes are path dependent; thus, they are dependent on the stock of internal sustainability capabilities accumulated in the past. PSM's asset accumulation process is facilitated through the bonding with this resource stock in internal auditing (*Beta*) and production (*Delta*). Thus, we formulate the following proposition:

Proposition 2a: The content of SGSM processes is dependent on previous paths of sustainable capability building within the organization.

Although sustainability capabilities were accumulated within the organization, informants from all four firms highlighted the lack of internal resources to immediately develop a concept embracing all aspects of the triple bottom line. Thus, firms prioritized their actions according to the pressure they perceived to be the strongest. *Alpha* and *Gamma* acknowledged deficiencies in the initially neglected social dimension of the triple bottom line; whereas *Beta* highlighted its backlog in particular in green supplier evaluation and development capabilities. All three firms recently continued to broaden the content covered within their SGSM processes toward a more holistic embracement of the triple bottom line.

Delta's pioneering role in combining economic and ecologic supplier management processes enabled them to gain an edge over competitors in terms of breadth of

the content embraced by SGSM processes. Recently, *Delta* perceived the increased pressure for transparency concerning the social dimension of sustainability as inevitable. As a consequence, *Delta* integrated the social dimension in its existing SGSM processes, which originally evolved from the initial focus on the ecologic dimension.

Hence, a firm's successful pursuit of a social sourcing strategy may be dependent on having first demonstrated competence in green global supplier management processes. Relating to Hart (1995), early accumulation of capabilities in SGSM focusing on the ecological dimension of the triple bottom line may provide the foundation upon which the content of the social dimension can be added to existing SGSM processes. Such further content integration in existing operational processes is enabled by learning curve effects from the deployment of the available SGSM capability. The feedback loops available from capability deployment lead to a stable process guiding the evolution of capabilities and enhancing their productivity. The knowledge created by *Delta* in the ecological dimension can thereby be leveraged in the related context of social deliberation (see Figure 2). Based on path dependency arguments derived from the DCV of the firm (Prahalad and Hamel 1990; Zollo and Winter 2002), we formulate the following proposition.

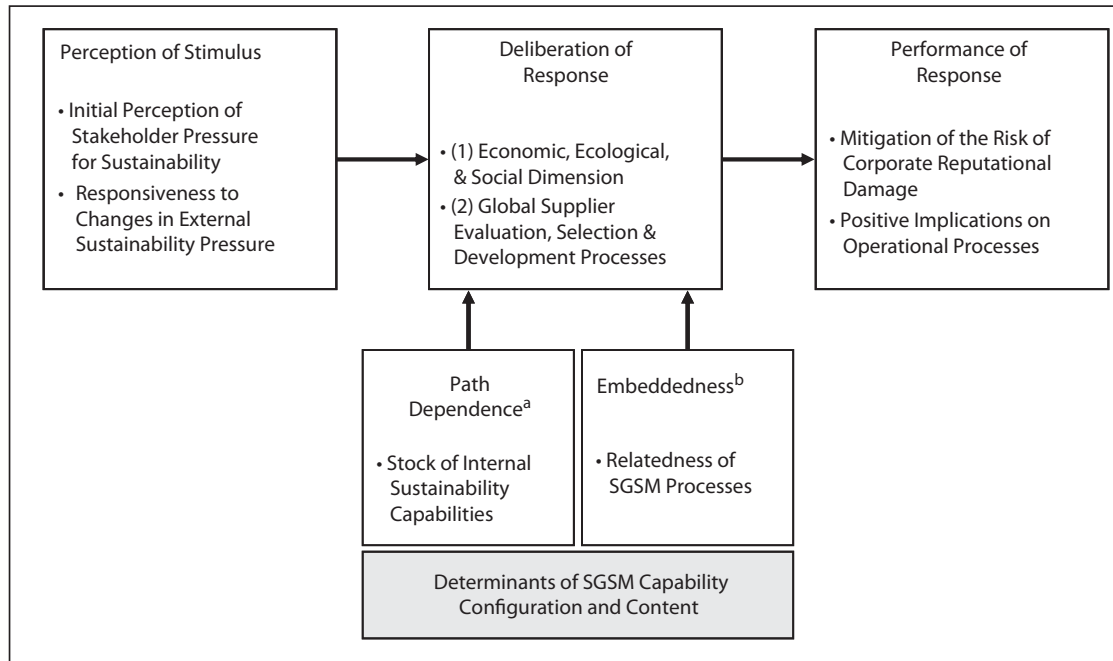
Proposition 2b: Excess capacity in previously accumulated SGSM capabilities enables the embracement of broader content priorities of SGSM over time.

Embeddedness of SGSM Processes

Supplier Selection and Evaluation. As indicated before, sustainable supplier selection and evaluation processes show ample similarities across case companies. New suppliers entering the selection process are confronted with a supplier self-assessment questionnaire before they are short-listed. This assessment consists of a structured and a semistructured questionnaire in which suppliers must openly describe how exactly they deal with topics such as waste levels, handling of hazardous material, and assurance of production safety. In the early stage of the supplier selection process, sustainability standards act as a gate-keeper. If violated, these suppliers are not considered for further cooperation. Once a new supplier has progressed on to the shortlist, it will be audited on-site by either internal or external experts in order to ensure that only compliant suppliers enter the supply base.

For established suppliers, the exigency for subsequent action is derived from the criticality and likelihood of supplier noncompliance. Non-critical suppliers receive a self-declaration to be signed to signify compliance with the required standards. In contrast, critical suppliers have to endure a process similar to the one in place for new suppliers, beginning with a questionnaire assessing

FIGURE 2
Summary of Findings



^aEffects grounded in path dependency arguments from the DCV impact (1) the content criteria pursued by SGSM processes and (2) the configuration of SGSM processes.

^bEffects grounded in embeddedness arguments from DCV impact primarily the configuration of SGSM processes.

sustainability-related practices and standards. If there is doubt about the sustainability of the supplier, an audit is triggered. Very critical suppliers receive an audit which assesses the implementation of sustainability measures concluding in a follow-up action plan.

Alpha, *Beta* and *Gamma* initially rely on information available from their global supplier database, which is consolidated in a supplier noncompliance-risk and impact matrix. Risk indicators include the physical properties of the product, the labor intensity of the production process, and the supplier's geographic location. The potential business impact of supplier non-compliance is estimated by indicators such as spend volume, absolute revenues affected and strategic status (see Table III).

In contrast, *Delta's* supplier evaluation and risk ratings are seamlessly interlocked. Risk indicators from the supplier database are consolidated with data gathered from the supplier self-assessment and externally acquired data. This compiled information is used to generate a supplier rating concerning the ecological and social dimensions of sustainability. The supplier self-assessment is compulsory for all established and new direct material suppliers. The overall metrics are consolidated into a rating ranging from 0 to 100 percent compliance, with a minimum threshold for established and new suppliers of 65 percent. New suppliers must reach this threshold in order to be

considered for a business relationship. If established suppliers score below this threshold, a supplier audit is triggered, and an action plan has to be implemented within 3–6 months. Until the minimum threshold is met, the business relationship is put on hold.

In comparison, the risk-impact classification along the three categories, as pursued by *Alpha*, *Beta* and *Gamma*, has limited applicability for continuous supplier monitoring since only one out of three statuses are assigned to the supplier — noncritical, critical and very critical. In contrast *Delta's* sustainable supplier evaluation is more complex and resource consuming, but the percentage scores allow for continuous monitoring of the supply base over time.

Supplier Development. Having elaborated on sustainable supplier evaluation and selection processes, we now turn to the sustainable supplier development (SSD) process. In unison, informants at *Alpha* and *Beta* highlighted that they only desist from the supplier development program in highly competitive supply situations. Hereby the term “competitive” refers to a sufficient number of suppliers capable of delivering the requested product at comparable prices and quality, as well as environmental and social performance. Informants at *Beta* and *Delta* highlighted medium-term competitive thinking as a driving force behind their SGSM initiatives. The prevalence of joint actions is exemplified by this statement of *Beta's* head of sourcing:

“Together with our suppliers, we seek to ensure that applicable laws are complied with and working conditions and environmental protection measures are improved across our supply chain. In doing so, we not only reduce our own financial and reputational risk exposure, but nurture relations with our supplier and raise our attractiveness to increasingly ethically-aware customers and financial markets.”

The meaning of supplier development with SGSM is further described by *Alpha's* purchasing manager:

“In most procurement situations, a supplier phase-out, resulting from deficient sustainability standards, is not an option. Thus, responsive and resource-effective supplier development is a key success factor to minimize our exposure to sustainability related risks.”

Having presented the approaches toward supplier evaluation, selection and development, we base our next proposition on the following argumentation. The key challenge in SGSM is to fulfill the CR expectations of the companies' stakeholders — that is, to ensure high social and environmental standards along the supply chain, while simultaneously ensuring economic sustainability of the buying company itself and of its suppliers. Relying on supplier selection and evaluation alone in a way that leads to the exclusion of those suppliers which do not meet the standards is not considered sustainable. While the risks regarding social and environmental sustainability may be mitigated when a critical supplier is excluded from the supply base, this only holds true for a limited time. The per se limited supply base is reduced and competition among suppliers minimized, which may ultimately endanger the goal of economic sustainability. Furthermore, fewer but more powerful suppliers might be less inclined to quickly adopt the changing and stricter standards of their customers without an increasing monetary compensation, which is best exemplified by a statement made by *Delta's* director of global strategic sourcing:

“Phasing out of suppliers or desisting from supplier development would increase our dependency on the remaining suppliers. By sustainable development of the global supply base, we foster competition among our suppliers, while improving their green and social capabilities. This is costly, yet it results in positive medium-term performance effects.”

Hence, SSD capabilities are of primary importance for the following reasons. *First*, SSD provides the suppliers with concrete starting points to quickly

improve their social, environmental, and economic performance within a timeframe ranging from 3 to 6 months. *Second*, SSD increases the credibility of the buying firm since standards are not only stipulated but ways of achieving and maintaining these standards are depicted. The suppliers' willingness to adopt certain practices or standards increases (Carr and Pearson 1999; Krause, Handfield and Tyler 2007). *Third*, SSD has positive performance implications beyond risk reduction. They have an indirect component, namely the more competitive supply market situation in the medium-term resulting from SSD of the supply base, which in turn has an effect on bargaining power and total costs of the buying firm. Moreover, a direct effect is attributable to the collaboration with internal experts from the production, compliance and EHS-functions in SSD engagement. The combined efforts lead to spillover effects on traditional operational performance, namely enhanced quality of supplied products and security of supply. However, these effects were perceptually reported and could not be quantified by the case firms.

As firms accumulate comprehensive knowledge and experience in supplier development, they are able to realize under which preconditions “successful” — that is risk-mitigating — supplier development is possible, probable and feasible. Accounting for this knowledge in the design and redesign of supplier selection and evaluation criteria provides firms with superior resource picking capabilities, meaning that only those suppliers enter and remain in the supply base which are deemed developable in order to meet future demands. In turn, this leads to a more efficient deployment of SSD capabilities as the risk of development failure is reduced. Thus, sustainable supplier selection and sustainable supplier evaluation are embedded within SSD (see Figure 2). Hence, we formulate the following proposition.

Proposition 3a: SSD facilitates the capability building in sustainable supplier selection and evaluation, and vice versa.

Accounting for the distinguishable increased importance of risk mitigation along the triple bottom line lays ground for our next proposition. Literature on supplier development predominantly focuses on strategic suppliers in terms of spend volumes, bargaining power and strategic relevance of the supplied item to the final product (Kraljic 1983). No such clear portfolio should be made in the context of SGSM. Referring to the early stages of supplier selection, the statement of *Delta's* director of strategic sourcing is representative for all cases:

“Sustainability criteria, in particular social concerns, are accorded the same weight as price and quality for all of our suppliers.”

In contrast to purely economic supplier development deliberation, sustainable supplier evaluation and hence SSD decisions must account for the reputational risk of the entire company. Stakeholders will condemn any kind of misconduct irrespective of spend volume with a particular supplier or strategic relevance to the buyer. Thus, the actions of any supplier may pose a reputational risk to the buying firm. In order to adequately account for the equal damage potential of the supply base to the buying firm's reputation *Delta* based their supplier evaluation and development measures solely on risk indicators which are consolidated in a percentage rating. PSM leadership chose to desist from prioritizing according to the mentioned impact indicators (see Table III), they apply indicators such as the chemical properties of the supplied components, the production process and the geographic location of supplier production. In short, at *Delta* the need for SSD is determined based on the assessment of the likelihood of supplier noncompliance.

At the other three cases *Alpha*, *Beta* and *Gamma* applied a derivative of the portfolio approach combining risk and impact indicators. These firms assume spend volume and suppliers' strategic importance to be a feasible indicator of potential negative impact from detected sustainability grievances at supplier premises, despite the fact that stakeholders such as NGOs will punish supplier misconduct irrespective of such indicators. Thus, we formulate the following proposition:

Proposition 3b: Firms following a genuine SGSM approach base their supplier development considerations on sustainability risk assessment of suppliers as opposed to prioritization according to a combination of risk and economic impact.

Moreover, although firms applied different supplier evaluation methods as discussed above, all PSM functions concentrated their auditing and development initiatives primarily on suppliers from emerging countries and, in particular, on Asian suppliers. Yet, the sourcing volume in these countries compared with the total volume is comparatively small, ranging from 10 percent to 20 percent (see Table II). This situation indicates that the location in an emerging country of a supplier is a decisive and critical factor in the sustainable global supplier evaluation of our sample firms. They assume emerging countries to be more risky in terms of noncompliance to Western sustainability standards. Thus, while buying firms seem to particularly value the cost advantages available in these supply markets, they are aware of the potentially lower sustainability standards in these countries. Consequently, they place high emphasis on the location of production in their determination of where to concentrate their SSD efforts. As indicated in Table III all firms concentrated their efforts particularly in emerging countries. Hence,

the perceived risk of noncompliance to Western sustainability standards is strongly attributed to this geographic location of supplier production. This leads as to the following proposition:

Proposition 3c: To reduce the risk of corporate reputational damage, buying firms concentrate their global SSD capabilities in emerging countries.

Performance of Response

Following the perception of a stimulus and the deliberation of an appropriate response, firms need to address discovered deviations between the current state and preferred state in order to avoid reputational damage. This is underpinned by the statement of *Gamma's* purchasing manager:

"As soon as a misconduct of a supplier becomes apparent to us, fast corrective measures must be taken to eliminate our risk exposure."

Among the four cases, *Delta* shows a unique approach. In total, five regional experts are deployed around the world. Although being part of the purchasing department, they operate independently from traditional PSM measures and solely focus on supplier sustainability aspects. Moreover, these experts are trained specialists in environmental and social affairs, often with an engineering background, and equipped with comprehensive knowledge of cultural aspects for the particular region in which they operate. Thus, they are not only able to identify deviations from the preferred state at suppliers' sites but are also equipped with the skills necessary to realize the preferred state as fast as possible under the given circumstances. However, once misconduct at the suppliers' premises is detected, the regional experts are empowered to immediately inhibit further business undertakings with this particular supplier, either temporarily or perennially, by blacklisting the supplier in the order placement system. This blacklist status hinders maverick buying with noncompliant suppliers and avoids the purchasers' potential conflict of interests, for example, achieving savings at the expense of sustainable products.

Moreover, *Delta's* regional SGSM experts are evaluated by key performance indicators, such as "coverage of suppliers" and "average sustainability score of suppliers." Thereby, they are encouraged to execute frequent re-auditing, which allows for incremental improvement and incorporation of the constantly changing expectations of various stakeholders into the supplier evaluation and development processes.

Based on these observations and literature support we bring forward the following argumentation in order to present our next proposition: Once a new (quasi-) standard evolves, a short lead time before ensuring compli-

ance across the supply base is crucial in order to maintain the buying firm's reputation (Campbell 2007). Having to deal with uncertainty variables, such as regulation and quasiregulation, it is important to possess a capability that allows timely reaction to the universe of probable outcomes (Teece et al. 1997). The deployment of empowered SGSM experts allows *Delta* to react sooner and more astutely than competitors in two ways. First, the risk of reputational damage is reduced immediately by inhibiting further business until grievances at supplier premises are reduced to an acceptable level. Second, being equipped with profound knowledge, proper follow-up actions can be initiated leading to a fast reduction of the grievance. The continuous SSD efforts lead to learning curve effects for all actors, enhancing these processes, consisting of supplier evaluation and development, ultimately making them more stable. By following this strategy on a global basis, the core elements of the processes which are necessary and serve independent of the locus are incrementally redefined and optimized. In turn, these capabilities can be deployed to any location, requiring only minor adjustments, while equal sustainability standards can be maintained throughout the global supply base, fulfilling the expectations of stakeholders. Hence, we propose:

Proposition 4: Continuous sustainable development efforts increase the performance of response, i.e., firms may respond sooner and more astutely than competitors to arising issues at suppliers' premises and changes in stakeholder expectations.

SUMMARY AND CONCLUSION

In this paper, we presented the approaches of four leading chemical companies to continuously meet the challenge of satisfying stakeholders' alternating sustainability expectations across their global supply base. In particular, we examined *how* they integrate sustainability criteria in their global supplier management processes. The contribution of the paper is threefold. *First*, we elaborate on the SGSM processes prevalent in the chemical industry. By doing so, we follow the call for more information on *how* those firms, which pursue genuine sustainability, integrate their SGSM practices in their daily operations (Carter and Rogers 2008). *Second*, we contribute to existing literature by providing theoretical explanations for effective SGSM by drawing on the DCV. We determine that despite the diffusion of sustainability capabilities within the industry, they have the potential to serve as a source of competitive advantage, depending on the configuration of the process and the sustainability contents covered by the process (Prahalad and Hamel 1990; Peteraf 1993). *Third*, we elaborate on the performance outcomes of these undertakings. In an inductive reasoning approach, we extend

our initial research model and derive a series of testable propositions (see Figure 2).

Based on four case studies and in line with previous works of the DCV (e.g., Dierickx and Cool 1989; Litz 1996; Zollo and Winter 2002), we conclude that there are first-mover advantages available in the field of SGSM. The earlier firms begin to evaluate their suppliers for CR-related issues, the greater the accumulation of sustainability-related capabilities relative to their competitors. The deployment of early established processes provides the firm with learning economies, leading to reconfiguration of the capability and creation of a more stable process. This process leads to the build-up of access capacity. Consequently, the accumulated capability stock becomes more productive and can be deployed in an initially neglected sustainability dimension. The SGSM process does not only become more stable and advanced, it also covers a wider range of sustainability-related topics. Since the SGSM capabilities are developed in an iterative process within the firm's boundaries, the resulting processes tend to be highly tacit and socially complex in nature, preventing immediate imitation (Peteraf 1993). Hence, the combination of the learning and the access capacity effects contribute to the competitive position of the firms through more advanced and wider risk mitigation.

Moreover, in line with previous literature (Murillo-Luna et al. 2008), we find that the structure of the SGSM processes is not contingent on the perceived stakeholder pressure or the sustainability content to be covered by SGSM. Once an SGSM process is established it may be diversified, leading to a wider coverage of social and environmental evaluation and development criteria. Therefore, it is important that firms take the initial step and start considering a structured evaluation and development of their global supply base within a predefined spectrum of sustainability topics (e.g., water and energy efficiency, carbon impact, and child or forced labor). The longer companies withstand stakeholders' pressure to act, the further they will fall behind competitors which have started implementing SGSM processes. Moreover, the positive operational performance implications on costs, quality of supplied products and security of supply available from concerted SSM capabilities provide further rationale to become engaged.

Finally, we elaborated that the value of a dynamic capability for gaining competitive advantage lies in the resource configuration it creates (Eisenhardt and Martin 2000). Responsiveness is a major ingredient of dynamic SGSM capabilities because it provides timely feedback on a firm's sustainability performance, leading to our final conclusion. Firms must integrate external resources with the developed SGSM processes to form a truly dynamic capability, which allows for a timely and astute alteration of the content and the execution of SGSM processes to accordingly accommodate changing stakeholder de-

mands. Furthermore, cooperative issue management together with NGOs allows the PSM function to respond more effectively to new market requirements and supplier misconduct (Eisenhardt and Martin 2000). Hence, we conclude that under the presence of dynamic stakeholder stimulus, stable and high-class SGSM processes are a necessary condition to achieve competitive advantage; however, they are not sufficient to maintain the buying firm's reputation in the long run (Teece et al. 1997; Campbell 2007). To secure long-term competitive advantage from SGSM capabilities, firms must be continuously receptive to external dynamics.

In the light of our research questions and research design, we found case study research well-suited to investigate how firms configure SGSM processes in congruence with dynamically changing sustainability (Dubois and Araujo 2007). However, some limitations exist that are notable and should motivate further research. A limitation of this study is the focus on one industry (SIC 28) which limits the generalizability of our findings; our results could be specific to the chemical industry. For example, the greater distance to private end users may lead to different requirements regarding social and ecological sustainability compared with toy manufacturers and personal computer assemblers. Also, the companies' global sourcing focus on Asia may lead to insights specific to this industry. Thus, further research is needed to test whether the relationships formulated in our propositions hold true in industries with different regulatory and competitive conditions. Moreover, future research could test the viability of our formulated propositions in a large-scale empirical setting with data collected across industries, thereby contributing to further theoretical refinement.

Although these limitations need to be addressed in future research, they do not seem to substantially question that SGSM capabilities are a source of competitive advantage. Moreover, these capabilities are particularly valuable when organizations are receptive to altering stakeholder demands. Owing to reconfiguration processes and capability accumulation over time, early-mover organizations reap the available competitive benefits to a notable extent.

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APPENDIX

Core Questions of the Semistructured Interview Guide

External Stimulus to Engage in Sustainable Global Supplier Management (SGSM) Processes

1. Who are/were the internal and external drivers behind PSM's sustainability efforts?
2. Which legal regulations influence the governance of sustainable supplier management processes and structures the most?
3. Which extra legal pressures influence the governance processes for sustainability in PSM (customer demands, NGOs, financial markets)?

Sustainable Global Supplier Evaluation and Selection Processes

1. Please provide a description of all the practices and methods you use to evaluate suppliers' sustainability capabilities.
2. How do they differ from economic supplier evaluation and selection processes?
3. How do you value and treat environmental and social supplier selection criteria compared to traditional supplier evaluation and selection criteria such as direct cost, total cost, quality, cycle time, responsiveness and innovativeness of suppliers?
4. What are the consequences of "non-compliance" for suppliers? How do these consequences differ for preferred, standard and new suppliers?

Sustainable Global Supplier Development Processes

1. Describe the process you use to select suppliers requiring development in terms of their social and ecological production capabilities?

2. Please outline the main criteria or requirements according to which you prioritize which suppliers are to be developed?
3. Which other functions are involved in the development of sustainability-related capabilities at suppliers?
4. Identify the three most important measurable results typically achieved from sustainable supplier development engagement? Please refer to one particular case.

Performance of Sustainable Global Supplier Management (SGSM) Processes

1. How do you measure the impact of your sustainable global supplier management (SGSM) activities on the performance of the PSM function?
2. Do you assess the impact of sustainable procurement initiatives on other traditional supplier performance metrics (e.g., total cost, quality, responsiveness, security of supply, supplier innovativeness)? How?
3. Are sustainability performance targets broken down to the individual buyer level?