

Multinational Oil Companies and the Adoption of Sustainable Development: A Resource-Based and Institutional Theory Interpretation of Adoption Heterogeneity

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ABSTRACT. Sustainable development is often framed as a social issue to which corporations should pay attention because it offers both opportunities and challenges. Through the use of institutional theory and the resource-based view of the firm, we shed some light on why, more than 20 years after sustainable development was first introduced, we see neither the adoption of this business model as dominant nor its converse, that is the total abandonment of the model as unworkable and unprofitable. We focus on multinational corporations (MNCs) because they were among the organizations first called to take action. In order to illustrate the institutional pressures MNCs face and their strategic response to these pressures, we analysed four major oil and gas multinationals subject to similar sustainable development pressures – climate change, biodiversity, renewable energy development and social investment. We argue that normative and coercive isomorphism does not occur at the global level because sustainable development is largely a stakeholder-driven rather than a broad social pressure. That is, host country interpretation of sustainable development pressures varies across an MNC's subsidiary network. Based on the analysis of the four major MNCs' annual reports from 2000 to 2005, we argue that mimetic isomorphism may occur, but since it implies the use of complex and intangible resources, mimetic processes are slow, rare and discretionary.

KEY WORDS: sustainable development, multinational corporations, business strategy, resource-based view, institutional theory

Introduction

In an attempt to address the imbalance between industrial and less-developed countries in the economic, social and environmental spheres, the

1987 World Commission on Environment and Development (known as the Brundtland Commission) coined the term 'sustainable development' (WCED, 1987, p. 43), which 'is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Corporations have used the term to refer to their combined environmental, social and financial performance, the so-called triple bottom line (Elkington, 1998). We consider, then, a sustainable development-oriented corporation an organization that 'contributes to sustainable development by delivering simultaneously economic, social and environmental benefits' (Hart and Milstein, 2003, p. 56). Thus, sustainable development-oriented corporations are capable of not only being responsive to environmental and social pressures but also of remaining profitable and succeeding in the competitive marketplace. Sustainable development-oriented corporations represent a new business model, a unique alignment of corporate strategies (i.e. enterprise and business-level strategies) and firm-specific capabilities. However, if sustainable development-oriented corporations have survived and succeeded (Payne and Raiborn, 2001; Shrivastava and Hart, 1995; Steurer et al., 2005; The World Bank, 2000; Westley and Vredenburg, 1996), why, then more than 20 years after the concept was first introduced, do we see neither the adoption of the business model represented by sustainable development-oriented corporations as dominant nor its converse, that is the total abandonment of the model as unworkable and unprofitable. Our objective in this article is to posit an answer to this question. We limited our research to

multinational corporations (MNCs) because they were amongst the organizations first called on by the United Nations (1992) to take action, and within this group, we focussed on a single industry, oil and gas, which appears to have been more susceptible to what we will here call sustainable development pressures and in which many underlying complexities associated with the term 'sustainable development' are present.

Just as not all MNCs have adopted sustainable development business models, likewise not all management scholars are proponents of sustainable development as a business strategy. Indeed, an argument against more sustainable development-oriented MNCs has been advanced by international business scholars by arguing that sustainable development does not guide corporate behaviour because its contribution to financial performance is at best minimal and there is no administrative enforcement that can ensure compliance (Rugman and Verbeke, 1998b). The argument in favour of MNC adopting sustainable development-oriented practices is as follows. Sustainable development pressures – key stakeholders' claims common across an industry – induce changes in the organizational milieu where the MNC operates. The MNC's ability to efficiently and effectively adapt to this new and/or emerging organizational milieu increases shareholder value (Freeman, 1984; Payne and Raiborn, 2001; Petersen and Vredenburg, 2009).

At the core of these contrasting arguments there are two theories, the resource-based view of the firm and institutional theory. While the former's fundamental premise is that competitive disparities are the result of capabilities heterogeneity at the firm level (Barney, 2002; Wernerfelt, 1984), the institutional theorists argue that corporations facing similar institutional pressures will eventually adopt similar strategies. Therefore, by being embedded in society (Westney, 1993), MNCs' actions are influenced by stakeholders (Clarkson, 1995; Freeman, 1984) including governments (through regulations), industry (through standards and norms), competitors (through better business models) and consumers (through loyalty). Accordingly, for an MNC to embrace sustainable development and become a sustainable development-oriented corporation, there must be either some sort of power exerted over it (from regulators or the industry itself) or there must

already exist successful models of the integration of sustainable development pressures with business practices attractive enough for the MNC to emulate in its search for new competitive frontiers. According to institutional theorists (DiMaggio and Powell, 1983) the former leads to coercive isomorphism (i.e. similar corporate strategies regarding sustainable development pressures induced by regulators) or normative isomorphism (i.e. induced by the industry). The latter, the presence of successful models, leads towards mimetic isomorphism (i.e. induced by competitors).

Like other scholars (e.g. Rugman and Verbeke, 1998b), we acknowledge that, sustainable development-oriented MNCs are not more abundant due to coercive isomorphism because there is lack of clear regulation and enforcement mechanisms at the international level. Similarly, normative isomorphism or the increased number of corporations adopting the same business models due to widely accepted industry standards is as well unlikely. This is because different subsidiary locations or host countries often experience different sustainable development pressures. This reduces the likelihood of establishing common standards around the world and also reduces the likelihood of MNCs using similar initiatives across all the countries in which they operate. Under these conditions, MNCs may then focus more on sustainable development pressures that can be resolved through technology that has global scale economies and less on pressures that require the subsidiary to adapt to host countries' realities (e.g. presence or not of local NGOs, organised communities and local standards for stakeholder engagement) which compromise the MNC's scale economies. Thus, mimetic isomorphism is the only option through which we could expect more sustainable development-oriented MNCs to appear in a given industry. To this form of isomorphism, we committed our study.

At the core of our argument are the business-level strategies through which corporations can increase their environmental and social performance while increasing their financial performance. We expand the study undertaken by strategy scholars (Hart, 1995; Petersen and Vredenburg, 2009; Sharma and Vredenburg, 1998) concerned with the business–society interface by proposing four business-level strategies (green consumerism, reduced liability, reduced cost and reduced risk exposure)

through which MNCs could become sustainable development-oriented corporations as defined by Hart and Milstein (2003).

We depart from previous studies (Bansal, 2005; Buysse and Verbeke, 2003; Henriques and Sadorsky, 1996; Moser, 2001; Sharma and Henriques, 2005) that focussed on the adoption of similar environmental capabilities (i.e. pollution prevention, pollution control, stakeholder engagement) as the result of external pressures by focussing on the alignment amongst enterprise strategy (what do we stand for?), business-level strategies (how do we compete and create financial gains?) and the firm-specific capabilities that allow an MNC to concurrently deliver environmental, social and economic benefits – a sustainable development-oriented MNC.

We constrained this study to a single industry – oil and gas. Sustainable development pressures vary according to the idiosyncrasies of each industry. For example, the automobile industry experienced significant pressures for increasing safety in their vehicles in the 1960s; more recently pressures to reduce green house gases while increasing the efficiency of their cars are more significant. In the apparel industry, pressures for resolving human rights issues (e.g. sweatshops, child labour) and the emerging consumer demands for green clothing (e.g. organic cotton), is another example. For this study, key sustainable development pressures in the oil and gas industry are climate change, biodiversity, renewable energy and social investment.

In order to answer the research question, we identified the initiatives and actions undertaken by four of the biggest oil and gas MNCs namely BP, Royal Dutch/Shell, ExxonMobil and Chevron. We did this by conducting a structured content analysis of the sustainable development, social and/or environmental reports published by these four MNCs between 2000 and 2005. The objective of the content analysis was to identify the various initiatives and actions undertaken by these MNCs to address four sustainable development pressures common to MNCs in the oil and gas industry: climate change, renewable energy, biodiversity and social investment. From the collection of the MNC's initiatives and actions we established the behavioural pattern of each MNC's response for each sustainable development pressure. In other words, we deduced, the business-level strategies adopted to resolve the

sustainable development pressures while increasing the MNC's financial performance.

Our analysis shows that although our sample of oil and gas MNCs face similar sustainable development pressures they have chosen different business-level strategies to address these pressures. The model represented by BP and Royal Dutch/Shell offers a better fit with the sustainable development pressures such as climate change, renewable energy, biodiversity and social investment than the model represented by ExxonMobil and, to a lesser extent Chevron. However, our analysis of BP and Royal Dutch/Shell does not provide sufficient evidence to suggest that they also are more profitable than the model represented by ExxonMobil and Chevron. One must conclude, then, that the model represented by BP and Royal Dutch/Shell is not attractive enough to entice other oil and gas MNCs to adopt it. In other words, the presence of sustainable development-oriented organizations may not lead to mimetic isomorphism on the part of other corporations in the industry.

The rest of this article is structured as follows: First, we discuss how corporations respond to sustainable development pressures and argue why coercive and normative isomorphism are unlikely to take place. Second, we address mimetic isomorphism and the factors that make it possible. Next, we propose the business-level strategies that offer MNCs the possibility of becoming sustainable development-oriented corporations. What follows then is the research method used in this study, our findings and finally we offer some concluding remarks and implications of our findings.

Responding to sustainable development pressures

The study of the MNC's response to sustainable development pressures tends to be divided by two dominant yet contrasting perspectives. On the one hand, we have international business scholars (Rugman and Verbeke, 1998a, b) that argue that complying with sustainable development pressures does not lead to increased financial performance; hence MNCs should refrain from adopting strategies that respond to such pressures. In addition, in the few cases in which there is an international commitment

to tackle sustainable development pressures such in the case of climate change (through the Kyoto Protocol), there is no administrative enforcement that can ensure global compliance (Rugman and Verbeke, 1998a, b). These international business scholars' position rests on the assumption that MNCs' response to sustainable development pressures will not be a voluntary endeavour; there must be coercive forces (from peer companies or regulators) that ensure compliance. DiMaggio and Powell (1983) would argue that this scenario leads to normative (through peer pressure) or coercive (through regulators) isomorphism.

On the other hand, there are scholars (Freeman, 1984; Payne and Raiborn, 2001; Petersen and Vredenburg, 2009; Sharma and Vredenburg, 1998) that argue in favour of the MNCs' proactive response to sustainable development pressures. The premise of this argument is that sustainable development pressures induce changes in the MNC's organizational milieu that require strategic adaptation, otherwise the corporation's business objectives could be compromised. In addition, responsiveness to sustainable development pressures could as well be a non-traditional source of competitive advantage by reducing pollution, increasing efficiencies and opening new markets (Hall and Vredenburg, 2003; Hart and Milstein, 2003). The assumption of this view is that MNCs should be responsive to sustainable development pressures not because there are coercive forces but rather there are persuasive arguments. Thus there are successful examples of sustainable development-oriented corporations that have increased their environmental and social performance without compromising their financial performance. DiMaggio and Powell (1983) would argue this scenario leads to mimetic isomorphism.

Published scholarship attempting to explain the corporate sustainable development strategy phenomenon tends to take one theoretical perspective and argue why we should find a certain empirical result. Most studies can be placed on opposite sides of the same empirical question, namely the relationship of environmental and social pressures with financial performance – the three constructs that constitute the concept of a sustainable development-oriented corporation. Theoretically, however, we argue that the above mentioned corporate strategic positions with respect to sustainable development

can better be explained by relying on *both* institutional theory and the resource-based view of the firm. While the former explains how and why organizations facing similar institutional pressures tend to adopt similar strategies and practices (DiMaggio and Powell, 1983; Meyer and Rowan, 1977; Zucker, 1987); the latter explains firms' competitive positions as the result of resource heterogeneity (Barney, 2001; Wernerfelt, 1984).

In the following paragraphs, we explain the different forms of isomorphism and argue why coercive and normative isomorphism are unlikely to take place amongst oil and gas MNCs. Since mimetic isomorphism is the only likely option, we discuss this form of isomorphism separately.

Coercive isomorphism

Coercive isomorphism amongst MNCs facing similar institutional pressures would come from enforceable international regulations and/or agreements. Some scholars (Henriques and Sadorsky, 1999; Porter and van der Linde, 1995) argue that governments, through regulatory bodies, force corporations to comply with certain sustainable development pressures. Regulatory compliance brings legitimacy to MNCs, ensuring access to resources and ultimately the corporation's survival (DiMaggio and Powell, 1983; Zucker, 1987).

Sustainable development pressures have been portrayed as broad social issues that must be addressed by corporations and other organisations alike. For Clarkson (1995), societal issues are concerns within society that have been endorsed by political and regulatory bodies. Thus, corporations respond to sustainable development pressures when those issues are addressed by regulators – that is, when regulations are enacted and, more importantly, enforced. A belief in the necessity of regulatory enforcement to induce corporations to adopt similar strategies and practices lies at the core of the argument for coercive isomorphism.

In the aftermath of environmental disasters in the United States between 1991 and 1995, the US environmental regulators enacted more than 90,000 regulations that required firms to use the 'best available technology' to, in most cases, control and, in a few cases, prevent environmental harm

(USEPA, 1989 cited in LaGrega et al., 1994). The majority of these regulations aimed at resolving environmental problems (i.e. water and soil contamination, air quality) rather than social problems, which are equally part of the sustainable development discourse. Indeed, according to Hoffman (2001), the Environmental Protection Agency of the United States, through this great number of regulations, required chemical and oil & gas companies to heavily rely on the 'best available technology' to prevent negative impact on the ecosystem, to the extent that social issues such as '[p]ublic health, although acknowledged in a crude sense of aesthetic, was not a predominant concern' (Hoffman, 2001, p. 66).

Social issues are generally overlooked in most regulations, especially in less developed countries where the focus on technical issues (e.g. required technology, emissions limits and waste disposal) imposes limitations on the pace of regulatory change. For example, environmental regulations in Latin American countries require MNCs to address social issues by means of public hearings (Barrera-Hernandez et al., 2000). However, there is no mention of social impacts assessment, capacity building or early stakeholder engagement as means to identify and prevent social impacts that could mitigate risk exposure and increase an MNC's social investment in the host country. McPhail and Davy (1998) identified social investment, achieved through capacity building and early stakeholder engagement, as common practices among environmental, and socially responsible MNCs in the oil and gas industry. Regardless of the technical or social tone of regulations, the lack of power and/or capacity of regulatory bodies, in less developed countries, to enforce local regulations constrains the effectiveness of international regulations. Under these circumstances, an MNC will most likely focus on transferring practices that provide win-win situations. Usually these practices are highly technical, such as pollution control and prevention. Practices less tangible, such as capacity building or stakeholder engagement, may not be sufficiently present to make any meaningful difference in local communities.

Based on the above, then, it could be argued that the adoption of sustainable development strategies based on coercive power (i.e. regulators) lacks empirical support. MNCs do not adjust their

behaviour to respond to international agreements such as the Kyoto Protocol or the Rio Summit declaration because the agreements lack clear regulations, agendas, leeway for compromise and internationally useful enforcement mechanisms (Rugman and Verbeke, 1998b). Therefore, these protocols must rely heavily upon national regulations and individual governments' commitment to comply with global objectives or standards. Technically oriented regulations are easier to enforce and adopt than broader and complex regulations that require MNCs' allocation of resources to social issues. Even if we assume that regulations are enacted and enforced locally, which is the best possible scenario, MNCs are more likely to respond to sustainable development pressures that are technical in nature – climate change, renewable energy – and overlook less technical pressures – social investment, biodiversity – because the benefits of the former are more apparent for managers.

Normative isomorphism

Normative isomorphism, at the industry level emerges from industry-related standards and it would come into play to prevent coercive forces (e.g. stringent regulations) from emerging (Arora and Cason, 1995). In other words, voluntary standards may pre-empt stringent regulations that could put at risk an MNC's competitiveness.

Regardless of the impact of the sustainable development concept on society and its constituents, the concept itself is not exempt from criticism. For example, sustainable development was drafted on Western conceptions of development and natural environment conservation that rely more on market forces than on international agreements or laws. These Western conceptions resulted in an approach that superimposes human development on nature (Redclift, 1987). Although commonalities do exist amongst most sustainable development definitions (see for example Gladwin et al., 1995), different locations may show different interpretations (van Marrewijk and Werre, 2003). For instance, societies in survival economies may favour an anthropocentric view of development while societies with more advanced economies may favour a more 'sustainable' approach. In the former, climate change may not be

as important as the need for social investment to fight poverty. Various countries, societies and even communities may have relatively differing demands, resulting in different sustainable development pressures across the MNC's network of subsidiaries.

The contextual situation may increase the complexity of the institutional environment, preventing MNCs from adopting similar strategies across all their subsidiaries. MNCs are exposed to local institutional pulls that constrain the subsidiary behaviour. Traditionally, these pulls were competitors, suppliers, customers and the government (e.g. regulatory bodies). Sustainable development pressures increase the number of influential entities by bringing to the table stakeholders related to social (e.g. communities, human rights NGOs), environmental (e.g. environmental NGOs, consumers) and economic issues (e.g. stockholders). Consequently, more and more oil and gas MNCs are exposed to diverse social issues such as human rights, poverty, unskilled labour and so forth (Idahosa, 2002).

MNCs could deal with this broader and more complex spectrum of sustainable development pressures across their operations by adopting industry standards. Industry standards often emerge when stakeholder issues reach the political stage without regulations having been enacted. An industry's objective in developing its own standards is twofold: first, to show that the industry is undertaking concrete actions to correct inefficiencies; and second, to influence the government, in enacting any new regulations, to fall in line with industry standards so as not to compromise the industry's growth and competitiveness.

The Union Carbide disaster in Bhopal, India in 1984 and other incidents in North America created a negative public perception of the industry. Out of fear of stringent regulation, the chemical industry developed the Responsible Care Program in 1989. This programme was created to 'promote continuous improvement in member company environmental, health and safety performance in response to public concerns, and to assist members' demonstration of their improvements to critical public awareness' (Chemical Manufacturers Association, 1993 cited in King and Lenox, 2000).

Although the Responsible Care Program did protect the industry from stringent regulations, King and Lenox (2000, p. 713) argue that this normative

isomorphism shows 'enough opportunism that it includes a disproportionate number of poor performers, and its members do not improve faster than non-members'. For King and Lenox (2000) the difficulty of creating normative isomorphism in the Responsible Care Program was due to the lack of explicit sanctions (i.e. coercive forces) and to the 'public good' nature of the benefits created. The latter refers to corporations' failure to realize economic benefits despite charging consumers premium prices. Similar problems exist in the oil and gas industry when considering the likelihood of common and effective standards for MNCs such as The Global Gas Flaring Reduction Partnership, the Global Compact, the Voluntary Principles on Security and Human Rights and more detailed standards such as ISO 14000 and/or the ISO standard on social responsibility (ISO 26000), currently under development.

We argue that the combination of local and diverse institutional pulls with broader and deeper sets of stakeholders increases the uncertainty and complexity of sustainable development as a normative pressure (through industry standards), particularly when such pressures (i.e. to address climate change, renewable energy, biodiversity and social investment) are driven more by global concerns than by a local agenda. Under these circumstances, MNCs' response would be, as Oliver (1991) suggests, resistance to the pressure or attempts to manipulate the pressure to reduce uncertainty by responding only to local and powerful stakeholders. In other words, the extent of compliance to industry standards would be mediated by the level of stakeholder pressure at the host country level because there is no enforceable mechanism that works at the international level. Thus, issues of the greatest global concern, such as climate change, are likely to be overlooked at the host country level, especially in less developed countries.

In summary, we argue that coercive (based on legal coercion) or normative isomorphism (based on voluntary diffusion of norms) are less likely to reduce uncertainty under sustainable development pressures and to consequently encourage MNCs in the oil and gas industry to become isomorphic – sustainable development-oriented corporations. Thus the only real option to lower an MNC's resistance to sustainable development pressure in the oil and gas

industry is the presence of a successful business model, a model worth imitating – a sustainable development-oriented MNC from which mimetic isomorphism could emerge. To this form of isomorphism, we devote the rest of this article.

Mimetic isomorphism

MNCs can imitate competitive and proven strategies that are worth adopting and that reduce the uncertainty or complexities associated with the sustainable development pressures these organizations face. DiMaggio and Powell (1983) call this mimetic isomorphism.

In order to further develop our theoretical argument we make two points as they pertain to mimetic isomorphism. First, for an MNC, becoming responsive to sustainable development pressures such as climate change, biodiversity, renewable energies and social investment creates uncertainty because although the potential pressures to address such pressures can be discerned, the cost and positive impact of any responsive initiatives on the MNC's financial performance is not certain. This implies that becoming a more sustainable development-oriented corporation is a strategic problem and, as such corporations use strategies to adapt their corporate behaviour (Grant, 1991). Second, a certain degree of diversity under similar institutional pressures could be acceptable without compromising the economic survival of the MNC (Kondra and Hinings, 1998).

Sustainable development strategies

Strategy concerns both the firm and the organizational milieu in which the firm operates; hence the firm's strategy has an undeniable impact on the firm's welfare (Chaffee, 1985). Companies use strategy to deal efficiently and effectively with changes in their organizational milieu (Rajagopalan and Spreitzer, 1997), including changes that could stem from sustainable development pressures. Companies respond to changes in their organizational milieu induced by sustainable development pressures through the use of two types of strategies: the enterprise strategy and the business level strategy.

While the enterprise strategy is concerned with what the company stands for or what is the role of business in society (Freeman, 1984; Stead and Stead, 2000), the business level strategy is concerned with 'how shall we compete in each business?' (Chaffee, 1985).

The MNC's enterprise strategy directly deals with the environmental and social performance embedded in the definition of a sustainable development-oriented corporation (Hart and Milstein, 2003). The economic performance interest is dealt with through the business-level strategies which aim at providing the opportunities to either increase shareholder value (e.g. increasing market share by attracting social minded customers) or preventing it from diminishing (e.g. pre-empting stringent environmental regulations) while increasing the environmental and social performance of the corporation (Hart, 1997; Hart and Milstein, 2003). It is through the integration of enterprise strategy and business-level strategies that corporations can deliver environmental, social and economic benefits simultaneously, thus becoming sustainable development-oriented corporations.

The enterprise strategy, while conceived at the highest level, must be implemented through business-level strategies. Based on previous studies (Hart, 1995; Petersen and Vredenburg, 2009; Sharma and Vredenburg, 1998) that identify strategies, at the value chain level, for corporations when dealing with different stakeholders, we argue that the implementation of these strategies is guided by four business-level strategies through which an MNC resolves environmental and social pressures while improving its financial performance (Hart, 1997; Hart and Milstein, 2003), that is, strategies through which corporations become more sustainable development-oriented. These strategies are, *green consumerism*, when the corporation is able to resolve the 'public good' challenge by selling green products, is one such strategy. *Reduced legal liability*, where the corporation takes action to avoid either penalties from regulators or the enactment of stringent regulations, is another. *Reduced cost*, whereby corporations use a more sustainable-oriented approach to gain financial strength from greater efficiencies, regardless of the presence of green markets or coercive power from regulators or industry, is the third. The final strategy, *reduced risk exposure*, sees a corporation develop the intent to prevent

non-technical issues from straining the business–society interface. We come back to these strategies and their implications later in the article.

Diversity under sustainable development pressures

Since, institutional theorists' initial interest was in conformity, corporate self-seeking behaviour (i.e. strategic response) and diversity were overlooked. Some scholars (e.g. Kondra and Hinings, 1998; Oliver, 1991) have removed these limitations by incorporating strategic choices and organizational diversity within institutional environments. Oliver (1991) suggests that the extent of corporate compliance with institutional pressures would depend on the corporation's ability to accommodate conflicting institutional demands (by renewing the enterprise strategy), to avoid the necessity of conformity (by bargaining with regulators) or to change expectations themselves (by influencing primary stakeholders in the institutional environment). The corporation's ability to accommodate, bargain or avoid compliance must rely on the use of firm-specific capabilities. Otherwise, diversity within the institutional environment is not possible. In addition, since organizational diversity is possible under similar institutional pressures, MNCs would show some variation in their financial performance (Hinings and Greenwood, 1988) as well.

There are two forms of deviation from the institutional pressures, one related to the degree of institutional fit and the other to the degree of financial performance fit (Kondra and Hinings, 1998). On the latter, a corporation's financial performance will be acceptable if its deviation from the average of the isomorphic group is reasonable. In other words, financial performance fit is concerned with the economic aspect of a sustainable development-oriented MNC. Institutional fit will be determined by the MNC's initiatives and actions taken to address institutional pressures. The more the initiatives and actions undertaken resolve the institutional pressure the better institutional fit the MNC shows. In this sense, the financial and institutional fit are the result of business-level strategies such as green consumerism, reduced liability, reduced cost and reduced risk exposure, because embedded in these strategies are the principles through which corporations perceive

their responsibility towards sustainable development pressures (Ansoff, 1979; Stead and Stead, 2000) and the way through which corporations become more sustainable development-oriented. In our case, the more an MNC delivers economic, social and environmental benefits simultaneously, the more sustainable development-oriented its enterprise strategy is and the better the MNC's fit in the resolution of sustainable development pressures.

Business-level strategies for sustainable development

The 'green' business literature (Bansal, 2005; Buysse and Verbeke, 2003; Henriques and Sadorsky, 1996; Moser, 2001; Sharma and Henriques, 2005) has focussed more on the diffusion within and across industries of overarching environmental capabilities than on business-level strategies. For example Bansal (2005) studied the diffusion of environmental capabilities such as waste management and disposal as well as human rights; Buysse and Verbeke (2003) focussed on stakeholder management; and Sharma and Henriques (2005) on pollution control, eco-efficiency, eco-design and recirculation amongst others.

Strategies, across the corporation's value chain, that could resolve environmental and/or social pressures while increasing the corporation's financial performance have also been addressed by the green business literature. For example, Hart (1995, 1997) proposed product stewardship and the development of clean technologies for manufacturing and technology development processes; Sharma and Vredenburg (1998) found strategies built around capabilities for stakeholder integration, higher-order learning and continuous innovation as the most effective for operational processes; Petersen and Vredenburg (2009) found risk management as a key strategy explaining the link between sustainable development initiatives and institutional investors' preferences for investments. The diffusion, however, of these strategies has not received the same treatment as environmental capabilities.

We argue that for an MNC to become a sustainable development-oriented corporation the strategies that are implemented in different areas of the value chain must be guided by business-level

strategies that work across functional areas, the MNC's network of subsidiaries and that could rely on a combination of several environmental capabilities. Based on the study of Hart (1995, 1997), Sharma and Vredenburg (1998), and Petersen and Vredenburg (2009) we propose four business-level strategies: green consumerism, reduced legal liability, reduced cost and reduced risk exposure.

The difference between environmental capabilities and business-level strategies such as green consumerism, reduced legal liability, reduced cost and reduced risk exposure is that environmental capabilities work at the functional level while the business-level strategies work at the corporate level. This means that the impact of business-level strategies on the financial performance of the corporation would last longer than environmental capabilities.

For example, a corporation could realize financial gains from adopting pollution control technologies if the corporation is able to pre-empt environmental regulations, in other words, attain first-mover advantage. However, once all the competitors adopt similar or better technologies the competitive gains of being the first mover (e.g. cost of adopting a new technology, moving down the learning curve) disappear. In order for this corporation to keep its competitive edge the company may need to adapt pollution prevention capabilities. While these capabilities, pollution control and pollution prevention, require different technologies and managerial vision (Hart, 1997), they offer the same benefit – reduced operating cost, which is a business-level strategy.

Green consumerism

Green consumerism requires the MNC to increase its investment in new technologies and processes that reduce the company's ecological footprint. These improvements often result in a more expensive product that offers more value in the eyes of the customer but no difference in the service rendered. In order to be able to appropriate some of the 'public good' created, MNCs must rely on product differentiation (Reinhardt, 1998). As such, the most valuable firm-specific capabilities to a corporation pursuing this opportunity are technology and marketing related.

Reduced legal liability

Since regulators are often seen as the main driver behind sustainable development-oriented decisions (Henriques and Sadorsky, 1999), developing corporate strategies to address regulators' power is often undertaken. To this end, corporations may comply, influence the nature of regulations (Barret, 1991) or avoid the enactment of new regulations by developing industry standards (King and Lenox, 2000) or voluntarily reporting initiatives (Arora and Cason, 1995). Regulators can impose strict sanctions and hefty costs on a corporation, so that when enforceable mechanisms exist, it is a reasonable decision to comply with regulations. In order to do so, however, the corporation needs to develop firm-specific capabilities that allow it to capitalize on the situation, either by complying or by staying one step ahead of regulators. Both approaches yield problems. Compliance offers short-term benefits, but since all corporations, by complying with regulations, will receive the same financial benefits, there is no competitive advantage. Staying one step ahead of regulators (i.e. being first mover) may offer mid-term benefits. However, this approach requires of the corporation the ability to read or influence regulatory trends and develop highly technical skills.

The second problem with this strategy is that it inherently overlooks social pressures. MNCs in strongly market-oriented countries receive extra regulatory pressure because the most important environmental concerns in these economies drive international or global agreements. These global agreements, which attempt to resolve the most important environmental global problems (technical by nature), result in long-term effects and differentiated responsibility amongst countries, as in the case of climate change. For example, in the oil and gas industry, the Kyoto Protocol as an international agreement has put pressure on MNCs. This protocol focuses on environmentally sound technology as the sole mechanism through which climate change can be controlled or reduced.

Reduced cost

It is possible to reduce operating cost through the implementation of sustainable development initia-

tives. For example, Hart and Ahuja (1996) found that opportunities for increased return on investment were higher in the most polluting firms. Contrary to proactive firms, the most polluting firms require less expensive technological and process innovation to bring about a greater reduction of their ecological footprint. The most polluting corporations can make more significant improvement in their environmental and financial performance through pollution prevention measures (less capital intensive than upgrading technology) than can proactive corporations that have already exhausted such options. Therefore, this strategy cannot be a long lasting source of competitive advantage.

A well-documented case of reduced cost opportunities is 3M which, over a period of more than 15 years, managed to save more than \$500 million (US) through the implementation of a strategy known as the Pollution Prevention Pays Principle. As a result of this strategy, 3M reduced the use of raw materials, energy consumption and emissions, and minimized the amount of waste associated with its products (Shrivastava, 1995). Since then many other corporations have adopted similar environmental management systems, hence, diluting the competitive advantages of such initiatives. In 2008, for example, more than 180,000 ISO 14000 certificates were issued globally (International Organization for Standardization, 2009) reflecting this trend to environmental management.

Reduced risk exposure

Widely known cases such as Bhopal and Love Canal and the subsequent Superfund collection of laws and cleanup programmes have shown that regulations are often not enough to avert negative economic, environmental and social effects where MNCs operate. Moreover, these cases show that corporations, especially MNCs, are exposed to unexpected issues that emerge from their geographic, internal environment and socio-political contexts. Unexpected issues create tension within the business-society interface that needs to be dissipated if the MNC is to capitalize on its intended economic opportunities. In order to do so, the MNC has to allocate or develop firm-specific capabilities that are able to deal with these tensions. In order to reduce the need for such adaptation, practitioners

and scholars often advocate stakeholder engagement (Freeman, 1984).

Because they are especially exposed to complex geographic, internal environment and socio-political dimensions, oil and gas MNCs in particular must engage stakeholders. McPhail and Davy (1998) describe how MNCs working in less developed countries have used effective community stakeholder engagement to move from the pay-as-you-go approach to a formalized community involvement where win-win opportunities strengthen the business-society relationship. This new approach involves an extensive consultation with local communities and environmental groups, often beginning long before seismic exploration gets underway (Konrad et al., 2006; Loza, 2004; McPhail and Davy, 1998; Steurer et al., 2005). Failing to so engage increases the tension within the business-society interface, which can be detrimental for the MNC.

The business-level strategies of green consumerism, reduced cost, reduced liability and reduced risk exposure offer MNCs the opportunity to develop capabilities that can lead to non-traditional sources of competitive advantage (Hart, 1995).

The resource-based view of the firm argues that rare, valuable and difficult-to-copy capabilities are the source of competitive advantage. The competition is then for better capabilities as opposed to bigger markets (Collis and Montgomery, 1995). Rare, valuable and difficult-to-copy capabilities are firm-specific; hence, the bundle of capabilities a firm has at its disposal is the result of the collection of strategic decisions the firm has made in the face of competition (Dierickx and Cool, 1989; Pettus, 2001). The resource-based view, then, expects corporations to differ in the capabilities they control, and this heterogeneity explains the competitive advantage that some corporations enjoy.

In general, the corporation's bundle of capabilities is of two kinds: tangible (e.g. technology, property rights) and intangible (e.g. knowledge, organizational culture). Tangible capabilities are tradable, easy to copy or, at least, to replace, making for a competitive advantage that is not sustainable. On the other hand, intangible capabilities are non-tradable (i.e. the market is unable to fully capture their value), and difficult to copy or replace because their acquisition is a function of time invested in their development process, the ability of the firm to rely on other

firm-specific resources, and the complexity of these resources' development and integration with other core resources (Dierickx and Cool, 1989). The above has two implications: first, there is no way to acquire intangible capabilities, such as stakeholder engagement, other than by developing them within the MNC; second, intangible capabilities are more likely to be a sustainable source of competitive advantage as opposed to tangible capabilities (Hall, 1992, 1993).

Since none of the business-level strategies – green consumerism, reduced legal liability, reduced cost or reduced risk exposure – can resolve sustainable development pressures by itself, a sustainable development-oriented MNC must address such issues through a combination of these strategies. Indeed, green consumerism and reduced legal liability rely heavily on tangible capabilities (i.e. technology). Competitive advantage through reduced legal liability is short-lived because the benefits that accrue from being the first mover (i.e. by development of the 'best available technology' or a better reputation with regulatory bodies) are often outweighed by the advantage of second mover (such as improvement of the incumbent technology, reduced regulatory uncertainty and/or reduced implementation cost). Similarly, green consumerism is a short-lived source of competitive advantage because competition amongst MNCs in the renewable energy industry will not centre on differentiation but cost.

Reduced cost relies on a combination of tangible and intangible capabilities such as pollution control and prevention (Christmann, 2000; Hart, 1995; Hart and Ahuja, 1996), environmental management systems (Klassen and McLaughlin, 1996), product stewardship (Hart, 1997) and life-cycle assessment of products and technologies (Hawken, 1994; Shrivastava, 1995b). Since reduced cost relies on the combination of tangible and intangible capabilities, this strategy is likely to be a more sustainable source of competitive advantage than green consumerism and reduced liability. Its downfall, however, is that, like green consumerism and reduced liability, reduced cost it is not as effective to address social pressures (i.e. need for social investment) as environmental pressure (i.e. climate change, biodiversity) that are more technical. Finally, reduced risk exposure relies on intangible capabilities such as stakeholder engagement (Sharma et al., 1994; Westley and Vredenburg, 1991, 1997). Since intangible capabilities are difficult to

copy and embody tacit knowledge subject to time compression diseconomies and complex interactions (Sharma and Vredenburg, 1998), these capabilities could offer a longer-lasting source of competitive advantage.

Research method

Sample

Since sustainable development pressures and the associated corporate strategies are context-specific (Carroll, 1979; Sweeney and Coughlan, 2008), we limited this research to a single industry – oil and gas – in which MNCs are dominant and sustainable development pressures such as climate change, biodiversity, renewable energy and social investment are salient. In addition, since the oil and gas industry is often considered in tension with the sustainable development agenda, MNCs operating within this industry will tend to disclose more on the institutional pressures that demand change of their corporate behaviour (Cormier et al., 2004; Kolk et al., 2001; Osborne et al., 2001). Our sample consisted of four of the largest oil and gas MNCs: Royal Dutch/Shell, BP, ExxonMobil and Chevron that appeared to represent *a priori* divergent strategic approaches to sustainable development.

Sustainable development pressures

We adopted Bansal's (2005) operationalization of the sustainable development concept as the combined corporate effort to, on the environmental front, reduce the 'ecological footprint' (Wackernagel and Rees, 1996); on the social front, embrace a broader spectrum of stakeholders beyond the economic and legal corporate responsibilities (Carroll, 1979); and on the economic front, develop new products and/or increase efficiencies as the result of strategic decisions taken by top managers.

With respect to 'ecological footprint' we focussed on climate change, renewable energy and biodiversity. For social performance we focussed on social investment through which oil and gas MNCs reach out to stakeholders other than the traditional consumers, suppliers, regulators and shareholders. We

deal with economic performance later as part of the conditions for a mimetic isomorphism to emerge.

Climate change

In a survey conducted by the *McKinsey Quarterly* (Krauss and Mouawad, 2009) of more than 2000 executives working for MNCs, 60% of these identified climate change as strategically important for their companies. However, no more than 36% of the multinational executives acknowledged that their companies seldom or never incorporate this sustainable development pressure in the overall corporate strategy (Krauss and Mouawad, 2009). Oil and gas MNCs are a significant target group for those advocating a reduction of GHGs' (Green House Gases) emissions.

The Kyoto Protocol, an international agreement developed under the United Nations Framework Convention on Climate Change, in which developed countries committed to reduce their GHG emissions to 5.2% below 1990 levels by 2010 was ratified in February of 2005. The World Resources Institute (WRI, 2002) argued that, despite the US not ratifying it, the Kyoto Protocol would affect American industry because 'many U.S.-based companies have extensive assets abroad that could be impacted' and added that '[o]ne likely scenario is that communities living in or near environmentally sensitive areas will increase their opposition to oil and gas development, either through a political process or other means, such as protests and sabotage' (WRI, 2002, p. 5).

Renewable energy

The emergence of renewable energy as a potential business option for oil and gas MNCs emerged as a viable response to the Kyoto protocol's GHG emissions targets, environmental degradation and overall decline of the quality of life (Beardsley, 1988). Although the participation of renewable energies in the global energy system is growing, its impact in today's energy supply and/or consumption remains minimal. For example, from 1973 to 2003, the proportion of renewable energies (i.e. solar, wind and geothermal) in the world's total primary energy supply rose from 0.1% to 0.5% (International Energy Agency, 2005). This increase was in part due to technical improvements and market conditions that make some renewable energies (e.g. wind

and solar) more competitive (Madsen, 2000). Wind power, for example, is expected to produce 7% of all the electricity consumed by 2017 (The Economist, 2008).

Another factor to consider in the discussion of sustainable development pressures and the emergence of renewable energy as a feasible and strategic business option is energy security (Foreign Affairs, 2008). China has set itself the goal of supplying 15% of its energy needs with renewable sources by 2020. In order to do this, the government is prepared to invest more than \$200 billion US (Roberts, 2007) which is an attractive figure for any energy company.

Biodiversity

The negative impact of oil and gas developments on biodiversity cannot be overlooked. For example, in the Niger Delta, oil spills and gas flaring (a common problem of this industry) have adversely impacted the mangrove forest, the largest in Africa, as well as water bodies of the region. Moreover, oil and gas developments in the Niger Delta arguably have put at greater risk the survival of endangered species such as the Delta elephant and the white-crescent monkey (Ugochukwu and Ertel, 2008). Cases like the Niger Delta are increasingly common. In fact, according to the *Millennium Ecosystem Assessment* (2005), 60% of the world's ecosystem services (e.g. genetic sources for medical advancements, provision of fresh water and raw materials, climate and flood regulation and water and air purification) are being degraded by corporations, which in turn means that in the future governments may need to regulate corporate strategies, which could impact the MNC's finances (ENDS, 2008). This is particularly important for oil and gas MNCs because extraction sites are often located in sensitive and/or protected areas with very little human intervention.

One challenge for MNCs is the lack of an internationally comprehensive and applicable set of definitions for protected and sensitive areas. To this end, the World Conservation Union (composed of several countries, NGOs, government agencies and experts) and the United Nations (UN) have compiled a list of protected areas. The challenge for oil and gas MNCs arises because this system classifies protected areas according to management objectives (e.g. conservation for specific natural features,

wilderness protection or sustainable use of natural ecosystems) rather than conservation effectiveness or relative biodiversity value. In addition, the perceived failure of state-controlled protected areas, especially in less developed countries, calls for a multi-stakeholder approach to conservation in which local communities, local government, NGOs and the MNCs need to collaborate (Gjertsen and Barrett, 2004; Grigg, 2007; Pearce, 2005; Rajvanshi, 2005).

Social investment

Oil and gas operations are increasingly facing above-ground risk or non-technical challenges (e.g. displacement of communities, deforestation, forced change of economic activities, poverty and human rights) that cannot be resolved by the use of technology but rather by capabilities that are associated with stakeholder engagement. From the business perspective, the mismanagement of above-ground risks increases grievances amongst key stakeholders and results in mistrust and the escalation of partnerships amongst NGOs, communities and indigenous organizations to oppose oil and gas developments (Barker et al., 1997; Wasserstorm and Reider, 1997a, b).

McPhail and Davy (1998), in their study of oil and gas MNCs working in less developed countries – a common destination for resource-seeking MNCs – describe how oil and gas companies have used effective stakeholder engagement practices, especially with communities, to move from the pay-as-you-go approach (i.e. appeasing salient stakeholders by providing them certain needed goods and/or services for example fishing nets or paying a school teacher's annual salary) to a formalized community involvement where win-win opportunities strengthen the business-society relationship.

Data analysis

We performed a structured content analysis of the sustainable development/environmental and/or social reports of four oil and gas MNCs (Royal Dutch/Shell, BP, ExxonMobil and Chevron) from 2000 to 2005.¹

Content analysis is 'a research method that uses a set of procedures to make valid inferences from text' (Weber, 1990, p. 9) such as annual reports. Annual reports are prime material to study organizational

behaviour, firm's strategies (Bettman and Weitz, 1983; Raisch and von Krogh, 2007) and the interaction of the firm with its organizational field (Dirsmith and Covaleski, 1983). Annual reports avoid the retroactive sense-making bias often present during retrospective interviews (Osborne et al., 2001), they offer an easy access to comparable set of data (Bettman and Weitz, 1983) and, more importantly, annual reports describe what initiatives and actions the corporation has adopted or will adopt to resolve new or emerging organizational milieus (Salancik and Meindl, 1984).

The use of annual reports has been criticised because these documents can be used to portray the best image of the company and/or are targeted to specific audiences. Abrahamson and Hambrick (1997) in their detailed account of the reliability of annual reports for the study of business strategy concluded that for non-evaluative information (e.g. actions taken by managers) present in annual reports the best analytical approach would be an information-processing interpretation (i.e. a systematic method based on the same underlying rules and logic) rather than an impression-management interpretation (which assumes that managers try to influence the perception certain stakeholders have created of them). Abrahamson and Hambrick's (1997) assertion is consistent with Fiol's (1995) study of executives' public and internal communications, and Duriau et al. (2007) review of the use of content analysis in annual reports which suggest that annual reports are a valuable source of non-evaluative information. In summary, annual reports can be used for studying corporate behaviour especially when the focus is, as in our case, on non-evaluative, descriptive themes (see for example Kabanoff and Brown, 2008) such as actions and initiatives taken to address sustainable development pressures – climate change, renewable energy, biodiversity and social investment. Since the most appropriate analytical approach when studying non-evaluative and descriptive themes is a systematic method based on the same underlying rules and logic (Abrahamson and Hambrick, 1997; Fiol, 1995; Osborne et al., 2001) we decided to use a structured content analysis. Structured content analysis has been used before in the study of a firm's strategic decision as response to changes in their organizational field (Chen and Hambrick, 1995; Miller and Chen, 1996; Offstein

and Gnyawali, 2005). Structured content analysis allowed us to make inferences from a set of pre-established constructs (Jauch et al., 1980), in the case of our study, the sustainable development pressures facing MNCs in the oil and gas industry – climate change, renewable energy, biodiversity and social investment. Therefore, these sustainable development pressures provided the codes for the content analysis.

The coding of all the sustainable development, social responsibility or environmental reports of Royal Dutch/Shell, BP, ExxonMobil and Chevron was done by two research assistants. The text in these MNCs' reports from 2000 to 2005 was coded based on the four major sustainable development pressures facing these companies: climate change, renewable energy, biodiversity and social investment.

Since we are concerned with the appearance of more sustainable development-oriented MNCs by means of mimetic isomorphism, our objective during the data analysis was to identify to what extent the MNCs under study adopted business-level strategies (i.e. green consumerism, reduced legal liability, reduced cost and reduced risk exposure) that will allow them to increase their environmental/social performance while increasing their financial performance. Embedded in these business-level strategies are the ability of the MNC to resolve the sustainable development pressure they face (i.e. institutional fit) and the likelihood of increasing their financial performance (i.e. financial fit).

Mintzberg et al. (1998) argue that business-level strategies are embedded in the corporation's patterns of behaviour. Consequently, we identified the MNC's business-level strategies from the behavioural pattern established by the collection of initiatives and actions undertaken by the MNC to resolve each sustainable development pressure. In other words, the business-level strategies emerged as second order themes from the original coding – from the action/initiatives undertaken to address each sustainable development pressure. Together, business-level strategies profile the enterprise strategy of the MNC as it relates to sustainable development. In order to do this, two research assistants, independently and at different times, were instructed to look for specific actions and initiatives taken by each company on each of the sustain-

able development pressures. For example, in 2002, ExxonMobil announced the investment of \$100 million over 10 years in Stanford University's Global Climate and Energy Project to search for 'new commercially viable technologies that can substantially reduce green house gas emissions' (ExxonMobil, 2002, p. 9). This initiative was coded under climate change.

Each research assistant was provided with the definition of each sustainable development pressure and asked to initially code the report of one company for one year. Their coding was then compared with the coding done by the principal researcher. The observed discrepancies between each research assistant and the leading researcher were resolved by improving the definition of each sustainable development pressure and/or by clarifying where (climate change, renewable energy, biodiversity or social investment) the major benefit of an initiative undertaken by the company should be classified. For example, energy efficiency projects may have a positive impact on biodiversity; however the prime benefit is on reducing GHG emissions; hence climate change was the category selected.

Financial fit

As noted previously, for mimetic isomorphism to take place sustainable development-oriented MNCs need to show not only that they can resolve sustainable development pressures by adopting certain business-level strategies (i.e. green consumerism, reduced liability, reduced cost and reduced risk exposure) but also that they are more profitable than non or less sustainable development-oriented corporations. Therefore, we gathered profitability ratios such as return on total assets, return on shareholder equity, and earnings before interest, taxes, depreciation and amortization (EBITDA) for Royal Dutch/Shell, BP, ExxonMobil and Chevron. Since one might expect the result of sustainable development strategies to be not instantaneous but lagged, we use profitability indicators for the period 2004–2008. In addition, we collected price/earnings (p/e) ratios for 2008 as this ratio is an indication of what the market expects future earning to look like. A higher price/earnings ratio would suggest that the market perceives the company to be better positioned with

respect to fit with its future environment. For example, if the market collectively believes that climate change-driven CO₂ emissions regulations will seriously impact oil and gas companies in the future, then those companies that have prepared themselves for this eventuality by investing in emissions mitigation technologies would be expected to have higher stock prices and higher resultant price earnings ratios than companies that have left themselves exposed to future regulatory liabilities by not investing in such technologies.

Findings

Our findings are presented here for each sustainable development pressure.

Climate change

During the period under study (2000–2005), Royal Dutch/Shell and BP were more proactive than ExxonMobil and Chevron with respect to climate change. For example, Royal Dutch/Shell and BP committed to GHG targets of 10% below 1990 levels for 2002 and 2010, respectively. Their targets were met before their self-imposed deadlines and in the case of BP, reportedly, at no net economic cost to business (BP, 2001, p. 3). In order to achieve these targets, both MNCs relied on similar business-level strategies: reduced cost through energy efficiency projects such as reducing continuous flaring at oil production facilities, and reduced liability, by introducing an internal carbon market, especially for large new projects. BP for example created an internal carbon market in 1999 and entered the UK emission trading scheme in 2002 (BP, 2004, p. 32). Through these internal markets, BP and Royal Dutch/Shell ensured investments would be robust in a future of financial penalty for carbon use. Indeed, this initiative had the advantage of facilitating understanding of the by-then-emerging carbon market and the development of appropriate internal mechanisms to benefit from it, all in light of the first international trading system for CO₂ emissions in the world – the European Union's Greenhouse Gas Emission Trading Scheme

(EU ETS), was established in 2005. Chevron's approach to climate change was similar to that of Royal Dutch/Shell and BP but was developed later. For example, Chevron established annual targets for GHG emissions: 63 million metric tons for 2004 and, for 2005, no net emissions increased over 2004 (Chevron, 2004). Similarly, Chevron created a carbon market team in 2004 with the objective of coordinating 'Chevron's carbon related policies and activities through the world, to assist our units in achieving cost effective carbon regulatory compliance' (Chevron, 2005, p. 24). An additional objective of this team was to secure credits for the voluntary reductions of GHGs that could be claimed under the Kyoto Protocol's Clean Development Mechanism, hence they sought to reduce their compliance cost while reducing its environmental impact.

By contrast, ExxonMobil in 2000 exhibited a more reactive approach by delaying any major response until scientific research findings could resolve the major uncertainties of the climate change phenomenon. Indeed, ExxonMobil, in its 2005 Corporate Citizenship Report (p. 23), argued that '[w]hile assessments such as those of the IPCC have expressed growing confidence that recent warming can be attributed to increases in greenhouse gases, these conclusions rely on expert judgement rather than objective, reproducible statistical methods...'. However, ExxonMobil did concede, 'Even with many scientific uncertainties, the risk that greenhouse gas emissions may have serious impacts justifies taking action'. ExxonMobil's actions were mainly focussed on reduced legal liability by complying with laws or regulations in countries implementing the Kyoto Protocol, such as the EU ETS. There is no indication that as in the case of Chevron, ExxonMobil tried to reduce its compliance cost, hence ExxonMobil did not seem to be using any business-level strategy.

Biodiversity

Regarding biodiversity, ExxonMobil did not use any of the four business-level strategies but a mix of mitigation approaches which provide no opportunity to increase the financial performance of the

corporation – a necessary condition for a business-level strategy. ExxonMobil's responsibility is clearly stated in its 2002 report (p. 17), '[w]orking with local, national and worldwide conservation organizations, ExxonMobil seeks to preserve habitats that will allow species to flourish'. The mitigation aspect of ExxonMobil's approach is stressed in its 2005 Corporate Citizen Report where it is mentioned that biodiversity issues are identified through Environmental and Social Impact Assessments (ESIAs) and that each location should develop its own mitigation measures based on its specific social and environmental context. What differentiates ExxonMobil from Royal Dutch/Shell, BP and Chevron, is that, for the same period, the former did not exhibit initiatives to develop new competencies around this sustainable development pressure while the other three MNCs did. Indeed, ExxonMobil initiatives around biodiversity seem to be isolated and lack strategic vision; hence they do not represent any of the four business-level strategies previously identified.

By way of contrast, BP, Royal Dutch/Shell and Chevron have not only made monetary contributions to research and conservation initiatives but have developed a strategic approach to biodiversity. These companies, as members of the Energy and Biodiversity Initiative (EBI) formally created in 2001, joined their efforts with leading conservation organizations such as Fauna and Flora International, the Nature Conservancy and the Smithsonian Institute, and a fellow oil and gas company, Statoil, to produce meaningful guidelines to minimize harm to biodiversity and maximize opportunities for conservation in the industry's upstream activities. BP went beyond this collaboration to develop firm-specific capabilities (BP, 2000). The first to strategically address biodiversity, BP, began to incorporate biodiversity into the environmental management systems of 12 major facilities across the company as early as 2000. For BP, it seems the objective was to establish criteria and to gather performance data for reporting while ensuring operations remained profitable (BP, 2000, p. 21). Since the focus of BP, Royal Dutch/Shell and Chevron was on developing new capabilities to strategically deal with biodiversity, we argue the business-level strategy they used to resolve this sustainable development pressures was reduced risk exposure.

Renewable energy

In the realm of renewable energy, BP has been the most proactive MNC of the four studied. BP's renewable energy projects are mainly developed around solar power. After a period of adaptation to market conditions and development of in-house firm-specific advantages, BP Solar – the operating unit in charge of the renewable energy business – had its first reported profit in 2004 (BP, 2004, p. 3), increasing sales by over 30% globally (BP, 2004, p. 41). BP Solar focussed on providing energy options not just in isolated and rural communities in Asia, Africa and South America but as well to residential customers in developed countries. Like BP, Royal Dutch/Shell demonstrated a reduced-risk exposure strategy to resolve this sustainable development pressure: once firm-specific capabilities were developed, they used a green consumerism strategy to profit from their response. Royal Dutch/Shell's initiatives concerning renewable energy focussed on developing two transportation technologies – biofuel and hydrogen – and two renewable sources – wind and thin-film solar.

In contrast with BP and Royal Dutch/Shell, Chevron and ExxonMobil focussed their efforts more on developing alternative energy technologies other than renewable energy. We argue that at the core of these two companies' response to this sustainable development pressure was an incremental approach of current practice or developing complementary technologies (e.g. carbon sequestration). Neither Chevron nor ExxonMobil pursued green consumerism as business-level strategy resulting from the development of in-house capabilities. For both MNCs, the development of new competencies in this emerging renewable energy industry was minimal. Chevron, for example, invested in the development of technology to convert natural gas into hydrogen to power fuel cells as the most realistic near-term objective to reduce GHGs emissions. Chevron's investment in clean technology of this nature accounted for more than \$500 million from 1999 to 2004 while renewable energies accounted for less than \$60 million during the same period (Chevron, 2004, p. 48). ExxonMobil, as well as Chevron, invested in projects targeting fundamental breakthroughs in technologies such as hydrogen cells, capture and storage of carbon dioxide, and to a

lesser extent, solar cells. Chevron, however, through the acquisition of Unocal in 2004, acquired geothermal plants that accounted for 1.2 megawatts, making it the largest renewable energy producer amongst these four oil and gas companies. Based on the information gathered we cannot argue that this acquisition was done to obtain capabilities to resolve pressures concerning renewable energy.

Social investment

With regard to social investment, Royal Dutch/Shell, BP and Chevron proved the most strategic, as opposed to philanthropic, of the four MNCs. For example, every year Royal Dutch/Shell invested more than 20% of its total social investment in community development projects to establish stakeholder support and provide an appropriate milieu for its subsidiaries to operate. The more even distribution of Royal Dutch/Shell investment across all continents in which they operate supports this argument. In 2001, for example, social investment in North America and 'Africa and the Middle East' were very similar, 35% and 31% respectively (RDS, 2001, p. 40).

In addition, BP, Royal Dutch/Shell, and Chevron, instituted the use of social performance reviews and plans to identify key stakeholders in major operations and assess potential responses to these stakeholders' main social concerns. In other words, these MNCs adopted a reduced risk exposure as business-level strategy. As a result, BP, Chevron and Royal Dutch/Shell, since 2004, have formally adopted a strategic approach to social investment, focussing their programmes increasingly on responding directly to issues linked to their business. There is, however, a significant difference amongst these MNCs. While Royal Dutch/Shell showed a more even distribution of its social investment across locations, Chevron's and BP's preferred destination for social investment was North America. In the case of BP, North America received approximately twice what the 'rest of the world' did. (For BP the 'rest of the world' is countries other than UK, the rest of Europe and USA.) By 2005, however, BP's social investment gap between the 'rest of the world' and USA had shrunk, the former receiving \$31 million (US) and the latter \$36 million (US).

By contrast, ExxonMobil's social investment appeared to be more mitigating in nature. For example, in its 2003 report this MNC states that its \$90 million (US) social investment consisted of taxes paid by the firm, wages and benefits paid to its more than 90,000 employees, research and development expenditures and charitable contributions. By 2005, ExxonMobil's focus areas were civic and community projects (\$52 million (US)), higher education (\$31 million (US)), health (\$15 million (US)), public policy research (\$7 million (US)) and employee giving campaigns (\$6.5 million (US)). The United States received almost four times more social investment than Africa, the second preferred destination of ExxonMobil for its social investment.

From our analysis (see Table I for a summary), BP's and Royal Dutch/Shell's combination of business-level strategies (i.e. green consumerism, reduced liability, cost reduction and reduced risk exposure) offered these companies not only the possibility to resolve the sustainable development pressures they faced but financial gains as well. As Table I shows, BP's and Royal Dutch/Shell's model seem to be more responsive to sustainable development pressures in the oil and gas industry. Royal Dutch/Shell is, however, the best model as its social investment reaches more regions than the second best, BP. Both MNCs, BP and Royal Dutch/Shell, adopted business-level strategies that in theory offered them the opportunity to address sustainable development pressures while improving their financial performance. For the period under study, these two corporations not only addressed the sustainable development pressures before ExxonMobil and Chevron did, but they also committed themselves to the development of competencies that could lead them into non-traditional sources of competitive advantage.

This is not to say that BP and Royal Dutch/Shell are free of challenges to their sustainable development legitimacy but that, along with the technical issues, they embrace the less tangible and more complex issues we describe as sustainable development pressures. The result is a better fit with sustainable development pressures than that of corporations with more traditional environmental management, in this case ExxonMobil. Since, as argued before, the new model (BP's and Royal Dutch/Shell's approach) provides a better response to the mentioned sustainable development pressures, the success of the new model in

TABLE I
Business-level strategies adopted by the MNCs to address sustainable development pressures

| Sustainable development pressures | Royal Dutch/Shell | BP | ExxonMobil | Chevron |
|-----------------------------------|--|--|--------------------------------|---|
| Climate change | Reduced cost Reduced liability (since 2000) | Reduced cost & reduced liability (since 2000) | Reduced liability (since 2005) | Reduced cost Reduced liability (since 2004) |
| Biodiversity | Reduced risk exposure (since 2001) | Reduced risk exposure (since 2000) | None | Reduced risk exposure (since 2001) |
| Renewable energy | From reduced risk exposure to green consumerism (since 2000, in-house development) | From reduced risk exposure to green consumerism (since 2000, in-house development) | None | Green consumerism (since 2004, by acquisition) |
| Social investment | Reduced risk exposure (global approach) | Reduced risk exposure (regional approach – focussed on North America) | None | Reduced risk exposure (regional approach – focussed on North America) |

creating mimetic pressures relies on the new model's economic fitness. To the latter, we focus next.

Financial fit

If BP's and Royal Dutch/Shell's models can outperform their competitors, then increasing pressures to follow this model would emerge. Conversely, if the performance is only within an acceptable range, then following the model will be optional – the decision at management's discretion. The latter appears to be the case when we consider some profitability indicators such as return on total assets, return on shareholder equity and EBITDA of these four companies (Table II). Since one might expect the result of sustainable development strategies to be not instantaneous but 'lagged', we use profitability indicators for the period 2004–2008.

Discussion

When corporations face uncertainty they will tend to adopt models that have been successful in dealing with the issue in question. The adoption of such successful operational patterns is known as mimetic isomorphism. In our case, we argue that the more sustainable development-oriented MNCs such as BP and Royal Dutch/Shell reduce uncertainties around sustainable development pressures better than more hesitant-to-adopt MNCs such as ExxonMobil. In the long term, these hesitant-to-adopt MNCs will tend to imitate BP and Royal Dutch/Shell, which creates a mimetic isomorphism (DiMaggio and Powell, 1983). We argue that, at least in our sample, MNCs are not consistently addressing sustainable development pressures, such as climate change, renewable energy, biodiversity and social investment. BP and Royal Dutch/Shell appear to be more sustainable development-oriented MNCs as defined by Hart and Milstein (2003, p. 53) by 'delivering simultaneously economic, social and environmental benefits'. However, the financial gains are not as conclusive as one might expect based on articles in the management literature (see for example Nidumolu et al., 2009) advocating such an approach (see Table II). The paradox is that while in theory BP and Royal Dutch/Shell models offer the

TABLE II
Profitability ratios

| | 2008 | 2007 | 2006 | 2005 | 2004 |
|----------------------------------|-------|-------|-------|-------|-------|
| Return on total assets (%) | | | | | |
| Royal Dutch/Shell | 18.00 | 18.77 | 18.97 | 20.30 | 16.80 |
| BP | 13.35 | 13.39 | 15.92 | 15.43 | 12.83 |
| ExxonMobil | 35.85 | 29.11 | 30.78 | 28.53 | 21.12 |
| Chevron | 26.65 | 21.62 | 24.11 | 20.02 | 22.05 |
| Return on shareholder equity (%) | | | | | |
| Royal Dutch/Shell | 39.93 | 40.80 | 42.21 | 49.02 | 38.29 |
| BP | 33.36 | 33.74 | 40.94 | 39.91 | 32.47 |
| ExxonMobil | 72.37 | 57.88 | 59.21 | 53.45 | 40.53 |
| Chevron | 49.58 | 41.73 | 46.39 | 40.20 | 45.44 |
| EBITDA margins (%) | | | | | |
| Royal Dutch/Shell | 14.13 | 17.77 | 17.92 | 18.44 | 16.67 |
| BP | 11.80 | 14.68 | 15.40 | 16.56 | 16.45 |
| ExxonMobil | 20.21 | 20.80 | 21.32 | 19.15 | 17.59 |
| Chevron | 19.26 | 18.63 | 19.04 | 15.99 | 16.73 |

All the profitability indicators were gathered from MintGlobal database – MintGlobal Bureau van Dijk (2008). Retrieved June 4, 2009.

EBITDA earnings before interest, taxes, depreciation and amortization.

opportunity to attain a non-traditional source of competitive advantage, our financial analysis does not yet corroborate the theoretical argument. We further explore this paradox next.

Competitive advantage through the new model

MNCs, especially those in the oil and gas industry, compete within organizational milieus of continuous change because sustainable development pressures raised by host country, home country and global stakeholders are often complex and inevitably result in winners (those stakeholders whose claims are resolved, for example groups advocating for more job opportunities) and losers (those stakeholders whose claims remain unresolved, for example groups advocating for the MNC to withdraw from a host country). Since a firm's resources are limited, stakeholders are basically competing for the firm's resources. The more resources a stakeholder gets (the winners), the fewer resources are left for the remaining stakeholders which means that some stakeholders' issues will remain unresolved or at best partially resolved (the losers). These stakeholders, the losers, often at the fringe, will potentially become

the new source of change in the MNC's organizational field (Hart and Sharma, 2004). Under these conditions, MNCs must rely on management's ability to integrate and consolidate corporate-wide technologies and production skills into competencies that empower subsidiaries to adapt quickly to changing opportunities across all businesses' geographic locations (Prahalad and Hamel, 1990). The global integration of corporate practices provides scale and scope economies that yield economic benefits. However, such economic gains are constrained when sustainable development pressures demand responses of different form and shape across the many countries where the MNC operates.

As a new business model, such as Royal Dutch/Shell's, challenges incumbent models such as ExxonMobil's, the former needs to find more opportunities to create competitive advantage. In this regard, Barney (2002) argues that in mature industries such as oil and gas, there are three paths to creating competitive advantage: product refinement, investment in service quality and process innovation. Product refinement is the result of actions taken to extend and improve current products. In the case of sustainable development, these actions could be, for example, the reduction of the benzene, sulphur and

aromatics to achieve reductions in volatile organic compounds (VOCs), NO_x and toxics emissions during engine combustion that otherwise are released to the atmosphere. These actions and others of the same nature have been adopted by the four MNCs in our sample; hence they can only create competitive parity (Barney, 1991; Dierickx and Cool, 1989). Enhancing the quality of the service is not a feasible option to create competitive advantage because this option can only be realized by MNCs that offer services such as installing equipment and maintenance to products that were previously acquired from the MNC – a type of possession-related service that is minimal in the oil and gas industry. Since product refinement and investment in service quality do not provide opportunities to create new sources of competitive advantage, the only option is competition based on process innovation.

We argue above that oil and gas MNCs rely on four business-level strategies (i.e. green consumerism, reduced legal liability, reduced cost and reduced risk exposure) to address sustainable development pressures. Individually, these strategies offer limited opportunities for a more attractive competitive advantage. Reduced cost and reduced risk exposure are the only business-level strategies that (jointly) can offer competitive advantage based on process innovation, as suggested by Barney (2002), and resolve technical (i.e. climate change and renewable energy) and non-technical (i.e. biodiversity and social investment) sustainable development pressures. Indeed, empirical studies conducted in the oil and gas industry (Hall and Vredenburg, 2003; Sharma and Vredenburg, 1998) show that process-oriented innovation, such as stakeholder engagement and continuous learning, have greater positive impact than traditional technologically-oriented capabilities (e.g. new drilling technology) on the competitive advantage of MNCs. In addition, MNCs that showed stakeholder engagement and continuous learning had a better fit with sustainable development pressures: Royal Dutch/Shell for example, showed better alignment with less technical sustainable development responsibilities than the other three MNCs in the same period by adopting a global perspective on its social investment rather than focussing on developed countries. This indicates that Royal Dutch/Shell is likely to be developing pro-

cess-oriented innovation through stakeholder engagement that eventually could make this MNC a model for the creation of a non-traditional and difficult-to-imitate competitive advantage.

Intangible capabilities, such as stakeholder engagement, often play important roles in corporations that perform above less sustainable development-oriented firms such as ExxonMobil and Chevron. However, stakeholder engagement as a capability is subject to time compression diseconomies that slow the pace of development and appropriation of the benefits it provides (Dierickx and Cool, 1989). Some capabilities can be acquired through markets (i.e. mergers and acquisitions); however, others, such as stakeholder engagement, cannot. If the capability is available in abundance, then any competitor can acquire it, and organizational diversity disappears. In addition, corporations are more likely to appropriate profits from resources they themselves develop than from those they purchase in the market (Barney, 1991). In the case under study, ExxonMobil and, to a lesser extent, Chevron will continue to use the current highly technical institutional model because either they cannot distinguish which are the truly valuable resources or are unable to identify the precise combination of capabilities necessary to become a sustainable-development-oriented corporations (i.e. causal ambiguity).

Another factor is that since key resources cannot be acquired in markets, they must be built over time in ways that are difficult to accelerate. What this implies is that resources are path dependent (Dierickx and Cool, 1989), and what BP and Royal Dutch/Shell have learned from experience could change the way these companies approach new institutional pressures. For example, Royal Dutch/Shell changed its corporate strategy to include sustainable development pressures after its experience in Nigeria and with the Brent Spar (Knott, 1997).

The implications of the above considerations – differentiated sustainable development pressures across countries and process-oriented capabilities as a source of sustainable value creation – is twofold. First, process-oriented capabilities that lead to a sustainable development strategy of reduced risk exposure are more likely to produce process-oriented capabilities that offer opportunities to create value for the MNC while responding to non-technical risk posed by sustainable development

pressures. Non-technical risk (e.g. poverty, lack of capacity in local communities) are often the source of tensions between MNC and institutional host country's constituents (Barker et al., 1997). Second, these process-oriented capabilities are more likely to be found in subsidiaries than headquarters because the institutional host country constituents demand such capabilities more of the former than the latter. We recognize intuitively that the ability of a subsidiary that works in the Ecuadorian Amazon to engage productively with indigenous communities is more valuable to the subsidiary than to the headquarters based in London. This is especially true in the oil industry where corporate environmental policies must address non-technical risk associated with indigenous communities, biodiversity, unskilled labour and socio-economically deprived nearby communities, and where a good reputation with host governments and nearby communities could grant access to new oil fields. Consequently, the MNC will be better prepared to respond to sustainable development pressures by a strategy that differentiates the needs for local responsiveness and global integration – which further increases the complexities associated with the adoption of sustainable development strategies. Of the four MNCs considered in our sample, Royal Dutch/Shell alone demonstrates responsiveness to local stakeholders by increasing social investment in less developed countries and focussing efforts strategically on projects in capacity building, for example, rather than on philanthropy (e.g. scholarship).

Since, as argued above, the sustainable development-oriented MNC represented by BP and Royal Dutch/Shell provides a better response to the mentioned sustainable development pressures, the success of this business model in being adopted by other oil and gas MNCs relies on the new model's economic fitness.

The indicators presented in Table II seem to favour more reactive companies like ExxonMobil than proactive companies like Royal Dutch/Shell and BP. However, price/earnings ratios (p/e) show another picture. Price/earnings ratio is a measure of what the market expects future earnings to look like. So, if the market expected that in future ExxonMobil's profitability would be hurt by its current neglect of stakeholder issues, the price/earnings ratio might be lower. Likewise, if shareholders expected future earnings to

be enhanced by current investment in stakeholder engagement, then those companies' p/e ratio would be higher. Also, if companies are investing today in technologies that may in future enhance profitability, then those companies' p/e ratio will be higher. The p/e ratio for 2008 for ExxonMobil, Chevron, Royal Dutch/Shell and BP were 9.64, 6.87, 8.06 and 9.68, respectively. These ratios indicate that investors do not seem to expect Royal Dutch/Shell's and BP's earnings to be compromised by their proactive approach to sustainable development. This supports the point made earlier, when we argued that, even while the new model advanced by Royal Dutch/Shell and BP shows a better fit with the industry's sustainable development pressures and potential for complementing these MNCs' competitive advantage, actual profitability indicators and p/e ratios suggest these MNCs *just* remain competitive and the adoption of sustainable development strategies is still discretionary at best. Therefore, mimetic isomorphism, like normative and coercive isomorphism, is unlikely to emerge in this industry.

Conclusions and implications

The argument presented in this article is built on two premises. First, MNCs are technical and social phenomena with global implications. In the oil and gas industry, MNCs are likely to be exposed to contrasting institutional pulls of home and host countries. Second, sustainable development pressures such as climate change, biodiversity, renewable energy and social investment offer opportunities for increasing environmental, social and economic performance, thus, the decision to integrate sustainable development into enterprise and business-level strategies and develop idiosyncratic capabilities is a strategic problem.

Through the use of institutional theory and the resource-based view, we were able to integrate the international business literature that argues sustainable development does not offer opportunities for increased industrial performance (Rugman and Verbeke, 1998b) with evidence presented by sustainable development scholars (Hall and Vredenburg, 2003; Sharma and Vredenburg, 1998; Vredenburg and Westley, 2002; Westley and Vredenburg, 1991, 1996, 1997) that corporations like BP and Royal

Dutch/Shell could pursue those opportunities and remain competitive.

Currently, international business scholars consider the parent company the organisational unit best suited to develop sustainable development capabilities (Rugman and Verbeke, 1998b) and the subsidiary as implementer. We have argued that in the oil and gas industry, the institutionalization of sustainable development pressures is more likely to take place at the national than the international level. The difference of institutional pulls amongst host countries may force the MNCs to differentiate their practices across their network of subsidiaries. Therefore, the role of the subsidiary in the development of sustainable development capabilities needs to be reconsidered in light of host countries' stakeholder claims.

We argue that, in the oil and gas industry, sustainable development pressures will not force MNCs towards coercive, normative or mimetic isomorphism for several reasons. First, there is a lack of clear regulation and enforcement mechanisms; hence the decision to respond or not to sustainable development pressures may be left to host country managers. Since, in the oil and gas industry, host countries are likely to be less developed countries with weak regulatory environments, sustainable development pressures will remain unresolved, especially in regions with the greatest needs. Second, different subsidiary locations may differently interpret the meaning of sustainable development, which reduces the likelihood of MNCs adopting similar initiatives across their subsidiary network and achieving certain economies of scale. In such an environment, MNCs may tend to focus more on sustainable development pressures such as climate change that can be resolved through technology and less on intangible or non-technical pressures such as poverty or capacity building, which varies across host countries. Third, our analysis shows that although a model represented by BP and Royal Dutch/Shell and their combinations of business-level strategies such as reduced cost, green consumerism, reduced liability and reduced risk exposure, offer better fit with the sustainable development pressures of climate change, renewable energy, biodiversity and social investment than the incumbent model represented by ExxonMobil and, to a lesser extent, Chevron, the former does not yet provide strong evidence that it offers better financial fit than its counterparts. This means that there are

not enough reasons for MNCs in oil and gas industry to adopt the BP's and Royal Dutch/Shell's model. In addition, even if this new model managed to provide better financial fit, it would be difficult for other MNCs to adopt because its adoption is fundamentally linked to process-innovation capabilities that are difficult to acquire and duplicate.

Our analysis of mimetic isomorphism seems to indicate that the proposed business-level strategies of reduced cost, green consumerism, reduced liability and reduced risk exposure could resolve sustainable development pressures. However, further research is needed to pair these business-level strategies with strategies across the value chain and environmental capabilities. Additionally, we need to better understand how the alignment of these two level of strategies and environmental capabilities impacts the financial performance of an MNC.

This study has two limitations, First the sample consists of only four MNCs, and second, the financial information gathered on these MNCs constrained the type of analysis that could be made. Despite these limitations, we believe the paradox will remain valid in a bigger sample. This is, the paradox of an MNC having a better model to address sustainable development pressures and tap non-traditional sources of competitive advantages based on process innovation but unable to capture the expected financial gains. One possible explanation is that the mimetic isomorphism is yet to develop. In other words, the model embodied by BP and Royal Dutch/Shell is not mature enough, and these companies are still struggling with the complexities associated with this new model; hence potential followers may be hesitant to adopt similar business-level strategies. If the model reaches maturity and can be followed, then the competitive advantages of such an approach are likely to dilute as competitors are capable of using similar strategies. This suggests that the process-innovation capabilities developed by BP and Royal Dutch/Shell may be mobility barriers; hence, we may be in the presence of strategic groups rather than an emerging mimetic isomorphism. Strategic groups consist of corporations that have similar competitive strategy within an industry (Higginson and Vredenburg, 2010; Mascaenhas and Aaker, 1989; McGee and Thomas, 1986), these groups are created because there are mobility barriers. Mobility barriers are entry or exit barriers created as the result of the substantial cost and

time associated with the development of certain capabilities (Mascaenhas and Aaker, 1989) – in our case process-innovation capabilities to address sustainable development pressures. The presence of strategic groups could as well explain the financial performance differences between sustainable development-oriented MNC's and the resistant-to-adopt MNC's (Higginson and Vredenberg, 2010; Mascaenhas and Aaker, 1989; McGee and Thomas, 1986).

Note

¹ For BP: Environmental and Social Review 2000, Environmental and Social Review 2001; Environmental and Social Review 2003; Sustainability Report 2004; Sustainability Report 2005.

For ExxonMobil: Corporate Citizenship in a changing world-may 2002 (it has information for 2001); Corporate citizenship 2002; 2003 Corporate Citizen Report, 2004 Corporate Citizenship Report; and 2005 Corporate Citizenship report. ExxonMobil started publishing its reports since 2001.

For Chevron: ChevronTexaco Annual report 2001; 2002 ChevronTexaco Corporate Responsibility Report; 2003 ChevronTexaco. Chevron started publishing its corporate responsibility report since 2002, we used the Annual report for 2001 as it addressed some related issues to the sustainable pressures under study. For example energy efficiency projects. Corporate Responsibility Report; Chevron Corporation 2004 Corporate Responsibility Report; and Corporate Responsibility Report 2005.

For Royal Dutch/Shell: The Shell Report 2000, the Shell Report 2001; the Shell Report 2002, the Shell Report 2003; the Shell Report 2004; and the Shell Sustainability Report 2005.

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References

Abrahamson, E. and D. C. Hambrick: 1997, 'Attentional Homogeneity in Industries: The Effect of Discretion', *Journal of Organizational Behavior* **18**(7), 513–532.

- Ansoff, H.: 1979, 'The Changing Shape of the Strategic Problem', in D. E. Schendel and C. W. Hofer (eds.), *Strategic Management. A New View of Business Policy and Planning* (Little, Brown & Company, Boston), pp. 23–44.
- Arora, S. and T. Cason: 1995, 'An Experiment in Voluntary Environmental Regulation: Participation in EPA's 33/50 Program', *Journal of Environmental Economics and Management* **28**(3), 271–286.
- Bansal, P.: 2005, 'Evolving Sustainably: A Longitudinal Study of Corporate Sustainable Development', *Strategic Management Journal* **26**(3), 197.
- Barker, G., G. Smith, F. Vacas, E. Swingholm, R. Yuill and M. Aleman: 1997, 'Managing Nontechnical Risks Associated with Seismic Operations in the Tropical Rain Forest of Ecuador', *Oil & Gas Journal* **95**(16), 50–60.
- Barney, J. B.: 1991, 'Firm Resources and Sustained Competitive Advantage', *Journal of Management* **17**(1), 99–120.
- Barney, J.: 2001, 'Resource-Based Theories of Competitive Advantage: A Ten Year Retrospective on the Resource-Based View', *Journal of Management* **27**(6), 643–650.
- Barney, J.: 2002, *Gaining and Sustaining Competitive Advantage* (Prentice Hall, Upper Saddle River, NJ).
- Barrera-Hernandez, L., A. Lucas, E. McCoy and J. McCready: 2000, *Energy and Environmental Law in Latin America & the Caribbean: Legislative Inventory & Analysis* (OLADE, University of Calgary, CIDA, Quito).
- Barret, S.: 1991, 'Environmental Regulation for Competitive Advantage', *Business Strategy Review* **2**(1), 1–15.
- Beardsley, T.: 1988, 'Winds of Change', *Scientific American* **259**(3), 18.
- Bettman, J. R. and B. A. Weitz: 1983, 'Attributions in the Board Room: Causal Reasoning in Corporate Annual Reports', *Administrative Science Quarterly* **28**(2), 165–183.
- Buysse, K. and A. Verbeke: 2003, 'Proactive Environmental Strategies: A Stakeholder Management Perspective', *Strategic Management Journal* **24**(5), 453–470.
- Carroll, A.: 1979, 'A Three-Dimensional Conceptual Model of Corporate Performance', *Academy of Management Review* **4**(4), 497–505.
- Chaffee, E. E.: 1985, 'Three Models of Strategy', *Academy of Management Review* **10**(1), 89–98.
- Chen, M. J. and D. Hambrick: 1995, 'Speed, Stealth, and Selective Attack: How Small Firms Differ from Large Firms in Competitive Behavior', *Academy of Management Journal* **38**(2), 453–482.
- Christmann, P.: 2000, 'Effects of "Best Practices" of Environmental Management on Cost Advantage: The

- Role of Complementary Assets', *Academy of Management Journal* **43**(4), 663–680.
- Clarkson, M. E.: 1995, 'A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance', *Academy of Management Review* **20**(1), 92–117.
- Collis, D. and C. Montgomery: 1995, 'Competing on Resources: Strategy in the 1990s', *Harvard Business Review* **73**(4), 118–130.
- Cormier, D., I. Gordon and M. Magnan: 2004, 'Corporate Environmental Disclosure: Contrasting Management's Perceptions with Reality', *Journal of Business Ethics* **49**(2), 143–165.
- Dierickx, I. and K. Cool: 1989, 'Asset Stock Accumulation and the Sustainability of Competitive Advantage: Reply', *Management Science* **35**(12), 1504–1511.
- DiMaggio, P. and W. Powell: 1983, 'The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields', *American Sociological Review* **48**(2), 147–160.
- Dirsmith, M. W. and M. A. Covalleski: 1983, 'Strategy, External Communication and Environmental Context', *Strategic Management Journal* **4**(2), 137–151.
- Duriau, V., R. Reger and M. Pfarrer: 2007, 'A Content Analysis of the Content Analysis Literature in Organization Studies: Research Themes, Data Sources, and Methodological Refinements', *Organizational Research Methods* **10**(1), 5–34.
- Elkington, J.: 1998, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business* (New Society, Stony Creek, CT).
- ENDS: 2008, 'EU Makes Economic Case to Halt 'Unprecedented' Rate of Biodiversity Loss', *ENDS (Environmental Data Services)*, (401), 54–56.
- Fiol, M.: 1995, 'Corporate Communications: Comparing Executives' Private and Public Statements', *Academy of Management Journal* **38**(2), 522–537.
- Foreign Affairs: 2008, 'Winds of Change', *Foreign Affairs* **87**(2), 8–9.
- Freeman, R. E.: 1984, *Strategic Management: Stakeholder Approach* (Pitman, Boston).
- Gjertsen, H. and C. B. Barrett: 2004, 'Context-Dependent Biodiversity Conservation Management Regimes: Theory and Simulation', *Land Economics* **80**(3), 323–339.
- Gladwin, T., J. Kennelly and T.-S. Krause: 1995, 'Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research', *Academy of Management Review* **20**(4), 874–907.
- Grant, R.: 1991, 'The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation', *California Management Review* **33**(3), 114–135.
- Grigg, A.: 2007, 'Biodiversity and the Extractive Industry: Innovative Practices and Remaining Challenges', *Greener Management International*, (52), 63–76.
- Hall, R.: 1992, 'The Strategic Analysis of Intangible Resources', *Strategic Management Journal* **13**(2), 135–144.
- Hall, R.: 1993, 'A Framework Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage', *Strategic Management Journal* **14**(8), 607–618.
- Hall, J. and H. Vredenburg: 2003, 'The Challenges of Sustainable Development Innovation', *MIT Sloan Management Review* **45**(1), 61–68.
- Hart, S.: 1995, 'A Natural Resource-Based-View of the Firm', *Academy of Management Review* **20**(4), 986–1014.
- Hart, S.: 1997, 'Beyond Greening: Strategies for a Sustainable World', *Harvard Business Review* **75**(1), 66–76.
- Hart, S. and G. Ahuja: 1996, 'Does it Pay to be Green? An Empirical Examination of the Relationship Between Emission Reduction and Firm Performance', *Business Strategy and the Environment* **5**(1), 30–37.
- Hart, S. and M. Milstein: 2003, 'Creating Sustainable Value', *Academy of Management Executive* **17**(2), 56–69.
- Hart, S. and S. Sharma: 2004, 'Engaging Fringe Stakeholders for Competitive Imagination', *Academy of Management Executive* **18**(1), 7–18.
- Hawken, P.: 1994, *The Ecology of Commerce: A Declaration of Sustainability* (HarperBusiness, New York).
- Henriques, I. and P. Sadorsky: 1996, 'The Determinants of an Environmentally Responsive Firm: An Empirical Approach', *Journal of Environmental Economics and Management* **30**(3), 381–395.
- Henriques, I. and P. Sadorsky: 1999, 'The Relationship Between Environmental Commitment and Managerial Perceptions of Stakeholder Importance', *Academy of Management Journal* **42**(1), 87–99.
- Hinings, B. and R. Greenwood: 1988, 'The Normative Prescription of Organizations', in L. G. Zucker (ed.), *Institutional Patterns and Organizations: Culture and Environment* (Ballinger, Cambridge, MA).
- Higginson, N. and H. Vredenburg: 2010, 'Collaborating for Sustainability: Strategic Knowledge Networks, Natural Resource Management and Regional Development', *International Journal of Sustainable Economy* **2**(3), 334–352.
- Hoffman, A.: 2001, *From Heresy to Dogma: An Institutional History of Corporate Environmentalism* (Stanford Business Books, Stanford, CA).
- Idahosa, P.: 2002, 'Business Ethics and Development in Conflict (Zones): The Case of Talisman Oil', *Journal of Business Ethics* **39**(3), 227–247.

- International Energy Agency: 2005, *Key World Energy Statistics: International Energy Agency*.
- International Organization for Standardization: 2009, *Iso Survey 2008 – Principal Findings* (ISO, Geneva), www.Iso.Org/iso/survey2008.Pdf. Accessed 16 April 2010.
- Jauch, L., R. Osborn and T. Martin: 1980, 'Structured Content Analysis of Cases: A Complementary Method for Organizational Research', *The Academy of Management Review* **5**(4), 517–525.
- Kabanoff, B. and S. Brown: 2008, 'Knowledge Structures of Prospectors, Analyzers, and Defenders: Content, Structure, Stability, and Performance', *Strategic Management Journal* **29**(2), 149–171.
- King, A. and M. Lenox: 2000, 'Industry Self-Regulation Without Sanctions: The Chemical Industry's Responsible Care Program', *Academy of Management Journal* **43**(4), 698–716.
- Klassen, R. and C. P. McLaughlin: 1996, 'The Impact of Environmental Management on Firm Performance', *Management Science* **42**(8), 1199–1214.
- Knott, D.: 1997, 'Royal Dutch/Shell Reinventing Itself as Total Energy Company', *Oil & Gas Journal* **95**(97), 29–36.
- Kolk, A., S. Walhain and S. v. d. Wateringen: 2001, 'Environmental Reporting by the Fortune Global 250: Exploring the Influence of Nationality and Sector', *Business Strategy and the Environment* **10**(1), 15–28.
- Kondra, A. and C. Hinings: 1998, 'Organizational Diversity and Change in Institutional Theory', *Organization Studies* **19**(5), 743–767.
- Konrad, A., R. Steurer, M. Langer and A. Martinuzzi: 2006, 'Empirical Findings on Business–Society Relations in Europe', *Journal of Business Ethics* **63**(1), 89–105.
- Krauss, C. and J. A. D. Mouawad: 2009, 'Oil Industry is Stressing Cooperation on Climate', *New York Times*, p. 3.
- LaGrega, M., P. Buckingham and J. Evans: 1994, *Hazardous Waste Management* (McGraw Hill, New York), pp. 1–31.
- Loza, J.: 2004, 'Business–Community Partnerships: The Case for Community Organization Capacity Building', *Journal of Business Ethics* **53**(3), 297–311.
- Madsen, B. T.: 2000, 'Energy's Wind of Change', *UNESCO Courier* **53**(3), 9.
- Mascaenhas, B. and D. Aaker: 1989, 'Mobility Barriers and Strategic Groups', *Strategic Management Journal* **10**(5), 475–585.
- McGee, J. and H. Thomas: 1986, 'Strategic Groups: Theory, Research and Taxonomy', *Strategic Management Journal* **7**(2), 141–160.
- McPhail, K. and A. Davy: 1998, 'Integrating Social Concerns into Private Sector Decisionmaking. A Review of Corporate Practices in the Mining, Oil, and Gas Sectors', *World Bank Discussion Paper No. 384*.
- Meyer, J. and B. Rowan: 1977, 'Institutionalized Organizations: Formal Structure as Myth and Ceremony', *American Journal of Sociology* **83**(2), 340–363.
- Miller, D. and M.-J. Chen: 1996, 'The Simplicity of Competitive Repertoires: An Empirical Analysis', *Strategic Management Journal* **17**(6), 419–439.
- MintGlobal database – MintGlobal Bureau van Dijk: 2008, Retrieved June 4, 2009.
- Mintzberg, H., B. Ahlstrand and J. Lampel: 1998, *Strategy Safari: A Guided Tour Through the Wilds of Strategic Management* (The Free Press, New York).
- Moser, T.: 2001, 'MNCs and Sustainable Business Practice: The Case of the Colombian and Peruvian Petroleum Industries', *World Development* **29**(2), 291–309.
- Nidumolu, R., C. K. Prahalad and M. R. Rangaswami: 2009, 'Why Sustainability is Now the Key Driver of Innovation', *Harvard Business Review* **87**(9), 56–64.
- Offstein, E. and D. Gnyawali: 2005, 'Firm Competitive Behavior as a Determinant of CEO Pay: Empirical Evidence from the US Pharmaceutical Industry', *Journal of Managerial Psychology* **20**(5/6), 335–354.
- Oliver, C.: 1991, 'Strategic Response to Institutional Processes', *Academy of Management Review* **18**(1), 145–179.
- Osborne, J. D., I. S. Charles and R. Arkalgud: 2001, 'Strategic Groups and Competitive Enactment: A Study of Dynamic Relationships Between Mental Models and Performance', *Strategic Management Journal* **22**(5), 435–454.
- Payne, D. and C. Raiborn: 2001, 'Sustainable Development: The Ethics Support the Economics', *Journal of Business Ethics* **32**(2), 157–168.
- Pearce, D.: 2005, 'Paradoxes in Biodiversity Conservation', *World Economics* **6**(3), 57–69.
- Petersen, H. and H. Vredenburg: 2009, 'Morals or Economics? Institutional Investor Preferences for Corporate Social Responsibility', *Journal of Business Ethics* **90**(1), 1–14.
- Pettus, M.: 2001, 'The Resource-Based View as a Developmental Growth Process: Evidence from the Deregulated Trucking Industry', *Academy of Management Journal* **44**(4), 878–895.
- Porter, M. and C. van der Linde: 1995, 'Green and Competitive: Ending the Stalemate', *Harvard Business Review* **73**(5), 120–134.
- Prahalad, C. and G. Hamel: 1990, 'The Core Competence of the Corporation', *Harvard Business Review* **68**(3), 91–97.
- Raisch, S. and G. von Krogh: 2007, 'Navigating a Path to Smart Growth', *MIT Sloan Management Review* **48**(3), 65–72.

- Rajagopalan, N. and G. M. Spreitzer: 1997, 'Toward a Theory of Strategic Change: A Multi-Lens Perspective and Integrative Framework', *The Academy of Management Review* **22**(1), 48–79.
- Rajvanshi, A.: 2005, 'Strengthening Biodiversity Conservation Through Community-Oriented Development Projects: Environmental Review of the India Ecodevelopment Project', *Journal of Environmental Assessment Policy & Management* **7**(2), 299–325.
- Redclift, M.: 1987, *Sustainable Development. Exploring the Contradiction* (Methuen, London/New York).
- Reinhardt, F.: 1998, 'Environmental Product Differentiation: Implications for Corporate Strategy', *California Management Review* **40**(4), 43–73.
- Roberts, D.: 2007, 'China: Wind Power's New Force', *Business Week Online*, p. 22.
- Rugman, A. and A. Verbeke: 1998a, 'Corporate Strategies and Environmental Regulations: An Organizing Framework', *Strategic Management Journal* **19**(4), 363–375.
- Rugman, A. and A. Verbeke: 1998b, 'Corporate Strategy and International Environmental Policy', *Journal of International Business Studies* **29**(4), 819–833.
- Salancik, G. R. and J. R. Meindl: 1984, 'Corporate Attributions as Strategic Illusions of Management Control', *Administrative Science Quarterly* **29**(2), 238–254.
- Sharma, S. and I. Henriques: 2005, 'Stakeholder Influences on Sustainability Practices in the Canadian Forest Products Industry', *Strategic Management Journal* **26**(2), 159–180.
- Sharma, S. and H. Vredenburg: 1998, 'Proactive Corporate Environmental Strategy and the Development of Competitively Valuable Organizational Capabilities', *Strategic Management Journal* **19**(8), 729–753.
- Sharma, S., H. Vredenburg and F. Westley: 1994, 'Strategic Bridging: A Role for the Multinational Corporation in Third World Development', *Journal of Applied Behavioral Science* **30**(4), 458–476.
- Shrivastava, P.: 1995, 'Environmental Technologies and Competitive Advantage', *Strategic Management Journal* **16**, 183–200.
- Shrivastava, P. and S. Hart: 1995, 'Creating Sustainable Corporations', *Business Strategy and the Environment* **4**(3), 154–165.
- Stead, J. and E. Stead: 2000, 'Eco-Enterprise Strategy: Standing for Sustainability', *Journal of Business Ethics* **24**(4), 313–329.
- Steurer, R., M. Langer, A. Konrad and A. Martinuzzi: 2005, 'Corporations, Stakeholders and Sustainable Development I: A Theoretical Exploration of Business–Society Relations', *Journal of Business Ethics* **61**(3), 263.
- Sweeney, L. and J. Coughlan: 2008, 'Do Different Industries Report Corporate Social Responsibility Differently? An Investigation Through the Lens of Stakeholder Theory', *Journal of Marketing Communications* **14**(2), 113–124.
- The Economist: 2008, 'Winds of Change', *Economist* **389**(8609), 22–25.
- The World Bank: 2000, *Greening Industry: New Roles for Communities, Markets and Governments* (Oxford University Press, New York).
- Ugochukwu, C. N. C. and J. Ertel: 2008, 'Negative Impacts of Oil Exploration on Biodiversity Management in the Niger Delta Area of Nigeria', *Impact Assessment & Project Appraisal* **26**(2), 139–147.
- United Nations: 1992, *World Investment Report* (United Nations Publications, New York).
- van Marrewijk, M. and M. Werre: 2003, 'Multiple Levels of Corporate Sustainability', *Journal of Business Ethics* **44**(2–3), 107–119.
- Vredenburg, H. and F. Westley: 2002, 'Sustainable Development Leadership in Three Contexts: Managing for Global Competitiveness', in P. N. Nemetz (ed.), *Bringing Business on Board: Sustainable Development and the B-School Curriculum* (JBA Press, Vancouver), pp. 239–259.
- Wackernagel, M. and W. Rees: 1996, *Our Ecological Footprint* (New Society Publishers, Gabriola Island).
- Wasserstorm, R. and S. Reider: 1997a, 'Lessons from Conoco's Experiences in Ecuador's Rain Forest', *Oil & Gas Journal* **95**(33), 24–25.
- Wasserstorm, R. and S. Reider: 1997b, 'Oil Firms in Environmentally Sensitive Areas Learning to Balance Stakeholder Interests', *Oil & Gas Journal* **95**(33), 23–27.
- Weber, R.: 1990, *Basic Content Analysis* (Sage, Newbury Park, CA).
- Wernerfelt, B.: 1984, 'A Resource-Based View of the Firm', *Strategic Management Journal* **5**(2), 171–180.
- Westley, F. and H. Vredenburg: 1991, 'Strategic Bridging: The Collaboration Between Environmentalist, and Business in the Marketing of Green Products', *Journal of Applied Behavioral Science* **27**(1), 65–90.
- Westley, F. and H. Vredenburg: 1996, 'Sustainability and the Corporation: Criteria for Aligning Economic Practice with Environmental Protection', *Journal of Management Inquiry* **5**(2), 104–119.
- Westley, F. and H. Vredenburg: 1997, 'Interorganizational Collaboration and the Preservation of Global Biodiversity', *Organization Science* **8**(4), 381–403.
- Westney, D. E.: 1993, 'Institutionalization Theory and the Multinational Corporation', in S. Ghoshal

and E. D. Westney (eds.), *Organization Theory and the Multinational Corporation* (St. Martin's Press, New York).

World Commission on Environment, Development: 1987, *Our Common Future* (Oxford University Press, Oxford).

World Resources Institute: 2002, *Emerging Environmental Risks and Shareholder Value in the Oil and Gas Industry*.

Zucker, L.: 1987, 'Institutional Theories of Organizations', *Annual Review of Sociology* **13**(1), 443–464.

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