The greening of black gold: towards international environmental alignment in the petroleum industry
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1 Introducing Corporate Environmentalism

1.1 Introduction

1991: The Pulitzer prize winning book 'The Prize. The Epic Quest for Oil, Money and Power' of Daniel Yergin (1991) tells the story of the history and politics of the oil industry. From its fine detail, it becomes clear how complex this important industry is; it has shaped world politics of the 20th century and continues to do so. In the last few pages of this comprehensive book, Yergin gives attention to environmental issues and oil: "A new challenge to Hydrocarbon Society has emerged, this time from within, portending a great confrontation that will probably affect the oil industry and, indeed, our way of life in the years ahead" (Yergin, 1991:783).

2004: In January 2004, Shell announced a reduction of 20% to its proved reserves base. As a part of the subsequent debate, shareholders criticised Shell's top management for having spent more time "trying to convince environmentalists of Shell's commitment to sustainable development than reassuring investors" in relation to Shell's declining performance (Hoyos, 2004a). In response, Shell's Chairman stated: "In the wave of criticism it has sometimes been suggested that our commitment to contribute to sustainable development is an unnecessary distraction from our central task of delivering shareholder value. In fact, I believe that the reverse is true. Our efforts to contribute to sustainable development will play an important role in rebuilding trust, managing risk and delivering the strong business performance our shareholders demand, in both the short and long term" (Shell, 2004:2).

2004: In October 2004, Greenpeace signed a court agreement that prevents its supporters from staging protests against ExxonMobil, anywhere in the US for a duration of seven years. Included are protests on corporate property, filling stations and events sponsored by the company or involving company officers; breaches will bring the automatic risk of fines and imprisonment. The settlement is a blow for Greenpeace, which agreed in part in order to avoid an indefinite ban. The group will continue its actions within the limits set. According to Greenpeace, the case coincides with actions by the US government that such direct actions against companies are unacceptable in the present anti-terrorism climate (Birchall, 2004).

Considering the 2004 examples, it is clear that Yergin's 1991 prediction was right and still holds true. Actually, a myriad of other examples could have been chosen from the developments in the last decade. For the petroleum industry, examples include the Brent Spar controversy, the situation in Nigeria, the Erica tanker incident, the issue of climate change, and pipelines in countries with vulnerable ecosystems and political instability. Thus, a multitude of environmental issues have indeed confronted the international petro-
leum industry. Stakeholders of different kinds have urged for change, regulation has increased, and companies' reputations have been more easily at stake due to campaigning on the Internet. This way, the pressure on companies has increased, provoking change in the strategic behaviour of the industry. In the public debate, the content of this change is regularly questioned: What are mere public relation efforts, and what are not? Are environmental issues becoming 'embedded' and integrated, or are these merely temporary adjustments? What is the linkage to the general strategic and structural characteristics of companies? How broad should the scope of corporate responsibility be? Is the aim an improvement in environmental performance ('eco-efficiency'), or does change lead to the end of the use of fossil fuels and a focus on other, renewable sources of energy?

Overall, environmental issues climbed the strategic ladder of management's attention and more transparency was demanded of companies. In the literature, this altered status of environmental issues resulted in a diversity of approaches. However, very little is still known about the internal process of corporate greening (Winn and Angell, 2000). The aim of this study is, therefore, to gain insights into that process of internal greening by means of an examination of the behaviour of international petroleum companies in the period 1990-2002. This sector is particularly important because of its economic, environmental and political impact. The study focuses on 'environmental strategy' and 'environmental structure' (the term adopted in this study to indicate organisation elements such as management systems, standards and auditing procedures), the relationship between them, and the linkage to other internal and external factors. To examine this complex of factors and thus the integration of environmental issues in multinational corporations (MNCs), the concept of 'International Environmental Alignment' will be introduced.

1.2 Developments in corporate environmentalism

From the 1970s onwards, environmental issues started to penetrate business. The publication of the Club of Rome report (1972) and several environmental incidents drew the attention of the general public and regulators. The awareness developed that economic activity needed mitigation to prevent new environmental catastrophes from taking their course. In a response, public authorities initiated more elaborate environmental legislation, starting with end-of-pipe measures, oriented to lessen the environmental impact of industrial processes at the end of the line of production. The main environmental problems in the international arena, and thus faced by business as well, became categorised in seven categories: [marine and fresh] water pollution and scarcity; air pollution; solid/hazardous waste; soil degradation; deforestation; loss of biodiversity; and atmospheric changes such as greenhouse warming and the hole in the ozone-layer (World Bank, 1992:4). Over the years, the concern for their interrelationships and global scale increased. This is illustrated by the call of the OECD for attention to be paid to issues such as depleting fisheries, global deforestation and groundwater pollution from agriculture (OECD, 2001).

In the 21st century, regulation still seems the most important driver of environmental action. In this connection and through self-initiative, corporations have developed programmes and other initiatives to mitigate the environmental effect of their operations. As

1 E.g. a dioxin leak at the ICMESA factory in Seveso, Italy in 1976, the oil spill by Amoco Cadiz, in France in 1978, and the nuclear plan accident at Three Mile Island, Harrisburg, USA in 1978.

2 The concern and awareness of the general public has been examined in several studies, see, e.g., EPA 1998; EPA 1997; IBE 2003; NIPO/Gallup International 2002.
well as end-of-pipe measures, efforts include eco-design, life cycle analysis, process- and product-oriented measures, audit and verification procedures, and training. Companies have moved from ad-hoc responses to a more fundamental approach to environmental impact, which involves changing processes and products. Environmental management has become an important part of corporate management but still with its own character and peculiarities, sometimes different from other corporate concerns (Hoffman, 1997:19):

— "Pace. It represents a phenomenon of rapid social change, one whose growth is unmatched in other arenas of corporate affairs
— A moral component. It has a moral-ethical side to it that differentiates it from other strategic concerns (but makes it similar to other social issues, such as civil rights)
— Multidisciplinary scope. Unlike other social issues, environmental management has a strategic aspect, cutting across departmental lines to alter product, process, and management considerations within the firm
— Challenge to corporate autonomy. The certainty of scientific data is no longer absolute. Organisational activities are interpreted by external determinants of legitimacy".

Since the end of the 1990s, companies have made additional claims to be increasingly working in a sustainable way. However, the ambiguity of the concept of sustainable development leaves room for a number of conflicting interpretations (see, e.g., Dyllick and Hockerts, 2002). Agreement on a clear-cut definition could signify a transformation of economic and power relationships in the world, concerning states and people; but for now, this seems a utopian view. Although some businesses are on a track to work in a sustainable manner or apply elements of sustainability, it cannot be found as a daily practice. In addition, some industries are considered not sustainable by definition, because they use non-renewable sources. A frequently debated example is the petroleum industry.

Against this background, this dissertation focuses on the strategic dimensions of environmental management. The strategic dimensions are defined as those that influence the company's image, profitability, competitiveness, markets or products (Kolk, 2000). They relate to the motivations of companies to engage in environmental management. Besides regulatory compliance, motives for environmental action are competitive advantage, stakeholder pressures, ethical concerns, critical events and top management involvement (see, e.g., Bansal and Roth, 2000; Bowen, 2000; Henriques and Sadorsky, 1999; Mitchell, Agle and Wood, 1997; Porter and Van der Linde, 1995a; UNCTAD, 1993b). In addition, companies face important questions as to how to organise and structure these environmental issues. This is especially critical when large complex worldwide organisations are involved.

1.3 Environmental management and international business

The central unit of analysis in this dissertation is the multinational corporation (MNC). The economic importance of MNCs, which have so far mostly originated from developed countries, is impressive. Considered one of the most remarkable economic phenomena of the post-war period (Buckley and Casson, 1976, 1991), the world's top 100 non-financial

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3 The Brundtland commission defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). Interpreted as to include environmental protection, business growth and social equity, this is also phrased as the 'triple bottom line' represented by three E's (Economy, Environment and Equality) or three P's (People, Profits, and Principles (Elkington, 1997).
MNCs foreign affiliates accounted for one-eighth of the total assets of all foreign affiliates worldwide in 1998; they were concentrated in four sectors of industry: electronics and electrical equipment; automobiles; petroleum; and chemicals and pharmaceuticals (UNCTAD, 2000). In this study, the MNC is understood to be the core firm. As a core firm, the MNC functions as the spider in the industrial web (cf. Ruigrok and Van Tulder, 1995; see, e.g., Dunning, 1993; Rugman and D'Cruz, 1998).

The study of the MNC as a specific kind of company is connected to the research approach of International Business. Since its inception in the late 1950, and early 1960s, it now contains many disciplines (see, e.g., Inkpen and Beamish, 1994; Toyné and Nigh, 1998) and has expanded its geographical scope from North America to Europe and gradually to other regions. In the last decade, strategic environmental management in MNCs has developed as a new topic within International Business. Several authors have underlined the importance of this topic. Vernon (1994:149), for example, stated that "especially in the raw materials industry", environmental issues "promise to figure in a major way in every respect of future research on TNCs."

The environmental impact of MNC-activity results from several aspects: the nature of the activities, the sector of industry, the standards and regulations with which multinationals have to comply, and the kind of environmental management applied. The prominence of MNCs in heavy industry, their ability to influence environmental regulations and their economic impact, which is often welcomed, are other reasons why the study of MNCs and their environmental management is significant (UNCTAD, 1992). In addition, their possession of financial, managerial and technological resources, especially compared with those of local companies, "raises expectations and allows TNCs to exercise leadership in environmental protection" (UNCTAD, 1992:226-227). Furthermore, MNCs are relatively more visible and vulnerable: "Large TNCs have a global image to protect and tend to be conscious of public and stockholder opinions, and of the potential for restrictive home country regulation, even for their foreign operations." The developments in the way MNCs approach environmental issues, their worldwide presence and experience, and their global brand name, in combination with the attention of media and a wide variety of stakeholder groups, all lead therefore to questions about the strategy, planning and organisation of environmental management in MNCs.

1.4 Petroleum industry and environmental issues

In environmental management, sector characteristics usually have a large influence on corporate strategies and organisational responses, especially because they determine the types of issues companies face as well as their 'room for manoeuvre'. In line with other studies on environmental management research, this study has also taken a sector-specific approach. Such a single-industry focus has also been said to enhance internal validity because companies face similar regulatory constraints, enforcement procedures, stakeholder activism, issues and problems (Griffin and Mahon, 1997). The international petroleum sector has been singled out for analysis because of the combination of its envi-
Environmental impact and its economic and political importance, as well as the high degree of public attention for the industry. In combination with chemicals, paper and pulp, and mineral processing (Leonard, 1988), the sector is one of the four most pollution-intensive industries. This impact on environmental waste streams, the centrality of the products to certain environmental problems, and the emphasis on the industry by regulatory authorities, all make the sector a focus in the environmental debate. According to Hoffman (2001:10): "Environmental concerns related to these two [petroleum and chemical] industries [therefore] emerged earlier and developed with more intensity than those involving other, less controversial industries."

In the literature, this controversial nature is reflected in the many petroleum studies that pay attention to specific countries and companies (see, e.g., Bronckhorst, 2000; Piascicki, 1995) as well as the relationship of the sector with human right issues (see, e.g., Haller et al., 2000; Tomei, 1998). The aim of these studies often is to raise awareness of the dilemmas related to operations in certain areas. An overview of examples of controversial operations is provided in Table 1-1.

<table>
<thead>
<tr>
<th>Area</th>
<th>Examples of issues</th>
<th>Actors involved</th>
<th>Time period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>Impact of operations and construction of pipelines on an ecologically sensitive area; tanker incident; drilling in wildlife refuge</td>
<td>Alyeska consortium, (a.o. ARCO, other companies, government, NGOs</td>
<td>1968 – present</td>
</tr>
<tr>
<td>Caspian region (Azerbaijan, Kazakhstan, Turkmenistan)</td>
<td>Struggle for control of resources with emergence of new states and breakdown of Soviet Union; construction of pipeline.</td>
<td>BP, Statoil, other companies, governments of several countries, NGOs</td>
<td>1990s – present</td>
</tr>
<tr>
<td>Chad-Cameroon</td>
<td>Construction of pipeline and environmental, cultural and economic impact</td>
<td>Exxon, Petronas and Chevron, other/national companies, governments, NGOs</td>
<td>1988 – present</td>
</tr>
<tr>
<td>Ecuador</td>
<td>Upstream operations in nature park and environmental impact</td>
<td>Texaco, Conoco, other/national company, indigenous people’s organisations, government, NGOs</td>
<td>1970s – present</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Drilling for gas; construction of pipeline; human rights violations by military regime, e.g. forced labour, population displacements.</td>
<td>Total, Unocal, other/national companies, the country’s military regime, opposition leader Aung San Suu Kyi, NGOs</td>
<td>1990s – present</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Environmental destruction of valley area, execution of Ken Saro Wiwa, flaring, violence, sabotage and safety issues</td>
<td>Shell, Elf, Agip, Texaco, other companies, Ogoni people, government, NGOs</td>
<td>1990s – present</td>
</tr>
<tr>
<td>Russia</td>
<td>Bad maintenance of pipelines, resulting in oil lakes; other environmental problems</td>
<td>Tyumen as owner TotalFinaElf as buyer, government, Greenpeace, NGOs</td>
<td>2000 – present</td>
</tr>
<tr>
<td>Sudan</td>
<td>Civil war since 1960s, peace negotiations in 2004; opening of new production area</td>
<td>CNPC, Petronas, ONGC/Videsh (resp. Chinese, Malaysian, Indian state-owned) plus TFE, Several other companies (Talisman, Lundin, OMV) pulled out/agreed to sell stakes. US companies were debarred by sanctions. Other actors: Rebels, NGOs, governments</td>
<td>1999 – present</td>
</tr>
</tbody>
</table>

Note: Examples are listed in alphabetical order and only serve as a means to illustrate the diversity and complexity of the debates involved; thus, not all controversial operations are included in the list, e.g. those in An-
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gola, Colombia. As almost all of the host countries are less-industrialised, politically unstable countries, discussions are highly political and complicated; distribution of revenues is almost always an issue.

Other studies focus on the complex economic impact of the sector (e.g. Eifert, Gelb and Tallroth, 2003; Karl, 1997; Ross, 2001), the response and behavioural patterns of petroleum companies with regard to environmental issues (e.g. Hastings, 1999; Hoffman, 1997; Hoffman and Ventresca, 2002; Kolk and Levy, 2004; Levy and Kolk, 2002; Logsdon, 1985), or on the individual manager as level of analysis (e.g. Sharma, 2000; Sharma, Pablo & Vredenburg, 1999; Sharma and Vredenburg, 1998). The majority of the previous studies have dealt with North-American companies.

This study examines first and late movers' behaviour of a large sample of petroleum MNCs for the period 1990-2002 to see whether and how multinationals have integrated environmental issues in overall management, and what the mechanisms behind their choices have been. The period 1990-2002 has been chosen because it witnessed the huge implications of environmental issues for the oil industry. The oil spill by Exxon Valdez in 1989 marks the beginning of the period, followed by the publication of the first corporate environmental report by the petroleum MNCs Chevron and Texaco in 1990. The controversy around the dumping of Shell and Exxon's oil platform Brent Spar and the execution of Ken Saro Wiwa, both in 1995, characterise the middle of the period. In the corporate context, the period is further characterised by the development of environmental management systems, the rise of the sustainability paradigm, the publication of reporting guidelines, and the first verifications of corporate environmental reports.

1.5 Research aim, questions and design of the study

In 1993, Gladwin listed ten critical general observations about the state of scholarship in the literature on the greening of industry (Gladwin, 1993:43). One of his observations was the failure to cumulate research findings. Another observation was that progress in the study of greening demands much greater application of the scientific method, in particular the formulation of theoretical explanations (Gladwin, 1993:55).

In the following ten years, research in environmental management has expanded quickly. Major debates on the relation between MNCs and environmental management have concentrated on the impact of regulation; the competitive impact of environmental management; drivers and expressions of environmental management; technical measures to improve products and process; and, studies about environmental performance. In addition, attention has increasingly been given to the organisation of environmental management. Gladwin's comments with regard to the status quo of environmental management research are, therefore, no longer as valid as they were in the beginning of the 1990s. However, the relatively young age of the field of environmental management can still be discerned from the number of opportunities there are present for new research.

The aim of this research is to expand the knowledge on the integration of environmental issues in the organisation and management of MNCs. Integration can be defined as "the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment" (Lawrence and Lorsch, 1969:11). The present study therefore analyses the characteristics and determining factors of the environmental strategy and the organisation of environmental management (structure) in the petroleum industry, driven by the following general question:
Which factors influence the relationship between environmental strategy and environmental structure in a multinational corporation?

Sub-questions have been formulated to enable this analysis for the international petroleum industry:
Q1. How can external contextual characteristics be classified in such a way that a relationship with environmental strategy and environmental structure can be studied?
Q2. How can internal characteristics of MNCs be characterised, in such a way that a relationship with environmental strategy and environmental structure can be studied?
Q3. How can environmental strategy and structure of large MNCs be characterised, in such a way that influencing factors can be identified?

To these ends, the research project has adjusted the strategic alignment model for environmental issues in MNCs. It is introduced as the 'International Environmental Alignment Framework'. As further discussed in Chapter 3, **strategic alignment** examines the cooperative and/or conflicting relationship between strategy and structure with the aim of improving efficiency and performance (Henderson and Venkatraman, 1991, 1993; Porter 1996; Rondinelli, Rosen and Drori, 2001). Building on the concepts of strategic fit and functional integration, this model assumes that decisions need to be coordinated to achieve value. The International Environmental Alignment Framework copied the distinction between an internal, functional domain and an external, strategic domain. This allows for the inclusion of company, sector and country variables. Furthermore, the framework distinguishes three different orders of alignment (simple consistency, mutual reinforcement, optimisation of effort) and examines the drivers underlying the alignment.

The nature of the study is both descriptive as well as exploratory: descriptive in that it explores first and late movers' behaviour of European and U.S. multinational companies in the petroleum industry in the period 1990-2002, and explorative in its effort to shed light on formulated propositions. The exploratory character of the study results from the novelty of the subject and the relative novelty of the discipline. In its methodology, the study employs two distinct empirical formats. An extensive study of a large sample of companies, covering the majority of petroleum MNCs in the Fortune Global Top 250, provides the basis of the study; it includes European, Asian, and US petroleum MNCs. A multiple case study format of European companies was added to deepen the insights.

The relevance of the study is of both a theoretical and a practical nature. The study aims to contribute to the environmental management and international business literature by means of its exploration of the 'black box' identified in the literature review (Chapter 2): the dynamics of and relationship between environmental strategy and structure. Adjusting the prescriptive nature and original focus of the strategic alignment model to examine the process of alignment and overall management of environmental issues means moving the model to a new frontier. The examination of the petroleum industry sheds light on sector developments over a longer period of time. In a practical sense, this may perhaps show managers what opportunities are available to influence their companies' order of alignment as a result of insights given into the influencing factors of this process. Finally, the study aims, in general, to contribute to greater transparency of the state of this industry which has received so much public attention.

Figure 1-1 gives an overview of the design of the study. In Part I, the study examines the literature with regard to perspectives on environmental management with both a general and a MNC-specific focus (Chapter 2). Building on the resulting identification of a 'black
box' in the literature, the exploratory framework of the study and its propositions are formulated (Chapter 3). Subsequently, the methodology of the study is explained as well as the techniques of sampling for all variables (Chapter 4).

Part II focuses on the petroleum industry, first giving background information and data related to its strategic profile (Chapter 5), reputation (Chapter 6) and environmental profile (Chapter 7). Building on the conclusions of this sector study, the examination is continued with four case studies which are each examined separately in Part III. The cases of Shell, BP, TotalFinaElf and Statoil are discussed in, respectively, Chapter 8, 9, 10 and 11. Chapter 12 presents the conclusions and implications of the study, and suggests areas for further research.

Figure 1-1 Design of the study