The motivations for environmental commitment in the airline industry:

A case study of Scandinavian Airlines

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To my grandfather, Bill.
The greening of management theory suggests that to ensure the environmental sustainability of businesses, a paradigm shift is required away from valuing profit maximisation as the fundamental objective of business, towards incorporating more ecocentric goals and corporate social responsibility into the management equation. The development of mechanisms and tools for a business’s environmental sustainability needs to take into consideration the complex issue and value-laden environment in which corporate environmental policy-making occurs, if tools are to be socially and politically legitimated. In this policy-making context there has been growing importance placed on the role of social science in environmental decision-making, as the natural sciences alone may no longer be sufficient to guide the development of sustainable environmental management. This thesis uses a case study of Scandinavian Airlines (SAS) to examine an airline’s decision-making processes and drivers for environmental commitment.

The airline industry is the focus of this research. Although the airline industry is part of the service sector, it possesses several characteristics similar to those of manufacturing industries including intense regulation, high entry barriers and high capital costs, with tendencies towards oligopolies. It thus provides an interesting juxtaposition between the ‘heavy’ industries sectors such as the chemical, mining and energy sectors (the focus of much of the empirical research on environmental motivations) and the more consumer-oriented service components of the service industry. The increasing uptake of ecolabels and benchmarking practices in service sectors such as the tourism industry demonstrate growing corporate interest in voluntary and market-based mechanisms to address the management of environmental impacts. Although aviation has been examined with respect to its impacts on the environment, it has not been considered with regard to the internal management processes which are used to develop company policies.

The research for this thesis was carried out using a mixed method approach for data collection that included interviews, an interactive discussion tool, document analysis and a literature review. The case study, SAS, is an international commercial airline and one of the founding members of the Star Alliance™ network. SAS operates predominantly at the Scandinavian and European Union level, a domain that has given much attention to environmental issues. This study uses two key decisions that
were made in SAS to demonstrate how environmental issues were taken into consideration in the airline’s decision-making process. The first decision focuses on a strategic move by the airline in 1995 to purchase ‘environmentally-friendly’ aircraft engines, and the second decision deals with a new inflight service concept, Scandinavian Direct, that was created by SAS following the economic downturn in the industry in 2001.

Based on an in-depth analysis of the drivers identified by both Scandinavian Airlines and related industry officials, this study shows that attitudes, values and beliefs generated both internally and externally have a critical impact on the airline’s environmental policy-making. Although there are numerous influences that drive SAS’s level of environmental commitment, three of these ‘motivators’ are particularly noteworthy in the findings. Firstly, this research demonstrates that eco-efficiencies, in various forms, are indeed a strong motive at SAS. Secondly, the Scandinavian culture also plays an influential role in the value SAS puts on the environment at a strategic level. Thirdly, it was found that internal leadership, in the form of environmental champions in senior management positions, played a key role in the positive outcomes of the airline’s environmental performance.

The implications of this study are three-fold. Firstly, the study provides empirical evidence of the motivations and influences for an individual company at a level of depth provided in few case studies. Secondly, it provides findings that can be used in the development of mechanisms to encourage airlines to continually improve their environmental performance. Thirdly, the significance of this research is founded on the notion that it is crucial to understand the external and internal drivers that influence the development of airline environmental policy if realistic and appropriate benchmarks are to be set for different sectors of the tourism industry. Given the historic and forecasted growth in air travel, the salience of this research is demonstrated.
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<tr>
<td>ACAC</td>
<td>Arab Civil Aviation Commission</td>
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<tr>
<td>ACI</td>
<td>Airports Council International</td>
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<tr>
<td>ATAG</td>
<td>Air Transport Action Group</td>
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<tr>
<td>BA</td>
<td>British Airways</td>
</tr>
<tr>
<td>CAEP</td>
<td>Committee on Aviation Environmental Protection</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CFiT</td>
<td>Centre for Integrated Transport</td>
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<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
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<tr>
<td>CH₄</td>
<td>Methane</td>
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<tr>
<td>CNS/ATM</td>
<td>Communication Navigation Surveillance / Air Traffic Management</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>COO</td>
<td>Chief Operating Officer</td>
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<tr>
<td>DJSI</td>
<td>Dow Jones Sustainability Index</td>
</tr>
<tr>
<td>EC</td>
<td>Commission of the European Communities</td>
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<tr>
<td>EMAS</td>
<td>Eco-management Auditing Scheme</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>EEA</td>
<td>European Economic Area</td>
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<td>HC</td>
<td>Hydrocarbons</td>
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<tr>
<td>IATA</td>
<td>International Air Transportation Associations</td>
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<td>IBAC</td>
<td>International Business Aviation Council</td>
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<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<tr>
<td>ICCAIA</td>
<td>International Co-ordinating Council of Aerospace Industry</td>
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<td>ICSA</td>
<td>International Coalition for Sustainable Aviation</td>
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IFALPA  International Federation of Air Line Pilots' Association
IFCA    Inflight Catering Association
IPCC    Intergovernmental Panel on Climate Change
ISO     International Organization for Standardization
LFV     Luftfartsverket (Swedish Civil Aviation Administration)
LSG     Lufthansa Group
NGO     Non-government organisation
NOx     Oxides of Nitrogen
SARPs   Standards and Recommended Practices (of the ICAO)
SEK     Swedish Kronor
O₃      Ozone
SAS     Scandinavian Airlines
T&E     (European Federation for) Transport & Environment
TNC     Trans-national Corporation
UK      United Kingdom
UN      United Nations
UNFCC   United Nations Framework on Climate Change
WMO     World Meteorological Organization
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First and foremost I would like to thank Scandinavian Airlines who stayed with me as a case study in the wake of the turbulent times of the airline industry over the past few years. The openness of SAS management and personnel contributed greatly to this research. Particular mention must be given to Niels Eirik Nertun, Martin Porsgaard Nielsen and Bjorn Nilsson. I am grateful for the ‘Scandinavian spirit’ of Peter Brokking and other faculty members at the Urban Studies division of the Kungl Tekniska Högskolan (Royal Institute of Technology) in Stockholm who were very kind in providing me with an office and computing facilities during my stay in Sweden. Tack så mycket! Thanks also to representatives from the Air Transport Action Group, Airports Council International, the International Air Transportation Association, the International Civil Aviation Organization, Luftfartsverket (the Swedish Civil Aviation Administration), LSG Sky Chefs, British Airways and Qantas for their assistance in this study. David Hyett and Brian Beudekker (both formerly of Ansett Australia) and Prof. Ashley Scott also provided me with much support in the beginning stages of this project.

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And finally, a big thank you to all my friends and family who gave me support during this thesis – from those who brought me cups of tea and a shoulder to lean on, to those who housed, fed and even clothed me (I’m referring here to the donation of an orange Hawaiian shirt, which I have been told is an essential fashion item for any serious academic). You know who you are, so I will leave your names out of the limelight.
List of Publications Associated with this Thesis


Other related articles


¹ Included as Appendix A
² Included as Appendix B

* The two papers co-authored by one of my supervisors, Dianne Dredge, represent early thoughts on this thesis topic. However, the research contained herein is entirely my own.
Declaration

I declare that this work has not previously been submitted for a degree or a diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

..................................................

Jennifer Kristin Lynes

December 5, 2004
Chapter One

Balancing the environment at 10,000 metres

1.1 Introduction

There is but one “social responsibility” for corporate executives… they must make as much money as possible for their shareholders. This is a moral imperative. Executives who choose social and environmental goals over profits – who try to act morally – are, in fact, immoral.

(Milton Friedman in Bakan, 2004:3).

Comments such as those from Friedman raise several questions regarding what the motivations are for large companies to be concerned about the environmental impacts of their actions. Will economic fundamentalism ultimately prevail, or are there deeper and more altruistic aspects that economists do not ‘see’? Big businesses, such as corporations, are made up of individuals whose values, goals, ideals and perspectives often clash with the rigour and inflexibility set in laws and charters that guide the operation of corporations. It is within this context that the issue of corporate greening sits, torn between social consciousness and business profits.

It is therefore interesting to consider what motivates a company to integrate the effect of environmental impacts into its decision-making processes. Through a case study approach, this thesis critically examines the motivations that drive the level of environmental commitment of an airline and, more specifically, of one airline - Scandinavian Airlines (SAS). Developing an understanding of the figurative black-box of SAS’s decision-making process contributes to unlocking the reasons why a company chooses (or not) to pursue environmental commitment. If these reasons are known, they can be used to develop appropriate mechanisms to ensure the environment is an important aspect of a company’s decision-making regime (Bowen, 2000). As a way of examining the motivations for SAS’s environmental commitment, this study focuses on two major decisions that were made within the airline, one concerning the replacement of SAS’s aircraft fleet in 1995; the other a more recent decision about the development of a new concept of inflight service following the economic downturn of the airline industry post-September 11, 2001. The examination of these two decisions provides an important link between the airline’s corporate environmental policy, its perceived motivations, and the actual outcomes of strategic
management decisions. Prakash (2000:2) cites that there is an inadequate understanding of the internal processes that lead a firm to adopt, or not adopt, environmental policies, arguing that an examination of intra-firm dynamics is required to supplement the existing literature on external pressures that firms face (see also Gilley, Worrell & El-Jelly, 2000). Accordingly, an investigation into the driving forces to which a particular industry is subject makes an important contribution to developing more in-depth understandings of the way decisions occur, the relative importance of different issues and of overriding values and concerns embedded in the level of a company’s environmental commitment. These insights are important informants in the development of corporate greening approaches (e.g. Cannibal & Winnard, 2001; Stone, 2000; Kirk, 1998). Increased legislation, environmental education, green consumerism, the media and pressure from environmental groups have kept the issue of ‘business and the environment’ alive (Fineman, 1997). The European Commission (1999) cites the requirement for action that goes beyond business-as-usual improvements and that needs to encompass an integrated action programme through both policy and industry initiatives.

1.2 An overview of corporate response to environmental concerns

While the economists speak of profit maximisation (e.g. Friedman, 1985; Drucker, 1946), the past few decades have been witness to pressure from the public, non-government organisations (NGOs) and governments as well as to an array of reports, events and international summits that have shaped the current relationship between an unlikely couple: business and the environment. Publications such as Rachel Carson’s Silent Spring (1962) have opened the eyes of both the public and business leaders to the existing and potential contribution that businesses make to environmental degradation (Frankel, 1998). The voluntary programme, Responsible Care, developed by the chemical industry, for example, was a direct response to the 1984 Bhopal disaster in India in which at least 3000 people died as a result of a chemical spill from the multi-national company, Union Carbide (Moffet & Bregha, 1999; CNN, 2002). Similarly, petroleum companies responded to the 1989 oil spill of the Exxon Valdez which devastated local wildlife (Frankel, 1998). Starkey & Welford (2001) mark Hart’s 1997 article published in the Harvard Business Review as a key turning point between the marriage of the literature of both business and environment. The evolution in environmental management literature and promotion of environmental issues has prompted businesses to create, move and rearrange departments responsible for the environmental agenda of the company (Elkington,
In the early 1990s, and in the wake of the Brundtland Report (1987), the focus was much on sustainable development and, later, on sustainability. About that same time, government began adopting neo-liberal economic management philosophies by relinquishing their regulatory roles of the 1970s and 1980s and putting the onus on businesses to take responsibility for their actions (Bakan, 2004). Programs such as the abovementioned Responsible Care (Chemical Industry) as well as other voluntary initiatives that are appearing (i.e. ISO 14000 certification, Eco-Management Auditing Scheme (EMAS) and the U.S. based Green Lights program), further demonstrate this shift towards ‘privatisation’ of environmental management. Globalisation has intensified competition and placed pressure on businesses to perform (Howes, Skea & Whelan, 1997). Large corporations have institutionalised and bureaucratised the environment through the creation of environmental departments, mission statements, and designated employees to handle environmental issues (Fineman, 1997; Gladwin, 1993). Elkington (2001), as well as Schot & Fischer (1993), provide interesting and descriptive accounts of the evolution of corporate response to environmental issues.

Within this framework, a vast body of literature has recently emerged that examines influences and motivations on corporate environmental responsiveness (e.g. Annandale & Taplin, 2003; Khanna & Anton, 2002; Bansal & Roth, 2000; Bowen, 2000). Much of this literature concentrates on ‘heavy’ industries such as mining, chemical and energy sectors (see for example Annandale & Taplin, 2003; Khanna & Anton, 2002; Kiernan, 2001; Gilley, Worrell & El-Jelly, 2000; Prakash, 2000; McAllister, 1999; Moffet & Bregha, 1999; Hawkens, Lovins & Lovins, 1999). Moreover, there has been significantly less research on the service sector, which is an issue requiring attention given the increasingly relative importance of the service sector in most western economies (Céspedes-Lorente, Burgos-Jiménez & de Álvarez-Gil, 2003; Kirk, 1998; 1995). While the focus on manufacturing is warranted given its large impacts on the environment, the service sector cannot be overlooked as a contributor to environmental degradation and as a ‘candidate’ for corporate greening.

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3 The premise behind sustainable development and sustainability has been widely discussed in the literature and thus will not be examined in this study. Interesting discussions on these topics can be found in Brown, Flavin & Postel, 1988; Chatterjee & Finger, 1994; Daly & Cobb, 1989; Leiss, 1976; Rees, 1992; Rees & Wackernagel, 1996; Roseland, 1992.
The focus of much of the work found in the literature based on motivations for corporate greening is on three areas:

1. The motivations of businesses to implement ‘voluntary’ and/or ‘beyond compliance’ measures (e.g. Rosen, Beckman & Bercovitz, 2003; Gibson (ed.), 1999a; Prakash, 2000; van Nijnatten, 1999)

2. The relationship between financial gains and environmental management through ‘eco-efficiencies’ (e.g. Hawkens et al., 1999; Russo & Fouts, 1997; Hart & Ahuja, 1994)

3. Determinants of corporate response towards regulatory compliance (e.g. Annandale & Taplin, 2003; Labatt, 1997)

Few studies have examined the combination of motivations for the uptake of voluntary, regulatory and market-based mechanisms and the influence of these drivers on decision-making within a firm. Furthermore, in spite of the complexities surrounding the management of corporate environmental issues these issues are often approached in the literature in a simplistic manner such as from an ethical approach or an evaluation of financial and economic benefits (Azzone, Bertele & Noci, 1997:565, 569). There is a strong emphasis in the literature on the American regulatory system and thus American companies are often used as examples or case studies (e.g. Khanna & Anton, 2002; Prakash, 2000; Andrews, 1998; Roberts & Gehrke, 1996). However, different sectors operate differently and may be motivated by different drivers with respect to effective tools and mechanisms, thus indicating the importance of looking at a particular company in context of the larger sector to which it belongs (Baylis, Connell, & Flynn, 1998; Howes et al., 1997). Despite these differences, there is a lack of contextual information about the industry in the reporting of these examples in the corporate greening literature. Lastly, the literature has identified a need for more empirical research in this area (e.g. Cespedes-Lorente et al., 2003; Gladwin, 1993). Räsänen, Meriläinen & Lovio (1995:15) suggest that, instead of simply assuming what would be effective ways of changing firms, researchers should be interested in the ways in which firms actually do change (emphasis added). The Commission of the European Communities (2001:8) has identified the need for better knowledge and further studies on the impact of corporate social responsibility in business performance through collaborative studies involving a mix of businesses, public authorities and academic institutions.
1.3 Defining the concept of ‘corporate greening’ and ‘environmental commitment’

Over the past few decades, a field of literature on ‘corporate greening’ has emerged. This is evidenced through journals that draw the link between environmental management and business such as *Greener Management International* and *Business Strategy and the Environment*. The term ‘corporate greening’, used liberally in the literature, remains loosely defined. Räsänen et al. (1995:9) argue that attempts have been made to define corporate greening through reference to the notion of ecologically sustainable business development but that these definitions still avoid, rather than answer, the question of what corporate greening is. One of the challenges in defining corporate greening stems from its use for any number of processes and outcomes of corporate environmental management (Winn, 1995).

In Gladwin’s (1993:37–38) search for the ‘meaning of greening’, he depicts a hypothetical group of academics from varying fields gathered around a ‘thing called greening’, in an attempt to understand what it is:

The…ecologist then pronounces that it must be about respect for ecosystem assimilative capacities, thresholds and irreversibilities…Farther down the academic pecking order, the softer scientists then take the floor. The philosophy professor, perceiving values, suggests that the thing represents a shift from anthropocentric (human-centered) toward biocentric (ecosystem-centered) ethical systems…The economist then efficiently argues that it is simply about internalising environmental externalities…Finally the business school professor says, “I think I’ve heard enough. This thing, at a minimum, is simply about harmonising corporate environmental performance with stakeholder desires and expectations; but on second thought, it could also constitute a significant source of competitive advantage, lower costs, expanded market share, and enhanced shareholder value; but on the other hand, of course, it all depends.”

Gladwin’s parable illustrates the complexity of defining corporate greening and, when considered from a deconstructionist point of view, the numerous and varied meanings embedded within. In the short-term, the meaning of the term greening, as a ‘motley collection’ of everything from entropy to normative conformity and corporate opportunity, will remain ‘troublesomely ambiguous’ (Gladwin, 1993:39, 41). While entire articles have been devoted to discussing the notion of corporate greening, they fail to provide a concrete and clear definition of this term. However, common themes have emerged from the literature that help to describe and define corporate greening.
for the purpose of this study (see, for example, Prakash, 2000; Gibson (ed.), 1999a; Welford (ed.), 1997; Welford & Starkey (eds.), 1996; Fischer & Schot (eds.), 1993). These themes include, but are not limited to:

- Environmental strategy;
- Commitment;
- Organisational change; paradigm shifts; changes in rhetoric;
- Compliance;
- Voluntary initiatives;
- Communication & transparency;
- Institutionalisation of environmental issues; and
- Corporate ethics.
These themes, for the most part, relate to how firms are interpreting this term ‘corporate greening’, such as through reports, development of formal environmental management systems and corporate policies, measurable performance indicators and benchmarks, internal cultural change and communication with stakeholders.

Corporate greening is thus a broad term that encompasses affective, cognitive and behavioural components (Gladwin, 1993:41). When considering the motivations of a firm, however, the term appears almost too ‘spacious’ and all-encompassing. Zeffane, Polonsky & Medley (1995) identify ‘environmental commitment’ as one fundamental component of corporate greening that incorporates both attitudinal and behavioural attributes (see also Winn & Angell, 1992). Similarly, Keogh & Polonsky (1998:38) define environmental commitment as both a process and a resultant through which organisational members display environmental concerns; however they also emphasise the lack of understanding in the literature of how such commitment arises within a firm.

When trying to come up with a word that accurately described what I was examining in this thesis, I was reminded of a meeting I had with the Executive Director of the Air Transport Action Group in which he said that while SAS may not have the ‘number one’ environmental performance record, it was, in his opinion, the airline which showed the highest level of environmental commitment (pers. comm., 28 June, 2002). The term ‘environmental commitment’ is thus used in this thesis in relation to the motivations that will be identified within a company as drivers to environmental policies and decisions. The term ‘environmental commitment’ encompasses what is being examined in this research – not the sophistication of the environmental management system or the outcomes of a company’s environmental performance, but how far a firm is willing to go in terms of its commitment to participate in corporate greening, and more specifically, why. In this respect, evidence of a company’s environmental commitment can be seen through:

- The pledges it makes to a course of action;

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4 Gladwin bases this argument on Sternberg’s ‘triangular theory of love’ (see also Sternberg, 1997) in which he describes adult human relationships as being comprised of varying levels of three components: commitment, passion and intimacy. The size and the shape of the triangle can vary depending on the strength of each of these components in a given relationship. Gladwin has extrapolated this idea to the concept of corporate greening by suggesting that firms can ‘think’, ‘behave’ and ‘feel’ greenly to varying extents.
• The actions undertaken in relation to its pledges;
• The responsibility taken for its actions;
• The dedication to improving its environmental performance; and
• The level of involvement with environmental issues (both externally and internally).

1.4 The objectives of this thesis

This thesis is about determining what the influences and motivations are of a single airline within the broader context of the airline industry and the literature on corporate greening. The aims of the research are two-fold:

1. To identify the internal motivations of SAS that influence its commitment to improving environmental outcomes; and

2. To identify the impact of industry-specific external drivers upon the airline’s capacity to pursue this environmental commitment.

These aims will be achieved by examining how the environmental commitment at SAS has evolved in relation to the influences and motivations for the airline, as well as by critically analysing if, how and why environmental considerations were integrated into two key decisions at SAS. The significance of this research is founded on the notion that it is critical to understand the external and internal drivers that influence the development of airline environmental policy if realistic and appropriate benchmarks are to be set for different sectors of the airline industry. The approach to this study is interdisciplinary in nature and draws from literature such as corporate greening, environmental leadership and the management of large corporations. The underlying argument of this thesis is that the effective development of mechanisms and tools for the environmental sustainability of (the airline) industry also needs to take into consideration the complex, value-laden environment in which corporate environmental policy-making occurs, if tools are to be socially and politically legitimated (Andrews, 2000). This research will contribute to the existing theory by providing insight into industry’s role in the improvement of efficient management of resources as well as by increasing the empirical evidence of industry’s motivations to improve environmental activity. Dissemination of this knowledge can inform governments and regulatory agencies of the opportunities and impediments to
corporate environmental commitment within the airline sector, with overall benefits to the development of airline sector environmental management framework and practices.

1.5 Research approach: SAS as a case study within the larger framework of the airline industry

The research strategy used in this thesis was a case study investigating the motivations that influenced SAS’s level of environmental commitment. The research was carried out using a mixed method approach to data collection, which included semi-structured interviews, analysis of published and unpublished reports and a literature review. The interviews consisted of nine preliminary and background interviews with officials from international aviation organisations, SAS and three other airlines. The main data collection comprised twenty-seven interviews with SAS management and employees and with one SAS supplier. The informants included representatives from marketing, inflight services, investor relations, environment, engineering and purchasing – from the Deputy Chief Executive Officer to Aircraft Maintenance Engineers.

The uniqueness of the airline industry provides an interesting backdrop for this research. Although commercial aviation is part of the service sector, it possesses several characteristics similar to those of manufacturing industries, including intense regulation, high entry barriers and high capital costs, with tendencies towards oligopolies (Clancy, 2001). It thus provides an intriguing juxtaposition between the ‘heavy’ industries sectors such as the chemical, mining and energy sectors (the focus of much of the empirical research on environmental motivations) and the more consumer-oriented components of service sectors.

The airline industry has been examined through several different lenses, such as the economic perspectives of alliances and deregulation (see Li, 2000; Crystal, 1999; Gudmundsson, 1999) and the environmental impacts of aviation (e.g. see Penner, Lister, Griggs, Dokken & McFarland, 1999; Tomkins, Topham & Twomey, 1998; Morrell, Taylor & Lyle, 1997; Pennington, Topham & Ward, 1990). While the technical aspects of the environmental impact of commercial aviation are the subjects of much research, a review of the literature reveals the paucity of information regarding the ‘softer’ aspects of environmental management in this sector. In this respect, research on the airline industry tends to rely heavily on industry and government reports (e.g. COWI, 2001; European Commission, 1999; IATA, 2000; CE Delft, 2002).
This study has evolved from my own work experience in the airline industry, first as a flight attendant then as an inflight director for a Canadian airline, while completing a Masters thesis that focused on minimising inflight waste in the airline industry. These two experiences demonstrated how an airline could be convinced to reduce or recycle waste if eco-efficiencies could be clearly demonstrated. The ideas for these environmental initiatives often came from pressure from within - an ‘environmental champion’ - who approached management with an idea or solution to the issue by demonstrating the financial benefits for the company (Lynes, 1999). Working within the industry revealed that a further story needed to be told, which is how the topic for this thesis began.

1.5.1 The short story of SAS

Scandinavian Airlines (SAS) was formed just after World War II in August, 1946. SAS is the largest airline in Scandinavia and has bases in Stockholm, Denmark and Oslo, serving 23 million passengers per annum on domestic, inter-Scandinavian, European and Intercontinental routes (SAS, 2001). The airline is part of the larger SAS Group, which owns hotels and other airlines as well as airline support services. The 1990s was a phase of vertical integration for the SAS Group, which acquired a range of travel companies including airlines, hotels, travel agents and ground services (SAS, 2002b; 2001a; 2000a; 2000b). As of 2002, SAS ranked 30th in the world in terms of passenger traffic, while the SAS Group ranked 13th in the world with respect to total revenue, demonstrating that it is an important player in the global airline market (Baker, 2003a). In the 1980s, SAS was hailed as the ‘businessman’s airline’, marketing itself predominantly towards business travel. The former Chief Executive Officer (CEO) of SAS, Jan Carlzon, maintained that unlike tourists, businessmen “must travel in good times and bad” (Carlzon, 1987:23). Over the past few years, however, the airline has attempted to increase its share of the leisure market, realising that, given the current market trends, it must do so to stay competitive (Pilling, 2004).

SAS has developed a reputation in the commercial aviation industry for being a forward-thinking airline and has pioneered such steps as being the first major western airline to have a female pilot (1969), to offer Business Class on board its flights (1981) and to have its environmental report examined, verified and validated by an external auditor (1997). SAS has also been identified as a ‘leader’ in environmental commitment by its suppliers and other airlines as well as by representatives of international organisations such as the Air Transport Action Group.
(ATAG) and the International Air Transportation Association (IATA) (pers. comm., (former) Head of Sustainable Business Unit, British Airways, 4 Nov., 2002; pers. comm., Environmental Manager, Qantas, 17 October, 2002; pers. comm., Executive Director, ATAG, 28 June, 2002; pers. comm., IATA representative, 6 June, 2001; Middleton & Hawkins; 1999). SAS’s open policy to reporting both its weaknesses and its achievements was an important asset to this research. SAS was selected as a case study for the following reasons:

- **Size**: it is an international commercial airline, part of a major alliance;
- **Service**: it provides passenger services similar to other international commercial airlines;\(^5\)
- **Management Direction**: SAS’s leadership in the area of environmental management;
- **Reporting**: the detailed information SAS includes in its environmental reports;
- **Openness**: the airline’s open policy to sharing information with respect to its environmental policies and performance; and
- **Commitment to participate**: the airline’s willingness to continue participating in the study post-September 11, 2001 (see Section 1.5.2).

1.5.2 Overcoming industry turbulence: adjustments in the research approach

At times research requires the researcher to change and adapt to the circumstances of the object(s) or subject(s) being studied. This particular study has evolved much since its inception due to the turbulent conditions of the airline industry over the past few years. The original aim of this thesis was to do a comparative study of the motivations of three international airlines - Ansett Australia, SAS and another major European airline (all of whom had agreed to participate). In September 2001,

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\(^5\) This was determined through the researcher’s work experience in the airline industry as well as inflight observations made from at least ten major airlines including British Airways, Air Canada, Air New Zealand, Ansett Australia, Lufthansa, Qantas, Singapore Airlines, SAS, Thai Airways, United Airlines.
however, several events took place that prevented the study from going ahead as planned.

Prior to September 11, 2001, the airline industry was already experiencing a downward economic cycle and many airlines were beginning to struggle financially. In late August 2001, the European airline that had initially agreed to take part in this study was no longer able to participate due to cutbacks in the company. Shortly after, in September 2001, Ansett Australia filed for bankruptcy and therefore could no longer be used as a case study. At this stage, considerable background data had been collected from Ansett, the insights providing important feedback for the development of the interview data collection of the final case study. As a result of the economic turbulence in the airline industry caused by the terrorist events of September 11, 2001, it was unlikely that another case study could quickly be identified. At that particular time, most airlines were concentrating their efforts on safety and security issues as well as on remaining financially viable in the sudden and significant downturn in air traffic. SAS thus became the main focus of the research when the Environmental Director of the airline reinforced that SAS was still willing and committed to participate in the study. At this point, the focus of the study also began to take a different turn. The original focus of the data collection was on the environmental impacts of inflight service, particularly with respect to waste management and reduction. However, when the research was reduced to one case study, it was decided that the focus of the study be broadened to include an holistic view of environmental commitment at SAS, including flight operations, investor relations, engineering and maintenance, inflight service, purchasing, marketing and product development.

1.6 Outline of the Thesis

This thesis is divided into seven chapters that use an ‘outside-in’ approach to address the overarching aim of the research by critically examining the relevant issues in a broad context, then narrowing the focus by examining SAS and two ‘sub’ case studies of the airline’s decision-making process.
**Macro Level**: Ideological Influences - Corporate Greening
Internal and external motivations and mechanisms that drive the environmental commitment of big business

**Meso Level**: Airline Industry
Regulatory structure, technological advances, market trends and mechanisms used to encourage improved environmental performance

**Micro level**: SAS (case study)
Understanding motivations for an airline’s level of environmental commitment

**Chapter 6**
Green engine decision
Decision for new inflight service

**Chapter 7**: Conclusions

*Figure 1.1. Visual outline of thesis chapters*
The purpose of **Chapter Two** is to critically analyse, from the literature, the theoretical aspects of internal and external influences that motivate environmental commitment within a corporation. The conceptual issues raised in this section transcend disciplines and include aspects of corporate greening, policy-making and environmental and corporate management, with particular emphasis on how the theory can be applied to larger companies such as airlines. This final section of this chapter discusses ‘four systems of influence’ of corporate environmental commitment that will act as a basis for the following chapters.

As this study examines the influences and motivations of SAS, it is useful to consider first the more holistic aspects of the airline sector. **Chapter Three**, therefore, examines this milieu by investigating the regulatory structure, policymaking trends and mechanisms of the airline industry, as a whole, to encourage greener performance of airlines. The approach of this section is to explore the airline industry in the context of the four systems of influence of corporate environmental commitment that were described in Chapter Two.

**Chapter Four** explains the methodological framework adopted for this study including the use of the case study approach and the opportunities and constraints presented in the interview process. Particular emphasis is paid in this chapter to discussing the use of the ‘interactive discussion tool’ that was used in the interviews to elicit discussion between the interviewer and informant concerning motivations of SAS.

**Chapter Five** is the first of two chapters that discuss the results of the case study, SAS. The chapter begins with an historic overview of how and why environmental management and commitment at SAS has evolved since the early 1990s. The second half of Chapter Five presents a critical assessment of the results of the interviews and document analysis, in order to determine the motivations and influences of SAS in the context of the four systems of influences of corporate environmental commitment developed in Chapter Two.

**Chapter Six** is a continuation of the case study analysis. This chapter, however, focuses on two major decisions that were made by SAS:
1. **The Green Engine:** In the late 1980s, management at SAS began contemplating the replacement of the airline’s fleet of DC-9s. Aircraft noise and emissions were becoming a higher priority of the ICAO and Sweden was considering tightening charges on airport emissions. The choice of aircraft was therefore critical to meet future regulatory requirements. After several years of evaluation and considerable negotiation with the aircraft manufacturers, SAS decided to purchase an engine that excelled in its environmental performance, but added 250 million SEK (A$42 million) to the total investment of the new fleet (adapted from pers. comm., Director Aircraft Engine and Analysis, SAS, 11 June, 2002; SAS, 2002d; SAS, 1996a).

2. **Scandinavian Direct:** In October 2001 the airline industry was still reeling from the effects of September 11. The Group Management Team at SAS announced that 12% cutbacks were needed from every department. The economic downturn in the industry prior to September 11 confirmed that it was also time for a new image for the airline and a different way of approaching customers. The Marketing and Product Development team at SAS had approximately eight months to conduct market research, develop a new image, create and implement a new inflight service, while at the same time dramatically reducing costs (adapted from pers. comm., Manager, Inflight Products, 19 June, 2002; pers. comm., Senior Vice-President, Marketing and Product Management, SAS, 14 June, 2002).

The ways in which the environment was taken into consideration in both instances is critically examined in relation to the drivers and influences that were perceived from the interviews and demonstrated in the reports, internal documents and actual outcomes. This chapter allows the discussion and analysis of Chapter Five to be more clearly defined in the context of two ‘real-life’ decisions for the airline.

**Chapter Seven** follows on from the individual discussions about the case study contained in Chapters Five and Six and draws eight conclusions for the thesis in light of the findings that have been presented.
Chapter Two

Corporations with a conscience?

Motivations and influences on corporate greening and environmental commitment: a review of the literature

If you find an executive who wants to take on social responsibilities...fire him. Fast! (Peter Drucker)⁶

(in Bakan, 2004:35).

2.1 Introduction

The aim of this chapter is to explore the corporate environmental management literature identifying motivations that drive corporate greening. These motivations will be discussed in relation to the internal and external influences on a company's environmental commitment. Drawing on this knowledge as a foundation for our understanding of what motivates companies to increase their environmental commitment, this chapter presents and discusses various external mechanisms, such as market and compliance-based options, in order to critically analyse their role in encouraging increased environmental commitment. It also discusses the role that internal influences such as 'environmental champions' play in the decision-making process. Emphasis in this chapter will be placed on large corporations, since that is the focus of the case study in this thesis. An underlying tenet of this chapter is that, despite increased awareness of anthropogenic environmental impacts, financial aspects remain the dominant considerations entrenched in business decision-making.

⁶ Peter Drucker, referred to as one of the top ten 'gurus' of management, has been writing about corporations, management, economics and politics since the 1940s (Schneider, 2001). According to Charles Handy of the BBC, Drucker's 'first great contribution' was to focus on management as a discipline in its own right (Handy, n.d.).
(either as direct economic gains through improved efficiency, or as more covert financial boosts such as improved image). The influence that financial considerations have in business decision-making processes are a direct response to the overarching legislative and regulatory structures that guide the organisation and operation of corporations.

Within the corporate environmental management literature the movement towards the adoption of corporate greening strategies within corporate decision-making has been conceptualised in a number of ways. Two dominant perspectives can be identified from the literature. Firstly, there are those who acknowledge that corporations have significant environmental side-effects, but who believe that through a combination of voluntary initiatives and pursuit of eco-efficiencies, businesses will choose to mend their ways through improvements in, for example, production processes (e.g. Hawkins et al., 1999). Secondly, there are those that believe that businesses have only one responsibility: to maximise profits (see Bakan, 2004) and that companies will pursue this ideal unless they are met with ‘regulatory incentives’ to do otherwise. Under the latter perspective, corporations are identified as the root of the present environmental crises and it is argued that corporate greening will not provide significant environmental improvements. Instead, a more fundamental paradigm shift is needed in the way corporations do business (e.g. Newton & Harte, 1997; Buchholz, 1998; Hawkens, 1996; see also Sharpley, 2001; McLaughlin, 1993; Schot & Fischer, 1993).

Fundamentally, these conceptions of what the purpose and role of the corporation is represent divergent views on the rationale of corporate greening, generating debate over which of the various mechanisms available should be implemented to encourage improved corporate environmental commitment (Shrivastava, 1995b:186–187). In the ongoing search for opportunities to improve the environmental performance of the private company sector it has become necessary to identify more narrowly the purpose and role of the corporation and the motivations that drive these companies to incorporate environmental considerations into decision-making processes.

2.2 Corporations and the environment

One argument that has developed in the literature has been that the very principle on which a corporation is based ensures that the goal of profit maximisation for its shareholders is placed above all other criteria when making
decisions. In fact, not only is it a guiding principle, it is a company’s legal responsibility to put the interests of its shareholders before any other consideration when making decisions (e.g. Schumacher, 1973; Drucker, 1946; Friedman, 1962). This requirement presents a significant barrier for improving a company’s social or environmental behaviour. In order to identify the consequences this fundamental principle presents for the adoption of corporate greening, it is necessary to investigate further the intricacies of corporate governance.

The corporation is an interesting entity. Corporations have a legal obligation as a ‘person’ (in the eyes of the law) to encourage self-interest and invalidate moral concern (Bakan, 2004:29). However, under this legal obligation, the personal aspects of decision-making must be removed within the corporate framework so that decisions are to be independent of emotions and desires (Drucker, 1946:39). Schumacher (1973:30) posits that the ‘religion’ of economics has its own code of ethics, and the ‘First Commandment’ is to behave ‘economically’. Similarly, Drucker (1946:20) argues that the corporation is a mere sum of the property rights of individual shareholders, with economic returns being the first yardstick of achievement. While Drucker, Schumacher and Friedman wrote these words several decades ago, the premise of the corporation remains the same today. John Browne, CEO of British Petroleum, recently reinforced the dissonance between personal and corporate values when he spoke of social and environmental responsibility: “If you really did what you wanted to do that suits your personal thoughts and your personal priorities, you’d act differently. But as CEO you cannot do that that” (interviewed in Bakan, 2004:46).

These arguments have theoretical undertones of neo-classical economics. There is only one true motivation for a corporation’s level of environmental commitment: maximisation of growth and profits (see also Coase, 1993a; 1993b and Friedman, 1982 for interesting discussions on economics and the theory of the firm). The premise of this economic fundamentalism is that the market can solve all problems that are worth solving. In this theory, value questions found outside the market do not warrant much attention. When confronted with a choice between environmental and economic preservation, business organisations will choose the latter. And in the absence of government regulation, business will seek the most cost-effective solution to environmental problems (Buchholz, 1998:359). This decision-making context presents a
corporate environment in which it is difficult to envisage how environmental commitment can be adopted and implemented in corporate decision-making. It presents an interesting question; whether social responsibility, profitability and a corporation’s legal requirements regarding its shareholders are mutually exclusive. The Business Charter for Sustainable Development would suggest that they are not:

Economic growth provides the conditions in which protection of the environment can best be achieved, and environmental protection, in balance with other human goals, is necessary to achieve growth that is sustainable. In turn, versatile, dynamic, responsive and profitable businesses are required as the driving force for sustainable economic development and for providing the managerial, technical and financial resources to contribute to the resolution of environmental challenges. Market economies, characterised by entrepreneurial initiatives, are essential to achieve this. Business thus shares the view that there should be a common goal, not a conflict, between economic development and environmental protection, both now and for future generations (ICC, 1991).

In response to the context in which corporate decision-making takes place, a number of authors have turned to advocating corporate greening as an economic investment (Kiernan, 2001; Hawkens et al, 1999). By couching environmental commitment as a profitable exercise, proponents of this win-win scenario attempt to use the profit maximisation goal of corporations to achieve their own aim of enacting environmental gains. The attractiveness of this approach is reflected by the strong push in the business and environment literature to demonstrate ‘win-win’ opportunities which are good for business and good for the environment (see Frankel, 1998; Welford (ed.), 1996; Porter and van der Linde, 1995; Cairncross, 1995). For example, Hawkens, et al. (1999) explore the ‘lucrative’ practical opportunities for corporate greening and argue that businesses can radically increase productivity by using substantially fewer resources than presently required (see also Weiszacker, Lovins & Lovins’ 1997 discussion on ‘factor four’). The Porter (1985) hypothesis assumes that companies have not maximised their efficiencies with respect to the economy-environment relationship, therefore there is great potential for further achievements in this area. This principle was recently recognised in the European Commission’s 6th Environment Action Programme in which the
European Union and Member State governments were encouraged to fulfill their role in helping business to identify market opportunities and undertake ‘win-win’ investments (Commission of the European Communities, 2001:10).

This perspective on the role and purpose of corporate greening however, has met resistance from those who adopt a more reformist view of corporate greening. Frankel (1998:40) describes the notion of win-win opportunities as a staple of ‘third era’ thinking with regard to corporate environmentalism, an era within which the goal of sustainable development has been adopted in a corrupted form by corporations to create the impression of environmental commitment without substantively altering either practice or the paradigm from which they approach corporate decision-making:

Third-era corporate environmentalism [has] sent ‘sustainable development’ through a semantic and conceptual sausage-grinder whence it emerged as the more palatable ‘eco-efficiency’. And that, for the most part, is how it continues to be viewed today (Frankel, 1998:49).

Similarly, Moffett & Bregha (1999) cite that once the ‘low hanging fruit’ has been picked (e.g. eco-efficiencies that involve little investment), investments in environmental technology or improvement run the risk of becoming increasingly expensive and thus less attractive to businesses when the cost of investing in improving corporate environmental performance outweighs the predicted benefits (see also Walley & Whitehead, 1996). When this imbalance occurs, Howes et al. (1997) argue that corporations will turn to making investments in other areas of the business that could reap equal if not greater returns. Firms must consider, for example, the costs of regulatory compliance versus the opportunity costs – those that would have been earned if the firm had selected the ‘next best activity’ (Henriques & Sadorsky, 1996:383). While the ‘win-win’

7 Frankel has categorised corporate environmentalism into three eras, the first being around the release of Silent Spring which produced a ‘geyser’ of environmental laws, the second being the external corporate communication that occurred post-Bhopal and the third being the era of ‘beyond compliance’.

8 Henriques & Sadorsky (1996) further define the ‘benefits’ that firms consider in the development of environmental plans as: monetary and non-monetary benefits; market share; potential efficiency gains and increased positive reputation. The costs are defined as investment, regulatory compliance costs and opportunity costs if the firm chose to
approach to corporate greening may create improvements in corporate environmental performance in the short-term it is unlikely that this approach will encourage long-term increases in corporate environmental commitment and ongoing improvements in performance. Motivations other than eco-efficiencies will be needed in the long term to provide stronger incentives for continuing corporate environmental commitment.

In response to this need to encourage longer-term corporate environmental commitment, a perspective has developed in the literature which suggests that, to ensure the environmental sustainability of businesses, a paradigm shift is required away from valuing profit maximisation as the fundamental objective of business, towards incorporating more ecocentric goals and corporate responsibility into the management of large corporations (Buchholz, 1998; Newton & Harte, 1997; Hawkens, 1996). The call for this paradigm shift is coming from the increasing awareness of the environmental impacts of large corporations and the movement towards social and environmental transparency.

2.3 Mechanisms for encouraging corporate greening

One of the enduring legacies of the sustainable development debate of the 1980s [and beyond] has been a quest for greater integration of the economy and the environment. A significant by-product of this quest has been growing interest in the potential of market-based instruments of environmental policy as a supplement, or in some cases, an alternative, to the traditional approach of setting environmental standards by direct legal regulation (Ekersley, 1995a:1).

From a macro-sociological perspective there are three key mechanisms that can be used to entice corporate participation in environmental management:

1. Compliance-based (e.g. government regulations and sanctions).
2. Market-based (e.g. taxes and charges).
3. Value-based incentives (e.g. voluntary) (Post & Altman, 1994).
1. Compliance-based

Over the last 20 years, transcendental shifts have been occurring in the theory and practice of environmental policy-making. The dominant paradigm has traditionally been one of compliance regulation and government control. However, the failure of these traditional top-down positivist approaches to environmental policy-making and management has been attributed to the belief that government had exclusive knowledge about just what the problem was and how it could be fixed (e.g. Aplin, 2000; Fischer, 1998). This belief is gradually being dismantled by postmodern and poststructuralist scholars who argue that environmental policy-making and implementation is a complex, multi-layered, iterative process (e.g. Renn, 2001; Gare, 1995; Smith, 1995). In this emerging view, neither governments nor private sectors have a decisive role in the development of environmental policy and its implementation. No single agency or actor has complete knowledge of the issues and alternative solutions; nor can any single agency or actor predict with certainty what the implications of certain policies might be. Actors and agencies bring values, beliefs, understandings and knowledge to environmental policy-making and management over time, and no single agency has absolute sovereignty over environmental policy-making and implementation.

In this context, there has been growing importance placed on the role of social science in the development of mechanisms to entice corporations to participate in environmental management (e.g. Renn, 2001; Harremöes, 2001; Aplin, 2000). Increasing dispersal of roles and responsibilities for policy implementation in modern pluralistic societies requires that policy be socially and politically legitimised (Boehmer-Christiansen, 1994). That is, policy needs to be collaboratively developed and agreed upon, in order for it to become accepted. Policy developed outside this process of social and political legitimisation runs the risk of being irrelevant to the needs and operations of business and can lead to a crisis of acceptance and ‘political disaffection’ (Renn, 2001:427; Kirkland & Thompson, 1999). From this platform, Boehmer-Christiansen (1994), Gare (1995), Aplin (2000) and Renn (2001) are among those who call for increased attention to the dialectics of environmental policy-making. In their view, examination of the discourses that surround policy-making reveal different ways that environmental problems are constructed and valued and can provide
important insights into how policy-making can move forward through an ‘irreducibly complex world’ (Gare 1995:124).

This realisation, that governments and regulatory bodies alone cannot implement sustainable environmental development and management practices, has stimulated considerable exploration of the potential and actual role of market-based and mixed instruments over the last decade (Eckersley, 1995). One stream of considerable activity emerging from this impetus is the development of indicators of sustainability and the benchmarking of many business and industry sectors. In the travel and tourism sector, this is evidenced in the development of sustainable tourism indicators and growth in interest in eco-labelling practices (Diamantis, 1999; Font, 2001).

2. **Market-based (economic incentives)**

Market-based, or economic instruments, such as resource taxes or charges (meant to reflect the external costs posed on society), and tradable emission permits can be used to strengthen market incentives, reduce overall compliance costs and provide greater flexibility for business (Cairncross, 1995; Lynes & Gibson, 1998; UNEP, 1993). These financial-based instruments can have effective steering power in encouraging firms to ‘embrace’ corporate greening. While the United States is highly opposed to environmental taxes, socialist governments (such as in Sweden) are increasingly using economic instruments in environmental policy-making (Greer & Bruno, 1996; Cairncross, 1995). The effectiveness of market-based incentives, such as emission trading, however, remains questionable. One criticism is that it allows firms to gain economic benefits for reducing pollution by selling excess to other firms for which purchase is cheaper than compliance (Andrews, 1998:187). A further criticism of economic instruments is that they are seen by governments as a tool for ‘revenue-raising’. There are also those that argue that market mechanisms, on their own, will not provide sufficient incentive for firms with respect to long-term environmental commitment (Cairncross, 1995).

3. **Value-based incentives (e.g. voluntary)**

Ever since the fall of Troy, gift horses have been treated with some suspicion. Etiquette may rule against looking them in the mouth, but the other parts are worth checking (Gibson, 1999b:3).
Post & Altman (1994) refer to this third mechanism as ‘value-based’ incentives. One aspect of this is ‘ecological responsibility’, which Bansal & Roth (2000:728) describe as a salient feature of a company’s concern for ‘the common good’. The increasing ‘privatisation’ of the responsibilities for environmental management has led to the development of an array of ‘voluntary’ corporate environmental initiatives. In many cases, eco-efficiencies (environmental and financial savings) play a large role in determining the extent of a company’s environmental good will. Some industries have developed set standards that businesses must ‘voluntarily’ adhere to as a condition of membership, such as the chemical industry’s Responsible Care programme (see Moffet & Bregha, 1999; Simmons & Wynne, 1993). In this way, the industry becomes, in essence, a self-regulator, relying on peer pressure and public image as motivating factors.

Product stewardship programmes are also gaining popularity as a type of voluntary environmental management. Liability issues are forcing businesses to rethink their environmental commitment as banks and insurance companies are becoming increasingly stringent in their requirements of the businesses with which they deal. Ideally, stewardship programmes will include an examination of the entire life of a product from ‘cradle to grave’. Companies with environmental management systems are also demanding that their suppliers meet similar standards. Likewise suppliers can also influence a firm’s performance. This forces businesses to improve in order to have a competitive edge (Porter, 1985).

Other interesting discussions on the role and effectiveness of voluntary initiatives can be found in Gibson (ed., 1999a), Khanna (2001), Rosen, Beckman & Bercovitz (2003), Annandale, Morrison-Saunders & Bouma (2004).

These mechanisms can be applied separately or in combination. Voluntary environmental initiatives, for example, range from government-to-industry pollution reduction challenges to more formal negotiated performance agreements between industry and governments. In the former, governments encourage private sectors to go beyond regulatory requirements while the latter often consist of exemption from legal obligations in return for environmental improvement that goes beyond the current standards (Lynes & Gibson, 1998). Andrews (1998:189) argues that the potential effectiveness of mechanisms for self-regulation must be evaluated “not just in the context of hopeful ‘green’ idealism…but of the basic economic forces that drive and constrain business
outcomes and that will relentlessly, if not immediately, sort long-term trends from fleeting experiments in business decision-making”.

Determining which mechanism, or combination of mechanisms, can be applied to encourage corporate environmental commitment requires identifying what the key influential factors are within corporate decision-making, especially in the context of what motivates corporations to improve their environmental commitment.

2.4  **Motivations and drivers for corporate environmental commitment**

Identifying cultural influences and recognising their role in policy-making is a critical component of policymaking (e.g. Hall & Jenkins, 1995; Parsons, 1995; Hall, 1994). In dynamic and reflexive policy-making processes, issues are constantly being identified, framed and evaluated by different actors and agencies. This dynamic process means that issues move in and out of focus, and are continuously impacting upon stakeholder interests, the identification of possible solutions and decision-making. In this way, issues can be conceptualised as being mediated through ever-changing power structures and the dynamic knowledge that characterises a community of stakeholders. Knowing both how companies perceive and construct decisions relating to their environmental performance and what the motivations are that drive corporate environmental commitment becomes important knowledge when developing policy aimed at achieving improved environmental outcomes.

Business perceptions are built upon a combination of factors...at times, these factors, such as size and regulation, may reinforce one another and so lead to a clear direction of activity and a relatively uncomplicated line of analysis, whilst, at other times, they neutralize each other and thereby result in a lack of clear direction and difficulty in analysing what is happening (Baylis, Connell & Flynn, 1998b:285).

There are different motivations for the various components of corporate greening. Benchmarking and eco-labelling practices, for instance, are coercive voluntary instruments that have the potential to improve product marketability to an increasingly educated and environmentally aware consumer (Middleton & Hawkins, 1999; Eckersley, 1995b,). Khanna & Anton (2002) find that total quality environmental management and environmental reporting are principally
motivated by perceived competitive advantages in the marketplace and internal environmental policy, corporate environmental standards and environmental auditing are predominantly influenced by the regulatory environment. The reasons why businesses choose to participate in environmental commitment are also motivated by various factors depending on the type of industry to which they belong. For example, industries thought to pose significant environmental risk seek to regain public trust through highly publicised environmental improvement activities (Lynes & Gibson, 1998:18). These factors provide an overview of the drivers for environmental activity within a company. However, recent research suggests that there are different drivers for different sectors and drivers can also be dependent on the nature of the decision (Céspedes-Lorente et al., 2003; Khanna & Anton, 2002; Gilley et al., 2000). As a result, generic lists of drivers are open to criticisms of reductionism, consolidating the argument that further research is required on specific sectors (e.g. Céspedes-Lorente et al., 2003; Gilley et al., 2000; Howes et al., 1997).

Motivations have been considered in relation to voluntary initiatives and regulatory systems as well as with respect to reasons for adopting environmental management systems such as ISO 14000 (e.g. Chapman & Anderson, 2000). Over the last ten years a vast body of literature has emerged that examines influences on corporate greening (e.g. Khanna & Anton, 2002; Bansal & Roth, 2000; Gilley, Worrell & El-Jelly, 2000; Gibson (ed.), 1999a). This literature is invaluable in identifying broad ranging drivers and in building up understandings of what sorts of policy instruments (from compulsory regulatory instruments through to coercive voluntary initiatives) can be effectively used in different industries to further sustainable management practices (e.g. Khanna & Anton, 2002; Eckersley, 1995b). Gibson (1999c:253) suggests that corporate environmental commitment should be considered in a much broader “web of motivations and methods” since the actions of corporations are not ‘voluntary’ in the traditional sense of the word. Finding answers to why some firms take for granted that sustainability and profitability can, and must, reinforce one another calls for a different kind of analysis, one that transcends our narrow faith in markets and goes beyond the legalisms and dead ends of so many (voluntary initiative) examples (Fowler, 2000:73).

Table 2.1 provides a summary of selected empirically-based studies that have addressed motivations for corporate greening from various perspectives.
including voluntary initiatives for supply-chain management, financial incentives to improve a company’s ‘eco-value’ and surveys of sectors and across sectors about corporate ecological response.\(^9\)

\(^9\)Literature-based research on motivations for corporate greening has not been included in the table, nor is the table meant as an exhaustive list of the empirical studies on this topic. For further reading on motivations for corporate environmental commitment see Hostager et al., 1998; Keogh & Polonsky, 1998. Bansal & Roth (2000) also provide an interesting review of the literature (and also present their empirical findings on the subject).
Table 2.1. A summary of selected empirically-based findings on motivations for corporate greening

<table>
<thead>
<tr>
<th>Authors</th>
<th>Overview of findings: description of motivations/drivers/ influences</th>
<th>Notes</th>
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</thead>
</table>
| Annandale & Taplin, 2003 | • Internal pressures include company size, organisational culture and learning, and individuals within the company  
• External pressures included stakeholder pressure, jurisdictional culture and market characteristics  
• Organizational culture exerted the greatest influence on a company’s approach to approvals regulation | Examined internal and external determinants on the ways in which Australian mining companies respond to environmental regulation.  
A mixed method approach was used including: 1) 26 semi-structured interviews to establish possible determinants; 2) a quantitative mail-out survey (n=121)  
Literature base: positive agency theory and strategic leadership theory |
| Rosen et al., 2003       | • Health risks of employees  
• Liabilities  
• Public relations/image  
• Protect themselves from costs associated with environmental health and safety  
• Economic gain | This study focused on the reasons for adopting voluntary standards for supply chain management in the information technology sector  
Exploratory research consisting of telephone interviews with environmental and/or procurement managers at 15 firms.  
Literature Base: New Institutional Economics |
| Bansal & Roth, 2000      | Three basic motivations:  
• Competitiveness; Legitimation; and Ecological responsibility.  
Contextual factors  
• Issue salience; Field cohesion; and Individual concern. | In-depth interviews, participant observation and analysis of archival documents of 50 firms in the UK and Japan (over a range of sectors) to determine motivations and contextual factors on corporate ecological responsiveness.  
Provides an advanced model of corporate ecological responsiveness based on the findings of the study. |
| Kiernan, 2001            | • Financial gains  
• Avoidance of penalties for non-reporting of practices  
• Competitive advantages: 1) first-mover advantages of being a leader; 2) stronger negotiating position; 3) expedite permits; 4) market capitalisation  
• Liability (e.g. new laws allow environmental lawsuits and can affect the risk/return of industry in emerging markets)  
• Capturing green product markets | Examined the drivers and influences on the eco-value (stock return performance) of environmental leaders in four industrial sectors (mining, oil & gas, energy and steel)  
Because Kiernan was considering the eco-value, all motivations are economically-based. |

10 Corporate greening is used here to cover various terms that the authors of the papers included in this table have used, such as ‘corporate ecological responsiveness’, ‘eco-value’ and ‘corporate environmental response’.

11 Annandale & Taplin (2003:907) define ‘jurisdictional culture’ as the differences in countries’ languages, religions, social organisations, laws, politics, education systems, values and attitudes affect the relationship between individuals, organisations and the political domain.
<table>
<thead>
<tr>
<th>Authors</th>
<th>Overview of findings: description of motivations/drivers/influences</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Prakash, 2000</td>
<td>• Firms adopted Type II decisions based on strategic reasons for long-term economic benefit such as first-mover advantages, to pre-empt or shape environmental regulations and/or raise the entry cost for rivals (by being technologically advanced);</td>
<td>Studied the internal processes that led to the selective adoption of Type II\textsuperscript{12} decisions (Ten decisions were examined within the context of two firms in the pharmaceutical industry). Literature base: Power-based and leadership based theory (also sociological institutional theory, and stakeholder theory).</td>
</tr>
<tr>
<td>Sharma 2000</td>
<td>• If the industry is subject to strong institutional pressures then companies undertake voluntary initiatives that go beyond conformance;</td>
<td>Investigated links between managerial interpretations of environmental issues and a company’s choice of environmental strategy The study included \textbf{quantitative questionnaire surveys} of 99 firms in the Canadian oil and gas industry. Between three and five people within each company were sent surveys (n=181). Literature Base: strategic issue interpretation</td>
</tr>
<tr>
<td>Baylis, et al., 1998b</td>
<td>The most common ‘stimuli’ for encouraging environmental improvements were:</td>
<td>This study consisted of 420 quantitative mail-out questionnaires that were sent to manufacturing and process companies in the UK.</td>
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<tr>
<td>• Compliance with environmental regulation</td>
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<td>• Potential to increase profits by reducing costs</td>
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<tr>
<td>• Good neighbourliness public concern</td>
<td></td>
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<tr>
<td>• Personal concern for the environment</td>
<td></td>
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<tr>
<td>Henriques &amp; Sadorsky, 1996</td>
<td>A firm is positively influenced by:</td>
<td>This study considered the determinants of a firm’s development of an environmental plan Conducted \textbf{quantitative mail-out survey} on 331 Canadian firms from the manufacturing, resource and service sectors.</td>
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<tr>
<td>• Regulatory pressure;</td>
<td></td>
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<td>• Customer pressure;</td>
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<tr>
<td>• Shareholder pressure; and</td>
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<tr>
<td>• Neighbourhood and community group pressure</td>
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<tr>
<td>A firm is negatively influenced by:</td>
<td></td>
<td></td>
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<td>• lobby group pressure sources; and</td>
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<tr>
<td>• its sales-to-asset ratios.</td>
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<tr>
<td>Williams, Medhurst &amp; Drew, 1993</td>
<td>Increasing environmental pressures that are responsible for raising environmental awareness and stimulating industry response:</td>
<td>Interviewed 25 firms in varying industrial sectors in the UK to determine corporate awareness and response to a range of environmental pressures.</td>
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<td>• Costs associated with pollution control;</td>
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<td>• Stringent environmental legislation and enforcement;</td>
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<tr>
<td>• Training and personnel requirements;</td>
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<tr>
<td>• Expectations from the community; and</td>
<td></td>
<td></td>
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<tr>
<td>• Client and supplier pressure;</td>
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<tr>
<td>They also identified factors that did not exert pressure on a firm to be environmentally responsive such as:</td>
<td></td>
<td></td>
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<tr>
<td>• Employees and trade unions; and</td>
<td></td>
<td></td>
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<tr>
<td>• Investors (not now, but perhaps in the future)</td>
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\textsuperscript{12} A “Type II” decision is defined as one that is ‘beyond compliance’ but cannot, or does not meet profit criteria (see Prakash, 2000:3).
From Table 2.1, it can be seen that a number of themes emerge from the literature with respect to motivations for corporate environmental commitment.

1. Financial benefits (e.g. to reduce costs and increase efficiency, especially by cutting resource use and waste generation).

2. Competitive advantage.

3. Image enhancement (e.g. to enhance or reinforce a positive image in the marketplace as a ‘good corporate citizen’).

4. Stakeholder pressures (e.g. customers, community groups, industry member, banks and insurance companies).

5. Desire to avoid or delay regulatory action.

Furthermore, this review of the literature identifies a complex array of motivations influencing corporate environmental commitment, including internal industry-specific and external drivers. Two types of motivations can be identified in these studies:


2. Drivers.

Catalysts are not motivations in themselves, but can act as a medium to encouraging corporate greening, such as internal environmental leadership within a firm. Drivers, on the other hand, are what actually induce companies to pursue environmental commitment. The distinction between these two terms becomes particularly relevant in the analysis of the case study of SAS in Chapters Five and Six.

Previous empirical studies have focused predominantly on the manufacturing sectors and typically relied on the use of quantitative collection of data in the form of surveys. In a study on the hotel industry, Céspedes-Lorente et al. (2003) concluded that the greater the economic legitimacy of environmental practices that was perceived by firms, the greater the likelihood they would be adopted.
The power of stakeholders was also an influential factor in the extent of environmental practices that were introduced. Roome (1999) arrives at a similar conclusion but discusses it by using a fictional company which is a composite based on his experience with various American and European businesses over a fifteen-year period. For Composite Co. the route to change in the early 1990s appears to have been a result of timeliness, momentum and the powerful articulation of environmental storylines by internal champions (Roome, 1999:283). This was supported by evidence of changing environmental positions in other corporations and institutional mimicry. The champions sold the ideas to the company through evidence of cost savings, market opportunities and the overall leadership position of the company, with senior management deciding that it was ‘good for business’, as it would enable environmental protection and competitiveness (win-win position).

Corporate environmental commitment can also be driven internally by strategic considerations. For example Williams, Medhurst & Drew (1993) identify that in Germany, although environmental and profit objectives are no longer viewed as a conflict by senior management, very few top managers had realised the potential of the long-term financial gains from market and competitive advantage opportunities related to environment initiative. These strategic drivers can be motivations in themselves, or they can be used as tools by environmental champions to encourage environmental commitment. In a study on determinants of regulatory compliance amongst Australian mining companies it was found that the internal organisational culture of the firm exerted the greatest influence on the way management dealt with regulatory requirements (Annandale & Taplin, 2003). While the search for economic efficiency, shareholder pressure and environmental champions represent internal drivers for environmental commitment corporations can also be encouraged to improve environmental commitment through external drivers such as industry pressure and government intervention.

This discussion identifies that while economic considerations and the search for eco-efficiency appear to be required to justify environmental commitment in corporate decision-making there are other influences (such as the role of internal champions, external government regulation and perceived strategic advantage) that motivate corporations to consider and adopt environmental commitment. In order to identify what motivations (as identified in Table 2.1)
influence environmental commitment in particular contexts it is necessary to
develop a more in-depth understanding of the nature of these motivations and
the influence they may have in corporate decision-making.

1. Financial benefits

The financial benefits of environmental commitment range from short and
medium term savings through improved resource management to long-term
competitive advantages. While eco-efficiencies (such as energy savings) may
produce immediate and clearly measurable improvements, there is also a range
of indirect benefits on which it is more difficult to put a precise monetary value
(such as the outcomes of a firm’s improved image or increased productivity as a
result of employee ‘pride’). Financial incentives can be further defined to
incorporate money saved and money earned as the result of a firm’s level of
corporate greening. However, early stages of programs such as the American-
based Pollution Prevention Pays may incur large savings at the beginning that
then gradually decrease (e.g. diminishing returns) (Buchholz, 1998; Hart, 1995).
Table 2.2 provides a summary of the various indirect and direct financial benefits
that can be realised through investment and commitment of a firm towards
environmental management.

<table>
<thead>
<tr>
<th>Increased Revenue</th>
<th>Decreased Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased market share</td>
<td>Improved efficiency in managing resources</td>
</tr>
<tr>
<td>Increase brand value</td>
<td>Decreased risk and liability concerns</td>
</tr>
<tr>
<td>Improved image</td>
<td>Avoiding environmental law suits and clean-up costs</td>
</tr>
<tr>
<td>Improved productivity/customer service through increase in employee pride or improvement in corporate culture</td>
<td>Avoiding taxes and charges (or paying reduced taxes and/or charges)</td>
</tr>
<tr>
<td>Increased revenue through emissions trading</td>
<td>Avoiding cost of compliance with more stringent regulations</td>
</tr>
</tbody>
</table>

Source: Compiled by the author from Kiernan, 2001; Howes et al., 1997; Lynes & Gibson, 1998; Buchholz, 1998
Shareholder value is another aspect of financial benefits. The American-based company Baxter International claimed in the cover letter for their 1993 Environmental Report that the savings the company generated from their environmental program added eight cents per share to Baxter’s profitability (in Frankel, 1998:40). Higher returns is one aspect of shareholder value, but there is also the pressure from shareholders for companies to be environmentally and socially responsible for ethical principles. Green and ethical funds began to emerge almost a decade ago and sustainability indexes have also been established such as the Dow Jones Sustainability Index and (DJSI)\(^\text{13}\); however, Kiernan (2001:1) argues that the importance of a company’s sustainable performance has also moved “from being the sole preserve of the statistically marginal ‘socially responsible’ investment into the mainstream”. Kiernan’s study begins to answer some of the questions surrounding shareholder pressure through empirical data of what he refers to as the effects of ‘eco-value’ on the financial performance of four industry sectors – mining, integrated oil and gas, steel and electric utilities. Of these four sectors, with respect to investment on stock return, the environmental leaders outperformed ‘industry laggards’ by between 11 and 37% over a three-year period (Kiernan, 2001:6).

2. Competitive advantage

The benefits a firm would gain from competitive advantage for corporate greening are part of an advanced long-term business strategy. Prahalad & Hamal (1990) state the importance of competing for the future as a strategic move, but much-neglected aspect of competitive advantage. Porter (1991) also argues that a stringent regulatory framework within a country can actually encourage competitiveness on an international scale over the long term. Indeed, companies with superior implements for environmental commitment would become more attractive for investors and corporate customers. It also adds value to a company by differentiating or outperforming competitors (Porter, 1985). Porter divides competitive advantage into three categories:

- Direct (e.g. adding value to a product or service)

\(^{13}\) see [http://www.sustainability-indexes.com/default.html](http://www.sustainability-indexes.com/default.html).
• Indirect (e.g. activities that make it possible to perform direct activities); and
• Quality assurance (e.g. monitoring, inspecting, testing, reviewing, reporting).

While the distinction between these three groups is not often made, it is important in determining the extent and effect of the competitive advantage. Stead & Stead (1992) also emphasise the importance of developing competitive advantages with respect to environmental initiative by capitalising on environmental opportunities and minimising environmental threats. That being said, strategic choice to use environmental management as a competitive advantage is “rarely a dominant belief; it usually has to be haggled for by a ‘committed', but ever vulnerable, champion” (Fineman, 1997:37).

3. **Enhancing image and being a good corporate citizen**

Fineman (1997:36) maintains that public embarrassment is a “potent emotion for organisational change”. Other advantages of improving and/or maintaining good relationships with community stakeholders and upholding the ‘good neighbour badge’ are that less management and employee time is spent on complaints and enquiries from the press (Howes et al., 1997); as well as easier approval for new planning (Kiernan, 2001). Social legitimacy is an essential aspect of management and it has long since been recognised in the literature that competitive advantage should be developed in the broader context of social legitimacy (Hart, 1995:998).

4. **Stakeholder pressures**

Stakeholder pressures can include concerns from banks and insurance companies (who do not wish to inherit environmental liabilities), industry-specific pressures as well as pressures to conform to pressures from community and environmental groups. Hart (1995) proposes that over time a pollution prevention strategy will become increasingly based on external legitimacy (and grow from an internal competitive process) since transparency will enhance image and legitimacy as opposed to acting as a deterrent (e.g. through environmental reports). Some companies also claim that participation in programmes such as formal industry agreements (e.g. Responsible Care)
provides monetary incentives from financial institutions such as reduced lending rates and reduced liability risks (Moffet & Bregha, 1999).

5. **Desire to avoid or delay regulatory action**

Environmental regulation has been identified as an important stimuli in the level of a firm’s environmental commitment (e.g. Baylis et al., 1998). In addition to complying with regulations, firms may take ‘pro-active’ action to avoid or delay more stringent regulatory requirements. Case studies suggest that the threat of regulation is the key driving force in accelerated levels of corporate greening, especially with respect to initiatives developed by industry groups (Lynes & Gibson, 1998; see also Labatt & Maclaren, 1998). Another motive for firms to become more active in corporate greening is so that they can exercise their power to influence the shape of national and international environmental directives (Fineman, 1997: 35). An ulterior motive of this pro-activeness is to reduce the cost of compliance and to maximise potential long-term competitive advantage gains (Howes et al, 1997; Fineman, 1997). Howes et al (1997) argue that firms are moving beyond rebelling against regulations, or just meeting regulatory requirements, to strategically managing the anticipation of regulations to gain a competitive advantage. Cairncross (1995) postulates that a great deal of ‘corporate environmentalism’ has been as a result of regulations.

2.5 **‘Non-drivers’ and ‘negative influences’**

While motivations or influences for environmental commitment are extensively discussed in the literature, deterrents, or ‘non-drivers’ are not as widely acknowledged. Steger (1996:51) identifies barriers to development of a sustainable organisation such as lack of regulatory or market pressure, uncertainty, and a monetary bias of a firm’s information system which favours “narrow, economistic, and short-term views”. In the larger context of policy-making and designing mechanisms to encourage corporate environmental commitment, it is important to identify the elements which are negative influences on corporate decision-making (see, for example, Henriques & Sadorsky, 1996). The growth of green consumerism, for example, has been less vigorous than originally anticipated (Marcus, Geffen & Sexton, 1998). The literature on the use of eco-labels in the tourism sector has

14 Non-drivers is defined here as motivations which have not been identified by firms as being influential on corporate environmental commitment.
shown that these accreditation systems are having little effect on travel decision choices because of the lack of interest by tourists in the environmental impact of their vacation (see Font, 2001). However, results of a study by Baylis et al. (1998a) on motivations of manufacturing firms showed that the closer the sector was to the ‘end-user’, the more important customer concerns became. Fineman (1997) found that in the automotive industry in the UK, there is limited pressure from consumers for a ‘greener’ car. Selling the environment internally was seen by managers as difficult, especially since there was little customer demand for improvements and “greenness was rarely awarded any intrinsic value, worthy of investment for its own sake” (Fineman, 1997:35). Limited demand from customers in many sectors, as well as an overemphasis on how important the customer believes the environment is (because of the dissonance between attitude and actual consumer behaviour) has perhaps misled to emphasis being placed on customer demands in regards to environmental commitment of a corporation.

Another deterrent that has been identified is that short-term profits are preferred over long-term environmental investments because of the requirements of shareholder dividends, pressure from banks, markets and investors (Moffet & Bregha, 1999). Furthermore, if a firm were to internalise their environmental costs, it would provide them with a competitive disadvantage to other companies who chose not to use this method (in the absence of internationally or industry agreed rules). This can also occur if the regulations or other instruments give disadvantages (competitive or otherwise) to certain companies or jurisdictions. The resulting effect is a ‘lose-lose’ situation (see Howes et al., 1997; Greer & Bruno, 1996). Ineffective regulation, or regulation made by inappropriate authorities who are too distanced from the needs of the industry can also discouragae businesses from participating (Howes et al., 1997). Finally, Andersson & Bateman (2000) note in their study on environmental championing that managers do not tackle environmental issues because they think they are too ‘complex’, too ‘scientific’ with ‘undetectable’ and ‘incalculable outcomes’ (see also Shrivastava, 1995a; Stead & Stead, 1992). These are all important to evaluating the effectiveness of various environmental tools and mechanisms aimed at encouraging deeper environmental commitment from corporations.

Up to this point in the discussion about influences on a company’s level of environmental commitment, the focus has been on external drivers such as market conditions, demands of shareholders and fear of more stringent regulations. The review of the literature concerning motivations for corporate
environment commitment however, identified internal motivations as playing an important role. In particular, the influence of strong internal leadership was identified as a motivating factor to further activate environmental commitment. This next section deals with environmental champions as catalysts for environmental commitment.

2.6 Environmental champions as engines of change

Roberts & Gehrke (1996) argue that pressure to pay attention to environmental issues has typically come from outside the firm. However, while lobby groups and government regulation can act as ‘push’ factors in environmental commitment, individuals within an organisation can act as ‘pull’ factors (Schaper, 2002). Green entrepreneurship is an emerging area of research that examines the role (and power) of an individual (such as an employee, manager or owner) in the environmental ethos of a company, large or small (see for example Andersson & Bateman, 2000; Walley & Stubbs, 1999; Starik & Rands, 1995). Green entrepreneurs can help management see the external drivers and act as an internal driver to stimulate change and sell green ideas by demonstrating opportunities for marketing and/or efficiency improvements (Schaper, 2002). Such individuals are often referred to as ‘environmental champions’ (Andersson & Bateman, 2000; Walley & Stubbs, 1997). Other terms such as ‘green maverick’ (Taylor & Walley, 2003), environmental ‘intrapreneur’ (Pinchot, 1985) and an ‘eco-preneur’ (Schaper, 2002) are also used to denote internal environmental leaders. An environmental champion is an individual who, through formal organisational roles and/or personal activism, attempts to introduce or create change in a product, process, or method within an organisation to improve environmental performance (Andersson & Bateman 2000). Champions are able to recognise the business significance of an issue and promote it within their organisation to help ideas proceed beyond the initial stages.

Post & Altman (1994) cite that some of the most successful organisations (with regards to environmental management) have actually tried to create environmental champions and position themselves at various levels within the company. This method is reinforced by Drucker (1985:40), in which he remarks that entrepreneurship is indeed a behaviour (and sometimes learned behaviour) and not a personality trait. In a field study of successful and unsuccessful
‘championing episodes’ amongst American-based firms, Andersson & Bateman (2000:548) found that the degree to which organisations adopted the ideas of an environmental champion depended on how the individual ‘identified, packaged and sold the idea’. It also depended on the degree to which the company already had adopted an environmental paradigm, as well as the strength of that paradigm. This finding reinforces the importance of an environmental champion as an internal driver to encourage environmental commitment.

Given the dominant corporate decision-making context in which environmental champions operate, the innovation and alternative thinking that they bring to decision-making processes means that environmental champions reflect the qualities epitomised by the traditional business definition of an entrepreneur. Indeed, reflecting this argument is the attention environmental champions are being provided within the literature under the term green entrepreneur. Though broader in discussion than green entrepreneurship, Drucker (1985:35-36) defined entrepreneurship as the ability to create a new market and/or a new customer while ‘transmuting’ values. In this context innovation is a social or economic term rather than a technological one: “The entrepreneur always searches for change, responds to it and exploits it as an opportunity” (Drucker, 1985:42). Schumpeter (1934) labelled entrepreneurship as ‘creative destruction’ and an entrepreneur as an engine of change. Given the similarities between traditional definitions of an entrepreneur and the role of environmental champions it can be seen that many of the concepts of intra- and entrepreneurship, when posed in an environmental context, can be applied to corporate greening. One example is Drucker’s (1985:61) advice for companies (or individuals) to pose the questions:

- What would it mean to us if we pursued this course of action?
- What would we have to do to turn it into an opportunity? and
- Where could it lead us?

When these questions are posed in response to a potential commitment to improve environmental performance it becomes possible to identify how environmental considerations can play a strategic and long-term role in corporate decision-making. Little empirical research, however, has examined how champions process issues or innovations (Schaper, 2002; Andersson &
The role and importance of the environmental champion, or in some cases, champions, is understated in the literature as an influence over a company's level of environmental commitment. The action of an environmental champion can, at times, be the difference between a company which is environmentally compliant and an environmental leader in its sector. Annandale & Taplin's (2003:903) research demonstrated the perceived importance (within a company) of an individual's role in a firm as an influential determinant of the company's response to environmental regulation. This difference, they argue, provides additional evidence to counter the profit-maximisation assumptions embedded within neo-classical economic theory. However, perhaps the influence individuals exert within a company demonstrates their understanding of the positive direct and indirect financial benefits of corporate greening which they have been able to 'package and sell' to upper management. Individuals within a firm, therefore, can respond to external pressures while still fulfilling their obligation to act in the best (financial) interests of the company and its shareholders.

2.6.1 The role of management in a firm's level of environmental commitment

There is consensus in the literature about the relationship between support from top management for environmental commitment and a firm's actual level of environmental commitment (Azzone & Noci, 1998; Fineman, 1997; Stead & Stead, 1992; Hambrick and Mason, 1984).

...economic reform means management reform because business managers collectively represent the largest groups of economic decision makers. Indeed, our ecological problems are largely management problems (Stead & Stead, 1992: 166).

Although employees can also permeate a company with attitudes and values that reflect broader social change, this is particularly effective when the 'messengers of change' are senior managers since they have the authority and resources to institutionalise value changes (Howes et al., 1997; 162). That being said, even though 'the environment' is appearing more and more in large corporations (e.g. through reporting mechanisms, mission statements, environmental departments, and so on) top policy meetings have been described as 'pragmatic', 'usually defensive' and focused on 'how to keep our
nose clean’ (Fineman, 1997:35). This demonstrates that rather than demonstrating an environmental commitment for the purpose of improving environmental performance for social, philosophical or environmental reasons the environment is being considered in corporate decision-making only because it coincides with more traditional economic considerations.

The reason corporate decision-making has not fundamentally changed to include genuine environmental commitment may be related to the relationship between the objectives and values of individuals and those of the corporation they represent. Fineman’s (1997) study reveals that a manager’s morals define what he/she does in the workplace. The findings of Fineman’s (1997) study on the personal and professional views of managers in the car manufacturing industry suggest that many managers do not take the environment into serious consideration in their personal lives and this then extends to their work principles. Others, however, suggest that there is dissonance between what a senior manager of a corporation does in his/her personal life and what they must do in the best interest of the company (e.g. Bakan, 2004).

Fineman’s study on how managers value the environment in their private lives found that most described their involvement as non-existent to mildly interested (1997:33). He found that managers who had a specific responsibility to the environment at work would step back from any personal feeling they had about environmental damage. The exception to this finding, however, was the case study of a Scandinavian car manufacturer. Fineman (1997:36) found that managers in general are not good ambassadors for the environment and they are skilled at ‘techno-rationalisation’, or removing emotional attachment that one may have to an environmental issue. The managers in this study rarely moved beyond Stage 3 (living up to the expectations of key role-senders at work) or Stage 4 (being legally justified in their actions) of Kohlberg’s six stages of cognitive moral development (Fineman, 1997:36; see also Kohlberg, 1969). Fineman feels that changes in these managers are unlikely to occur through training and changes in corporate statements because the change in attitude needs to be more fundamental.

It is this relationship between the values of business managers and the actions of the corporations they represent that has led Jackson (in Bakan, 2004:25) to state that corporate leaders have displaced politicians as the new ‘high priests’ in influencing the environmental performance of industry. From this position of
power top managers have the potential to make a difference through environmental leadership – but they can also do the reverse: what determines the structure of society is not the majority but the leaders (Drucker, 1946:5). If the level of environmental commitment of a corporation is dependent, at least in part, on the values of it’s top management what are the motivations that exist to encourage managers to integrate an environmental agenda into decision-making?

John Browne, CEO of British Petroleum – who has been labelled as a green maverick by his colleagues in the petroleum industry – says, of his green strategies, that “this is not a sudden discovery of moral virtue or a sense of guilt about past errors, it is about long-term interest – enlightened, I hope, but self-interest nonetheless” (in Bakan, 2004:44). Comments such as those of Browne hint at a movement from businesses realising the short-term benefit of eco-efficiencies to the focusing on the larger picture of long-term economic survival. Perhaps these leaders have the ability to see opportunities where others see threats (see Sharma, 2000). In this sense, green entrepreneurs can be seen as the catalyst between the external and internal influences that a corporation is presented with and the ability to action these influences with a positive effect on the environment.

While the term environmental champion is typically used to describe a green entrepreneur within a corporation, a firm – as a whole - which displays similar characteristics can also be considered an environmental champion (Walley & Stubbs, 1999). Font (2001a:13), for instance, defines a “leader” as a company that has environmental standards that internalise costs on a continuous improvement basis and will also use their environmental performance as a promotional tool, using competitive edge environmental management with a marketing focus.

2.7 Systems of influence of corporate environmental commitment

While acknowledging the contribution of the generic drivers identified in literature, there is a need to develop a more systematic understanding of the interaction of internal and external influences on a corporation’s level of environmental commitment. In the context of a discussion about the role of social science in policy development, Renn (2001:428-9) identifies four broad
subsystems, or dimensions, that influence decision-making about environmental management:

- The market system – where decisions are based on cost-benefit analysis of the advantages to the company within the marketplace;
- Politics – where decisions are based on the political culture and system of government within which the business operates;
- Science – where decisions are made based on scientific knowledge of cause and consequence; and
- Social system – where decisions are made as a result of the sharing of knowledge about market, political and scientific systems.

Adapted from Renn (2001)

**Figure 2.1.** Four systems of influence on corporate environmental commitment
The relationships between these four systems of influences and the nature of decision-making about environmental management are shown in Figure 2.1. This figure, while it perhaps simplifies complex processes, also acknowledges and integrates the value of social, political and discursive dimensions of decision-making with the economic, scientific and regulatory environments in which drivers are acknowledged, framed and negotiated upon. At the core of this figure are the features of a well-developed approach to the development of environmental policy. That is, by balancing social, political, market considerations and scientific knowledge, environmental management policy and practice is likely to be efficient, embrace knowledge and competence, acknowledge values and fairness and, ultimately, be socially and politically legitimised.

Renn’s (2001) discussion applies to public policy development. However, the position taken in this thesis is that these four subsystems are also relevant in corporate environmental commitment and associated decision-making. This diagram has been adapted from Renn (2001) and also reinforced through a similar diagram in Sarlo (1997:26 & 27) who discusses the external influences on business firms. The diagram is comprised of the four main elements that influence corporate environmental decision-making. Both Renn and Sarlo describe these elements in the context of external influences, however internal influences such as corporate culture and leadership could apply to the social system and political system dimensions of this model.

According to Renn (2001:429) environmental policy development that balances social, political and market considerations and scientific knowledge is likely to be cost efficient, based on accepted scientific knowledge, acknowledge values of stakeholders and, as a result, be socially and politically legitimised. This model is used as the basis for discussion in Chapter Three in relation to the drivers which affect the development of airline environmental policy development and management. Its relevance to corporate environmental commitment in the airline sector, and specifically to SAS environmental management, will subsequently be discussed in Chapters Five and Six in relation to the case study.

2.8 Conclusions

This review of the literature relating to corporate management, corporate greening and leadership demonstrates that the reasons why corporations make
a commitment to environmental management are extremely diverse. To date, literature is fragmented and applies to a gamut of industries. Drivers of environmental commitment can be located along a continuum ranging from internal drivers to external drivers. At one end of this spectrum, internal drivers are those issues that are highly specific to the company and may not be shared across the gamut of similar businesses. In the case of the airline industry for example, specific corporate structures and financing arrangements may give rise to concerns that are not shared by other carriers. Two conclusions can be drawn from the literature in this chapter:

1. There are two subsets of motivations for environmental commitment: ‘catalysts’ and ‘drivers’.

2. Motivations for corporate environmental commitment can be described in terms of the interrelationships between four systems of influence: political, market, social and science (Figure 2.1).

The former is used in this research as a way of distinguishing between the themes that emerged both from the literature and the analysis of the SAS case study in Chapters Five and Six. The latter is used as a way of organising the discussion of this research in regards to the level and extent of corporate environmental commitment of an airline. In the following chapter, a review of the social, economic, political and scientific systems in which the airline sector operates is undertaken as a context for the case study that follows.
Chapter Three

A literature review of the environmental management of aviation

3.1 Introduction

“It is not necessary to fly kiwis from New Zealand to Europe, when four litres of kerosene are burned for each kilo of kiwis,” states the President of the Wuppertal Institute for Climate, Environment and Energy, Ernst von Weizsäcker (Lufthansa, 2000:38). Presumably von Weizsäcker is speaking of the fruit, although fuel consumption of passenger air travel is also noteworthy of consideration. Further investigation reveals that one trip from South Africa to New Zealand, for example, can exceed a tourist’s ‘sustainable CO\textsubscript{2} budget’\textsuperscript{15} for the entire year (Becken, 2002:123). Yet United Nations Secretary, Kofi Anan, has described air transport as contributing to the concept of ‘world progress’ (ATAG, 2002:5). Indeed, with over 1.6 billion passengers using air transport each year worldwide, airlines play a key role in today’s global economy (Aloi’s de Larderel, 2001; Clancy, 2001; ATAG, 2002; UK Commission for Integrated Transport, 2003). As a result of increasingly complex legislation and growing public awareness of the environment, airlines have begun to address the environmental impacts of aviation and airports are under increased pressure to develop environmental management systems (Hupe, 1998). Many environmental problems, such as the impacts of air travel across borders, cannot be addressed effectively by individual countries alone (McCormick, 1995).

While the data in this thesis has been gathered from one airline, that airline operates in, amongst other things, the larger milieu of the airline industry. This chapter examines this milieu by investigating the regulatory structure, policymaking trends and mechanisms of the airline industry, as a whole, to encourage greener performance of airlines. The approach of this section is to

\textsuperscript{15} Carlsson-Kanyama and Linden (1999) have estimated that between 2.2 and 3.3 tonnes of CO\textsubscript{2} per person per annum can be emitted ‘sustainably’ (includes total energy use from daily activities); Biesiot and Noorman (1999) state that a sustainable level of energy consumption for air travel is 0.7 tonnes CO\textsubscript{2} per person per year – see Becken, 2002.
explore the airline industry in the context of the four elements of corporate environmental decision-making that were described in the previous chapter:

- Science and technology: the environmental impacts of aviation;
- The market system: the economic and market-based incentives;
- The political system: the policymaking concerning environmental issues at the international, regional, federal and local levels; and
- The social system: the role of non-government organisations and other 'social' concerns on the environmental impacts of aviation.

By examining these four elements in an industry-specific context, the drivers of corporate greening in the airline industry begin to unfold. The final section of this chapter involves the development of an interactive discussion tool of the influences of environmental commitment. This tool is part of the data collection approach for the SAS case study (to be discussed in Chapter Four).

### 3.2 The airline industry’s greatest environmental challenge: growth

Over the past three decades, demand for air transportation has doubled approximately every seven to eight years. One of the biggest environmental challenges for commercial aviation is, in fact, its rate of growth (IATA, 2000a; Lufthansa, 2000). Growth rates had averaged 9% per year since 1960 (or at 2.4 times the average GDP growth rate) and are expected to grow at 5% per annum until 2015 (ATAG, 2002; European Commission, 1999; Penner et al., 1999:3). In only two instances has there been negative growth: in 1991, the year of the Gulf War; and in 2001 with the terrorist events of September 11 (Figure 3.1).
Sources: IATA, 1999; 2000a; 2001a; 2002a.

**Figure 3.1.** Rate of passenger growth and number of passengers travelling per year worldwide: 1983-2001.

Despite the abrupt downturn in air traffic following the terrorist events of September 11, 2001, the industry is gradually making a recovery and growth in air travel is expected to continue over at least the next five years (IATA, 2002; 2003c; Baker, 2003a). This growth can be attributed not only to increased demand through globalisation trends but also to ‘liberalisation’ of the skies, particularly in North America and Europe, which has allowed for increased productivity (ATAG, 2002). Other factors contributing to this continued growth are high-income elasticity of demand and new trends in leisure patterns (European Commission (EC), 1999). However, even with the technological advances that are being made in the industry with respect to fuel consumption and aircraft emissions, the overall environmental impact of the industry will maintain its upward trend if passenger growth continues at its expected rate.

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16 Growth in the airline industry has not rebound to the originally forecast rate after the events of September 11. Passenger levels of air travel in 2002 were virtually unchanged over 2001 passenger numbers. The expected rebound is now forecast to occur in 2004–2005 (see IATA, 2003c).
Aircraft technology, on its own, will not be enough to reverse the trend (European Commission, 1999). The environmental management of airlines must be considered in the larger context, not just with a focus on technological solutions.

3.3 Current market trends in the airline industry: from free skies to no frills

Key trends that have occurred in the airline industry over the past two decades include continuous growth, deregulation and liberalisation of the skies; increased use of air travel by tourists; movement towards low-cost airlines; changes in demands of passengers and the need for efficiency due to economic circumstances of the industry. Whether directly or indirectly, each of these trends has an effect on the environmental performance of the industry.

3.3.1 Deregulation and liberalisation of the skies

The 1980s and 1990s saw the deregulation of the airline sector, which up to that point had been largely owned and controlled by individual national governments. Previous to this time, destinations were highly restricted as airspace was considered an important aspect of national security. Deregulation of the US market in 1978 slowly led to more deregulation at an international level (Clancy, 2001; see also Vietor, 1994). With the increasing ‘liberalisation’ agreements, which allow international carriers increased access to destinations that were previously ‘out of bounds’, opportunities for travellers have increased significantly (ATAG, 2002). Airlines have also been able to develop both international alliances and code-share agreements, which have further increased accessibility for passengers. This increased accessibility, with its ensuing market expansion, is one of the factors contributing to the growth that has occurred in the industry (IATA, 2000b).

3.3.2 Aviation as a medium for tourism

Tourists are using air travel more frequently to get to and from their destination. Moreover, the average length of journey on a plane has almost doubled over the two decades (OPEC, 1997; ATAG, 2002). Clancy (2001) identifies that hotels and airlines form the majority of a tourist’s expenditure for a given journey, with
the cost of air travel up to half of a tourist’s total travel expenses. The trends in tourism and aviation travel are putting increased demands on the environment with respect to air travel. Although transport brings with it broader impacts on the environment that are often considered as being “beyond the scope” of sustainable tourism discussions (Buckley, 2001b:379), the environmental effects of a traveler’s mode of transportation are increasingly being considered when looking at the overall environmental impact of tourism (Middleton & Hawkins, 1999; 1994).

3.3.3 Low-cost airlines

Over the past decade low-cost airlines have become increasingly prevalent and have even outlasted some major airlines through the recent economic downturn in the industry. While the larger international airlines may not have initially felt threatened by airlines such as Virgin Blue and Ryannair, these low-cost airlines have proved that they are can compete with the larger airlines as seen by their ability to continually increase their market share. They have also forced other airlines to rethink their business strategies and, to a certain extent, evaluate their competitiveness: “clearly the low-cost carriers, the no frills, no service carriers or whatever you want to describe them, are here for the long term” (Lord Marshall, Chairman, British Airways, April 4, 2004; see also Pilling, 2004). Another representative from British Airways cited that scheduled airlines have grossly underestimated the rapid growth of these airlines (pers. comm., (former) Head of Sustainable Business Unit, 4 November, 2002). These airlines are now moving to low-cost service or have offshoots of their company providing low-cost service such as Air Canada’s ‘Tango’, and Qantas’s newly launched ‘Jetstar’, which are aimed at the leisure traveller or the ‘pragmatic’ businessperson who needs to save on costs (Pilling, 2004). Airlines worldwide are struggling to cut costs to meet consumer demands for cost-efficient air travel (IATA, 2003c). Airlines are changing their strategic management to be able to compete with low-cost airlines and the industry is moving into a new phase of development in passenger service. SAS has also realised that developing a low-cost airline is essential to economic survival in the current market conditions. In 2003 the airline launched Snowflake – SAS’s response to the low-fare airline trend (Pilling, 2004).
3.3.4 Changing demands of passenger and industry needs

Related to the emerging markets in low-cost airlines are changing passenger demands. First class and business class passenger volumes have been declining since 2001 and airlines are being forced to adopt a number of cost reduction strategies – the most direct approach being to cut capacity in order to realign with the resulting shifts in passenger demand. In 2002, available seat kilometres (ASK) were 10% below 2000 levels (IATA, 2002a). Furthermore, passengers – corporate customers especially – are demanding a simpler product because of the need to reduce their expenses and the market has moved quickly away from wanting a business-class option on shorter flights. Airlines are feeling pressured to lower prices by removing some of the more costly services and developing a more efficient and competitive product (Pilling, 2004:48). In New York at the opening address of the Airline Financial Summit in 2002, former Director General and CEO of IATA, Pierre Jeanniot, commented about the need for industry members to improve competitiveness through increased efficiency:

We cannot blame all of our poor results on external factors. Even before September 11 this industry was ill prepared to weather successfully even a fairly mild regular economic cycle. And so now is a good time to review the size and appropriateness of corporate overhead and to discard the inefficiencies which have been masked by the recent growth...We need to listen more to company Chief Financial Officers and less to the marketing men (IATA, 2002b).

This latter trend in strategic realignment and resource efficiency has also resulted in a consolidation of domestic carriers, as well as a movement towards the development of international alliances and code share agreements. This need for resource efficiency has the potential for positive repercussions on the environmental impact of the industry. Fewer planes are flying with higher passenger loads and the extravagant service the industry once prided itself on has been substantially reduced (pers. comm., Environmental Manager, LSG Sky Chefs, 28 June, 2002). However, the economic recovery that the airline industry had hoped to make following September 11 has been delayed by more recent

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\(^{17}\) Available Seat Kilometres (ASK) can be defined as the available (offered) number of passenger seats multiplied by the distance flown (SAS 2002a)
events such as the SARS\textsuperscript{18} outbreak in Asia in 2003 and political unrest in the Middle East. The current Director General of IATA cited that 2003 was “to be the year that the airline industry celebrated the Wright Brothers and 100 years of flight. Instead we got war and SARS…IATA needs to respond quickly to the needs of its members in a leadership role” (Basigni in IATA, 2003c). In 2000 IATA published an environmental report for the airline industry that discussed the impacts, the tools being used to improve environmental performance and the challenges facing the industry. However, in 2004 the environment is not even mentioned in IATA’s list of ‘priorities’, nor in the Director General’s speech on the state of the industry (IATA, 2004). This illustrates how much the industry has changed given the economic challenges the industry has faced over the past three years.

3.4  \textit{Science and technology: the environmental impacts of air travel}

If that which has been shaped by technology, and continues to be shaped, looks sick, it might be wise to have a look at the technology itself (Schumacher, 1973:120).

The spectacular increases in air travel witnessed over the last thirty years and the projected increases make the environmental impacts of air travel a particularly pressing issue (IATA, 2000a). In 1996 ICAO requested that the Intergovernmental Panel on Climate Change (IPCC) conduct a study on the environmental impacts of aviation on climate change. It is the first report conducted by the IPCC on a specific industrial sub-sector (Penner et al., 1999). The aim of the report was to provide an overview of the scientific issues related to emissions and climate change, directed at the policymaking community of the aviation industry. The IPCC report is currently the most comprehensive study that has been completed on the environmental impacts of commercial aviation. Amongst the conclusions of this report was that, while some aspects of the environmental impact of air travel are well understood, there remain many scientific uncertainties. The report noted that further work is required to better inform decision-makers. Table 3.1 summarises the environmental impacts of commercial aviation.

\textsuperscript{18} Severe Acute Respiratory Syndrome
<table>
<thead>
<tr>
<th>Environmental Issue</th>
<th>Summary of Impact</th>
<th>Factors affecting Management</th>
</tr>
</thead>
</table>
| Air Emissions       | • Carbon Dioxide CO<sub>2</sub>  
• Carbon Monoxide  
• Hydrocarbons (HC)  
• Oxides of Nitrogen (NO<sub>x</sub>)  
• Oxides of Sulphur (SO<sub>x</sub>)  
• Condensation trails (contrails) | • Airline’s choice of aircraft  
• International standards developed by ICAO  
• Individual countries can impose emissions-related charges and taxes  
• Emissions of international flights do not fall under the present Kyoto Protocol |
| Noise Emissions     | • Most prominent during landing/take off cycle (LTO)  
• Affects local residents and wildlife | • Airline’s choice of aircraft  
• Standards developed by ICAO (starting in the 1960s)  
• Landing charges for noise emissions at some airports |
| Congestion          | • Increased fuel use (and thus emissions) caused by circling busy airports and longer taxiing on the ground | • Regional / National governments and their NGOs develop more effective air traffic management systems  
• Partly caused by national air space rules that sometimes prevent aircraft from flying the most direct route |
| Waste               | • Solid waste from inflight service and aircraft grooming  
• Waste generated from airline administration offices  
• Hazardous waste from aircraft maintenance (e.g. petroleum products) and de-icing of aircraft (glycol) | • Local rules developed by each municipality or airport authority for waste disposal/treatment of tarmac run-off |

Compiled by the author from: ATAG, 2002; European Commission, 1999; British Airways, 2000; IATA, 2000a; SAS, 2000; Penner et al., 1999; Somerville, 1999.
3.4.1 Noise and air emissions

The principal environmental concerns of aviation are aircraft noise and emissions from the engines (including CO₂, oxides of nitrogen (NOₓ), carbon monoxide (CO) and hydrocarbons (HC)). The fuel efficiency and noise emissions of aircraft have improved by over 70% since the 1960s (IATA, 2000c; Penner et al., 1999:10). Noise is of concern to residents surrounding airports. It has been attributed to causing psychological and physiological affects of nearby residents (see Morrell, Taylor & Lyle, 1997) and, in some cases, can lead to house damage from vortices (Upham, 2001). Noise emissions also have an important effect on surrounding wildlife and can affect their migration habits. The number of people affected by aircraft noise has decreased over the last thirty years despite the increase in air traffic (ATAG, 2002).

The airline industry currently produces 12% of the transportation industry’s CO₂ emissions. While the airline industry contends that the total amount CO₂ is ‘only’ 3% of global emissions (Penner et al., 1999), Upham (2001:723) argues that it is roughly equivalent to the total CO₂ emissions of some developed countries such as Canada and the UK. Although the rate of CO₂ and NOₓ emissions are now comparable to other forms of transport such as road and rail, recent studies have shown that the impact of the emissions from aircraft at high altitudes are thought to have a global warming effect three times greater than on the ground (Penner et al., 1999). NOₓ emissions from aircraft are on the rise because of the trend towards aircraft with larger engines and a higher pressure ratio which are quieter and more fuel efficient (ATAG, 2002). Consequently, the challenge of aircraft manufacturers is to design an engine that is low in CO₂ emissions but does not compromise NOₓ emissions. The efficiency of aircraft depends largely on the length of the flight and the number of take-off and landing cycles. Fuel consumption during take-off is about 2.5 to 3 times higher than when an aircraft is at a cruising altitude (pers. comm., Environmental Advisor, Ansett, August, 2001). A report carried out for the Air Transport Action Group (ATAG) studied the different cost elements (e.g. external accident, environmental infrastructure, net balance and time costs) for road, rail and air and concluded that there was a ‘favourable position for the aviation sector’ for journeys over one hour flying time (or 400–500 km). The longer the journey, the better the environmental performance of air travel compared with road and rail (due to the fact that ground-level externalities (e.g. noise and air pollution) decrease over time spent
in the air (Maibach & Schneider, 2002:3; Bøgelund, 2001). Therefore, the longer the flight and the fewer the number of landings, the more efficient air travel becomes. Emissions and consumption of kerosene fuel for aircraft contribute to approximately 90% of an airline’s overall environmental impact (SAS, 2001).

A further impact of aviation on air quality is radiative forcing, where the composition of the atmosphere is altered by the emittance by aircraft of gases and particles such as CO₂, O₃ (ozone) and CH₄ (methane). Radiative forcing causes the formation of condensation trails or ‘contrails’ and may increase cirrus cloudiness and, potentially, climate change (Department for Transport (UK), 2003; Penner et al., 1999). The ‘expert community’ feels that there is still significant scientific uncertainty surrounding the quantification of damage costs of climate change (Department for Transport (UK), 2003b).

3.4.2 Congestion of airspace and airports

Another area of concern related to fuel consumption is the increasing congestion at airports. Congestion affects fuel consumption by causing aircraft to queue on the ground before takeoff, circle before landing and fly indirect routes because of ‘traffic jams’ in the sky (Upham, 2001; European Commission, 1999; Mortimer, 1998). In Europe, for example, 25% of flights are currently delayed an average of 21 minutes (ATAG, 2002). Part of the congestion problem is related to the consistent growth the airline industry has had over the last three decades. This growth has not been matched by equal expansion of airport infrastructure because these projects often face heavy opposition and result in delays (European Commission, 1999; McMillan, 1999; ATAG, 2002). Many airports, particularly in Europe, are already running at, or near, capacity and the ability to increase the capacity even further through new infrastructure is often hampered by delays in environmental impact assessments and negotiations with the local community and government agencies (ATAG, 2002; Lufthansa, 2000; Somerville, 1999). Improvements in air traffic management (ATM) and increased capacity at airports could reduce fuel consumption of an aircraft by between 8 and 18% (British Airways, 2000; Penner et al., 1999:11). Both the Airports Council International and Eurocontrol (Europe’s air traffic management body) warn that recent post-September 11 resurgences in air traffic could lead to increased airport-related delays as the scarcity of new airport capacity grows (Baker, 2004b:22).
3.4.3 Solid and hazardous waste

Other environmental impacts of commercial aviation include hazardous and non-hazardous waste management and resource consumption from ground and administrative operations. The design of the inflight meal has noteworthy environmental and economic implications. With up to 70% of an airline’s solid waste being attributed to inflight service (British Airways, 2001), the resources consumed not only become a disposal issue, but can also increase the amount of fuel consumed by the aircraft. Logistical and legislative complexities surrounding the disposal of waste from international flights mean that, in many instances, waste from these destinations cannot be recycled and must be incinerated (see Lynes, 1999). Hazardous waste is produced from the maintenance of aircraft. De-icing of the aircraft in winter is an important environmental concern for airports, since the glycol used in the process can enter the stormwater run-off causing land and groundwater contamination (Upham, 2001).

The issues of noise, air emissions, waste and congestion are inextricably linked to the impact the aviation industry has on the environment. It is, therefore, important for flight, cabin and ground operations to work together to develop solutions for best environmental practice. Factors that affect the environmental efficiency of an aircraft, such as adequate infrastructure, market forces and availability of technology (ATAG, 2002:19), need to be taken into consideration when developing environmental policy for the airline industry. Chapter Two examined corporate greening from four perspectives: market, science, political and social systems. The purpose of this next section is to discuss those four areas in the context of the airline industry, with specific reference to the main regions in which SAS operates (e.g. Scandinavia and Europe).

3.5 Political system: the regulatory structure of the airline industry

A representative from IATA described the environment issues as a ‘political animal’ of the air transport sector (pers. comm., 3 July, 2002). As a result of increasingly complex legislation and growing public awareness of the environment, airlines have begun to address environmental issues and airports are under increased pressure to take action (Hupe, 1998). The airline industry is governed by a combination of international, federal, regional and local
legislation. Although the majority of control has traditionally been at the federal and international level, local governments have been granted increased power in recent years, and many airports have now been privatised (Lynes, 1999). The regulatory system of aviation is further complicated by the fact that airlines, airports and aviation manufacturers are subject to differing regulation and jurisdictional authority. This results in different and, at times, contradictory legislation and regulatory requirements (Lynes, 1999; Hupe, 1998).

Comparisons can be drawn between the trends of trans-national corporations (TNCs) and those of the airline industry, including deregulation, removing borders and increasing movement across countries (Greer & Bruno, 1996). However, Clancy (2001:95) defines the airline industry as “uniquely strategic” because of the penetration of political borders and tendencies towards oligopolies (the dominance of a few very large companies). Out of necessity, commercial air transport is highly regulated because of the nature of the airline industry with respect to air traffic control, airspace, safety and security (ATAG, 2002). Historical characteristics of the airline industry include high levels of state ownership and controlled international competition. Airlines have also received particular attention by national governments because they use sovereign air space (national defence concerns) (Clancy, 2001; ATAG, 2002). Unlike TNCs, which have no overarching international authority dealing with environmental standards, the airline industry relies on the International Civil Aviation Organisation (ICAO) for this purpose. Pressure from other governing structures, such as the European Union, has been mounting for the airline industry to respond to environmental challenges – particularly in the areas of noise and emissions (IATA, 2000d).

3.5.1 The international regulatory structure of the airline industry

At the international level are two main bodies that deal with aviation: the International Air Transportation Association (IATA), the industry body of the international commercial aviation industry, and the International Civil Aviation Organisation (ICAO), a specialised agency of the United Nations (UN). The focus of this section will be on the role of the ICAO since this organisation has overall responsibility for the airline industry and establishes global standards and recommended practices on various aspects of international civil aviation – including environmental protection (Penner et al., 1999). Figure 3.2 shows the
members and observers of the ICAO, with specific reference to ICAO’s Committee on Aviation Environmental Protection (CAEP). There are nineteen active members of ICAO along with ten observers (some of whom represent countries, but most are industry-related organisations).

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**Figure 3.2.** Overview of the structure of the International Civil Aviation Organisation (Sources: ICAO 2001a; 2001b; IATA, 2000a).19

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19 Observers of CAEP include:

- **ACI** (Airports Council International) - international association of the world’s airports;
- **EU** (European Union) - proposals for encouraging greener aviation come from the Commission’s Transport and Energy Directorates in concert with the Environment Office
- **IATA** (International Air Transportation Association) - organisation of the world’s international airline industry;
- **ICCAIA** (International Co-ordinating Council of Aerospace Industry Associations) - comprised of aircraft and engine manufacturers and aerospace industries associations
- **IFALPA** – International Federation of Air Line Pilot’s Association – the global voice of airline pilots
- **T&E** (European Federation of Transport & the Environment) - formed to facilitate environmental NGO participation in ICAO CAEP
- **UNFCCC** – United Nations Framework on Climate Change
- **WMO** – World Meteorological Organization - the UN’s authoritative voice on the state and behaviour of the Earth’s atmosphere
Airlines have an obligation to adhere to ICAO’s technical standards for noise and air emissions (Department for Transport, 2003; ICAO, 1999). ICAO first became involved in environmental issues in the 1960s as a result of concern for noise emissions (Hupe, 1998) and also participated in the first UN Conference on the Human Environment in Stockholm, 1972 (ICAO, 2001b). The Standards and Recommended Practices (SARPs) related to the environmental impact of aviation are in Annex 16 of the Convention on International Civil Aviation. More commonly referred to as the Chicago Convention, it is the fundamental treaty for international civil aviation. The Chicago Convention also prohibits the use of taxes or charges of fuel kept on board aircraft and consumed on international flights. In effect, airlines do not pay tax on the kerosene fuel they use for their aircraft (ICAO, 1999).

Developing international environmental standards is increasingly on the industry agenda of the ICAO due to pressure from governments (particularly the EU) and to scientific evidence of the environmental impacts of air travel from the IPCC report (Penner et al., 1999). Thus far, ICAO has focused all of its regulatory efforts into the two largest areas of environmental concern in aviation – noise and air emissions from aircraft (IATA, 2000a; ICAO, 1999). Introducing ICAO standards takes a number of years to implement and involves several years of negotiations. Once a standard has been negotiated, it has then to go to the ICAO Assembly to be accepted before final approval and implementation start (pers. comm. IATA representative, 6 June, 2001). Industry members agree, that while the current ICAO process is effective, the consensus-based approach is quite slow, sometimes taking between five and ten years to develop new standards (Department for Transport (UK), 2003b; Director, Engine & Aircraft Analysis, SAS, 2002; Environmental Director, SAS, 2002; Head of Environmental Affairs, Luftfartsverket, 2002). Although Article 37 of the Chicago Convention states that ICAO standards are binding, member states can be exempt from some standards in special instances (pers. comm., ICAO representative, 6 June, 2001).

CAEP is a technical committee of the ICAO. The environmental activities of ICAO are largely the responsibility of CAEP, which reports directly to the ICAO Council. There are currently seven working groups under CAEP’s direction that focus on varying environmental concerns of the industry (Figure 3.3).
In making the proposals for stringency, CAEP applies three criteria: the proposals must be:

- Technically feasible;
- Environmentally necessary; and
- Economically reasonable (ATAG, 2002:17).

Other governing bodies, such as the European Union and airport authorities, have threatened to implement stricter regulations in the form of regional or local legislation if ICAO does not sufficiently tighten environmental standards in the near future (European Commission, 1999). UK’s Department for Transport (2003b) cited that the threats of the EU were an important precursor to action at the international level. The ICAO has replied to these threats by emphasising the need to keep aviation standards at the international level:
Early this year ICAO advised the European Union (EU) that while the...issue certainly presents a difficult situation [in Europe], it was nonetheless vital that ICAO maintain its leading role in establishing guidance on noise and emissions for international civil aviation (ICAO, 1999:5).

The CAEP process has given incentives for aircraft manufacturers to take action in relation to engine design in anticipation of more stringent standards (Mortimer, 1998). Table 3.2 provides an overview of both the benefits and the disadvantages of using the ICAO/CAEP process as a mechanism to improve the environmental performance of the aviation industry:

**Table 3.2. Various stakeholder positions on the CAEP process**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Consensus-based approach</td>
<td>• Difficult to get consensus among members</td>
</tr>
<tr>
<td>• The specific process of CAEP is tailored to the needs of the industry</td>
<td>• Geographic representation is skewed – little participation from developing countries; countries of expertise dominate the process</td>
</tr>
<tr>
<td>• Levels the playing field by creating international standards (as opposed to regional/national standards that may differ from country to country)</td>
<td>• EU wants to impose stricter regulations – ICAO standards are not stringent enough</td>
</tr>
<tr>
<td>• Allows the long term planning needed for the industry</td>
<td>• The ICAO standards follow technology instead of leading it (“too little, too late”)</td>
</tr>
<tr>
<td>• CAEP process is good because it develops recommendations that are then acted upon</td>
<td>• Process takes too long to develop and implement</td>
</tr>
<tr>
<td></td>
<td>• uncoordinated regional and national initiatives that could impose significant constraints on airport capacity</td>
</tr>
<tr>
<td></td>
<td>• Areas with environmental sensitivity or higher demand for noise/emission control need to be dealt with individually without having to undermine the worldwide policies</td>
</tr>
</tbody>
</table>

Sources: EU, 2002; Mortimer, 1998 and comments from stakeholders including representatives from SAS, ICAO, ACI and Luftfartsverket (Swedish Civil Aviation Administration).
Airlines do not appear to be against this process and, in fact, prefer the long lead times for implementing ICAO standards as it allows the companies time to plan fleet renewal options (Department for Transport (UK), 2003b). Other members of the airline industry, such as the Airports Council International feel that ICAO standards are “too little, too late” (pers. comm., representative from ACI, 18 June, 2001). Airlines would also prefer these international guidelines over domestic regulations since local laws can make the playing field uneven (e.g. some airlines are disadvantaged by local legislation while other airlines can avoid the costs if they do not fly to that destination). Certain regions, such as Europe, appear to have stricter regulations on certain aspects of air travel. Scandinavian governments are also known for their concern with waste and with air emissions (pers. comm., Representative from Qantas, 17 October, 2002). A provision in the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCC) adopted in 1997 requested that ICAO have the responsibility to limit or reduce air emissions related to aviation. This is because emissions from international aviation bunker fuels (the emissions generated from international flights) are not included in a country’s national emission inventory (ICAO, 1999).

While the ICAO plays a significant role in the development and implementation of international environmental standards in the airline industry, there are other areas of government at the regional and national levels that have been influential role in this respect. The European Union, for example, has played a powerful role in the CAEP process by pushing for more stringent standards.

3.5.2 The strategic environmental pillars of the European Union

The environment has proved to be one of the more successful areas of policy development and implementation in the European Union (McCormick, 1995:43). The EU has had, and continues to have, a very strong influence on the global environmental standards developed by ICAO.

The political importance of environmental issues in Europe, and the capacity and willingness of governments and politicians to take difficult decisions in favour of the environment, make the European perspective different to that from people in other parts of the world. There is a distinct and legitimate regional interest upon which it is quite proper to act when and if action at a global level fails
While the European Union (EU) believes that environmental standards for the aviation industry should be the responsibility of ICAO, the EU has threatened to implement their own standards if the ICAO does not react more quickly to the increasing environmental impacts of the air transportation industry (Mortimer, 1998). The EU asserts that prices of all modes of transport should reflect socioeconomic costs and should encourage the use of creating charges for external costs such as congestion, noise and air pollution (COWI, 2001). This was identified in the release of the White Paper on Common Transport Policy (European Union, 2001) which advocated for the presence of a ‘strong regulator’ and a surveillance, inspection and penalties system for the air transportation industry. The Commission favours creating a level playing field (with respect to other forms of transport such as road and rail which do pay tax on fuel) by introducing fuel taxes (Lönnqvist, n. d. b).

The European Commission has identified four ‘pillars’ of environmental policy in the commercial aviation sector:

1. Improving technical environmental standards on noise and gaseous emissions;
2. Strengthening economic and market incentives;
3. Assisting airports in their environmental endeavours; and
4. Advancing long-term technology improvement through research and development (European Commission, 1999).

This strategy recommends that the current direction of creating EU-wide national, regional and local measures (the objective being to accelerate technological solutions and operating techniques to reduce emissions and noise) should be enhanced by the introduction of economic and regulatory incentives reinforcing the competitive edge of operators which use best available technology and operations (Commission, 1999). The EC purports that policies for the airline industry should not just be about the environment itself but should also take into consideration ‘fairness’ with respect to other forms of transportation. This is particularly in reference to the current exemption the
airline industry has on paying kerosene tax (EC, 1999). Airlines, however, argue that they more than adequately pay for the ‘cost’ of air transport by paying for infrastructure costs unsubsidised (Dobbie, 1999). The EC feels that taxes are an effective method of improving the environmental impact and the economic competitiveness of the industry, particularly when all airlines are taxed equally (European Commission, 1999:13). The leading role the EU has played in the quasi-regulatory structure of the airline industry at an international level has resulted in environmental standards that reflect the demands of this regional governing structure. Regulations, taxes and levies in this region have played a key role in increased environmental activity (McCormick, 1995).

3.5.3 The regulatory structure of the airline industry at the national level
With respect to managing aviation at the national level, each country generally has a ministry or department of transportation, which is responsible for overseeing the safety and security of both passengers and crew on board an aircraft. Although SAS operates out of three countries – Denmark, Sweden and Norway – Sweden will be the focus of the discussion since SAS has its main headquarters in Stockholm and uses Stockholm-Arlanda airport as its main hub.

Swedish aviation has been deregulated since 1997. The government body that deals with aviation is known as ‘Luftfartsverket’ (LFV), which translates in English to the ‘Swedish Civil Aviation Administration’. The LFV is the government’s ‘expert’ in aviation and has the responsibility of ensuring that Sweden's interests in aviation are fulfilled on a national and international level (Luftfartsverket, n.d. a) LFV plays an active role in the development of transport policy goals and oversees that regulations from EU and ICAO are implemented in Sweden. The approach LFV uses to achieve these goals generally consists of ‘soft’ tactics, such as exerting influence, information and coordinating with participants, and ‘hard’ methods, such as the development of laws and regulations, to enforce certain aspects of the airline industry (Luftfartsverket, n.d. a).

LFV does not have a strong hierarchical structure. This allows LFV to work closely with both airlines and the Ministry of Transport, the government body to which LFV reports (pers. comm., Head, Environmental Affairs, LFV, 17 June, 2002). With respect to the environment, LFV’s objective is to ensure that the environmental effect of civil aviation is ‘acceptable in relation to the benefits
experienced by the community at large’ (Luftfartsverket, n.d. a). Interestingly, LFV sees that the aviation industry has received unsubstantiated criticism with regard to its effect on the environment, and argues that the aviation industry’s contribution to transport systems’ effect on the environment is relatively small. LFV has also recognised that having a strong dialogue with aircraft manufacturers is a necessary step in minimising noise and emissions (Luftfartsverket, n.d. a).

There is a trend towards raising environmental taxes in Europe. Sweden is one of only two countries (besides Switzerland) to favour charges in aviation as a mode of encouraging airlines to improve their environmental performance (UK Commission for Integrated Transport; year; Cairncross, 1995). LFV argues that charges and taxes are an effective tool to get airlines to use best available technology (pers. comm., Head of Environmental Affairs, Luftfartsverket, 17 June, 2002). In 1994 Denmark introduced a new scheme where they lowered income tax rates and initiated a series of green taxes. Carbon taxes have been used in all three Scandinavian countries with effective results (Cairncross, 1995).

In the Swedish airline industry, these initiatives have been, for the most part, environmental charges aimed at reducing the impact of local environmental problems (UK Commission for Integrated Transport, 2003; COWI; 2001; SAS, 2002). Stockholm-Arlanda airport, for example, uses charges and taxes as a mechanism to reduce noise and fuel emissions. The LFV purports that significant savings can be made by airlines who avoid these levies (Luftfartsverket & Federal Office for Civil Aviation, Switzerland, 2000). As of 1998, Sweden categorised aircraft into different environmental classes depending on the emissions the aircraft produced. Airlines that use aircraft in the lowest emission-producing category can have landing charges reduced by up to 70% (LFV, 2000b). Other countries, such as the UK, are considering the use of charges at a national level as an intermediate measure to a similar regional or international system (Department for Transport (UK), 2003b).

Denmark and Norway have also imposed environmental taxes in varying forms. Denmark has a passenger tax that corresponds to the impact of aircraft on the ambient society in terms of air pollution, noise, accidents and congestion, while Norway has implemented a seat tax of a similar nature (COWI, 2001). With respect to waste, Norwegian companies that have a recycling rate lower than
90% are subject to a charge for unsorted waste (SAS, 2002). Norway was also the first country to levy a combined charge for CO₂ and sulphur emissions on aviation fuel, for domestic routes only (SAS, 2000:11).

### 3.6 Market-based mechanisms

The airline industry has been characterised by technocratic policy-making derived from interactions principally between political and scientific systems, with some industry participation. Although the airline industry has a history of being highly regulated, market-based mechanisms are increasingly appearing on the agenda of both government and industry bodies such as ICAO (see Department for Transport (UK), 2003a; IATA, 2003; 2000; Middleton & Hawkins, 1999). The European airline industry especially is embracing market-based mechanisms (pers. comm. Director, Aircraft & Engine Analysis SAS, 11 June, 2002; pers. comm., IATA representative, 6 June, 2001).

#### 3.6.1 Non-voluntary mechanisms

Some of the market-based options for encouraging airlines to address the environmental impacts of air travel include charges on aircraft emissions and environmental passenger taxes. One market-based option that is being considered by the European Commission is a ‘Performance Standard Initiative’ (PSI), in which the better the aircraft performed the more money the airline would receive and the worse the aircraft performed the more money they would have to pay (CE Delft 2002). One recommendation, from a consultation report on the external costs of air, road and rail that was commissioned by ATAG, concluded that any environmental charging for noise or air emissions should be revenue neutral, focusing on the type of aircraft and nuisance rather than on increasing the overall level of charges (Maibach & Schneider, 2002:26). It is also argued that the ‘polluter pays principal’ should be utilised as well as instruments that target external costs (United Kingdom Commission for Integrated Transport, 2003).²

The Environmental Manager of Lufthansa Group’s (LSG) Sky Chefs (pers. comm., 26 June, 2002) stated that “a tax [on kerosene] would be

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²External costs can be defined as “unintended costs resulting from normal activity” such as noise nuisance to residents from aircraft landing or taking off and local air quality (United Kingdom Commission for Integrated Transport, 2003:3). Alternatively, ATAG (2002:16) defines externalities as “any benefit or cost borne by an individual that is a direct consequence of another’s behaviour for which there is no compensation”.

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something we [airlines] could live with if it is taxed everywhere and for all airlines." Taxes can be used as a tool to invoke either ‘efficiency’ (e.g. to finance the marginal external costs including infrastructure and utilisation of resources) or ‘financial gain’ (e.g. traveller’s funding society’s direct costs for a mode of transport with no public sector subsidisation) (see COWI, 2001; for an economic analysis of the effect of environmental charges with the airline industry, see Carlsson, 2002). Vienna International Airport has established a landing charge for airlines that do not have onboard waste sorted for recycling upon arrival at the airport. As a result, Vienna airport’s largest customer, Austrian Airways, has developed a comprehensive recycling strategy for its inflight service (Malle-Bader & Tunstall-Pedoe, 1997). This is just one example of the economic incentives that airports are using to get airlines to reduce their environmental impact.

The implementation of a carbon emissions trading system is also high on the agenda of the ICAO. The airline industry is in favour of open emission trading (e.g. being able to trade emissions with other industries) as it is felt that this will be more effective (in both monetary and environmental gains) for the industry (pers. comm., IATA representative, 6 June, 2001; pers. comm., ACI representative, 18 June, 2001). IATA cites that emissions trading will allow airlines to respond to increasing public demand for air travel, while at the same time contributing to the reduction of global reduction targets (IATA, 2003). Carbon emission trading has the potential to create a competitive edge for operators who choose to use best available technology, while also encouraging further technological innovations in a cost-effective way. Open trading of emissions, however, means that overall environmental performance of the industry will not necessarily be improved. For market-based options to be ‘environmentally effective’ they must be addressed within an international framework (Penner et al., 1999:11).

3.6.2 Voluntary initiatives

The ‘interest’ in environmental management has resulted in some airlines going beyond minimum standards by purchasing more efficient and less polluting aircraft, increasing the transparency of their performance through environmental reporting and incorporating environmental management targets into company performance goals. The use of voluntary mechanisms in the airline industry can be categorised into four groups:
1. Eco-efficiencies;

2. Accreditation systems and eco-labelling;

3. Environmental reporting; and


Voluntary initiatives could be classified under several of the four headings of decision-making that are being described in this chapter.

1. **Eco-efficiencies**

The Executive Director for ATAG cites that there is a clear financial benefit for airlines to have modern fleets because it will result in savings on fuel costs (pers. comm., 28 June, 2002). Airlines are also finding that the effects on the bottom line of costs savings and revenue gains from recycling and reducing energy consumption are worth the effort (Trombly, 1991). Several airlines have initiated waste management practices over the past decade without the help of a regulatory structure at the industry level. The factors that have driven these airlines to develop more efficient ways to manage resources include pressure from employees (e.g. in regards to waste management of inflight service) and the realisation of financial savings, or eco-efficiencies (Lynes, 1999). One example of this is the story of American Airlines flight attendant Heather Bell. In 1989 she started a recycling program out of her home base in San Jose, California to try to combat all of the waste she was seeing on board the flights. The money from the collection of the aluminium cans was given to several charities that were chosen by the employees. The program was soon expanded to include the collection of newspapers used during the flight. In the first eight months of the program the flight attendants recovered more than 524,000 pounds of aluminium and paper, and gave US$37,612 (A$52,656) in donations to charity groups, making the company one of the pioneers in on-board recycling (Trombly, 1991). The flight attendants went on to earn four separate awards for their endeavours even before they had the official support of the company for their project (for other examples of savings through efficiency that have been demonstrated in the airline industry see Dunn, 2000; Swissair, 1998; O’Neill, 1993; Meill, 1992).
While initial eco-efficiencies in the airline industry were often achieved through waste management techniques such as recycling, the focus is now on optimising fuel efficiency through both modern aircraft and improved operational management systems. The cost of fuel represents up to 25% of an airline's total operating costs (IATA, 2003); therefore there is a strong monetary incentive to operate aircraft with high fuel efficiency. Airlines are increasingly taking the onboard weight of aircraft into consideration (e.g. food trolleys and duty-free carts) as important fuel savings can be made through minimisation of weight (pers. comm., (former) Head Sustainable Business Unit, British Airways, 4 Nov., 2002).

2. Accreditation Systems

Industry-wide or internationally accepted accreditation and certification systems such as ISO 14000 and Green Globe 21 are two examples of ways in which airlines are trying to get recognition for their environmental efforts. Green Globe 21 has established guidelines specifically tailored to airports and airlines. So far, there has been minimal uptake of this accreditation system in the commercial aviation sector, with only one airline (Singapore Airlines) and one airport group (Malaysia Airports) becoming Green Globe 21 certified (Green Globe 21, 2004). ISO 14000 and the European-based Eco-Management Audit Scheme (EMAS) are more extensively used amongst airports than by airlines, although the technical departments of airlines such as cargo, maintenance, engineering and facility management are increasingly using these accreditation systems (IATA, 2001b:21). Major international commercial airlines, such as British Airways,

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21 ISO 14000 is a series of international standards on environmental management. It specifies a framework of control for an Environmental Management System against which an organization can be certified by a third party (ISO, n.d.).

22 Green Globe 21 is a voluntary worldwide benchmarking and certification program for the travel and tourism sector. It is based on Agenda 21 and principles for Sustainable Development (Green Globe 21, 2004b).

23 The EU Eco-Management and Audit Scheme (EMAS) is a management tool for companies and other organisations to evaluate, report and improve their environmental performance. The scheme has been available for participation by companies since 1995 and was revised in 2001. Participation is voluntary and extends to public or private organisations operating in the European Union and the European Economic Area (EEA) (Eco-Management and Audit Scheme, 2001).
Qantas and SAS, have also acknowledged the need for standards to benchmark and monitor environmental performance to drive the industry towards the application of ‘best practice’ environmental management (SAS, 2001a; British Airways, 2001; pers. comm., Representative from Qantas, 17 October, 2002). Qantas would like to be ISO 14000 ‘compliant’ by 2005, and then consider ISO 14000 certification. Reasons for Qantas pursuing compliance with ISO 14000 were:

- This type of voluntary certification is a “defendable strategy”;
- As a way of assuring due diligence; and
- It will provide Qantas with a strategic advantage.

(pers. comm., Representative from Qantas, 17 October, 2002).

The literature on eco-labelling (particularly in the travel and tourism sector) argues that, one of the motivations for companies to use these accreditation systems is, simply, that ‘green sells’ (Font, 2001:1). The other side of this argument, however, is that despite this increased awareness, travellers are still not demanding green products (Sharpley, 2001). Reiser & Simmons (2003), for example, found that there was almost no recognition of the international eco-label Green Globe 21 when tourists were asked in a survey when passing through a tourist information office in Christchurch. Indeed, airline passengers do not appear to be demanding ‘green products’ in the airline industry (pers. comm., Representative from British Airways, 4 November 4, 2002; pers. comm., Representative from Qantas, 17 October, 2002). Yunis (2001) suggests that the variations in opinion on the effectiveness of eco-labels in the travel and tourism sector indicate a need for further research as to what the motivations are for companies to adopt such labels.

3. **Industry agreements**

Although the airline industry has no official industry agreements such as the chemical industry’s Responsible Care program, a few voluntary agreements have occurred between airlines and also between airlines and airports. In the United Kingdom, for example, a voluntary code of practice has been introduced to minimise aircraft noise at airports. British Airways has voluntarily agreed to ban late departures and early arrivals in order to reduce the times in which local
residents are disturbed by surrounding airport noise (pers. comm., British Airways representative, 4 November, 2002). Canadian airports have voluntarily adopted a set of guidelines to manage the discharge of de-icing fluids that was established in consultation with environmental regulators, transport authorities, airport operations, airlines and manufacturers. Representatives from the two regulators, Environment Canada and Transport Canada, argue that results obtained from voluntary agreements are less costly, more productive, with less resistance from industry than by using a regulatory system (Simpson & Kent, 1999:23). A further example of the use of voluntary agreements in the airline industry is the ‘environmental pact’ that was made by Star Alliance members in May 1999 (see Appendix C). Code-sharing flights have helped to improve aircraft utilisation by combining two half-empty flights into one flight (e.g. a Lufthansa flight and an SAS flight become one flight operated by either of the two airlines) (Walle, 1999). The environmental representatives of each of the member airlines also worked together to develop joint environmental targets and strategies. Most of this activity, however, was postponed following the events of September 11 and the group is only now beginning to resume discussions. The same can be said of the One World Alliance, which also exchange technical information on environmental issues (pers. comm., representative from Qantas, 17 October, 2002). In the case of British Airways’s voluntary ban on night flights at certain airports, the motivation could be to ward off future regulation. Although the representative from British Airways did not explicitly state this as a driver, they did say that voluntary initiatives were a ‘good option’ because of the ‘complexity of regulation’. Motivations for the environmental pacts of airline alliances are more likely to be associated with quests for more efficient management of resources through the exchange of ideas and perhaps even joint purchasing agreements.

4. Environmental reporting

Most major airlines now include some form of discussion on their environmental practices, either through their Annual Report or through a separate sustainability or combination social/environmental report\(^\text{24}\). The depth of reporting, however, 

varies from a few paragraphs on how the airline contributes to sustainable development, to detailed reports on the airline’s environmental performance. Of the airlines with serious ‘interest’ in reporting environmental issues, the messages are, at times, highly political. There are also several examples of airlines using the opinions of the expert community to relay their messages through to the intended audience (e.g. Lufthansa, 2001).

Table 3.3 provides an overview of the advantages and constraints of the various tools being used (or proposed) in the airline industry to combat the environmental impact of aviation. The table has been generated to illustrate a number of points that have not been explicitly discussed in this chapter in order to keep the discussion on mechanisms brief (since it was not the focus study in this thesis).

http://www.aircanada.ca/about-us/environment/
<table>
<thead>
<tr>
<th>Policy Instrument</th>
<th>Advantages</th>
<th>Constraints</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market-based incentives(^{25}) e.g. carbon trading schemes, charges and taxes</td>
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<td></td>
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<tr>
<td>Carbon Trading (global, open emission trading)</td>
<td>- Will create a competitive edge for operators who choose to use best available technology&lt;br&gt;- New technology and innovation created in a cost-effective way&lt;br&gt;- Compatible with flexible mechanisms under Kyoto Protocol&lt;br&gt;- Effective way of managing climate change in the medium term in a way that is measurable&lt;br&gt;- Proven effectiveness and compliance in other sectors</td>
<td>- Takes a long time to get global coordination&lt;br&gt;- Open trading means that overall environmental performance of the industry is not necessarily improved under this scheme&lt;br&gt;- More opportunities for ‘gaming’ (whereby companies take advantage of unforeseen loopholes)&lt;br&gt;- Environmental groups especially are concerned that trading may not be appropriate for all areas because of environmental ‘hot spots’&lt;br&gt;- Requires agreement amongst all member states&lt;br&gt;- Additional financial burden would be detrimental for airlines&lt;br&gt;- Seen by some simply as revenue raisers, not focused on environmental protection&lt;br&gt;- Allows airlines to have a clean conscience without having to act&lt;br&gt;Re: fuel tax: price elasticity of fuel is low, therefore a tax would result in negligible reductions in CO(_2) emissions&lt;br&gt;- One controversial option would be to tax kerosene fuel for aircraft – NGO groups and the EU are highly in favour of this&lt;br&gt;- There is debate amongst industry members as to the effectiveness of this method&lt;br&gt;- Effectiveness would increase if implemented at a broader level (e.g. regionally, globally)</td>
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<tr>
<td>Charges and taxes (e.g. CO(_2) charge)</td>
<td>- Can help give market signals to industry to adapt their behaviour&lt;br&gt;- Implementation possible in medium term&lt;br&gt;- Can be used to manage demand/cap growth of noise/emissions (view of NGOs)&lt;br&gt;- Pushes manufacturers to develop more fuel efficient aircraft&lt;br&gt;- Proven feasibility in improving overall performance (e.g. in Sweden and Switzerland)</td>
<td>- Cited by airlines as being ineffective in improving overall environmental performance&lt;br&gt;- Requires agreement amongst all member states&lt;br&gt;- Additional financial burden would be detrimental for airlines&lt;br&gt;- Seen by some simply as revenue raisers, not focused on environmental protection&lt;br&gt;- Allows airlines to have a clean conscience without having to act&lt;br&gt;- Re: fuel tax: price elasticity of fuel is low, therefore a tax would result in negligible reductions in CO(_2) emissions&lt;br&gt;- Effectiveness would increase if implemented at a broader level (e.g. regionally, globally)</td>
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\(^{25}\) Several different terms are used in the airline industry to describe this category, including ‘economic instruments’ and ‘fiscal-based incentives’. IATA (2002d) further categorises market-based measures into four groups: taxes, charges, voluntary agreements and emissions trading. The CFIT (2003) in the UK uses the term ‘economic instruments’ to describe taxes, charges and trading schemes and defines voluntary agreements separately. This study will use the term market-based incentives to mean taxes, charges and trading schemes (and not voluntary agreements).
<table>
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<tr>
<th>Policy Instrument</th>
<th>Advantages</th>
<th>Constraints</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Voluntary Initiatives</td>
<td></td>
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<tr>
<td>Industry Agreements</td>
<td>- Good option because of the complexity of the regulations</td>
<td>- Not binding – difficult to enforce</td>
<td>- In 2000 IATA member airlines voluntarily agreed to achieve a 10% fuel efficiency by 2010 over 2000 levels</td>
</tr>
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<td></td>
<td>- A flexible approach that can be tailored to the specific needs of government, industry and other stakeholders</td>
<td>- Minimal penalties for non-compliance of agreement</td>
<td>- EU encourages the establishment of voluntary agreements</td>
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<td></td>
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<td>- Monitoring and follow-up can be costly</td>
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<tr>
<td>Eco-labels or Accreditation/ Auditing systems (e.g. Green Globe 21, EMAS, ISO 14000)</td>
<td>- An effective way of demonstrating responsibility</td>
<td>- Little recognition of, or interest in, the label by customers especially individual passengers</td>
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<td></td>
<td>- Improved environmental awareness amongst employees and management</td>
<td>- Actual improvement in performance outcomes is questionable</td>
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<td></td>
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<td>- Standards may not be strict enough or appropriate to the industry</td>
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<tr>
<td>Regulations and Standards</td>
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<td></td>
<td>- Important tool for delivering government’s objectives – especially when the cost of the impact is quite high</td>
<td>- Current CAEP process for developing standards is quite slow and has been criticised for being “too little too late”</td>
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<td></td>
<td>- All airlines are treated equally and can be often easier to enforce – especially in countries that are used to following standards (e.g. Germany, Scandinavia countries)</td>
<td>- Creates an uneven playing field when countries take on their own agenda</td>
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<tr>
<td></td>
<td>- Encourages the use of best available technology</td>
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<tr>
<td>Operational Improvements</td>
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<tr>
<td>CNS/ATMs (air traffic management through satellite navigation)</td>
<td>- Improved fuel use as the planes would fly more direct routes and spend less time ‘circling’ near airports</td>
<td>- None cited</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Encourages the use of best available technology</td>
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This table was compiled by the author from various sources including European Commission, 1999; UK CFIT, 2003; SAS, 2001; Caimcross, 1995; pers. comm. Somerville, 2002; IATA, 2002d, 2003; CE, 2003; Department for Transport (UK), 2003; ICAO, 2001b.; Gander & Helme, 1999; Olsthorn, 2001
3.7 Social systems

This section addresses the influences on the airline industry to 'do the right thing' with respect to environmental issues. The term 'social system' will be defined here as a set of social interrelationships that operate within an airline and both within and upon the airline sector. This system gives rise to values, beliefs and opinions about environmental impacts and values. In this context, social systems can be used to denote:

- Airline-specific values and interests;
- Airline interest groups; and
- Values and opinions of leaders and powerful individuals.

These may be informed by science or 'soft' values, which may be explicit or embedded in everyday action. Historically, large airlines have been the national symbols of a country, particularly in the days (before the free skies agreements) when airlines were government-owned and operated. Airlines have a tendency to represent, and be representative of, their home country (Clancy 2001). When people think of Qantas, for example, they associate Australia with the kangaroo on the logo and also with Qantas's safety record. The formalities of the British class society are seen through British Airways' uniforms, with the female Flight Attendants in felt hats and white gloves during boarding. Airlines, as 'flag carriers' of the country in which they are based, have a certain responsibility to uphold a positive image for their culture. With respect to the environment, the General Manager (Environment) for Qantas sees it, not as a priority, but as a value (pers. comm., General Manager, Environment, Qantas, 17 October, 2002).

The environment as a value for airlines, however, goes beyond simply representing their country. Other values come into focus such as the value of the airline's shareholders and investors. Lufthansa (2000:7), for example, states in its environmental report that it is "equally committed to the demands of shareholder value as to those of social and environmental value". The importance of having a transparent social and environmental record is apparent through the increased movement towards combining financial and sustainability reports (see, for example, Lufthansa, 2004; SAS, 2004). In recent years there
has been a negative image of air transport with respect to environmental impact, with airlines being considered the 'polluters' of the transportation sector (COWI, 2001; LFV, 2003; SAS, 1999). Therefore there is a strong movement amongst airlines to boost the image of the industry. One way that they go about this is by publishing environmental reports; a second is through the various reports that have been commissioned from airlines and airline organisations to demonstrate that the environmental impacts are not as bad as the transportation sector makes them out to be (e.g. Maibach & Schneider, 2002; COWI, 2001). A positive environmental image for an airline, or, for that matter, for the airline industry, has both social and economic implications: firstly, to maintain its badge as a good, caring environmental corporate citizen and, secondly, to attract, or perhaps keep, existing investors.

Non-government organisations have been interested in the environmental impacts of the airline industry for many years, particularly with respect to the noise and emissions surrounding airports. Airports, especially in Europe, are increasingly using discussions and mediation procedures both to involve community groups and as part of the decision-making process. At an international level, ICAO invites NGOs to participate as observers in most meetings (ATAG, 2002). Because the NGOs have only been allocated one observer spot in CAEP they must speak with one voice. As a result, the NGOs concerned with environmental issues in aviation have established a collective group known as the International Coalition for Sustainable Aviation (ICSA). Founded in 1988, ICSA sees its role to provide technical expertise and policy recommendations for the aviation sector with respect to emissions (ICSA, n.d.).

Items on the agenda of the NGO's, such as ICSA, are reducing noise around airports and reducing air transport’s contribution to global climate change (ATAG, 2002). They also advocate the inclusion of aircraft emissions from international flights in Kyoto targets and the need for a world-wide tax on aviation fuel (Department for Transport (UK), 2003b; pers. comm., IATA Representative, 3 July, 2002; Transport and Environment, 2001). According to some of these groups, the kerosene exemption that is part of the Chicago Convention should be eliminated because "studies and experience have shown that a levy is most effective when applied closest to the source of pollution, in this case the combustion of fuel" (Transport & Environment/ICSA, 2001:3). Besides the creation of an aviation fuel tax, proposed policy instruments from
the NGOs include introducing market-based mechanisms to address CO₂ emissions through creation of emissions charges (Transport and Environment, 2001) and introducing emissions trading in order to cap growth in the industry and curb demand (Transport and Environment/ICSA, 2001). An IATA representative (pers. comm., 6 June, 2001) feels that the demands from the NGOs are ‘unrealistic’.

Figure 3.4 builds upon the diagram of four dimensions, or systems of influence, of corporate environmental commitment (e.g. market, science, social and political systems) shown in Figure 2.1 by presenting an overview of these influences within the specific context of the airline industry.
This table was compiled from various sources: Department for Transport (UK) (2003b); IATA (2003c; 2000a); pers. comm., IATA Representative, (3 July, 2002; 6 June, 2001); pers. comm., ICAO representative, (6 June, 2001); Transport & Environment & ICSA (2001); Penner et al., (1999). The content of the figure represents a brief summary of the information presented in the chapter regarding the scientific, market, social and political systems contained within the airline industry.

**Figure 3.4.** Four systems of influences of environmental commitment within the airline industry
3.9 Discussion

The purpose of exploring the current environmental tools being used in the airline industry is to reveal the drivers that external and industry bodies believe will encourage green behaviour from airlines. These drivers are an important part of determining the motivations for corporate greening within an airline. The influences on the environmental decision-making of airlines have been identified as a combination of pressure from the regulatory bodies (such as ICAO, airports authorities and the European Union), the need for increased efficiency in social trends, culture, influences of NGOs and state of the economy (pers. comm., Representative of IATA, 3 July, 2002; pers. comm., Representative of British Airways, 4 November, 2002). In Europe, threats of more stringent environmental regulations appear to be a concern of European-based airlines. It has been this threat, along with opportunities to decrease current spending levels, that have encouraged many European airlines to focus on environmental issues. The best motivator, explained the Executive Director of ATAG, is when you have both an environmental and an economic benefit because it becomes a win-win situation (pers. comm., 28 June, 2002). Airlines are now recognising the financial benefits that go along with environmental management. The IPCC report (Penner et al., 1999) on the environmental impacts of aviation discusses various tools that could be used including regulations, environmental levies, emissions trading and research programmes:

In practice, some of the improvements [in technology] are expected to take place for commercial reasons. The timing and scope of regulatory, economic and other options may affect the introduction of improvements and may affect demand for air transport (Penner et al., 1999:10).

In fact, it has been the economic conditions of the industry and the demand for transport since September 11 that have affected the timing and scope of environmental mechanisms in the industry.

From the point of view of the airlines, voluntary agreements – including contributing to the Kyoto Protocol on a voluntary basis – are the most preferable option since they maximise freedom (ATAG, 2002). The next preferred options are market-based mechanisms such as charges and taxes. Contributing to the discourse, Somerville (1999:7) of British Airways and the Executive Director of
ATAG (pers. comm., 28 June, 2002) both state that, although voluntary initiatives are the most obvious immediate preference for the aviation industry, it is unlikely that they will deliver on their own. Accordingly, airlines appear open to more stringent environmental standards as long as:

- there is a demonstrated scientific need;
- there is evidence of environmental benefit;
- they are economically reasonable;
- they do not distort competition and are equitable among regions (e.g. harmonisation at a global level);
- the revenue is recycled to meet the harm being controlled;
- there are staggered realisation times;
- there is equity amongst stakeholders (e.g. the burden must be shared amongst airports, airlines, and air traffic management providers); and
- no negative impact on safety and security.

(Somerville, 1999:7; ATAG, 2002:23; Penner et al., 1999)

When choosing the type of mechanism that should be used it is important to look at the desired outcome. Does the cost need to be internalised by the industry, for example, or is it necessary to reduce the overall pollution level? (Department for Transport (UK), 2003). Because of the increasing international nature of air transport, and the ‘free skies’ agreements that have been established in recent years, incentives for airlines to improve their environmental performance would be most effective on an international level so that the playing field can be level. This includes both market-based measures and regulatory incentives such as the environmental standards developed by the ICAO.

A representative of the Airports Council International (pers. comm., 18 June, 2001) argues that the only way to get airlines or airports to do something about the environment is to tell them that they can make or save money. Indeed, there is a clear trend in the industry at the moment, particularly in Europe, towards financial incentives such as carbon emissions trading, charges and taxes. A by-product of these financial incentives is a gain in competitive advantage for those
airlines who choose the technology that will allow them to reduce or avoid paying the charges and taxes. This competitive advantage, however, is not in terms of customers earned but in financial savings and gains. Airports are feeling increasingly pressured by local communities with respect to noise and air emissions and, to a lesser extent, the potential for hazardous waste (such as de-icing fluid) getting into stormwater run-off. These pressures and risks of liabilities are pushing airports into developing drivers for airlines to act ‘greener’. Because of the negative image that has developed of the airline industry as a transport ‘polluter’, being a good corporate citizen is also becoming increasingly important for airlines. These actions are aimed at accomplishing two things: (1) improving the image of the industry (in the eyes of the public, government bodies and NGOs); and (2), warding off future regulations, taxes or charges – neither of which is mutually exclusive of the other.

A number of important issues have been raised in the discussion on the role of markets, political structures, technology and social systems as influences in the environmental actions of airlines. However, these four elements reveal only part of the story. The internal nuances of corporate decision-making of environmental issues also need to be taken into consideration in order to determine the motivations of an individual company in the larger scheme of the industry.

Based on the literature review of corporate greening and the airline industry, preliminary interviews with airline management, and the researcher’s experience working in and researching the airline industry, a diagram was developed to illustrate some of the influences on an airline’s level of environmental commitment at the external, industry, internal and departmental levels of the airline (Figure 3.4). The use of this tool will be described in more detail in the next chapter on the study’s research approach (see section 4.5).

3.9 Conclusion

The aim of this chapter was to examine corporate greening within the airline industry in the context of the four systems of influences of corporate environmental commitment that were described in the Chapter 2: market, social, science and political. Clearly from discussions in this chapter there are considerable interdependencies between these systems. Three main
conclusions can be drawn from this investigation of environmental management in the airline industry:

1. **There is a strong push in the airline industry for political and social legitimation** to be a 'good corporate citizen' because of the negative image associated with the environmental impacts of air travel. This push is coming from airlines themselves but also from industry bodies such as the International Air Transportation Association and the Air Transport Action Group.

2. **The 'scientific' dimension of corporate environmental commitment plays a formative role in the airline industry** as airlines are, to a certain extent, bound by the available technology offered by aircraft and engine manufacturers. Furthermore, the scientific uncertainty surrounding the impact of air travel on climate change also is putting pressure on the industry to adopt the 'precautionary principle' in its management of the environmental impacts of aviation. As a reaction to this, and other pressures (outlined in Figure 3.4), governing bodies in the airline industry are using a mix of economic and regulatory instruments to encourage airlines to reduce their environmental impact.

3. Related to the above conclusion, **the airline industry is characterised by technocratic policymaking derived from interactions principally between the ‘political’ and ‘scientific’ systems in which it operates.** This is illustrated through such actions as the ICAO commissioning a report from the IPCC on the environmental impacts of the aviation sector, as well as through the global standards (SARPS) that have been developed in relation to aircraft air and noise emissions. Within this context, long-term policymaking is needed in order to suit the length of time an airline needs to renew its aircraft fleet (which can take as long as ten years from start to finish).

The current economic situation of the airline industry could be seen by the industry as either an ‘opportunity’ for airlines to manage resources more efficiently, or as a ‘threat’ in which operations, such as environmental departments, need to be streamlined for financial survival.
This next chapter describes the case study approach that was adopted in this thesis.
Chapter Four

Getting the goods out of industry:

the research approach

4.1 Introduction

In light of the literature that has been reviewed on corporate greening (Chapter Two) and the influences on the environmental commitment of the airline industry (Chapter Three), this chapter will describe the research approach used in the case study. This chapter has five sections. The first addresses the strategy adopted in the case study of SAS. The second section discusses data collection techniques, including strategies for identifying informants and the role of the interviewer, as well as ethical and cultural considerations. The third section discusses the use of an interactive tool as method of discussion in the interviews.1 Particular emphasis is placed in this chapter on the use of the discussion tool since it is not frequently discussed in the corporate greening literature. The fourth section provides the opportunity to situate the researcher with respect to the epistemological approach taken in this study. Lastly, the opportunities and constraints of this research approach are presented.

4.2 Using a case study approach

A case study is a research strategy as it can be carried out using a variety of methodological choices (Stake, 1998). A case study approach was suitable for this research because the question focused on a contemporary problem within a real-life context (Yin, 1984). An important advantage of case study research is

1 The section on the use of an interactive discussion tool has been published as Lynes, J. 2003, ‘Getting the goods out of industry: using interactive discussion tools as a form of strategic questioning when conducting interviews’, (refered paper) in the Proceedings from the Council of Australian University Tourism and Hospitality Education Conference, Coffs Harbour, NSW (Appendix A).
that it provides the opportunity to use a range of tools such as interviews, published and unpublished documents and archives to obtain ‘evidence’ in order to corroborate the findings (Yin, 1984:20). The case study approach was deemed the most appropriate strategy for this research because of the valuable information it can contribute to the development and enhancement of theory. However, there are also several disadvantages of the case study approach, including bias and difficulties establishing validity (e.g. Gummesson, 1991, Feagin, Orum & Sjoberg, 1991; Yin, 1984). A criticism of single case studies is their inability to establish external validity (Gummesson, 1991; Yin, 1984). External validity, is only necessary, however, if generalisations are to be made to the outcomes of the study (Yin, 1984). Stake (1998) emphasises that a study should be designed to optimise understanding of the case rather than ‘generalisation beyond’. A further aspect of validity is interpreting the data in a way in which the explanation accurately fits the description (Janesick, 1998). Wolcott (1990 in Janesick, 1998) posits that perhaps there is no ‘correct’ explanation in qualitative research, but different interpretations of the same phenomenon.

In the case study of SAS, several different sources of evidence including documents, interviews and historical data were used to increase the internal validity of the study (see Feagin et al, 1991; Yin, 1984). More specifically, SAS’s environmental and financial reports for the last seven years, internal documents and procedures on environmental management, interviews with external and internal airline officials, management and employees were used to create a picture of the how environmental decision-making in the airline has evolved. The findings of this single case study are not meant to be generalisable to all airlines, but instead they contribute to the broader theory of motivations for environmental commitment that could be applied to the airline industry or other sectors of similar nature (e.g. other forms of transportation such as cruise ships; the broader field of travel and tourism). For these reasons it was important that the methods of data collection be clearly articulated, the framework for eliciting information clearly described, and the analysis structured so that a similar case study might be applied in other situations to improve and refine understandings of a business’s motivations for working to improve its level of environmental commitment. The issue of bias in relation to the interviews will be addressed in a later section of this chapter.
The literature on qualitative analysis emphasises the importance of imposing cross-checks on the information obtained in the research process in order to draw on as many sources of data as possible and to verify the informants’ statements (Taylor & Bogdan, 1984). This was achieved in this study by using information from documents and reports (internal and external to SAS), interviewing managers of airline organisations and government agencies external to SAS, and by drawing on both the existing literature in this area as well as the author’s personal experience working and conducting research in the airline industry. Figure 4.1 illustrates the four main data collection approaches that were used to determine the motivations for SAS’s environmental commitment.
Aim:
To determine the influences and motivations on SAS’s level of environmental commitment

Secondary data

Literature Review
- Corporate Greening
- Green entrepreneurship and leadership
- Corporate drivers, motivations and influences

Documentation from industry and SAS
- SAS Environmental Reports
- SAS Annual Reports
- Internal publications on company and environmental policy at SAS
- Industry publications (ICAO, IATA, ATAG, ECAC, ACI)
- Reports of meetings with Scandinavian authorities and airlines

Primary data

Interviews
- Industry officials
- SAS Airline management and employees
- Other airlines (to get external view of SAS)
- Preliminary interviews

Personal experience working in the airline industry
- 5 years experience with a Canadian airline
- Informal discussions with airline employees and management and with airline officials

Figure 4.1. Sources of data collection for this thesis.
4.3 Paradigms and values

Currently, there is a movement in the social science field towards a research approach in which the values and subjectivity of the researcher are embraced, rather than suppressed (Guba, 1990). It is possible to be objective about what is being researched, but to pursue this objectivity from a value-oriented position (Williams, May & Wiggins, 1996). In other words – a researcher can acknowledge he or she brings certain values to the research but still tries to approach the question from an objective viewpoint. This notion can be traced back to the Kantian perspective on the creation of knowledge which recognises the investigator as someone who brings to the project their own interpretation and understanding of the world around them (Hamilton, 1994:63). In this context, the researcher has evolved from being a ‘disinterested scientist’ (Guba & Lincoln, 1994:115) to a human being who responds to participants and not only takes, but tries to give something back (Hamilton, 1994:67). As such, the research is being reflexively refined (Strauss & Corbin, 1998). Swedish investigator Evert Gummesson argues that it is important for researchers to account for their personal values since the more the researcher is aware of his/her own paradigm, the more valuable will be the contributions of the research (Gummesson, 1991).

I brought to this study my values as an environmentalist as well as the preconceived ideas I had about the airline industry from five years experience as a Flight Attendant and Inflight Director for a Canadian airline. During my time as an Inflight Director and Flight Attendant, I observed inefficiencies in catering, large amounts of wasted packaging and food that was thrown away at the end of flights, and a lack of options for onboard recycling. From a management perspective, I encountered, first hand, the difficulties in getting one’s voice (as a ‘frontline’ employee) heard by upper management and feeling removed from the decision-making processes of the airline. I also observed the strength of airline unions and their resistance to change when it came to adapting to new service concepts for the airline. From this experience, I developed insights into how decisions are made in airlines and the role of each department in the decision-making process. Strauss & Corbin (1998:167) argue that researchers are theoretically sensitised by their training, reading and research experience. While conducting this research I drew from these insights to understand how other airlines functioned. At the same time these insights provided me with a stepping-
stone into possible areas of the airline that needed to be examined in order to answer the larger research question.

**4.4 Interviews and Interviewing**

As a result of the volume of information that was available before the interviews were conducted (such as SAS’s comprehensive Environmental Reports dating back to 1995), a clear picture about the airline’s stated environmental goals and policies could be obtained. Maximising this ‘pre-understanding’ of the case study (see Gummesson, 1991) allowed the time spent interviewing informants to focus on investigating the motivations for SAS’s environmental commitment. To determine these motivations, the unwritten/written ideas and values of the company and the decision-making process of the airline were explored from the perspective of management and employees. Semi-structured open-ended interviewing was used to develop a greater understanding of the complexities of the motivations for environmental commitment than a more traditional structured interview or survey would be able to provide (e.g. see Fontana & Frey, 1994; Henderson, 1991; Taylor & Bogdan, 1984).

Prior to conducting the full series of interviews for this study, six preliminary interviews were carried out in June 2001 (see Table 4.1 for a more detailed description of the positions interviewed). The purpose of these initial interviews was to gather some background information about issues related to the topic and to seek out potential contacts for the more in-depth interviews. The initial interviews took place with two SAS managers (to see whether SAS would be an appropriate case study and to assess the airline’s willingness to be involved) and four senior managers from key airline industry organisations such as IATA, ICAO and Airport Council International. These preliminary interviews greatly assisted in focusing the questions for later interviews in order to get beyond the superficial information. Three other interviews were conducted with representatives of environmental departments from three other airlines to discuss their views on environmental issues within the industry. These airlines were chosen partly based on convenience (e.g. Qantas and Ansett) and partly based on the airline’s environmental leadership in the industry. Both British Airways and Qantas are two of only three airlines listed on the Dow Jones Sustainability Index (DJSI, 2004). After the preliminary interviews were completed (and following the events of September 11), the objectives of the
study were refocused and the research approach was modified to a single case study.

In June 2002, twenty-seven interviews were conducted over a four-week period with airline management and employees of SAS, with one SAS inflight catering supplier (LSG Sky Chef), and with airline and government officials related to the industry (Table 4.2). The majority of the interviews took place at SAS’s headquarters in Stockholm; however, interviews were also conducted in Copenhagen and Oslo (SAS) and in Geneva, Frankfurt and Montreal (with airline industry representatives external to SAS). A broad range of personnel were interviewed at SAS, from the Deputy Chief Executive Officer to flight attendants, along with industry officials from international and Scandinavian aviation authorities. A key part of the interview process was determining management and employees’ perception of what the external and internal influences were on environmental commitment. Although the focus of the data collection was related to the environmental management, policies and action of SAS, the goal was to interview SAS employees from varying levels within the company, and from a multitude of departments, including finance, environment, purchasing, marketing, engineering and inflight services. This allowed a more holistic perspective to be developed in relation to the environmental decision-making process of the airline. The interviews generally lasted between one and two hours and most were audio taped, except in four instances where permission to tape was not granted.

In each interview a set of questions was asked to obtain some historical information about the informant, such as how long they had been working for the airline and what other positions they held prior to their current job. These questions were asked in order to develop a framework of the informants’ ideas and values they were bringing to their job from past experience and education; it also served as a warm-up tool for the rest of the interview. The other questions asked in the interview varied depending on each informant’s position and the department in which they worked. The questions generally involved discussions about how they saw the flow of information through the company, how the decision-making process for the airline worked and how they saw relationships between departments with respect to environmental management and company policy-making.
### Table 4.1. List of informants for preliminary and background Interviews

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Position</th>
<th>Department</th>
<th>Date of Interview</th>
<th>Location of interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 International Air Transportation Association (IATA)</td>
<td>Relationship Director</td>
<td>Operations and Environment</td>
<td>June 6, 2001</td>
<td>Montreal</td>
</tr>
<tr>
<td>2 IATA</td>
<td>Manager</td>
<td>Inflight Service</td>
<td>June 18, 2001</td>
<td>Geneva Airport</td>
</tr>
<tr>
<td>3 Airports Council International (ACI)</td>
<td>Director, Aeropolitics</td>
<td>Environment and Regions</td>
<td>June 18, 2001</td>
<td>Geneva Airport</td>
</tr>
<tr>
<td>4 International Civil Aviation Organisation</td>
<td>Coordinator*</td>
<td>Air Transport and Environment Programmes*</td>
<td>June 6, 2001</td>
<td>Montreal</td>
</tr>
<tr>
<td>5 SAS</td>
<td>Environmental Advisor II</td>
<td>Environmental Department</td>
<td>July 7, 2001</td>
<td>Oslo</td>
</tr>
<tr>
<td>6 SAS</td>
<td>Environmental Director</td>
<td>Environmental Department</td>
<td>July 7, 2001</td>
<td>Oslo</td>
</tr>
<tr>
<td>7 (formerly) Ansett Australia</td>
<td>(former) Advisor</td>
<td>Environmental Department</td>
<td>August 12, 2002</td>
<td>Brisbane</td>
</tr>
<tr>
<td>8 Qantas</td>
<td>General Manager</td>
<td>Environmental Department</td>
<td>October 17, 2002</td>
<td>Sydney</td>
</tr>
<tr>
<td>9 British Airways</td>
<td>(former) Head</td>
<td>Sustainable Business Unit</td>
<td>November 4, 2002</td>
<td>Telephone interview</td>
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</table>
Table 4.2. List of informants for SAS data collection

<table>
<thead>
<tr>
<th>No.</th>
<th>Organization</th>
<th>Position</th>
<th>Department</th>
<th>Date of Interview</th>
<th>Location of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SAS</td>
<td>Environmental Advisor</td>
<td>Government and External Relations</td>
<td>June 10, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>2</td>
<td>SAS</td>
<td>Environmental Director</td>
<td>Environmental Department</td>
<td>June 10, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>3</td>
<td>SAS</td>
<td>Director</td>
<td>Corporate Purchasing</td>
<td>June 11, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>4</td>
<td>SAS</td>
<td>Environment, Health and Safety Coordinator</td>
<td>Cabin Operations</td>
<td>June 11, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>5</td>
<td>SAS</td>
<td>Vice-President Procurement</td>
<td>Corporate Purchasing</td>
<td>June 11, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>6</td>
<td>SAS</td>
<td>Director Aircraft &amp; Engine Analysis</td>
<td>Business System Division</td>
<td>June 11, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>7</td>
<td>SAS</td>
<td>Flight Standards &amp; Development</td>
<td>Operations Division</td>
<td>June 11, 2002</td>
<td>Stockholm</td>
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<tr>
<td>8</td>
<td>SAS</td>
<td>Vice-President</td>
<td>Inflight Services</td>
<td>June 12, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>9</td>
<td>SAS</td>
<td>Materials &amp; Processes Engineer</td>
<td>Material &amp; Methods</td>
<td>June 13, 2002</td>
<td>Stockholm</td>
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<tr>
<td>10</td>
<td>SAS</td>
<td>Senior Vice-President</td>
<td>Marketing and Product Management</td>
<td>June 14, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>11</td>
<td>SAS</td>
<td>Vice-President</td>
<td>Vice-President Corporate Communications</td>
<td>June 17, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>12</td>
<td>Luftsfartverket (LFV)</td>
<td>Head of Environmental Affairs</td>
<td>Aviation and Public Sector Department</td>
<td>June 17, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>13</td>
<td>SAS</td>
<td>Chief Financial Officer and Deputy CEO</td>
<td>SAS Group</td>
<td>June 18, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>14</td>
<td>SAS</td>
<td>Inflight Product Manager</td>
<td>Inflight Services</td>
<td>June 19, 2002</td>
<td>Stockholm</td>
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<td>15</td>
<td>SAS</td>
<td>Vice-President Corporate Finance</td>
<td>Investor Relations, SAS Group</td>
<td>June 19, 2002</td>
<td>Stockholm</td>
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<tr>
<td>16</td>
<td>SAS</td>
<td>Inflight Catering</td>
<td>Inflight Services</td>
<td>June 20, 2002</td>
<td>Stockholm</td>
</tr>
<tr>
<td>17</td>
<td>SAS</td>
<td>Contract Manager</td>
<td>Corporate Purchasing</td>
<td>June 20, 2002</td>
<td>Stockholm</td>
</tr>
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<td>18-23</td>
<td>SAS</td>
<td>Flight Attendant(s)</td>
<td>Cabin Operations</td>
<td>June 20, 2002</td>
<td>Stockholm</td>
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<tr>
<td>24</td>
<td>SAS</td>
<td>Environmental Coordinator Denmark</td>
<td>Environmental Department</td>
<td>June 27, 2002</td>
<td>Copenhagen</td>
</tr>
<tr>
<td>25</td>
<td>IATA</td>
<td>Executive Director</td>
<td>Air Transport Action Group</td>
<td>June 28, 2002</td>
<td>Geneva Airport</td>
</tr>
<tr>
<td>26</td>
<td>IATA</td>
<td>Relationship Director</td>
<td>Operations and Environment</td>
<td>July 3, 2002</td>
<td>Montreal</td>
</tr>
<tr>
<td>27</td>
<td>LSG Skychef</td>
<td>Environmental Manager</td>
<td>Catering</td>
<td>June 28, 2002</td>
<td>Frankfurt Airport</td>
</tr>
</tbody>
</table>
An interview guide was prepared for each informant to ensure that all issues were covered in the interview without the use of regimented questions (Appendix D). The results of several preliminary interviews, my knowledge of the airline industry and previous studies that I had conducted all contributed to the formulation of the interview guides (see Taylor & Bogdan, 1984; Lofland, 1971).

The first section of the interview guide consisted of a set of questions asked of each informant within the company about their role in SAS (e.g. their day-to-day responsibilities, who they report to and so on). The remainder of the interview guide revolved around three or four themes (which depended on the employment position of the informant). Each theme had a list of example questions and prompts that could be used, which acted as a guide to topics that needed to be covered in the interview. For the most part, the interview guide was used minimally in the interview and was referred to mainly as a checklist to ensure that I had not forgotten important questions.

4.4.1 Interview approach and content

Both qualitative and quantitative researchers advocate that for interviews it is effective to ask easy questions at the beginning of the interview as a type of warm-up, or ice-breaker, and then to delve into the more in-depth issues (Henderson, 1991; Fontana & Frey, 1994). This was particularly important for the interviews conducted in this study because of the distance involved. There was not an opportunity to establish rapport before the interview since the only contact with informants was via electronic correspondence prior to the interviews. These introductory questions, therefore, allowed the informant to comfortably move into a talking role in the interview. It was particularly important not to discuss environmental issues right away since many of the people being interviewed worked in areas that did not deal with environmental issues on a daily basis, and some were therefore apprehensive about discussing this topic (and also apprehensive that the interviewer would ‘attack’ them with questions regarding what they do for the environment). But once it was established that that was not the focus of the interview they became more relaxed and willing to speak (e.g. Taylor & Bogdan, 1984).

In some cases it was useful to act as if little was known about the issues being discussed, in order to get a more detailed explanation or description from the informant (see Henderson, 1991). However, in many instances, it was
necessary to do the reverse. Because each person could only be interviewed once (due to logistical and time constraints), it was important to get to the core issues early on in the interview. Thus, for several interviews – especially those of environmental professionals – it was necessary for the informant to demonstrate knowledge of SAS and the airline industry generally so that the discussion could move on to more detailed issues, rather than spend time having the informants describe the more superficial issues (such as how long SAS has had an environmental report, the organisational structure of the airline and so on).

4.4.2 Identifying and contacting interviewees

A schedule of informants was developed initially from contacts with industry members and from the preliminary interviews. A list of positions the researcher wanted to interview was given to SAS, and a list of people with contact details was supplied in return. In some respects, the researcher was bound by the decision of a third party deciding who should or could be interviewed at SAS. In some instances, certain names were removed from the list as a result of the restructuring that was occurring within SAS at the time of the study.

An initial contact list was established which consisted of twenty-two employees of SAS and the airline’s inflight caterer LSG Skychef. Of the twenty-two people contacted by electronic correspondence, seventeen initially agreed to be interviewed; however, three were unavailable at the time the interviews took place. A further three did not reply despite follow-up efforts to contact them. Once in Scandinavia, seven more interviews were organised after recommendations or suggestions from informants. These included four employees of SAS and three airline industry officials. The flight attendants interviewed were chosen from the crew room at Stockholm’s Arlanda airport. This selection was largely based on who was waiting in the crew room long enough between flights to be interviewed. Some of the crew members interviewed also worked part-time in the inflight office and thus it was easier to organise enough time for the interview. Senior management were very cooperative in the study, with the Chief Financial Officer/Deputy Chief Executive Officer and four Vice-Presidents agreeing to be interviewed. It is likely that even more senior management would have been available for interviews had the airline not been going through a major restructuring of its senior management
and operations at the time (this was something that had not been communicated to me when arrangements were made to visit). This restructuring process created some confusion as to whom to interview because top positions (and the people in them) were changing on a frequent basis during the time the interviews took place.

There was no particular order in which the management and employees were interviewed, with the exception of the researcher’s main contact, the Environmental Advisor, who was interviewed first. This was organised as such so that the protocol of how the interviews would take place could be discussed. The most senior management were interviewed towards the end of the series so that the information obtained from other interviews could be used to probe deeper into the ‘soul’ of the company. Also, time was quite limited with some of the top management, in particular the Deputy CEO, and thus it was very important that the core issues were addressed early on in the interview. The entire set of interviews had to be completed in approximately one month because of budgetary constraints.

It is suggested in the literature to interview until the same themes keep emerging and no new information is obtained, or until a full range of perspectives is covered (Henderson, 1991; Taylor & Bogdan, 1984). The focus in this case study was on the quality of the information obtained in order to develop insights into the research area (Henderson, 1991; Taylor & Bogdan, 1984; Lofland, 1971; Glaser & Strauss, 1967). It became apparent in the first half of the interviews that definite common themes were emerging. By the end of the interview process, limited new information was being obtained.

It was important to ensure that ethical considerations were considered and clearly discussed with the informants before commencing the interview. This included establishing informed consent, the informants’ right to privacy and the motives and intentions of the research (Fontana & Frey, 1994; Taylor & Bogdan, 1984; Lofland 1971). Initial contact for the interviews was made predominantly by e-mail informing the potential informant of the nature of the study, by the nature of the interview (e.g. length, type of information sought) and by asking the person if he/she would participate. If the person responded yes, an information package was sent to them prior to the interview. This consisted of an outline of the study and how the information would be used (Appendix D). A consent form was also included, which they were asked to review and then to have with them.
at the interview (Appendix D). Prior to commencing the interview, the informant was asked if there were any questions regarding the study or the consent form and if the interview could be audio-taped (explaining the reasons why it was preferred to record the interview). Once the consent form had been signed by both parties and all questions answered the interview commenced.

All recorded interviews were transcribed in full (see Lofland, 1971). For the interviews that were not recorded, in addition to the notes taken during the interview, extensive notes were also made immediately following the interview. To maintain a certain level of confidentiality, the informants were referred to in the analysis by their position and were not individually named. This is similar to the method used by Atkinson & Coleman (1989 in Holland, 1999:89,90) who identified their informants (most of whom were public officials and political appointees) by institutional affiliation and sometimes by rank in order to protect their identity.

4.4.3 Role of the interviewer

There is an increasing movement in qualitative research towards more ‘flexible’ and ‘human’ approaches to interviewing in order to evoke more intimate revelations and more honest opinions from the informant(s). The research tool here is not the interview schedule, but the interviewer (Fontana & Frey, 1994, see also Taylor & Bogdan, 1984; Daniel, 1983). During the interview process for this study, I brought with me both my values as an environmentalist and my understandings about inflight service and airlines as a result of working as a Flight Attendant for five years. Although I tried to maintain a value-neutral stance when asking questions, this set of pre-established values were sometimes used in the interview to challenge the person being interviewed and to ask their opinions in regards to my views. This resulted in dynamic and interesting discussions. In some cases the interviewer also tried to provide suggestions or information about initiatives of other airlines (or from personal experience in the industry) that might be of use to them. The following is one example of this informant-interviewer interaction with one of SAS’s Senior Vice-Presidents. This particular discussion was about the potential to revive an employee-incentive program that SAS used to have for suggestions regarding improving resource efficiency:
Interviewer: And what about any incentive programs for example. If I’m in maintenance and I come up with an idea that would save the company a million Kroner [A$200,000], what can I do?

Vice-President: They had a sort of suggestion box [where] you got a bonus based on the savings. We used to have that – and it earned us a lot of money, especially on the technical side…Now I really don’t know! I should make a note of that!…like a suggestion box thing.

Int: And when would you say that [program] stopped?

VP: It might have died by itself from a lack of proposals! I don’t know! But I really don’t know when it was stopped. Maybe it hasn’t been stopped. But I haven’t heard anything about it for years now.

Int: I know that in North America, for example, it’s very incentive- or reward-oriented culture so they have a lot of incentives program; especially in terms of environmental suggestions because it saves money as well. Maybe it’s a cultural thing, I don’t know whether it would work [here], maybe it’s not really in the Scandinavian nature.

VP: Yes, I think it is. Because we used to have it. They’ve done it [so well] in the beginning of the 90s and it seems to have disappeared and I really don’t know – perhaps we should revitalise it! No?...

Int: Well, yes. I think it’s always important for any employee at whatever level to feel that they can be heard.

VP: Yes, definitely so.

Int: And not just a suggestion box that gets looked at once a year or something but one they know will be taken seriously...

VP: And it creates a certain degree of involvement with…and a pride to a certain extent that you feel you contribute to the well-being of the company by coming up with suggestions.

The strategy of not only listening to what the informant is saying, but also giving something back to them through the informant’s own knowledge goes beyond the positivist notion of ‘mining’ information (Taylor & Bogdan, 1984).
4.4.4 Interviewing and culture

Understanding the culture and the associated language of the informants is a critical aspect of both interviewing and being able to properly interpret the results of the interview (Henderson, 1991; Fontana & Frey, 1994). Having worked in the airline industry for several years, I was familiar with the industry vocabulary including abbreviations, acronyms and industry-specific terminology. The more difficult task was being able to correctly interpret the Scandinavian culture. As I did not speak any of the three Scandinavian languages, the interviews were conducted in English. Most of the people that were interviewed had highly advanced levels of English so, for the most part, language was not an issue, although on a few occasions I had to assist the informants in finding a word. In doing so, it became apparent that, particularly in the Swedish language, there are many interesting and useful words to describe things for which an English equivalent does not exist.

In order to ensure that the interviewer’s behaviour during the interview was appropriate to the Scandinavian culture (so as not to make them feel uncomfortable or offend them unknowingly) some enquiries were undertaken into the local protocol and etiquette including how to introduce oneself, what type of attire to wear and punctuality (pers. comm., Desiree Lindberg, 10 February, 2002; pers. comm., Emily Olofsson, 15 May, 2002; pers. comm., Michael Chapman, 15 May, 2002;). I had visited Scandinavia on two occasions prior to conducting the main set of interviews. I was therefore able to build on this experience during the interviews. Scandinavians are very punctual and organised but at the same time their attire is quite casual and, although following the chain of hierarchy is important to them, people are treated more as equals amongst a group. The office of the Chief Financial Officer of SAS, for example, was not very much different from that of a middle management employee. All of the informants were well-prepared for the interview, with the information that had been sent to them printed out on their desk and the consent form signed or ready to be signed. For the most part Scandinavians are not interested in ‘small talk’ and tend to want to use their time effectively by getting right to the point. This made establishing rapport at the beginning of the interview a little bit challenging because they generally weren’t interested in ‘chatting’. Another
important aspect of the Scandinavian culture is that they take a very humble approach about their achievements. It is considered impolite to boast about one’s accomplishments. They tend to have a ‘tell it like it is’ approach to speaking and strongly believe in pointing out both the positive and negative aspects of the story. They also believe in being honest and up front which is an ideal setting for collecting data.

4.5 Discussion tool

A diagram was used during the interviews to evoke in-depth discussion about what the informant viewed as the influences on environmental commitment for SAS (Lynes, 2003). The diagram was developed from a combination of my own previous research in this area (Lynes, 1999), further reviews of the literature on corporate greening, airline industry reports and data collected from the preliminary interviews that were conducted in 2001. Its initial purpose was a tool (for myself) to understand the breadth of the influences on environmental commitment in the airline industry. However, as time went on, this diagram became an integral part of the interview process to generate discussion in the interviews of the SAS case study. The list of external, industry, internal and departmental influences was not meant to be an exhaustive inventory but rather an instrument to provoke discussion. The tool was seen as a way of getting the members of the industry to talk extensively about issues being researched (Figure 4.2).
### External Influences:

<table>
<thead>
<tr>
<th>Regulatory Structure</th>
<th>Social Trends</th>
<th>Technology</th>
<th>Events:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Regulatory Structure</td>
<td>• Consumer Behaviour</td>
<td>i.e. computers</td>
<td>• Manmade</td>
</tr>
<tr>
<td>Non-government organizations</td>
<td></td>
<td></td>
<td>• Natural</td>
</tr>
<tr>
<td>State of Economy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Trends in Organizational Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Trends in Environmental Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Leadership</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Industry Influences:

| • Industry trends i.e. low-fare airlines | • Industry leaders | • Manufacturers Available Technology | • Industry standards and regulations (i.e. ICAO) | • Airline organizations (i.e. IATA) |
| • Competition | | | | |
| • Industry agreements | | | | |
| • Airline events (i.e. safety incidents) | | | | |
| • Deregulation of the industry | | | | |

#### Internal Airline Influences - Management:

| • Requirements of suppliers/ clients | • Corporate Policy | • Financial Position | • Market Position |
| • Pressure from shareholders | | | |
| Corporate Culture | | | |
| Industry Agreements i.e. Star Alliance environmental pact | | | |

#### Internal Airline Influences - Departments:

| • Purchasing | • Catering | • Environment |
| • Financial Services | • Health and Safety | • Engineering/Maintenance |
| • Inflight operations | • Customer Relations/Communications | • Marketing |

Please feel free to write, draw, add, and delete as much as you like!

**Figure 4.2.** Interactive discussion tool
Sociological or ethnographic studies sometimes make use of certain props to act as a prompt for the informant, such as a diary, calendar, memorabilia or pictures to tell about experiences (Henderson, 1991; Taylor & Bogdan, 1984). Similarly, projection techniques or visual aids are widely used in psychological assessment (Patton, 1990) and in marketing research to capture the reaction of the informant. These tools can aid in eliciting thoughts and ideas that are difficult to articulate (Sekaran, 2000).

In this study, the purpose of using an interactive tool for discussion was not to make conclusions from the diagram itself, but to use it as a tool for enriched description and discussion in the interview. The diagram was presented to informants as an interactive tool that they were free to change, write on and mark the areas they felt were most relevant. The diagram was useful in overcoming some of the hurdles of semi-structured interviewing such as remaining focused on the issues being discussed and drawing information out of ‘non-talkers’.

4.5.1 Development of the interactive discussion tool

The diagram was designed to provide an overview of the external, industry and internal influences on the environmental commitment of an airline at various levels. It was decided that a diagram which was ‘less academic’ in nature (e.g. than Figure 2.1) would reduce the possibility of ‘rejection’ from the informant with regards to discussing the contents of the diagram. Influences were grouped together in a diagram in order to provoke more in-depth discussion. Because the interviews were being conducted in Scandinavia, it was also essential to get the information the first time because of the difficulty of making personal follow-up contact if more information or a second interview was required. The preliminary interviews revealed that industry officials were somewhat reluctant to speak beyond what was available by publication from the airline or airline organisation. The interactive discussion tool was developed as an attempt to target the subject material of the interview while still allowing flexibility for informants to extend or expand their own ideas.

The diagram was initially in colour to differentiate the various levels of influence, however pre-tests revealed that colour would discourage informants from writing on the diagram if it looked too ‘pretty’. Thus, the final version of the discussion
tool was kept quite simple and in ‘draft-like’ form to demonstrate that it was open for discussion and change.

4.5.2 Integrating the interactive discussion tool into the interview

At an appropriate time in the interview, the interviewer presented the informant with the diagram that outlined the factors influencing the environmental commitment of an airline. This diagram was presented to the informant as a draft model. The informants were asked to provide feedback on the model and to mark those elements that they felt were most influential on the environmental commitment of an airline. The informants were encouraged to write on the diagram as much as they wanted and to add or remove items from the list at will. The point at which the diagram was introduced differed from interview to interview and was based on the dynamics of the informant-interviewer relationship and the content being discussed. In some interviews, the issues in the diagram came up in the conversation unassisted. In those cases, the diagram was used to reinforce ideas that had already been discussed. In other interviews, where discussion was limited, the diagram was used as a prompt to stimulate further discussion and commentary on the part of the informant. Although the purpose of the diagram was explained to the informants, they were open to use the model as they wished to illustrate which factors they felt were most influential on environmental commitment. From the interviews in this study, six distinct informant personalities were identified: ‘The Minimalist’, ‘The Wanderer’, ‘The Storyteller’, ‘The Artist’, ‘The Scientist’ and ‘The Messenger’ (Table 4.3). The discussion tool provided the researcher with the opportunity to adapt to the differing characteristics of the informants (some of which were not mutually exclusive) in order to increase the quality and or quantity of information.
Table 4.3. Six types of informant ‘personalities’ and their management in the interview process.

<table>
<thead>
<tr>
<th>Type of informant personality</th>
<th>Characteristics</th>
<th>Action taken during interview (re: diagram)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimalist</td>
<td>The Minimalist tended to prefer ‘yes/no’ answers and was reluctant or unwilling to expand too much when asked a question. Responses provide limited information.</td>
<td>• Diagram introduced early on in the interview to entice the informant into further discussion.</td>
</tr>
<tr>
<td>Wanderer</td>
<td>The Wanderer liked to talk – unfortunately it generally wasn’t about the question being asked. The information may hold great value and be quite interesting but was not directly related to the topic of the interview.</td>
<td>• Diagram used early on in interview to maintain focus and direct informant’s attention back on track.</td>
</tr>
<tr>
<td>Artist</td>
<td>The Artist liked to use a pen and paper to reinforce discussion points. Valuable information was obtained by encouraging Artists to draw their own diagrams and pictures before introducing other diagrams.</td>
<td>• Informant encouraged to continue with his/her own visual interpretations • Gave ample time for informant to draw on diagram</td>
</tr>
<tr>
<td>Storyteller</td>
<td>The Storyteller liked to reinforce the points he/she was making with an anecdote or example. Although Storytellers have a tendency to be Wanderers as well, the stories often provided valuable information about the topic of discussion.</td>
<td>• Diagram often acted as a stimulus for stories and examples.</td>
</tr>
<tr>
<td>Scientist</td>
<td>The Scientists liked to take one step at a time and were quite methodical and precise when responding. They usually requested a few minutes to look over the diagram before discussing it in detail.</td>
<td>• Informant requested that diagram be explained in more detail • Gave informant a few minutes to look over diagram before responding</td>
</tr>
<tr>
<td>Messenger</td>
<td>The messenger had thought-provoking things to say, with many underlying ideas and messages which were often hard to catch in the interview itself. These ‘elusions’ became very relevant during analysis of the transcripts.</td>
<td>• Let them continue on their train of thought (to be deciphered later) • Introduce diagram towards end of interview to pinpoint ideas discussed</td>
</tr>
</tbody>
</table>
Although the results of the diagram were used in the analysis of the findings, they were used more as a tool to reinforce what was discussed in the interview itself rather than as a separate data source. In most cases, there was much discussion that revolved around each circle or discrete number, which is not apparent if the diagram is considered on its own. The interactive discussion tool was most useful when the interview was recorded so that an accurate record of the discussion surrounding the diagram (or other) could be kept. It was important to ensure that either the informant or I made verbal reference to parts of the diagram. The level of description needed was decided by conducting a series of pre-test interviews while making use of the visual tool. For example, in some interviews, the informant would point to a certain area of the diagram and I would then say aloud the area to which the informant had pointed so that there would be no confusion later on when the interview was transcribed and analysed.

It was found that the interactive discussion tool acted as a stimulus for conversation in the interview and in some cases up to half the interview revolved around discussion of the elements in the diagram. At the end of the interview several informants made positive comments about the diagram, illustrating that they too had been able to take something away from the interview. This can be exemplified by the comments made by an SAS Vice-President of Communications who at the end of the interview volunteered the following feedback from the interview:

I find your questions very interesting and very relevant. Some of them are very unusual also and I’m very happy you asked them because it puts things a little bit into perspective. So I am looking forward to seeing your paper at the end of this…analysis. I understand that you are really going into depth here which I find very very interesting…Yes, because I can see that [from] your questions that they are far less superficial than what I have been normally used to when I have participated in studies of this kind. This really goes to the heart of the problems and of the issues. So I find [it a] very interesting approach that you have chosen here.

The interactive discussion tool was found to be quite useful in instances when I wanted further clarification. For example, I could point to the diagram and say “Can you explain why you feel that there is a negative relationship between ‘x’ and ‘y’?” while providing the informant with a visual picture to think about. This
was especially helpful for informants who were more ‘visual thinkers’ and ‘Artists’. The diagram was also a great tool for refocusing the interview on the topic when the discussion started to get off track. The interactive discussion tool also worked well in interviews where the informant was less comfortable with the topic of discussion. For example, a middle-level manager who works in purchasing may not be used to dealing directly with environmental issues in his/her daily job. In these cases, the diagram provided an overview of the main issues that they could then discuss in more detail. Feedback from informants revealed that the diagram provided them with ideas about issues in a way that they had not previously considered.

It could be argued that interactive discussion tools that provide the informant with ‘lists’ or an overview of ideas could be seen as leading the informant into certain answers and, in this case, restricting the discussion to the items listed on the diagram. One technique that was used in the interviews to minimise ‘leading’ was to discuss the issues with the informant before showing them the diagram. For example, I would say “In your opinion, who or what do you really think has an influence on the environmental commitment of SAS?” Once this issue had been discussed for a few minutes, I would then pull out the diagram and say “and what about these? Which of these – if any – has an influence over the environmental commitment of the airline?” The amount of ‘pre-discussion’ varied from interview to interview depending on how much the informant was able to discuss the issue without the use of prompts. Other evidence that demonstrates the discussion went beyond what was on the diagram was that several informants pointed out influential factors that were not listed on the chart, or would say “but what about ‘x’? Where does that fit into your model?”

One aspect of the diagram that did not work as well was the use of lines and boxes to differentiate the various levels of influence on an airline. Informants were very reluctant to ‘cross the line’ (from one box to another) when discussing the relationship between the influential factors, and had to really be prompted to do so. A more certain method of getting the informants to draw relationships between influential factors was needed and was, perhaps, not encouraged enough on my part. This improved (with practice) towards the end of the series of interviews. Perhaps using the same diagram without the division of external, industry and internal influences would have aided in this ‘crossover’.
4.6 Discussion of analysis

The transcripts from the interviews were analysed by organising the information into major themes. It was felt that sufficient analysis of the data could be achieved through this method without the use of more formal coding tools such as NUD•IST or ATLAS/ti software. These themes were based on a combination of emerging patterns from the transcripts and concepts taken from existing theory. Strauss & Corbin (1998) advocate that the analysis of qualitative data is enhanced by the theoretical sensitivity of the researcher who, in effect, filters the various ‘voices’ from the actors in the interviews through constant comparison and theoretical questioning of the information. The influences on policy development discussed in Chapter Two (adapted from Renn (2001); Figure 2.1) were used as a framework for identifying themes for analysis in this study. Various sub-themes were then added under the larger headings of ‘markets’, ‘social systems’, ‘science’ and ‘political systems’.

It became apparent early on in the interview process that two key topics were consistently emerging when environmental decision making at SAS were discussed: one concerned the new inflight concept being developed by SAS (Scandinavian Direct), and the other was related to SAS’s decision to purchase ‘green’ (DAC) engines for its new aircraft. As the interviews progressed, the researcher tried to draw information from the informants on these two key decisions. These themes gradually evolved into ‘sub’ case studies of SAS, taking on a chapter of their own in this study. It was felt that these two decisions provided important evidence of the environmental motivations at SAS, which could then be compared with the findings from the literature and other information obtained in the interviews. The examination of these two decisions provides an important link between the airline’s corporate environmental policy, perceived motivations, and the actual outcomes of strategic management decisions. Few empirical studies consider the motivations cited by a firm in the context of specific decisions (for an example see Prakash, 2000). Figure 4.3 presents a simplified diagram of the cyclical nature of environmental management of a company, from initial influences to outcomes of its decision-making process. The shaded boxes represent the areas which are generally considered in studies concerning motivations for corporate greening, while the white boxes illustrate the extended approach being used in this study to identify motivations in relation to actual decision outcomes within SAS.
Opportunities and constraints

The interviews of airline management and employees revealed that the use of interactive discussion tools in an interview can be an effective method of obtaining information from industry by allowing the interviewer-informant to reach a deeper level of dialogue. The fact that English was a second language for most of the informants further contributed to the success of using the diagram to get the informants to discuss the various influences they thought were relevant.

While scientific quantitative studies often use technical reports in journals to disseminate the opportunities and constraints of the methods used, qualitative studies in the social sciences rarely provide this opportunity to learn from other researcher’s experiences.

For the most part, the interview process went smoothly and the informants were willing to share information. At times, SAS employees or management who did not have jobs related to the environment were at first sceptical of what kinds of questions would be asked and some assumed that they would be interrogated.
about their environmental activity. In retrospect, it would have been better in initial contact with informants to make the objectives of the interview clearer (e.g. that I was more interested in hearing about opinions and attitudes towards the airline’s decision-making process). Several informants commented at the end of the interview that they were glad they hadn’t been asked too many environmental questions. Henderson (1991) observes that a bad interview is the result of a bad interviewer. In one interview, the informant was quite defensive with respect to the environmental questions, and when the transcript was examined, it became apparent that I had been quite aggressive in my line of questioning and had launched into the environmental questions too early on in the interview. Because this was one of the earlier interviews I was able to correct my technique for future encounters.

A second problem that occurred twice in the data collection, was an informant bringing another SAS employee to the interview without my prior knowledge. When the interviewer arrived at the interview there were two people present instead of one and the informant seemed reluctant to be interviewed alone. This could be attributed, in part, to the first problem (of unclear communication of the role of environmental issues in the interview). In each case the interview was conducted with both employees present. In one case, the second person present had already been interviewed earlier on and contributed little additional information to the interview. In the second case, the original informant was quite dependent on his ‘assistant’ to fill in the gaps and confirm information. At the same time, some very useful information was obtained from having this second person present. In both cases it was decided that it was preferable to have both people present rather than not being able to continue because the informant did not feel comfortable being interviewed alone.

A further complication of the interviews that has been mentioned previously in this chapter was that, during the period of data collection, the company was going through restructuring of management at the senior level with, as mentioned before, several high-level positions changing during my four weeks in Sweden. This made it difficult to organise interviews, not only because people were changing positions but also because they were pre-occupied with these changes and the airline was in the media spotlight. Because of the geographical distance between interviewer and the informants, the interviews were planned long in advance and therefore the structural changes could not be anticipated.
Had these changes not taken place during this period, it is probable that more interviews with senior management would have been able to take place.

4.8 Conclusion

This chapter sought to describe the research approach, situate the researcher with respect to the research questions and critically discuss aspects of the methods used, including constraints and opportunities. The use of an interactive discussion tool can be quite valuable in getting industry to talk in-depth about the issues being researched. Secondly, it is a tool that allows the participants to think and talk about issues in their own way. Thirdly, it can be used as a ‘two-way street’ to communicate information to the participant (and, ultimately industry) while at the same time obtaining valuable feedback and rich information to the researcher.

In a post-positivist view, data collection is not simply mining information in sterile conditions where the interviewer has no relationship with the informant. It embodies the notion that the interviewer and informant have a relationship though which information is exchanged recursively. The informant is going through a thoughtful evaluation – learning and structuring the complexities of their role and how they fit into the larger picture. The research approach is reflexive and dynamic as the researcher is constantly evaluating the approach, adjusting and re-strategising to improve quality of information obtained.
Chapter Five

Seeing ‘green’ the Scandinavian way: examining what influences SAS’s environmental commitment (Analysis I)

SAS is in the process of positioning itself at the forefront of the environmental movement and the airline industry. This isn’t solely for idealistic reasons. We believe that companies which have an impact on the environment and ignore their responsibility will disappear from the market within a decade…A sound environmental profile is profitable. But it is more than that. It is our contribution to a sustainable society and to future generations (SAS, 1998c:2).

5.1 Introduction

This chapter is the first of two that examine the specific influences and motivations that contribute to SAS’s environmental commitment by bringing together the results of the interviews and from SAS published and internal documents. The first half of this chapter explores the development of the airline’s environmental commitment, from the early 1990s onward, with respect to policy, management and reporting. The second half of this chapter has been framed around the ‘four systems of influence’ of corporate environmental commitment that were established in Chapter Two (Figure 2.1). This diagram is expanded to include relationships between these systems of influences that emerged as drivers in the analysis of this study.

SAS does not pretend that their motives for environmental improvement are simply altruistic in nature. They clearly state in their environmental reports that what is driving them to strive for enhanced environmental performance is a combination of ethical principles, economic efficiencies, passenger interest, better company image, and liability concerns of banks and insurance companies, as well as the potential of gaining a competitive edge (SAS, 1995-2002). This section focuses on descriptions of the four main drivers and three catalysts for SAS’s environmental commitment.
5.2  The evolution of corporate greening at SAS

Environmental management at SAS had its origins in the late 1980s when a coordination group was formed within the company to start working on environmental issues. The group was formed largely as a response to the publicity surrounding the approvals to get a new runway built at the Stockholm-Arlanda airport (pers. comm., Director Aircraft & Engine Analysis, SAS, 11 June, 2002).

In 1989 SAS developed its first internal publication on the environment to be distributed to all management and employees of SAS. This publication was largely an educative tool to make SAS employees aware of the main environmental impacts of air travel and provided an outline of some of SAS’s environmental initiatives. The following year, a second internal publication was produced that outlined SAS’s first environmental policy (SAS, 1989; 1990; pers. comm., Director Aircraft and Engine Analysis, 11 June, 2002). Lars Bergvall, who was President of the airline at the time, was also a member of Greenpeace. The Director, Aircraft & Engine Analysis, recalls Bergvall as one of the first key players in the development of SAS’s environmental program:

[Bergvall] was quite conscious about environmental issues. He was also actually a Greenpeace member, however he was not an active Greenpeace member. He wasn’t out climbing chimneys!...But he said it is a very good way of learning about these other issues to get the information because you are a member (pers. comm., 11 June, 2002).

It was not until the mid-1990s, however, when environmental management really began to develop at SAS. In 1995 ‘the environment’ was elevated to a strategic level at SAS (SAS, 1996). The environment was no longer simply a term that was used in the company’s newsletters. It had become part of the overall policy-making structure for SAS, evident through the establishment of environmental visions and goals and a commitment to publish environmental reports on an annual basis (SAS, 1996). At the forefront of this strategic change was the then President and CEO, Jan Stenberg. Within the year, SAS became one of the forerunners in environmental management in the industry by publishing its first publicly available environmental report (SAS, 1996).
According to the current Environmental Coordinator, who has been employed with SAS for over twenty-five years, the environmental movement at the airline began in 1995 partly as a result of a combination of pressure from the Scandinavian culture, legislation and a few visionary people within the company; but it was largely due to increasing pressure from the media:

I think the company was in a period where it was necessary to make new strategies and policies all over and it was obvious at that time to make [an] environmental policy too. When the environment policy was developed, the next step was to found an organisation with a director and so on and it started out about that time [1994/1995]. In Scandinavia, the whole society was going into a period with making policies and founding environmental organisations in big companies. So it [was] part of the Scandinavian situation at that time.

Basically I think it was a little part of all the areas – authorities and culture in Scandinavia, pressures inside the company from few visionary people having environmental tools and some employees were focusing on that but mostly I think it was part of the time the time that this discussion in the headlines and so on. And I don’t know what came first, the egg or the hen, but I think it’s a combination because it’s similar in other companies. About that time big companies founded their [environmental] organisations and so on...when we look back now I would say that [the pressure] mostly [came from the] top down (pers. comm., 27 June, 2002).

In 1995, Stenberg appointed SAS’s first Environmental Director, Niels Eirik Nertun, who, since then, has been an influential player in the role that environmental management has taken in decision-making within SAS. Once in the position as Environmental Director, Nertun was able to justify the expense of developing environmental initiatives such as reporting mechanisms by arguing to upper management that competitors such as British Airways were reacting to environmental pressures and big (corporate) customers were demanding it.

“What is the value of a brand?” comments Nertun in a preliminary interview (pers. comm., 2 July, 2001). “How do you quantify the increase in business because of a positive environmental image?” He further reasoned that if the overall image of the company is improved because of SAS’s environmental image, then the cost of keeping that department is justified.
By sifting through SAS’s Environmental Reports from 1995 onwards the rapid evolution of SAS’s environmental programs becomes evident. Each year the Environmental Report becomes increasingly comprehensive and thorough in its impact measurements. Since 2001, however, the reports have taken a few ‘side steps’ (it is difficult to judge whether the moves are backwards or forwards, depending on how one considers the issues). For example, the 2001 Environmental Report was only available on the web, with a summary published in the Annual Report. More recent reports are also much less detailed than previous years’. These changes reflect the impacts of the economic recession the airline industry has been experiencing and the cutbacks that have ensued.

Despite the economic downturn of the industry in 2001, the present CEO Jorgen Lindegaard announced in the 2001 Environmental Report that SAS’s commitment to the environment would remain firm (SAS, 2001). Since then, however, the Environmental Department of SAS has faced cutbacks in economy and staff – albeit no more than other departments within the airline (pers. comm., Environmental Director, SAS, 10 June, 2002). This has resulted in a reduction of staff from four to two people working directly on environmental issues and a considerably smaller environmental report for 2002. Paradoxically, however, in 2001 SAS had its best-ever improvement in its environmental index due to the cost-saving measures that were implemented by the airline as a result of the “new market scenario that has emerged since 2001” (SAS, 2002:106), as well as increased efficiency in passenger loads through reduced flights.

Figure 5.1 shows a timeline of significant events in relation to corporate greening at SAS, including awards it has received for its environmental reports, changes in the company’s leadership and the evolution of its corporate environmental policies.
**Figure 5.1** Timeline of important events, achievements and leadership in relation to corporate greening at SAS, 1994-2002 (compiled by the author).
5.3 The meaning of greening for SAS: environmental strategies and policies

Safety. Punctuality. Service. These are the three primary goals of SAS that are engrained into every employee, from flight attendant to the CEO. They are stated at the beginning of many SAS publications and were mentioned numerous times in the interviews (e.g. pers. comm., Flight Attendant, SAS, 20 June, 2002; SAS, 2001a). It is interesting to note where SAS’s environmental goals fit with respect to these primary corporate ‘goals’. The first page of the 2000 Environmental Report outlines SAS’s overall goals. In this section, environmental goals come after safety, optimal punctuality, excellent personal service and “striving to maintain adequate profitability to meet the stockholders’ yield requirements and ensure that SAS is perceived as an attractive investment” (SAS, 2001a:1).

Although SAS records show that the first ‘environmental policy’ was developed in 1990 (SAS, 1990), it appears to have been abandoned until a revised ‘environmental strategy’ was established and published through the Environmental Report in 1995 (Box 5.1). This initial strategy describes broad goals and codes of conduct for decision-making at SAS.

<table>
<thead>
<tr>
<th>Box 5.1. SAS’s Environmental Strategy (1995)</th>
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<td>▪ Within the framework of SAS’s financial and qualitative goals, all operations shall be conducted so as to have the least possible environmental impact.</td>
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<tr>
<td>▪ Through a long-term program, SAS shall become one of the airline industry’s leading companies in the environmental sector.</td>
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<tr>
<td>▪ Environmental work shall be conducted at all levels and within all units of SAS, thus creating increased environmental awareness throughout the organisation.</td>
</tr>
<tr>
<td>▪ Environmental aspects shall be included in all material on which decisions are based</td>
</tr>
<tr>
<td>▪ SAS shall utilize or introduce methods which enable production with minimum environmental impact, characterised by low energy consumption, recycling potential, and minimal emissions.</td>
</tr>
<tr>
<td>▪ SAS shall account for its environmental work in a separate annual report</td>
</tr>
<tr>
<td>▪ SAS shall encourage external parties to understand the role and environmental impact of air transport</td>
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A series of environmental goals, also established that same year, have been revised over the years and expanded to include an 'eco-political vision' (SAS’s message to environmental policymakers), policy, overall and communication goals and strategy. Largely these environmental goals and policies involve:

- Desiring various forms of transport to be equally governed by the ‘polluter pays principle’;
- Achieving profitability while minimising environmental impact;
- Being a forerunner in the development of internal environmental standards;
- Harmonising production, financial and ‘qualitative’ goals;
- Communicating SAS’s environmental performance and promote stakeholder discussion;
- Increasing environmental awareness throughout the organisation by conducting environmental activities at all levels and in all decisions; and
- Utilising the methods that result in the lowest possible impact.


Every manager with decision-making authority and budget responsibility is required to include an environmental impact assessment in the decision making data, as stated in SAS’s environmental strategy (SAS, 2000a:32). The airline itself is not striving for ISO 14000 certification; instead, they have an integrated environmental management system in the total operations and management of the airline (TQM – Total Quality Management) (SAS, 2000a).

5.3.1 The internal corporate structure of environmental affairs at SAS

The management and employees of SAS who participated in the interviews were identified in Chapter Four. Figure 5.2 shows the structure of the

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1 Parts of the SAS Group (such as SAS Cargo and STS (Technical Services)) are working towards ISO14000 certification due to demand from corporate customers in these specific areas. The airline, however, is not currently working towards any specific environmental certification.
Environmental Department at SAS when the interviews were conducted in 2002. Besides the gradual addition of staff members (to a total of four in 2001 before a later reduction back to two the following year), the structure of the Environmental Department has not changed greatly from its inception in 1995.

Figure 5.2. The structure and organisation of environmental management at SAS (adapted from SAS 1998a)
The Environment Director reports to the Vice-President External Relations and Government Affairs, who, in turn, reports to the CEO.\(^2\) The responsibilities of the Environmental Director are to:

- Supervise the activities of the environmental department;
- Ensure environmental strategy is communicated throughout the company;
- Oversee production and publication of the Environmental Report;
- Direct the work of the Environmental Forum; and
- Coordinate SAS’s involvement in international environmental forums (pers. comm., Environmental Director, SAS, 10 June, 2002).

At its peak, the Environmental Department had an Environmental Co-ordinator and two Environmental Advisors (one responsible for putting together the environmental report and the other for external and government relations). Prior to the restructuring of SAS in 2002, National Co-ordinators also existed in each of SAS’s bases – Copenhagen, Oslo and Stockholm. Divisional co-ordinators carried out the same functions as the national co-ordinators, but at a divisional level. The positions of the National and Divisional Co-ordinators were only partly involved in environmental matters and held other responsibilities in addition to their environmental roles. The National and Divisional Co-ordinators formed part of an Environmental Forum that was chaired by the Environmental Director. The SAS Environmental Forum was a cross-divisional group that was organised both to ensure the integration of environmental work in the line organisation and to see that SAS met both internal and external requirements (SAS, 1999a:33; see also Figure 5.2). The forum would meet three or four times a year to discuss issues and learn about what other departments were working on in terms of environmental initiatives. The representatives who participated were able to bring suggestions or queries to the forum and also to communicate information to the rest of their department.

\(^2\) During the interviews the position of Vice-president Government & External Relations was being restructured and is now Senior Vice-President, Corporate Communications which is how he is referred to in the analysis chapters.
The Environmental Forum was being reconstructed at the time of the interviews as a result of the other restructuring that the SAS Group was undertaking in 2002. Since that time it has been reformed as an *Environmental Network*, which has expanded to include other members of the SAS Group including hotels, technical services and affiliated airlines. The group is now much broader in the issues it covers, with the aim of being able to manage environmental issues in the SAS Group consistently across the various companies.

### 5.4 Environmental initiatives at SAS

We have to protect our environment. Everyone knows that. But what is SAS doing to live up to the demands that customers and employees have the right to make? (Lars Bergvall, Chief Operating Officer, SAS, 1989:3).

Since 1995 SAS has implemented a variety of environmental initiatives, ranging from inflight recycling programs to the purchase of aircraft with low engine emissions. Since the focus of this chapter is on the *motivations* behind these initiatives, and not the initiatives themselves, detailed accounts of SAS’s environmental management will not be included in this section. Instead, a few of SAS’s more prominent environmental initiatives will be discussed including:

1. The annual Environmental Reports.
2. The environmental performance index developed by SAS.
3. SAS’s purchasing policy (and requirements of suppliers).
4. The online emissions calculator.

These initiatives were most relevant to the discussion on influences and motivations that will make up the second half of this chapter. Detailed information about the projects that have been a part of the SAS environmental strategy over the past decade can be found through SAS’s Environmental Reports (SAS, 1996a; 1997a; 1998a; 1999a; 2000a; 2001a; 2002a; 2003a).

#### 1. Environmental Reporting

Environmental reporting at SAS started the same year that environmental considerations were incorporated at the strategic decision-making level at SAS
in 1995. Alongside Lufthansa and British Airways, SAS was one of the first airlines to publish a separate environmental report and was also the first to have it externally audited and verified. SAS has recently released its ninth such report. SAS have used the Environmental Report as a tool to communicate their environmental performance, but also as a medium to voice their political views on how the government and industry organisations should ‘encourage’ environmental initiatives for airlines.

The reports provide a feeling of transparency with a balance of performance-based data, stories of initiatives and ‘environmental successes’ and extensive background of policies, initiatives and goals. Clearly, however, the reports are intended to fulfil a ‘promotional’ role, aimed at stakeholders such as aviation regulatory bodies, and, more recently, shareholders. Since 1995 the messages from the Environmental Reports have increasingly been integrated into the Annual Report. At first it was just a paragraph, then a few paragraphs, until the 2001 Annual Report, where a fifteen-page summary of the Environmental Report was included. The ‘personality’ of the financial and environmental report were quite dissimilar and obviously marketed to different audiences, although there was a common thread of financial viability in both (more on this in the second half of this chapter).

Since the inception of environmental reporting at SAS, it has won numerous awards for its work including:

• Best in Norway and Sweden (1995 Environmental Report);

• Best in Sweden (1997 Environmental Report); and

• Best in Sweden, Denmark and Norway (2000 Environmental Report);


In addition to reporting of SAS’s achievements, the environmental report also discusses the goals it did not meet, and why, as well as any infringements, incidents or legal disputes. This, the Environmental Director, maintains, helps to build SAS’s credibility (pers. comm., SAS, 7 July, 2002). SAS has identified that the purposes of the environmental reports are to improve the image of the industry in Scandinavia; to provide a way to voice opinions and to disseminate
information to regulatory authorities and policymakers; and as an educative tool for employees and management (SAS, 1997a; 1998a).

2. Environmental Index

SAS measures its annual ‘eco-efficiency’ using an index that was developed in 1998 by an employee of SAS as part of his Masters degree.

![Environmental Index: SAS](image)

**Figure 5.3.** Environmental index SAS, 1997-2001

With the base year being 1996, the index has evolved as a monitoring tool for SAS that allows the airline to follow up on its environmental performance from one year to the next. When an airline’s annual rate of growth exceeds what can be done through best available technology, the only way to show relative or continuous improvement is through an index (pers. comm., Environmental Director, SAS 7 July, 2001).

And I think the most important thing with the index – it’s not used for some benchmarks with some other airline companies. We couldn’t benchmark with Lufthansa on our index but we can present in a transparent and open way what we think are the important factors and if we are improving or not with SAS. That’s the main point, you see, continuous improvement. And I’m quite convinced that if the index is moving in the right way, also environmental impact that’s coming from SAS is going down (pers. comm., Environment and Health Coordinator, SAS, 10 June, 2002).

This type of index system was first used at SAS for determining performance of budgets and operations and has now been extended to environmental
performance. The Environmental Director claims that they have succeeded in reaching the goals of the environmental index and of putting it on the same level of importance as economics for the company (pers. comm., 7 July, 2001).

The reasons why SAS decided to create an environmental index are primarily as a result of outcomes of roundtable discussions on aviation with the non-government organisation Friends of the Earth and with other European airlines such as KLM and Lufthansa. The index is a way of showing that the airline is improving as well as being a tool for negotiation with the government (in relation to taxes and charges). It was also mentioned that pressure from shareholders was not a contributing factor (pers. comm., Environmental Director and Environmental Advisor, SAS, 7 July, 2001).

3. Purchasing Policy

SAS has a corporate policy that states the environment must be taken into account in every decision-making process. Managers now have an obligation to conduct an environmental assessment as part of their decision-making documentation (SAS, 1998). SAS also values strongly product stewardship programs and will only deal with suppliers who have environmental policies and management systems: “...because as an airline, with a certain profile, we cannot afford a scandal that would reflect on us if our suppliers [were] to behave badly” (pers. comm., Vice-President Corporate Purchasing, 11 June, 2002).

The airline thus requires its suppliers to meet certain environmental standards. As part of the Group Purchasing Policy, each supplier must sign a contract to this effect in both negotiation of new agreements and renegotiation of existing ones. In general, SAS demands that suppliers have an environmental policy and action program for environmental work and that they document environmental data for the goods and services SAS buys. In cabin operations the purchasing policy also states that suppliers, within the framework of cooperation with SAS, must start at least one environmental project and report on it every year (SAS, 2000:35; pers. comm., Senior Vice-President, SAS, 11 July, 2002; pers. comm., Manager, Corporate Purchasing, SAS, 11 July, 2002). The assessment of these questionnaires, however, appears quite subjective and there are no set evaluative criteria. Each supplier is judged on a case-by-case basis. One of SAS’s suppliers commented upon these requirements:
But when it comes to business I think [the environmental department] has to take into consideration the marketing and sales aspects of [the] business. And let's say, when we got the catering contract from them, two years ago, they sent us big questions – what we do in the field of environment and what our policy and program is and whatever. And to tell you the truth, once I had filled out this and sent it back to them, I haven't heard anything about it. So once the contract is signed, let's say, quality and price are the only things which are [important]. That's the experience I've had (pers. comm., Environmental Manager, LSG Sky Chefs, 28 June, 2002).

The SAS Purchasing Department contends, however, that it does occasionally inspect suppliers (pers. comm., Manager, Corporate Purchasing, SAS, 11 July, 2002). The lack of follow-up raises questions about the true effectiveness of the SAS-supplier agreements; however, analysis of this goes beyond the aim of this study. The relationship between SAS and its suppliers with respect to environmental management is relevant to determining the motivations behind the development and implementation of environmental policy at SAS. Appendix E provides an example of the questionnaire SAS gives its suppliers: it asks suppliers to provide information about their environmental activities, and shows how these responses are subsequently scored by SAS, as well as showing SAS's corporate purchasing policy.

4. Emissions Calculator

In 2001 the Director, Aircraft Fleet Development, identified that SAS’s corporate customers had become more environmentally conscious in the past five years and expects this concern to increase in the future. One of the reasons that corporate customers are interested in the environmental performance of SAS is so that they can meet their own reporting criteria, especially for those companies who have, or are seeking, ISO 14000 certification.

This emissions calculator is a tool driven by...our customers, actually, because SAS is their supplier, they need to be able to calculate how much do we contribute to the environment by using SAS as a carrier...And I mean, Lufthansa could do the same for their fleet and British Airways for their fleet. And this could be really great for NGOs, or to you and me as customers, if we would like to compare the different companies. So this is another thing...we are trying to create something
In response to this demand from SAS’s corporate customers, SAS developed the airline industry’s first online airline and destination-specific ‘Emissions Calculator’. Customers can now calculate how much CO$_2$ they ‘produce’ while travelling on a SAS flight (pers. comm., Environmental Advisor, SAS, 10 June, 2002).

In addition to the four initiatives described above, SAS has also been involved in prompting further study of the environmental impact of commercial air transport in relation to other forms of transport such as road and rail. To this effect, SAS commissioned a study (COWI, 2001) which evaluated and compared the environmental and economic costs of road, rail and air transport. SAS feels strongly that it is misrepresented in the transport sector in relation to the external costs it pays for environmental impact or air travel. Amongst other conclusions, the report determined that CO$_2$ emissions for an aircraft are in the same range as for a car with one or two people on each of the routes that was examined in Scandinavia (COWI, 2001). A report commissioned by the international Air Transport Action Group the following year cited that the most important study dealing with the external costs of aviation was the COWI study (Maibach & Schneider, 2002). The approach that was used in the COWI study was applied to the ATAG study in order to gain more generalisable information at a European level. The results of this second study showed that the findings for the COWI report also hold well at a European level and illustrate SAS’s environmental leadership and initiative.

5.5 SAS’s position on the corporate greening of airlines

“Once you realise how much exhaust we emit, you question SAS’s right to exist!” exclaims a former Chief Operating Officer in one of SAS’s first internal environmental publications (SAS, 1989:4). SAS is forthright in saying that it is very difficult to be a ‘green’ airline – because airlines in themselves are far from green (pers. comm., Environmental Director, SAS, 10 June, 2002). The most SAS can aim for is be greener than the others. One of SAS’s stated goals is to be an environmental leader in the industry (SAS, 2000a:35). SAS’s open and upfront management approach is reflected in their consideration of the
environmental issues, with the idea being that sharing information and being open about the environmental impacts of the industry will benefit everyone (pers. comm., Environmental Director, SAS, 10 June, 2002; SAS, 2001a; 1998a; 1997a; 1996). Consider, for example, this message from Nertun in SAS’s 2000 Environmental Report (SAS, 2001a) that focuses on the call for industry benchmarks:

We have...striven to find industry-wide performance indicators to facilitate comparison between airlines. And in the hope that others would follow our lead, we have openly disclosed our calculation methods. So far, no competitor has followed our example.

In spite of this, we are relentless in our efforts to encourage followers, especially among our partners in Star Alliance, because we are firmly convinced that many stakeholders in the market want the chance to compare the airlines’ environmental performance. We also believe the use of benchmarking to measure our performance against other leading airlines would be an effective stimulus (Environmental Director, SAS, 2001a:47).

There are other airlines such as British Airways, Lufthansa and Finnair that also benchmark their own performance; however, SAS is one of the few who benchmark themselves against other airlines. As the Environmental Advisor pointed out, SAS actually is the ‘worst of the best’ when comparing its aircraft CO₂ emissions against its competitors (pers. comm., SAS, 10 June, 2002). The explanation for this is that SAS has more short flights than these other airlines: these increase its CO₂ emissions per revenue passenger kilometre since the largest proportion of CO₂ is emitted on takeoff. When considered in this context, the message in the environmental report reinforces SAS’s openness in reporting its results (good or bad) and also its level of environmental commitment – beyond policy.

SAS has been quite vocal in Scandinavia and in the airline industry to express their views on the mechanisms that are being used in the industry and by government to ‘encourage’ airlines to reduce their environmental impact (pers. comm., Luftfartsverket, 17 June, 2002). The airline is a strong advocate of the polluter pays system as long as it is ‘fair’ across the various forms of transport, so that land, sea, rail and air transport each bear their own costs for both infrastructure and the environment. To this effect, one of the functions of SAS’s
environmental reports is an outlet to voice these opinions. Reports published from 1995-2002 contain several politically-oriented messages:

1. SAS is strongly in favour of increased benchmarking in the airline industry in order to create some ‘friendly competition’ and to encourage better environmental performance amongst the industry as a whole;

2. SAS recognises that there is a strong emphasis on the link between corporate greening and financial wealth – this is illustrated through such headings as “Economic Consequences for SAS” and “Environment and Economy”.

3. SAS believes that the airline industry in Scandinavia is being treated unjustly (in comparison with other modes of transport) with respect to bearing the external costs of its environmental impact.

4. SAS wants to be known as a leader who is breaking new ground in environmental reporting;

5. SAS is responding to stakeholders’ call for transparency in the environmental impact of airlines (or large companies in general);

6. SAS does not advocate charges and taxes as an effective means of improving industry environmental performance; and

7. SAS is in favour of increased environmental (regulations) if they are implemented on an international basis and not just within Scandinavian countries.


Behind these more overt messages, lie some other motivations that have been cited by SAS in the environmental reports as benefits or reporting, such as the need to demonstrate its leadership to a political audience; the need to improve its environmental image, to the need provide an internal educational tool for

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3 Juries of the prizes awarded for SAS’s 1995 Environmental Report commended SAS for attempting to ‘clarify as far as possible the effects of environmental work on the company’s financial results’. (SAS, 1997a:2)

4 Industry officials from LFV and IATA also made specific reference during the interviews to how the airline industry is treated as the ‘bad boy’ of the transportation sector.
employees; and the need to facilitate positive media relations (e.g. avert negative publicity if environmental accidents occur).

5.6 **Identifying ‘drivers’ and ‘catalysts’ for environmental commitment at SAS**

The previous section has examined the more concrete aspects of SAS’s environmental commitment that have been demonstrated through its written policies, reports and other measurable activities such as the environmental index, calculated on an annual basis. The purpose of this next section is to explore the reasons behind the use of these environmental management tools. The Vice-President of Corporate Communications at SAS provided an interesting overview of what he believed were the foundations for SAS’s level of environmental commitment. To set the context of the following conversation during the interview, he was explaining the way he interpreted the influences listed in the interactive discussion tool:

*Vice-President (VP):* I would say [these influences] are more *enablers*, the State of the Economy [for example] – of course it influences but it’s more esoteric, it’s more indirect, you can say. And that is why I am saying the environmental department, indirect, yes of course it’s indirect because it doesn’t help you *a lot* if you produce a very beautiful environmental report. Because it just describes how bad you are! But, it is an enabler to departments and to units, like catering, maintenance etc. to do something. But it’s *indirect* influence and not *direct* influence, that is why I put it – like the State of the Economy or the Political Leadership, it’s also *indirect* influences, so that is the way I am looking at it…And those I have not circled [on the diagram], they don’t mean anything.

*Interviewer:* Can I ask you a bit about the ones you’ve circled. Can you tell me, how you feel the regulatory structure has an influence [on SAS’s environmental commitment?]. For example, do you feel that regulations are really needed to push the companies to do more or do you think they will do more on their own without the regulations?

*VP:* Well, many answers to that question. Firstly, I think we cannot avoid regulation. It will always be there and that is what is creating framework conditions for our activities. Then, of course, we might avoid regulation if we take action ourselves but politicians have a tendency to always keep their fingers in everything so I think it is naive to believe that we can avoid
regulation on various environmental issues. It is simply necessary because, you know, this voluntary commitment and so on, it’s only a few actors on the market that actually do things by themselves and there are many that try to get away with it as long as possible. So I think it is a necessity, you cannot avoid it (pers. comm., 17 June, 2002).

In addition to the points the Vice-President made about regulations and the role of the Environmental Department, what is interesting is (1) how he differentiated between indirect and direct influences on SAS’s environmental commitment; and (2) that motivations can be seen on various levels such as the ‘enablers’ and ‘determinants’: This distinction is similar to the ‘drivers’ (determinants) and ‘catalysts’ (enablers) that were described as two aspects of motivations in Chapter Two.

The findings of this study revealed that four main themes emerged from the data in relation to SAS’s drivers for environmental commitment. These drivers can be defined with respect to the four systems of influence that were introduced at the end of Chapter Two:

1. **Market/Science systems**: financial cost-benefit.
2. **Political/Social systems**: legitimation (being a good corporate citizen).
3. **Social/Market systems**: creating a good airline image.
4. **Science/Political systems**: pressure from industry stakeholders.

These relationships are illustrated in Figure 5.4, which has been ‘expanded’ from Figure 2.1 to incorporate the findings in this case study. These findings will be described in this next section in the context of the four corners that have been added to the diagram.
Figure 5.4. Influences on corporate environmental commitment at SAS

Furthermore, three catalysts were identified as either indirect or direct contributors to these drivers:

1. Internal environmental leadership;
2. Scandinavian culture; and
3. (Positive) financial position of the airline.

Some of these issues were specifically referred to in SAS’s environmental reports, while others were often raised in the interviews, both by the informants themselves and during the dialogue that occurred with the use of the interactive discussion tool.
5.6.1 Drivers

1. Financial Cost-benefit

There is an intricate and complex relationship between environmental commitment and the financial incentives of corporate greening. Even the Deputy CEO (and former Chief Financial Officer) of SAS expressed several different ideas when asked about this relationship, including the importance of being a good corporate citizen, intuitively perceiving that it makes good business sense to bring the two together:

*Interviewer (Int):* ...with respect to your position as the Chief Financial Officer...the environment sometimes costs money and doesn’t always have a payback, so how do you justify that?

*Deputy CEO (D. CEO):* But my experience is that environmental efforts normally are also the good ones from a performance perspective. That has had a good influence on the business as such. I think the...corporate policy is the key – strong will – we want to be recognised as a company who takes care of the environment.

*Int:* Why is that so important to SAS?

*D. CEO:* What I’m saying is that is the most important factor. If we hadn’t pointed that direction out we wouldn’t have had such success as we have had. The Environmental Report which we have won several prizes for, is only mirroring the attitude – we want to be good in this area. Because it’s a matter of good attitude, it’s a matter of being good to the society. We have a dominant position in our home market. Even from an opportunistic point of view, we need to be recognised as a good citizen. So you can ask of course, if that wasn’t important, would we then after all still do it. And I think yes we would.

*Int:* Scandinavia is fairly regulated in terms of the environment, more so than other countries. Do you think that even without the regulations you would still have that same ‘determination’?

*D. CEO:* It’s hard to say, but I think yes, I think so. We want to be recognised as a good citizen...regardless of what we get paid for it. I mean we never know because it’s impossible to measure...There is something in the PR side of it – the good image aspect. The cost performance is not the driving force but I sense – I can’t prove it – but I sense from a logical common sense perspective that what is good for the environment is also paying off. If you spend less, it costs less.
If we do things in a way which makes people be more committed, more concerned about doing the right things, even from an environmental perspective, then it's probably also producing – well, spending less resources and costs and so forth. But we haven't, at least I haven't measured anything, I just sense that it's a good correlation.

Yet in his discussion just prior to being asked about whether he saw any financial benefits of environmental commitment, he also pointed out that SAS's shareholders are 'pretty much exactly the same as anybody else's shareholders – [financial] performance is key to all of them, of course' (pers. comm., 18 June, 2002). And later on in the interview he confessed his opposition to Stenberg's choice to invest in 'green' engines because he didn't see the financial payback of that particular decision. While certain elements of the discussion could be construed as 'greenwashing', at the same time the Deputy CEO demonstrated a clear understanding of the potential and actual financial benefits associated with environmental commitment. The Environmental Advisor of SAS also identified with this complexity and revealed that it was important to make the connection between financial benefits and costs clear when negotiating with the financial personnel within the airline:

It's really a challenge, I can say, because when I was working for the Environment Ministry it was very easy to look solely on the environmental effect...You have a kind of more naive approach to the industry...you [think] that you should bring them to that level and it should be no problem for them to do that. But now when I am in the industry myself – and in an industry that has a very bad image when it comes to the environment – then I start to realise that it's more complex situation...even though I told you that it's a bit the same kind of argument that I use for the finance department as I did at the Ministry. Now you have to be more realistic, in a way, that it's not all about the environment. Financial survival. You have so many things to consider, and the environment is just one part, even though it's a very important part, you have to be able to see that link to the other business [systems]. One of the first things is to try to connect the environmental work with the economic benefit...the image thing and then the marketing...a more realistic approach than naive, if you know what I mean.
A further example of this connection between environmental and financial considerations is demonstrated in SAS’s 1999 Annual Report and Environmental Report in which the message from SAS’s former CEO (Jan Stenberg) discusses the reasons behind the decision to purchase new long-haul aircraft:

**From SAS 1999 Annual Report**

More importantly, a decision was taken in December to invest in 10 Airbus A300-300s and A340-300s for our intercontinental aircraft. Deliveries begin in 2001 and will continue until 2004. This is more than just a replacement investment. It is also part of a conscious expansion strategy that is crucial to SAS’s continued development as a intercontinental airline. The idea is to take advantage of the excellent demand situation as regards our long-distance routes, particularly over the North Atlantic. The new aircraft greatly increase our capacity while cutting our costs per seat. From an environmental point of view the new aircraft represent a major, purposeful step forward...The overcrowding at Europe’s major airports has now rendered an increase in the number of routes virtually impossible. The only expansion option now open is to increase the size of the aircraft, which is why a decision was taken in February 2000 to invest in 12 Airbus 321-100s...(SAS, 2000b:4, emphasis added)

**From 1999 Environmental Report**

SAS has entered an intensive period with investments of over 30,000 MSEK. Over the next few years, we plan to procure a total of 110 aircraft and phase out around 90. Since flight operations account for the absolute bulk of SAS’s total environmental impact, these investments are crucial for our environmental performance. One important step was taken at the end of 1999 when SAS’s Board of Directors decided to procure ten new long-haul aircraft, an investment of around 10,000 MSEK...The new aircraft’s higher load factor reduces emissions per seat by 10-20% compared with the current Boeing 767. During negotiations with engine and aircraft manufacturers, SAS has ensured that the best available technology will be available on delivery. Thanks to lower NOx emissions, the aircraft can also be placed in a better charge category than the 767 in the Swedish charge system (SAS 2000b:5, emphasis added).

**Box 5.2. Excerpts from SAS’s 1999 Annual Report and 1999 Environmental Report**

These excerpts show the interconnectedness of financial and environmental decisions at SAS and how they influence each other. It embodies the point that the Deputy CEO made that environmental decisions just make good business sense, and perhaps the reverse is also true. In fact each environmental report
SAS produces has a section devoted to ‘Environment and Economy’. The Manager of Catering Agreements and Supplier Programmes for SAS further supports the importance of the relationship between environmental and economic benefits:

Over time [working with suppliers on environmental initiatives] also helps us to lower our costs…when a catering kitchen cuts its fixed costs by 10-20% it becomes more profitable, which can ultimately benefit us and the customers. There are no losers when it comes to environmental work (SAS, 2000a:24).

The introduction of new technologies that involve cleaner production and lower production costs with subsequent benefits for the airline’s image underpin the financial cost-benefits of environmental management. SAS management indicated interest in reducing its costs by employing energy and water saving techniques such as improving fuel efficiency and decreasing the amount of waste going to landfill. In SAS’s first Environmental Report (SAS, 1995) the airline stated that these types of projects were planned to be, for the most part, profitable within one to two years. Personnel and management, however, cited both the short-term and long-term paybacks of investing in environmental management and best available technology:

I don’t think it’s one motivating factor. It depends who you speak to, I think. Efficiency and costs – I would say that’s – to me - an important factor. The environmental work should hold a payback either in direct cost cuts or return in investment in the image or things like that. There should be a real value – it’s not just for the sake of the environment but also for the sake of the company. In the end I believe that if you have a good environmental policy and play by those rules you’ll end up saving money (pers. comm., Environment and Health Coordinator, SAS, 11 June, 2002).

Senior management indicated that environmental savings over the long term are important (pers. comm., Manager, Operations Standards and Development, SAS, 12 June, 2002). In addition to saving money, management at SAS believe that it can boost earnings by gaining and maintaining corporate customers who demand a certain level of environmental management. A negative environmental report from a human rights or environmental organisation can have an immediate effect on SAS’s bottom line – even if it is a result of
environmental negligence of one of SAS’s suppliers and not of the airline itself (SAS 2002b:105)

Airports, especially in Europe (e.g. Stockholm-Arlanda and Geneva) are increasingly using charges and taxes as a mechanism to reduce noise and fuel emissions. Significant savings can be made by avoiding these levies. Regulatory bodies such as the LFV indicate that charges and taxes are an effective way of getting airlines to use best-available technology (pers. comm., Head of Environmental Affairs, Luftfartsverket, 18 June, 2002). However, one senior manager at SAS is not so convinced that it leads to overall improvement in environmental performance since airlines use their ‘cleanest’ aircraft at airports with the charge and send the older aircraft elsewhere (pers. comm., Director, Aircraft & Engine Analysis, 11 June, 2002; SAS, 2002b:109). Nevertheless, it was one of the determining factors in the choice of aircraft for SAS’ fleet renewal. In fact, in 1995 the CEO of SAS decided to spend an extra 6 billion SEK (A$1 billion) on engines with low NO\textsubscript{x} emissions because of long-term savings in charges and taxes despite that these are likely to have a lower resale value (see also Chapter 6). The large range of charges and taxes that have been developed in Scandinavian countries have a significant effect on SAS’s income statement and balance sheet with charges and taxes adding up to 1 billion SEK (A$166 million) per year (see Appendix F for a detailed overview of the cost and savings of SAS’s environmental investments, charges and taxes between 1995 and 2002).

Competitive gains through first-mover advantage are another aspect of the financial cost-benefits that was discussed frequently in the Environmental Reports. Competitive advantage often brings with it other financial incentives stronger than that of eco-efficiencies to be environmentally ‘committed’. Chapter Three highlighted some of the environmental taxes and charges in place at airports in Scandinavia. These charges are predominantly aimed at reducing local environmental problems and encouraging airlines to use best available technology (SAS, 2002:109). As a result of these costs, SAS’s environmental initiatives need to go beyond realising eco-efficiencies through more effective management of resources if the airline is to stay competitive in its home market. Appendix F provides an overview of the various environmentally-related costs that have affected SAS’s balance sheet and incomes statement since environmental reporting began in 1995. Not all of the costs were available for
each year due to changes in reporting methods as well as changes in the charges and taxes themselves. Environmentally-related taxes, charges investments and costs represent up to one billion SEK. SAS reports these costs in three categories:

- Environmentally-related **earnings and/or cost reductions** (such as the money SAS saves on landing charges at Stockholm-Arlanda Airport as a result of using low-NOx aircraft);

- Environmentally-related **taxes and/or charges** (such as the charge SAS pays in Norway when recycling rates on aluminium cans are below 90%); and

- Environmentally-related **costs and investments** (such as the cost of producing the environmental report, salaries for staff in the environmental department and investments such as hushkitting engines on older aircraft to meet noise standards).

There is therefore a significant financial incentive to reduce the amount of these costs wherever possible. In the case of SAS, charges and taxes rely on market-forces to act as drivers towards improved environmental performance. SAS feel that environmental performance will have an increasing effect on costs, with the EU planning further environmental fees for commercial aviation traffic (SAS, 1999).

Because of the extent of the charges currently in place, SAS currently feels competitively disadvantaged against other airlines which are based outside of Scandinavia (and are therefore not subject to the same charges as Scandinavian airlines) (SAS, 2000a).

SAS urges the authorities and researchers in Scandinavia to study the current environmental charge systems for the airlines industry and evaluate whether they are valuable in terms of promoting a better environment. If not, we urge them to investigate the most effective way to achieve improved environmental conditions in the industry. We strive for an open and constructive dialogue (SAS, 1998a:46).
For example, new rules from 2003 in which airports can restrict access for certain aircraft types that do not meet the noise requirement “was a strong contributing factor to SAS Group’s investigation during the year of the possibility of hushkitting the MD-80 and finding new procedures for approach and departure in order to reduce noise levels” (SAS, 2003:111).

There were mixed views from SAS management as to whether there is a financial incentive to have sound environmental policies because of investor and shareholders demand. The Environmental Advisor (I) for SAS explained that investors are becoming increasingly environmentally and socially conscious and savvy (pers. comm., 10 June, 2002). This point is also cited in SAS’s 2001 Annual Report (SAS, 2002b:103). However, the Vice-President of Investor Relations said that there is not currently a demand in the equity market for companies with strong environmental management, although he added that it may be possible to generate that demand (pers., comm., 19 June, 2002).

*Vice-President, Investor Relations (VP):* I think the impact from the equity analysts [is an influence] because now the management meet regularly with equity analysts and investors and that means that they get influenced from their views and their demands and therefore it has a true impact on the way you run your business. And you also then need to be able to defend, and explain and sell your business and provide them with sufficient information, otherwise you will be penalised, you will not be able to reach your true value. The understanding, the strategic value, the very strong commitment from the management to put the focus on the shareholders and the different stakeholders on the shareholders side.

*Interviewer:* What about pressures from banks and financial institutions…do you see that at all in Europe?

*VP:* No. You see that more in the tobacco industry and so on but not in the airline industry, it is not that cautious, but…we expected that the investor focus should be much higher there [with respect to the environment]. And we have been very good at providing the market with environmental information, you know our Annual Report and so forth, which has been very much appreciated. But from traditional analysts, they are not into that area yet, to understand that that business and those parameters that are important and to analyse the environmental issues. But where you have seen a stronger trend is more with ethical issues.
Investor demand as a driver is explored further in the discussion on SAS as a ‘good corporate citizen’. From the discussion with the informants (both within and external to SAS), several categories emerged within the spectrum of the financial benefits associated with corporate greening:

- Direct and often immediate cost savings through eco-efficiencies;
- Investment in ‘green’ technology that will result in long-term savings;
- Operational changes aimed at minimising environmental taxes and charges; and
- Boosted earnings by maintaining ‘ethical’ credibility and avoiding costs incurred; by having a ‘bad’ environmental image or reputation
- First-mover advantages of being one of the environmental ‘leaders’ in the industry
- Improved productivity of employees through sense of ‘pride’
- Better investor relations could be a future selling point for the airline

The categories identified ranged from direct short-term benefits to long-term investments aimed at being a viable player in the current and emerging trends of environmental management. In other words, the financial gains of SAS’ environmental management are two-fold: money saved and money earned.

2. Legitimation: being a ‘Good Corporate Citizen’

The Product Manager for SAS’s Inflight Service stated that SAS wants be a good member of the society: “to be a good member you need to care – to care you need to take the environment into account”, because it is part of the Scandinavian mentality (pers. comm., 19 June, 2002). SAS informants indicated a desire to go beyond having an ‘image of a good corporate citizen’ to manipulating market demand and consumer awareness:

I think we could give [better] examples [of] our environmental behaviour and actually create true shareholder value. Sometimes it’s obvious because you can save costs by acting environmentally friendly. But then you have the more indirect [impacts] that you don’t [realise] can actually have an impact on your bottom line - [such as being] a good
environmental citizen. But I think we may be one of the best airlines on managing environmental issues. But we don’t sell that hard enough to the equity market. We don’t sell because they don’t demand. But we may be able to create a demand (pers. comm., Vice-President Corporate Finance, SAS, 22 June, 2002).

As an airline we’re polluting a lot, I mean we can’t really help it in order to get our business going! We have a big responsibility in reducing that. I think that’s definitely how it’s being communicated. But it somehow of course is very much related to our image as well (pers. comm., Manager, Product Management, Inflight, SAS, 19 June, 2002).

The Vice-President of Corporate Communications described SAS’s role in society as a ‘very esoteric term’ that is linked to marketing and also to branding. “It’s something that is very difficult to put your finger on – what is it actually?...It’s more of a measure of the perception of the company in society” (pers. comm., 17 June, 2002). SAS asserts in its 2001 Environmental Summary that there is a demand and expectation that large corporations should shoulder social and environmental responsibility as a result of deregulation and globalisation (SAS, 2002a:105).

Being a good corporate citizen includes several different sub-drivers such as embodying the ‘Scandinavian spirit’ and improving the image of the airline. There is mixed opinion, however, of what lies behind the façade of the altruistic gesture of being a good corporate citizen. Several informants felt that the environment has become an inherent part of the Scandinavian culture. One likened the environmental attitudes of Scandinavians to that of most developed countries towards wearing seatbelts in cars (pers. comm., Inflight Catering Product Manager, SAS, 22 June, 2002). Scandinavians want to keep their land clean and green and are well-educated with respect to environmental issues (pers. comm., Director, Corporate Purchasing, SAS, 11 June, 2002). Being a good corporate citizen also involves establishing a good image, which SAS representatives acknowledge. One vehicle for this is the environmental report, which has become an important part of SAS’ environmental work since its inception in 1995. SAS has used the report to send out a strong message about mechanisms that should be used by government and other stakeholders in the airline industry to combat environmental issues. This is seen through the opening and closing messages in the report by the CEO and the Environmental
Director of SAS. Airline reports strongly suggest that the industry is not being treated fairly with respect to other forms of transport (such as rail), which do not have to bear the full cost of their environmental impact. This is one of the reasons the focus of SAS has been to improve their environmental image – and that of the airline industry in general. One explanation for the gradual ‘harmonisation’ of the Environmental and Annual report could be a reflection of increased demands from shareholders for information on SAS’s environmental performance.

3. Creating a good image: ‘It’s Scandinavian’

Section 3.7 discussed the image that is associated with particular airlines that were known as the traditional flag carriers of a country. Before the liberalisation of the skies, this was not necessarily something the airline did explicitly, it just was. Today however, airlines are working hard at brand differentiation (Pilling, 2004). SAS is no exception and is trying hard to be reflective of the spirit that is ‘Scandinavian’. During the interviews for this study, and also in SAS environmental publications, the issue of ‘image’ was a frequent theme of discussion. SAS takes its image quite seriously and conducts market research to this respect on an annual basis. SAS argues that the perceived environmental impact of SAS as an airline (e.g. as seen by stakeholders) is worse than SAS’s actual performance. Improving its image is one area that SAS has worked on continually since the initial days of environmental management in 1995. In fact, the “enhancement of SAS’s environmental image so that it corresponds to the actual environmental data” was listed as one of SAS’s ‘priority areas’ in its 1998 Environmental Report (SAS, 1999a:12).

In 1995, SAS conducted a marketing survey in Scandinavia to see how people thought of SAS. Participants in the survey had to liken the airline to an animal they thought it best represented. The most frequent response was an elephant – which they described as big, slow-moving and doesn’t really notice where they put their feet. SAS has since endeavoured to be seen more like a cat – smart, fast and adaptive (pers. comm., Senior Vice-President, Vice-President Inflight Services, SAS, 14 June, 2002).

More recently, Marketing and Product Development conducted a passenger survey about in relation to its new market position: “Its Scandinavian”. SAS wanted to know how people interpret the word ‘Scandinavian’ in order to ‘brand’
the new position in terms of the way the airline treats and communicate with its customers, corporate identity and product development (such as the *Scandinavian Direct* concept that will be discussed in Chapter Six). The results of this survey showed that the core values for ‘Scandinavian’ were:

- Professional, reliable, progressive and caring.

Other words that were frequently associated with ‘Scandinavian’ were:

- Nobel prize, innovative, progressive;
- Model of modern welfare society, honest;
- Responsibility – environment and safety thinking; and
- Human values; quality of life (outdoors),

The Senior Vice-President of Marketing described that SAS is “trying to make the connection between ‘it’s Scandinavian’ and ‘SAS’, so it’s not just a name, or a logo, but it’s a lot of values in there” (pers. comm., SAS, 14 June, 2002). The marketing department contends that the associations that people make with the word Scandinavian are they way SAS would like to be seen as a company, and that the airline wants to ‘load’ into the brand “Its Scandinavian”.

The environmental work SAS carries out is also intended to help strengthen the SAS brand (SAS, 2002a:106,112). “A better environmental image creates greater scope for SAS to take action in issues related to development of the airline industry’s regulatory framework (SAS, 1999a:10). Management also believes that improvement in SAS’s environmental image index leads to improvement in the overall image of the company. The Environmental Director argues that this is also a selling point for the existence of the Environmental Department (pers. comm., Environmental Director, 7 July, 2001).
Each year SAS measures both the overall and environmental image of the airline (Figure 5.5). This is based on a Customer Satisfaction Index (CSI). When the environment moved up to a strategic level in 1995 the environmental image was not as strong as the overall image. But gradually over the years, SAS’ environmental image has helped boost the overall image of the airline (pers. comm., Environmental Advisor, SAS, 10 June, 2002).

Other reasons that SAS cites that it is important to maintain a positive image with respect to environmental commitment and performance are:

- Negative publicity as a result of a poor environmental report from human rights/environmental organisations can have dramatic and immediate effects on the company’s bottom line – even if it is a result of a supplier and not the company itself (SAS, 2002a:105; 2001a:9);
- A growing need in industry “for profiling through soft values such as environment ethical and social accountability” (SAS, 2001a:. 7); and
- As a tool for negotiation with government and NGOs (pers. comm., Environmental Advisor and Environmental Director, SAS, 7 July, 2002).

Figure 5.5. SAS’s Environmental and Image Index from 1996-2001

Each year SAS measures both the overall and environmental image of the airline (Figure 5.5). This is based on a Customer Satisfaction Index (CSI). When the environment moved up to a strategic level in 1995 the environmental image was not as strong as the overall image. But gradually over the years, SAS’ environmental image has helped boost the overall image of the airline (pers. comm., Environmental Advisor, SAS, 10 June, 2002).

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- A growing need in industry “for profiling through soft values such as environment ethical and social accountability” (SAS, 2001a:. 7); and
- As a tool for negotiation with government and NGOs (pers. comm., Environmental Advisor and Environmental Director, SAS, 7 July, 2002).
There are several motivations embedded in this quest for a positive environmental image such as boosting the overall image of the company, improving the ‘brand’ of SAS and living up to the spirit of the Scandinavian people.

4. **Pressures from Industry Stakeholders**

Clearly the regulatory environment has a direct and authoritative influence on SAS’s environmental management. Informants at SAS identified that regulations and standards are an essential part of environmental management (pers. comm., Environmental Advisor, SAS, 10 June, 2002; pers. comm., Director, Aircraft & Engine Analysis, 11 June, 2002). SAS also seeks to establish a leadership role in dialogues about the regulatory environment. Developing international environmental standards is increasingly on the industry agenda of the ICAO due to pressure from governments (particularly the EU) and scientific evidence of the environmental impacts of air travel from the IPCC Report (1999). At a national level, SAS seeks to work closely with the Swedish Aviation Authority, Luftfartsverket, in the development of environmental management and sees their credibility in environmental performance as being important to this relationship. Both the green environmental image of the airline and SAS’s development of tools and mechanisms (e.g. environmental index, environmental reports and a ‘green’ purchasing policy) have been important in establishing this credibility and thus a place at the negotiating table in the development of new regulatory directions (pers. comm., Environmental Advisor and Environmental Director, SAS, 7 July, 2001). The Director for SAS’s Aircraft & Engine Analysis discusses the role of the regulators in Scandinavia:

> Yes, we do get the most stringent requirements from regions and from airports and so on. And that's, I think, in a way also why maybe the European airlines are maybe being a bit more proactive in maybe improving our performance.

But then…

Charges are very popular in Europe! I think there is a belief among the regulators that charges work very nicely, that they are very effective. Personally, I have my doubts about that…We have not seen a very strong driver in a charge or tax changing our industry (pers. comm., 11 June, 2002).
Relationships between the airline, its suppliers and clients were important in SAS’ interest in pursuing more stringent environmental management. SAS informants indicated that they were starting to see demand from corporate clients who are trying to maintain or achieve some form of environmental certification such as ISO 14001 or the European EMAS (Eco Management Audit Scheme). And, while SAS have not yet experienced this pressure first hand, they are aware of the implications over the long term and are anticipating what corporate response might be appropriate:

No, we have not lost any clients but we have evidence that one of our Star [Alliance] partners lost one of their major contracts with a major Swedish international firm because of lack of environmental data…. [but] I don’t think it’s fair to say that our shareholders and owners are pressuring us (pers. comm., Environmental Director, SAS, 10 June, 2002).

In the airline’s 1998 Environmental Report, SAS commented that environmental performance of airlines will begin to affect costs more and more, particularly in Europe where the EU is planning further environmental fees for commercial aviation traffic in the near future. SAS also cited in its 2001 Environmental Report that emission limits such as those imposed at Stockholm’s Arlanda airport were an important consideration in the use of aircraft. In 2001, for example, by phasing in new aircraft, SAS reduced emissions-related charges by 15 million SEK (A$2.5 million) and had discounted landing fees (also because of lower emissions) in Sweden of just over 48 million SEK (A$8 million) (SAS, 2002a:112–113). Furthermore, from 2003 airports are able to restrict access for certain aircraft types that do not meet local noise requirements: “This was a strong contributing factor to SAS Group’s investigation during the year of the possibility of hushkitting the MD-80 and finding new procedures for approach and departure in order to reduce noise levels” (SAS, 2002b:111). These examples illustrate the relationship between SAS’s environmental performance and its financial performance and also strategic motivations to be proactive in dealing with anticipated changes in legislation.

It is anticipated that corporate customer demands will get more detailed in the future and that it may come to the point that big customers will not choose certain airlines because of their environmental performance (or lack thereof) (pers. comm., Vice-President, Inflight Services, SAS, 19 June, 2002; SAS,
The Director, Aircraft Fleet Development, identified that corporate
customers have become more environmentally conscious in the past five
years and expects this concern to continue to increase. These customers are
interested in the environmental performance of SAS in order to meet their own
reporting criteria, especially those companies who are seeking ISO 14000
certification. This transparency was also identified as being an important part of
avoiding more stringent government intervention as well as creating credibility
(e.g. in the eyes of NGOs, government and media), so if an environmental
incident were to occur, the political and financial repercussions may be less
intense. An example of can be found in SAS’s 2001 Environmental Report (SAS,
2002:108) which discussed allegations made against them in relation to an
environmental safety issue in which they were quickly able to provide media and
related parties with facts from environmental reports. This accountability, SAS
reported, made it easier to deal with inquiries related to their performance.

5.6.2 Catalysts

1. Environmental Leadership at SAS

Leadership within SAS was identified by the informants as an important part of
the corporate culture of the airline, which is why it is a focus of this section.
Numerous informants made specific mention of past presidents and Chief
Executive Officers (CEOs) of SAS. Long-time employees, in particular, referred
to distinct ‘eras’ at SAS based on these leadership styles.

The ‘charismatic’ Jan Carlzon was most frequently mentioned when discussing
the corporate culture of the airline and how it has changed over the years. Jan
Carlzon was the President and CEO of SAS from 1981 through to 1993 and was
responsible in his first year with the airline for turning a 120 million SEK (A$20
million) loss into a 270 million SEK (A$45 million) profit the following year
(Peters, 1987). It was Carlzon who first developed the concept of Business
Class service, which quickly filled a niche for the business traveller and was
largely responsible for the quick turnaround in positive returns on SAS’s
revenue. Carlzon has been described as the type of person who would just
show up at the maintenance hangar or in someone’s office to see how things
were going. “He was colourful and alive, he was very driving, a lot of ideas,
positive thinking” (pers. comm., Manager, Manager, Product Management,
Inflight, 19 June, 2002). “He was very charismatic and stimulated the organisation in many ways” (pers. comm., Deputy CEO, SAS, 18 June, 2002).

I think he was a more strategic person. He really defined SAS from being a technical and production-oriented [airline] to understanding that we are not flying aircraft – that we are actually flying passengers. And that changed the whole mentality, the whole focus, the way we organised it. That was revolutionary for the whole airline industry (pers. comm., Vice-President, Investor Relations, SAS, 18 June, 2002).

SAS employees who worked for the airline during the time of Jan Carlzon remember those years as the ‘golden years’ of SAS (pers. comm., Materials Process Engineer, SAS, 18 June, 2002). Carlzon became a management guru within Scandinavia and further afield through both his management style and the book he wrote on leadership, *Moments of Truth* (1987). He strongly believed in teamwork, a high level of customer service and in delegating decision-making to all levels of the company: “An individual without information cannot take responsibility; an individual who is given information cannot help but take responsibility” (Carlzon, 1987:xxi). Two years after Carlzon came to the airline, SAS was awarded *Airline of the Year* by the international *Air Transport World*. This era at SAS represented positive growth, new ideas, and serving the needs of the Scandinavian people.

After Carlzon left SAS in 1991, there was an interim CEO until Jan Stenberg was appointed in April 1994. There seemed to be no dispute amongst SAS employees that Stenberg was very different from Carlzon in his management style. He was described as “much more operative...more executive...he wanted to [make] the day-to-day decisions” (pers. comm., Vice-President, Investor Relations, 18 June, 2002); “invisible – you hardly ever saw him” (Manager, Inflight Services, June 2002), “a very strong, very strict man” (pers. comm., Deputy CEO, SAS, 18 June, 2002) but also very dedicated to environmental issues:
...Our former CEO, Jan Stenberg, he was very dedicated to environmental issues – he was that as a person – and therefore in 1995 he established environmental management at the very top level of SAS. And that same year, or the year after, [the Environmental Director] was appointed and environmental matters became a strategic issue for SAS. And that was driven by Jan Stenberg. So, that is very important, I think…and it is connected to what we started talking about, that you have to have a kind of fight all the time between the environment department and the financial competition and marketing because it’s about where to place the resources and what is important and [Stenberg] thought that it was very important (pers. comm., Environmental Advisor 1, 10 June, 2002).

The Vice-President, Procurement who has worked at SAS since 1990 also spoke of Stenberg as the foundation for SAS’s environmental strategies:

I believe [SAS’s environmental agenda] was driven, or at least heavily supported by our previous [CEO] Mr. Stenberg….because he was aware of the importance of this. He did very much and he implemented quality measures and criteria for that. I would say he was the driving force behind that (pers. comm., 11 June, 2002).

The airline industry was also going through quite a different time – post-Gulf War (one of only two negative growth times in the airline industry) – the booming economic growth of the eighties was over. During his time at SAS, Stenberg developed a reputation as a green leader and a strong supporter of environmental initiatives within the airline. Most of SAS’s environmental initiatives, such as annual reports and performance indices, took place while Stenberg was CEO of the SAS. Although his actions resembled those of numerous senior executives at that time (who were beginning to feel the pressure on business from the 1987 Brundtland Report), Stenberg’s beliefs in the importance of environmental commitment appear to have been quite sincere.

Stenberg left in 2001 and the current CEO, Jorgen Lindegaard, was appointed only months before September 11. At the time the interviews took place, no one would comment on the leadership of Lindegaard, saying that it was too soon to make a fair judgement with everything that had happened since he took over
from Stenberg in 2001 (such as economic downturn of the industry; September 11 and the Milan disaster\textsuperscript{5}). Those who had had the opportunity to interact with him describe him as a mix of Carlzon and Stenberg: serious, but strategically oriented.

The importance that the informants put on what it was like to work for SAS during the reign of the various CEOs illustrates the effect top management can have on the attitudes of the rest of the company. This purpose of this discussion on the CEOs of SAS was to emphasise the importance of leadership in a large company and the effect it can have on the attitude of every person in the company. This becomes particularly relevant when considering the concept of leadership with respect to the level of environmental commitment of the airline.

The President and CEO of an airline have a big influence on every part of the policy areas because they are [founding] and what is called giving words to the policies in different areas. In the reports, in the public—you know the media—in speeches, they are giving words to what we mean by environment (pers. comm. Environmental Coordinator, SAS, 27 June, 2002).

Besides the commitment of top management to the development of an environmental strategy at SAS, managers within the company were also noted by both informants internal and external to SAS as environmental champions. In particular, the Environmental Director and the Director of Aircraft & Engine Analysis were mentioned as being influential to the ‘success’ of weaving environmental criteria into decision-making at SAS. The two remaining members of the Environmental team at SAS both demonstrated a personal passion for the environment during the interviews. The Environmental Coordinator, in particular, said that he had tried to integrate his personal interest in environmental management into his position at SAS and thus his position in the airline has gradually evolved over the last twenty-five years to increasingly involve more and more environmental management of the airline:

\textsuperscript{5} In October 2001, just three weeks after September 11, SAS had its first major plane accident at the Milan Airport. The SAS plane crashed into a Cessna on the runway and then veered into a baggage handling building killing 110 passengers and crew and eight people on the ground.
[The Environmental Director] – have you met him? He’s around! He’s grabbing us, he’s giving speeches and stimulating [SAS’s activity] very much. He’s driving the reporting, he’s driving the follow-up, so we have acceptance of that (pers. comm., Vice-President, Procurement, SAS, 11 June, 2002).

A further example of enthusiasm that informants showed for the environment arose in the interview with the Contract Manager for SAS’s purchasing department (pers. comm., 20 June, 2002), who had used training money she had been allocated by SAS to pursue her environmental interests by taking a seminar about the Natural Step. She discussed this experience as an epiphany of environmental enlightenment. Her strong personal environmental convictions became evident during the course of the interview. This demonstrates that environmental culture is present at various management and personnel levels within SAS.

And I also think…today environment has reached top management as a steering parameter - which it wasn’t earlier - but today it’s one of the decision parameters - (pers. comm., Environment and Health Coordinator, SAS, 12 June, 2002).

I think it began slow but I think the curve is increasingly…steep. It’s like when you have a product offer, you have the early adapters and then you get the critical mass after the introduction period when it has been tested and verified this is the right thing to do and things like that. And that’s why I think it’s essential to find the key people – key person – who have the drive in order to be able to drive things like this forward (pers. comm., Senior Vice-President, Inflight Services, SAS, 12 June, 2002).

A further critical aspect of ensuring the success of environmental policy-making is the role of leadership that is projected both internally and externally within a company. In the case of SAS, it became clear during the interviews that several positive environmental decisions had been the result of a few ‘environmental visionaries’ leading the way and putting internal pressure on top management. In one particular case, it was, in fact, the CEO of the airline who vetoed the financial pragmatism of his fellow executives to purchase a new fleet of aircraft which were more expensive, but had superior environmental performance. Younger employees at SAS are also putting more emphasis on environmental issues in their day-to-day decisions, which are slowly ‘infiltrating’ the ways of the
airline (pers. comm., Environmental Director, SAS, 10 June, 2002) (more on this in Chapter 6). The role of the environmental champion is important not only within the airline but also amongst the industry in general. Airlines who lead the way in environmental management can act as role models, or examples, for other members of the industry. This is the case with SAS who just recently purchased one Spanish and two Nordic airlines with which they plan to employ the same environmental management systems as with the rest of the SAS Group.

2. Scandinavian culture

The earlier discussion on ‘image’ and being a good corporate citizen may be associated with a deeper set of values and beliefs embedded in Scandinavian culture about the importance of caring for the environment. This an important, yet indirect, influence on SAS’s pursuit of environmental commitment. "As a Scandinavian company," describes a former Chief Operating Officer for SAS, "we reflect the Scandinavian outlook on life. An outlook that's always been strongly connected with the environment. That's why it's rather natural for SAS to focus on the environment" (SAS, 1989:5). Frontline employees and senior executives alike strongly expressed the importance of culture as a driver of environmental stewardship:

I honestly think that it’s a wish of many people that we should be good. We should not pollute the world more than we [do] – but at least, if you talk to myself, that’s my driver. If I could contribute to reduce pollution of Sweden or Denmark or Norway, that would be really good. That’s my driver. …..in general in Scandinavia I think people are very aware of environmental issues. Like if you go to Greece or Italy, you know, on camping sites, you see litter all over the place. You never see that in Sweden. People really care (pers. comm., Materials Process Engineer, SAS, 18 June, 2002).

I think that this, I mean the society of the Scandinavian countries is probably…[even if] we believe it [not] to be true – we are simple, honest people. And from time to time we could be perceived a little bit naïve in the international interaction, I don’t know. But the upside of it is that we do things like that because we like to be that way, in a way, and I think that’s a driving force that's definitely being stimulated by corporate policies. Top management is pointing the direction “we shall be good citizens in the environmental area”. The Scandinavian culture, the spirit if you like,
appreciate having a company doing that. I think we would be hated [by the Scandinavian people], they wouldn’t fancy having a company like SAS behaving badly, not in the environmental sector, not in other sectors. And the airline is always a very public type of business, everybody has a view on it and everybody has tried it and everybody is a customer as well. So it is probably from that perspective, even more important compared to other types of business. But that is on the rational side of it, regardless of that it is a matter of doing what you believe is good for…the society (pers. comm., Deputy CEO SAS, 23 June, 2002).

Informants external to SAS had varying explanations for why the environment is so important to SAS. The Head of Environmental Affairs at Luftfartsverket believes that the 1972 Stockholm Conference also had a profound effect on the development of the ‘Scandinavian spirit’ towards the environment. Another influential factor [she] felt was the Swedish allemenstratt, or freedom to land that is felt strongly in Scandinavian culture. She also remarked that a few years ago Boeing said that, on a scale of one to ten, Scandinavian countries are a ‘twelve’ with respect to environmental commitment. The Executive Director of ATAG believes that it is not just about realities, it’s about the perception. SAS will be a big promoter of the environment because of the Scandinavian culture (pers. comm., 28 June, 2002). Culture plays a strong role in shaping SAS’s reaction to the environmental challenges that it faces within the airline industry.

3. Financial Position

The commitment that SAS can make to the environment is limited, to a certain extent by their financial position. For example, the Environmental Director explained that when SAS bought Braathens (a subsidiary airline of the SAS group which also has fairly new aircraft) SAS asked them why they bought the aircraft that did not have an engine that used best available environmental technology, Braathens answered that they could not afford to put in extra millions into the aircraft, which he added was ‘true enough’ since they had almost gone bankrupt the previous year (pers. comm., Environmental Director, SAS, 10 June 2002). The financial implications of environmental investment become then a double-edged sword. Improvements in resources and energy efficiency can reduce costs, but on the other hand, for the larger investments in best available technology the airline needs, in the first instance, to have access to that investment capital. The Vice-President of Investor Relations also remarked that, unfortunately, when the company is strongest (financially) is
when the airline can put the most resources into decision-making, while in times when the airline is 'under severe challenges' then everyone is too busy, and the time available that is allocated to environmental considerations is greatly reduced (pers. comm., Vice-President, Investor Relations, SAS, 19 June, 2002).

5.7 Role of SAS as ‘Motivator’

In addition to the discussion on what drives SAS’s environmental policies and decisions, the ways in which SAS acts as a motivator for other parts of the airline industry are also reflective of the airline’s overall commitment. While SAS sees environmental commitment as part of its competitive strategy, it also encourages open dialogue amongst industry members:

Yet we don’t view our strategies, programmes and successes in the industry as secrets. On the contrary, we hope that we can inspire as many of our competitors as possible to follow our example. That’s how we learn – by observing others. Environmental success must remain competitively neutral (SAS, 1998c:6).

Evidence of this openness can be seen through its detailed environmental reports, its openness in this study and its willingness to participate when other airlines were concerned about what might be revealed or that it would take too much effort in terms of staff and resources. The following example illustrates the influence of SAS’s openness to sharing information: when I was working for a Canadian airline I was sent over to SAS to discuss their environmental management ideas and philosophies. The Environmental Coordinator of SAS spent a full day with me, discussing present and future projects and providing advice on inflight waste issues (which was the focus of my visit). This is in contrast to another airline that I contacted, that would not allow me to bring any of the ideas we discussed back to my airline for reasons of ‘confidentiality’ and concerns about competition. Examples in SAS’s publications also provide evidence of working with suppliers to encourage the development of environmental management policies within these companies (pers. comm., Inflight Catering Manager, SAS, 20 June, 2002; SAS, 1998c; 2001c).
5.8 ‘Non-drivers’ and negative influences on SAS’s environmental commitment

In addition to the drivers that were identified in both the interviews and SAS’ environmental reports, several ‘non-drivers’ were also discussed. The list of non-drivers, or deterrents of environmental commitment, could in theory be infinite, in the sense that everything that isn’t explicitly stated as a driver thus becomes a ‘non-driver’. The terms are used here, however, to describe specific factors that were identified in the interviews as not being influential to SAS’s decisions regarding environmental issues.

1. External and Industry Events – The effects of September 11

With respect to SAS’s environmental commitment, the terrorist events of September 11, 2001 cannot be overlooked as an indirect catalyst to SAS’s behaviour in this area. Several short-term consequences of this sudden and dramatic downturn in air traffic became apparent. In October 2001, the SAS Management Team announced that a 12% reduction in costs had to be achieved company-wide (pers. comm., Environmental Director, SAS, 10 June, 2002). For the Environmental Department this initially resulted in a reduction in external communication such as brochures, advertising and the environmental report. The 2001 report, for example, was published only on the internet and was not distributed in hard copy as it had been in previous years (pers. comm., Environmental Advisor, SAS, 10 June, 2002). The Environmental Advisor positions were also eliminated when both employees chose to leave SAS voluntarily (and, subsequently, were not replaced), thus reducing the environmental team from four to two people (pers. comm., Environmental Director, 10 June, 2002 & 12 May, 2003).

However, because the 2001 Environmental Report was not published in hard copy, it was included in summary form in SAS’s Annual Report, thus giving it increased exposure to the financial community from in previous years. Despite the economic turbulence experienced in the airline industry as a result of September 11, in 2002 SAS had its best-ever environmental performance according to the rating of its overall environmental index (SAS, 2003a). A possible explanation for this in that the financial and operational cutbacks that were required increased the efficiency of resource use. For example, SAS
experienced higher passenger loads per aircraft because of reduced capacity (e.g. fewer planes operating) with 8% of its 200 aircraft being temporarily removed from the SAS fleet and services between SAS and affiliated airlines being amalgamated in order to reduce operating costs (SAS, 2002a). This meant that each passenger kilometre flown was more ‘efficient’ because there were fewer empty seats per aircraft (and thus lower fuel consumption for each revenue passenger kilometre (RPK)). The Environmental Manager of SAS’s caterer, Sky Chef, believes that the environment has dropped a level in importance in the airline industry since September 11 due to the need for airlines and airports to focus on safety and security (pers. comm., 26 June, 2002). The Head of Environmental Affairs at LFV seconded this feeling, stating that although the environment is not high on the agenda of airlines post-September 11, it still needs to be considered or else the Ministry of Transport in Sweden will get involved, saying that it was in SAS’s best interest to continue with that and be part of the dialogue (pers. comm., 17 June, 2002). It appears that an interesting dichotomy has developed between environmental performance and environmental commitment, illustrated by the positive effects airlines such as SAS have experienced in operational efficiency post September 11, even though SAS’s direct commitment is not as strong as it was prior to that event.

September 11 is just one example of how external events can effect the environmental decisions that are made in SAS. Another example is the outbreak of foot-and-mouth disease in the United Kingdom (UK). SAS reacted to this event by choosing to use disposable dishes for its inflight service on certain flights to the UK because Danish regulations required that waste from these flights be treated separately (SAS, 2002b:108). In this instance, external circumstances overrode SAS’s environmental policies. Chapter Six explores another example of how external events affected the internal decision-making of SAS post September 11 with respect to its inflight service.
2. Passenger Demands

Numerous factors are taken into consideration in consumers' decision-making about airline choice including price, availability, and then – all other things being equal – perhaps sustainability (pers. comm., Senior Vice-President, Marketing and Product Development, SAS, 12 June 2002).

[Passengers] want to pay ten Euros [A$18] less for the same link between two cities and they don’t care how environmentally-friendly the airline is...They just see the price...And that’s what all the marketing and sales departments tell us environmentalists...The basic problem is that passengers do not want to pay anything more for environmental efforts. They like it when they can fly with an environmentally-sound airline...but they don’t want to spend an additional Euro for any of these things. They take it for granted (pers. comm., Environmental Manager, LSG Sky Chefs, June 26, 2002).

The Senior Vice-President, Marketing and Product Development (pers. comm., 12 June, 2002) stated that he personally believed several years ago that passengers would begin to make demands on airlines with respect to the environment. This was also reflected in a 1998 SAS publication which stated that society’s growing awareness will increasingly influence the way customers select their form of transport. A sound environmental profile will help customers choose SAS, which will ultimately affect the bottom line (SAS, 1998c). However, despite the heightened awareness of environmental issues in Scandinavia, research shows that this is not one of their criteria in choosing an airline. One explanation is that there is a certain level of implied trust amongst Scandinavians that companies are ‘working on it’ (pers. comm., Senior Vice-President, Marketing and Product Development, SAS, 12 June, 2002).

3. ‘Green’ marketing

Unlike the ‘greenwashing’ that is taking place amongst some product and manufacturing sectors, SAS informants stated that it would not be appropriate to market themselves as a ‘green’ airline, because it would not be honest. Because of the amount of fossil fuels consumed by aircraft, airlines will never be really considered green, so, for the moment, they can only be considered greener. Furthermore, aside from large corporate customers there is presently not the demand for green airlines. The Vice-President of Investor Relations perceives,
however, that it may be possible to create that demand – at least amongst shareholders. That being said, there remains a tendency to market decisions as ‘environmental’ to the audience that reads the environmental report, as was illustrated through the excerpts shown earlier on in this chapter from SAS’s Annual and Environmental Reports that illustrated the different emphases placed on decision-making criteria.

4. Unions

Moreover, relationships with unions were thought to be a factor that inhibited the implementation of some environmental initiatives. SAS indicated that unions ‘were a challenge’ to changes in inflight waste management.

I’m sorry to say that we have evidence that we haven’t got the right environmental decisions because we couldn’t [convince] the unions to change the concept...the interaction between the company and the unions is very complicated. It’s not only money, it’s power, it’s used as a tool to gain some other benefits or to protect something that you have really got previous so I think it’s part of a gain (pers. comm., Environmental Director, 2 July, 2001).

All service changes must be negotiated with the unions, which are very strict on what tasks cabin crew can carry out during a flight (pers. comm., Manager, Corporate Purchasing, SAS, 11 June, 2002; pers. comm., Flight Attendant, SAS, 20 June, 2002). Internal ‘regulatory’ pressures can therefore have sometimes act as a deterrent to choosing the best option for environmental impact of the airline.

5.9 Summary & conclusion

As ‘Part I’ of two analysis chapters on the case study of SAS, the aim of this chapter was two-fold. Firstly, the chapter examined the evolution of SAS’s environmental commitment. Secondly, it investigated the influences and motivations that contributed to this commitment. From this discussion, four main drivers were identified: (1) financial cost-benefit; (2) image; (3) industry stakeholder pressures and (4) legitimation as a ‘good corporate citizen’. This chapter illustrated the interaction between the four systems of influence of market, science, political and social systems on corporate environmental commitment. Other relationships may be present, but were not specifically
identified in either the interview or documentation that was examined. Individual passenger demands for a ‘green’ airline, for example, were not identified by the informants as being influential. Three catalysts were also acknowledged as contributing to SAS’s level of environmental commitment: (1) internal leadership; (2) Scandinavian culture; (3) financial position of the airline.

In addition to the drivers and catalysts that were identified, three other conclusions can be drawn from this chapter:

1. **The motivations for corporate environmental commitment are the result of interaction between these four systems of influence:**

   - **Political/Social systems:** legitimation (being a good corporate citizen);
   - **Social/Market systems:** creating a good image;
   - **Market/Science systems:** financial cost-benefit; and
   - **Science/Political systems:** pressure from industry stakeholders.

   The influences these relationships have on an airline firm, such as SAS, can be further ‘pushed’ onto the corporate agenda by catalysts such as an internal environmental champion, culture and the financial position of the company. Embedded within the main drivers that have been identified, are several sub-drivers. The larger realm of ‘financial cost-benefit’, for instance, includes eco-efficiencies from efficient use of resources, better investor relations and long-term competitive advantage.

2. **The search for external social and political legitimation by SAS is quite strong.**

   This reinforces the finding in Chapter 3 that, in the broader context of the airline industry, social and political legitimation is an important motive for the current environmental activity of the industry.

3. **The presence of ‘win-win’ situations in SAS’s environmental decision-making.**
Informants at SAS, particularly senior managers such as the Deputy CEO, emphasised the financial ‘opportunities’ that environmental commitment presents in both the short and long term. Chapter 2 - sources

4. The role of Scandinavian culture as an influence on SAS’s environmental commitment.

Although internal culture of a firm such as ‘organisational culture’ and ‘corporate culture’ have been identified in the literature as influences on corporate environmental responsiveness (e.g. Annandale & Taplin, 2003; Bansal & Roth, 2000), the role of the external culture has not been explicitly stated as a driver in previous empirical studies. In the study of SAS, however, the role of Scandinavian culture was the most frequently cited influence amongst informants of SAS, from senior management to the frontline employees. This is similar to a finding in Fineman (1997:35)’s study on the social and political context of managers’ organisational lives in the car manufacturing industry. His findings showed that the managers from the Scandinavian car manufacturer contradicted those of other companies in the study (e.g. American and British companies).

One company in the sample was an exception. It had a long history of social responsibility…Such attitudes reflected the Scandinavian roots of the company where pro-environmental values flourished, echoed by the company’s shareholders.

Furthermore, with respect to the financial benefits that SAS informants associated with corporate greening, it could be argued that all of the drivers that SAS identified are, in some way, tied together by a common thread of ‘economic gain’ – either in the short, or long, term. A good image, for example, could lead to competitive advantage and even delay more stringent – and costly – regulatory action. It also illustrates the multi-layered and interactive nature of motivations for corporate greening. The next chapter in this study, ‘Part II’ of the analysis, takes the investigation of motivations within SAS one step further by examining the influences on two specific decisions within the airline.
Chapter Six

From motors to morsels: the ‘motivations’ behind two strategic decisions at SAS

(Analysis II)

Environmental decisions are an integral part of SAS’s operations. That means that all managers with budget responsibility are obligated to take environmental aspects into consideration when they make decisions. Environmental factors are thus taken into account in matters both great and small: everything from procurement of new aircraft to the design of new tableware for inflight meals… (SAS, 2001c:10).

6.1 Introduction

The previous chapter examined the environmental drivers and catalysts for SAS as perceived internally by airline management and employees, externally by industry bodies and as stated in SAS documents. This chapter takes the analysis one step further by investigating environmental commitment in two specific decisions at SAS. The first examines the decision to replace the airline’s ageing fleet of DC-9s, while the second investigates the decision-making process surrounding the recently introduced onboard service called Scandinavian Direct. The degree to which environmental considerations were taken into consideration within both decision-making processes will be analysed. This chapter builds upon the discussion and analysis of Chapter Five in the context of two ‘real-life’ decisions for the airline. An in-depth look at each situation reveals important information about the way in which the environment is taken into consideration and how the drivers behind the decision contribute towards the airlines’ environmental commitment.

What is interesting about the statement at the beginning of this chapter is the broad scale in which environmental aspects are identified as influencing airline management decision-making at SAS. Indeed, the two aspects of airline
management described within this statement sit at almost opposite ends of the decision-making spectrum.

The decision to purchase a new fleet of aircraft involves intricate and lengthy strategic planning as the aircraft will effect the airline’s future operations for up to three decades (Penner et al., 1999). While it is a major financial investment for the company, and comprises up to 90% of an airline’s environmental impact, it is a decision that the typical passenger thinks little about (SAS, 2001a). Except to the trained eye, an aircraft looks much the same as any other, as do the aircraft’s engines.

At the other end of the spectrum lies the decision to offer onboard service for passengers. The onboard service aspect of air travel is a highly visible element and becomes an important part of a passenger’s impression of the airline on which he/she is travelling. While this aspect of air travel makes a significant impression on passengers it constitutes only 5% of the airline’s total environmental impact (IATA, 2001b, Londquist, n.d.a.). Decisions to alter the inflight service an airline offers, while having long-term consequences, tend to be short-term and can be changed with relatively little notice.

6.2 Part I: the DAC engine decision

The decisions made in 1995 which will have the greatest effect on SAS’s environmental impact concern the development of SAS’s aircraft fleet – a total investment of 12-14 billion SEK [A$ 2-2.3 billion]. One key decision is to equip our new Boeing 737-600s with double annular combustion chambers. This step will ensure that they meet the stricter environmental requirements anticipated after the turn of the century (Stenberg, SAS, 1996a:3)

…I would say that we rank very very high on an international level in regards to how we care for the environment and in regards to how we consider the environment when we make major decisions. Because I have been involved myself, personally, in many of those processes, in those decision-making processes. And I know that this issue is always on the agenda. Especially when you take major decisions like what aircraft to buy, engines, what kind of engines to buy, specifications of engines and so on…(pers. comm., Vice-President Corporate Communications, SAS, 17 June, 2002).
Within an airline the decision to add or remove aircraft from a fleet is one of the most important to be made because of both the significant cost of replacement and the long term consequences that result from the choice of aircraft. An average fleet will last an airline between twenty-five and thirty-five years (Penner et al., 1999:10). Because decisions concerning the airline fleet represent a long-term investment that cannot be easily changed without considerable investment (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002), it represents a commitment to a particular future direction. Deciding on a new fleet is a decision that can take many years of negotiation and research.

Consideration of the long-term market expectations is key to the decision-making process. This consideration revolves around anticipating what the demands on the industry will be in five to ten years (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002). Fleet decisions made now will have consequences for how the airline will be able to operate in future markets. Predictions relating to the shape of the future marketplace, however, are not the only decision influences. The available technology also plays a significant role particularly over the issue of fuel efficiency, an issue that can be considered from both an economic and an environmental standpoint (IATA, 2001b:51).

In the short term the fuel efficiency of the airline is based on the type of fleet they have, in the long term, the available technology has a critical effect on the fuel efficiency performance of the airline industry as a whole (IATA, 2001b:51). The Director of Aircraft and Engine Analysis at SAS explained that every time he makes a presentation related to fleet renewal he emphasises that when the airline decides to replace ‘x’ number of airplanes then they have already decided on the airline’s environmental performance for the next ten or twenty years.

The rhetoric of the IPCC (Penner et al. 1999, p.10) states that the ‘dominant considerations within the aviation industry when assessing any new aircraft purchase or potential engineering or operational changes’ are “[s]afety of operation, operational and environmental performance…". The degree to which these considerations influence an airline’s decision-making process reveals important information regarding the motivations behind key strategic airline decisions.
6.2.1 Background of the decision

While SAS’s formal evaluation process for choosing the new aircraft to replace the aging fleet of DC-9s began in 1993, discussion surrounding the replacement of the DC-9s began in back in 1982. In all, it took more than ten years for the decision to come into fruition and several different evaluations to find a suitable replacement (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002). Most of the DC-9s were becoming quite old, with some dating back to the late 1960’s. While almost every department has input into the decision to renew the aircraft fleet the lead role in this decision is taken by the Fleet Development team at SAS.

The Fleet Development team, of which the Director of Aircraft and Engine Analysis plays an important role, makes decisions concerning the purchase of new aircraft by evaluating the available technology with regards to economics, general and environmental performance. This position also acts as a liaison between SAS and the manufacturers and is heavily involved in negotiations for leasing and purchasing aircraft. In relation to the issue of fleet replacement the Director of Aircraft and Engine Analysis outlines the reasoning behind the aircraft replacement decision:

[There are several] reasons why we want to change our fleet. It could be environmental reasons. As a matter of fact, we have changed our fleet. That is, we have replaced our planes for environmental reasons and that was primarily the Chapter III noise regulations that are now in effect in Europe and in [the] US and [in] Australia…And that caused us in ’95 to order newer airplanes to replace the older Chapter II airplanes (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002).

This decision saw airline management at SAS purchasing fifty-five B-737 aircraft. This decision was made in 1995, coincidentally the first year that SAS produced its Environmental Report. As stated by the Director of Aircraft and Engine Analysis one of the reasons for this decision was the development of new noise regulations at certain airports around the world. It was also influenced by the introduction of an emissions cap at Stockholm-Arlanda airport that had been created as a condition of a new runway being built. Up to that point, SAS

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1 There are two elements to this decision – the aircraft body and the engine; only the latter will be considered in this example of decision-making.
had paid the tax related to CO\textsubscript{2} but the Director of Aircraft and Engine Analysis at SAS felt that the emissions cap could become a potential problem (pers. comm., 11 June, 2002). If SAS, for example, had a fleet of planes that it could not fly into Stockholm (the airline’s main hub) because of poor aircraft environmental performance, then the financial implications of that decision could quickly become very serious. Operations could potentially be reduced, for instance, because the cap had been reached.

Fleet Development therefore took the position that they had to look for ways of improving SAS’s fleet performance such that they could demonstrate to the administrators that the airline’s NO\textsubscript{x} performance was ameliorating (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002). The next step was to evaluate potential aircraft with respect to noise and emissions and communicate SAS’s requirements for environmental performance to the manufacturing industry. The challenge was to create an optimal balance between the levels of noise, NO\textsubscript{x} and CO\textsubscript{2}. To meet the company’s requirements, SAS pushed the manufacturers into offering an engine with superior environmental performance:

So we challenged the airline manufacturers…actually we forced two manufacturers to offer stage combustors…the combustors had been developed as a research effort back in the 70s. So [the manufacturers] understood the technologies and techniques to reduce NO\textsubscript{x} but it had not been commercialised (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002).

This was also expressed in a report for LFV in which SAS reported that “We have noticed that the manufacturers have understood our message and in some cases offered further [technology]…(e.g. NO\textsubscript{x} reduction technology) that is not available in the market today” (SAS, 2002d:4). Since the B-737 had never been produced or sold with the dual combustor engine, technical hurdles had to be overcome before the manufacturer could finally offer the product to SAS. Two manufacturers could offer the Dual Annular Combustor (DAC) technology for the engines to fit the B-737, but at significant additional cost for the engine. This additional cost meant that investment in the low emission engines could not be justified solely based on the anticipated savings after the introduction of the NO\textsubscript{x} tax. This failure to justify the decision on economic grounds created uncertainty over whether an investment would be made for the improved technology. The
challenge was for the Fleet Development department to convince the SAS Management Team to spend the extra 5 million SEK (A$850,000) per aircraft for the dual combustor engine even though they would not provide economic benefits.

Similar to the process of purchasing a car, when an airline decides to purchase an aircraft it must also make decisions relating to the specifications of the design (e.g. whether air stairs are required, where the galleys should be in the cabin and so on). Each department has a list of desirable items they would like added to the plane and each must make a case or justify why they require these items. Decisions then need to be made as to which ones are going to be accepted and which rejected. In this case, SAS had a list of more than one hundred items 'desirable' items. Of these one hundred items, there were five which involved rather large costs (e.g. more than A$200,000 per aircraft). Although the decision on the type of aircraft that would replace the DC-9s had involved years of evaluation and negotiating with manufacturers, the specifications that were included in the purchase were decided at one meeting with the SAS Management Team.

But at the end of the day we had about five very costly items [that] we brought to the management team. So my boss at the time and I went to the management team meeting with this short list of five items – each of those items were in the order of [US] $200,000 (A$280,000) or more per airplane. That's quite a lot of money! And the Dual Annular Combustor was one of them. So, we suggested that we needed that [in relations to the] emissions cap and [said that] we know there will be more charges coming but we cannot say how many and how much and when. [Therefore] we need the fleet to improve performance-wise. We put that on the table and the upper management [read it]. And there was a majority saying 'no'; however our president [Stenberg] said yes! ...And he asked my boss and I how we would vote and he [the president] said yes and he overruled...because he thought personally that the environmental aspect of our industry would become more and more important. He realised that. He has been a supporter, he was a supporter at the time, a very strong supporter (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002).

The decision to purchase the DAC’s to reduce NOx was made. The two-stage combustor system on the new B-737 aircraft was designed to significantly lower NOx emissions. In fact the performance of the B-737s with DAC engines was
estimated at 40% lower NO\textsubscript{x} and 20% lower CO\textsubscript{2} than the DC-9s that they're replacing (ER, 1999, p. 8). SAS was the first airline to purchase the engines for the B-737, although Swissair had purchased them for use with the Airbus 320. For SAS, the total cost of the new aircraft fleet was 12 billion SEK (A$2 billion) with the DAC technology adding 5 million SEK (A$850,000) per aircraft for a total of 250 million SEK (A$42 million) (SAS 2000a). The purchase of the DAC represented a significant commitment to the future environmental improvement of the airline.

Stenberg later stated in the 1999 Environmental Report that the decision to purchase the Boeing 737's was “consistent with SAS’s policy to use best available environmental technology” (SAS, 2000a:5). More recently, in a report prepared for the LFV, SAS cites the strategy that the airline used in deciding on the appropriate aircraft was to look for the “best available combined noise and emissions reduction technology based on a long term objective of minimising possible limitations of usage of the equipment due to changes in environmental regulations...” (SAS, 2002d:4). The decision for this particular engine was based largely on the possibility of limitations of usage of the aircraft in the future.

While the decision followed SAS's environmental policy at the time, after speaking with top management who were involved in the process it became apparent that the final decision to purchase the DAC technology with the new aircraft was not carried out in the traditional consensus-based approach (pers. comm., Deputy CEO SAS, 15 June 2002; Vice-President Investor Relations, SAS, 17 June, 2002). The DAC decision would not have been made if Stenberg's personal belief in the importance of environmental commitment had not been as strong. The decision for a CEO to override the views of the rest of the management team is very unusual in the Scandinavian system as the Vice-President of Corporate Communications describes: “That’s part of the way we work. That’s why Scandinavians, or maybe in particular Swedes, are being considered as the ‘Japanese of Europe’ because we are believing very strongly in consensus decision-making” (pers. comm., Vice-President Corporate Communications, 17 June, 2002). The Deputy CEO was one of the members of the management team that was against the DAC decision.

_Deputy CEO (D CEO):_ Actually I have to admit, even if you’re taping this, I was against that [decision]...We have to admit that the idea was good, [but] the price for that was significant. And the tragic part of it is that when
we, for instance, [will sell] back these aircraft we will have to replace the environmental engines with normal engines because people don’t want them! So that product has not been – I don’t think we have gained too much on that one…I mean it was a straightforward decision – should we buy the normal engines or should we buy the ones with the – I think it was the double [annual combustors]…We decided to do that even if we weren’t all in agreement with it. Decisions have to be made anyway.

_Interviewer (Int):_ …In that case, you weren’t making the most economical decision?

_D. CEO:_ No, in that case it was different.

_Int: _But isn’t it hard to convince upper management in general if the dollar signs aren’t there?.

_D CEO:_ That’s why I doubted that decision.

_Int: _From your position as Chief Financial Officer?

_D CEO_: [Yes]…I didn’t believe that we were able to capitalise on the image. I think basically that many people were asking the question ‘why are they spending this amount of money, nobody else is doing that?’ …We were the forerunners for that…absolutely. That is one example that I didn’t see too much!

There are several ideas concerning motivations embedded in this conversation.

1 While environmental considerations are important, financial viability should take precedence

2 Second, the Deputy CEO believed that the green engines represented an environmental label meant to improve SAS’s image. An image which he didn’t feel the engines would could achieve.

3 Thirdly, he felt that the anticipated first-mover advantages did not pay off in this instance since no other airlines purchased the DAC B-737s and thus SAS is left to deal with the technical issues that need to be straightened out when new technology is introduced.

Figure 6.1 illustrates the relationships between the CEO, the management team and other senior management involved in the decision-making for the DAC
engines. The three environmental champions cited in this decision – the Environmental Director, the CEO and the Director of Aircraft & Engine Analysis - were key achieving the decision to purchase for the greener engine.

**Figure 6.1.** DAC engine decision-making.

During the interviews with SAS management and personnel, several people – some of whom had not been directly involved in the decision – brought up the topic of this purchase without being prompted. The Vice-President of Inflight Services, for instance, expressed that the DAC decision was an example that illustrated that SAS was willing to “walk the talk” (pers. comm., 12 June, 2002). This decision more than any other provided an example and a foundation for
senior managers to identify SAS as being committed to environmental performance improvements. To identify if this commitment was in fact the actual motivation for the engine decision it is necessary to analyse the motivations behind it.

6.2.2 Motivations for environmental commitment

As Figure 6.1 illustrates, the motivations for the DAC engine decision are based on a combination of external, industry and internal influences that include requirements of specific departments within SAS (e.g. maintenance, engineering, finance and environmental), market trends, manufacturers’ available technology and anticipated changes in legislation. Although there may be many decisions at SAS that involve some form of environmental consideration in the process, the motivations for the DAC decision were based primarily on environmental performance. Behind this main consideration lies several other motivations such as competitive advantage and financial benefits that would ensue as a result.

1. Uncertainty: interpretation of the regulatory environment

At the time the negotiations for new aircraft were taking place, the Swedish government imposed an emissions cap for Arlanda-Stockholm airport. Once the emissions cap was reached, airlines and the airport would have to reduce operations. The predominant reason that SAS considered the DAC engine was this cap and other anticipated changes in the regulatory environment in Scandinavia, particularly in Sweden. SAS was expecting that the level of NOx emissions in aircraft would become an increasingly important issue in Sweden and that they would need these engines to maintain operations at certain Swedish airports. SAS was therefore aiming to choose an aircraft/engine combination that would maximise the aircraft’s use in the long term. Figure 6.2 provides a summary of the introduction of various emissions-related taxes and charges that affected SAS and illustrates SAS’s fleet development decisions in the context of these market-based options.
LFV advocates that a good environmental standard has proved to be significant for the choice of aircraft/engine manufacturer’ (LFV, 2000). Furthermore, the Head of Environmental Affairs at LFV (pers. comm., 17 June, 2002) believes that airlines would make aircraft and engine decisions that resulted in fuel savings (and consequently in lower CO\textsubscript{2} emissions) on their own, but more incentives are required for other environmental impacts such as NO\textsubscript{x} emissions, since the financial motivations are otherwise not present. Within SAS’s anticipation of future emissions charges and other regulations is the notion of uncertainty. In this case, SAS decided to err on the side of caution and be proactive in its prediction of future requirements.

2. Financial benefits and competitive advantage

It appears that Stenberg, as well as the Fleet Development team at SAS, saw the potential for gaining a first-mover competitive advantage by using the DAC engines. Closely intertwined with competitive advantage were the financial benefits of the decision: “Even if we don’t believe that the Swedish emission-based charge system offers the greatest environmental gains, the new aircraft will lower SAS’s costs in Sweden” (Stenberg, SAS, 2000a:5). Meanwhile, the
Director of Aircraft and Engine Analysis states that he never tried to present the need for the DAC engines as an economical argument saying that it was not a decision to which he could attach ‘numbers’ (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002). So while there was not concrete evidence of financial benefits of the DAC decision, the CEO was using ‘professional intuition’ that the future financial savings would outweigh the initial investment (both through the tangible savings from the NO\textsubscript{x} charges and, conceivably, through increased credibility as a viable company).

The motivations behind this decision appear to be unique in the sense that short-term eco-efficiencies were clearly not the driving force in this decision. The decision was based on a view of long-term investment with both environmental and, to a certain extent, financial benefits. The financial benefits were, at the time, immeasurable because they involved long-term competitive viability, boosting image and forecasting the extent of future emission charges. The reason why this was done in this instance appears to be a result of a few dedicated people in SAS who saw the importance of environmental performance as an integral part of good business decision-making.

6.2.3 Motivators: The presence of ‘environmental champions’

From the interviews with various stakeholders in this case, it became apparent that two people in SAS played a key role in the decision: the Director, Aircraft and Engine Analysis, and Stenberg, the CEO of SAS at the time of the decision. Their roles as ‘environmental champions’ pushed the airline to take on environmental considerations that went beyond SAS’s corporate environmental policy. Evidence of this is present through the referral of several people at various levels, both internal and external to SAS, with respect to their leadership in this area (pers. comm., Environmental Advisor, SAS, 10 June, 2002; pers. comm., IATA representative 6 June, 2001; pers. comm., Director, Aircraft and Engine Analysis, SAS, 11 June, 2002). For example:

I think it has to do with that there has been [some] people with a good knowledge and a personal interest into the environmental part and exploring and be able to explain it – why – that is the key. When [a/the] company change[d] direction – not changed direction but put out a new direction – it has to be built on knowledge, in a way, and then the way of creating such knowledge is often driven by a number of people who have had the…energy and the competence in order to drive these questions
forward. And I think in SAS there have been a few people who have been successfully. Rightfully successful (pers. comm., Vice-President Inflight Services, SAS, 12 June, 2002).

The Director, Aircraft and Engine Analysis started with SAS in 1978 and worked in a few different positions before being appointed to his current position in 1982. In the mid-1980s he became the representative for SAS at IATA’s Environmental Task Force group (ENTAF) and became increasingly involved in this working group because there was, at that point, no organisation within SAS. He then became involved more and more in environmental issues within SAS when, in the late 1980s, there was much attention being drawn to the proposal to build a new runway at Stockholm-Arlanda airport. His position gradually grew to have more and more involvement in assessing the environmental performance of aircraft. He has also represented IATA at ICAO subgroups in CAEP, such as the Forecasting and Economics Subgroup, which evaluates the options and economic benefits in terms of engine emissions. The Director seems to have the abilities of a green intrapreneur as described by Andersson & Bateman (2000) to 'identify, package and sell' environmental ideas:

So I, of course, then put the requirements on the table when we have discussions about new aircraft, new engines and so on. These are the requirements we need to improve the noise characteristics of this engine, this airplane, emissions characteristics…I try to drive the development of the aircraft performance related to environment through my other work, but also then knowing what the pressure is from the public and…from our customers…(pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002).

The Environmental Advisor (I) for SAS described the Director of Aircraft and Engine Analysis as someone who makes a ‘really great contribution’ to SAS’s environmental performance:

It’s a big decision to buy an airplane and it takes several years to negotiate a contract with Boeing and also with the engine producers like Rolls Royce. Over 40 years we have halved our fuel consumption and also the emissions of carbon dioxides. And it’s the same with the noise – it has diminished by 90%. And this is thanks very much to the [Director’s] negotiations because he put pressure on the producers. We need to have more fuel-efficient engines and aircraft from an economic perspective and from an environment perspective. And it’s very much thanks to him. And thanks to Jan Sternberg,
[he] has been given the kind of mandate to negotiate our Boeing 737 fleet to buy these engines with dual annual combustors (pers. comm., Environmental Advisor I, SAS, 10 June, 2002).

Members of the airline industry external to SAS also referred to the dedication and technical knowledge of the Director in the area of environmental performance of aircraft (pers. comm., IATA representative, 6 June, 2001; pers. comm., Head of Environmental Affairs, LFV, 17 June, 2002).

Stenberg’s background will not be discussed in detail here since it has already been covered in Chapter Five. The majority rule not to purchase the engine was actually overruled by Jan Stenberg. The Vice-President, Procurement who has worked at SAS since 1990 spoke of Stenberg as the foundation for SAS’s environmental strategies:

I believe [SAS’s environmental agenda] was driven, or at least heavily supported, by our previous [CEO] Mr. Stenberg...because he was aware of the importance of this. He did very much and he implemented quality measures and criteria for that. I would say he was the driving force behind that (pers. comm., 11 June, 2002).

If it had not been for Stenberg’s long-term vision on the importance of making environmental commitment a priority at SAS, the decision would not have been made to purchase the low NOx engines because of the financial investment involved. Stenberg’s dedication to the environment extended beyond this decision to developing environmental management as a long-term strategy for SAS, including the creation of an environmental department, the appointment of an Environmental Director and a corporate policy which included environmental goals – all in the same year in which the decision for the DAC engines was made.

In addition to the abovementioned motivations and motivators, at the time of the decision SAS had to be in the financial position to make a 12 billion SEK (A$2 billion) investment in renewing its aircraft fleet, as well as to purchase the more expensive engines. For example, an American airline that also wanted to upgrade their DC-9s was not in as strong a financial position as SAS when the decision had to be made. Subsequently, the American airline could only afford to buy hushkits (a retrofitted system that reduces engine noise) at a cost of US$10 million (A$14 million) each rather than new aircraft which could have cost the
airline up to US 100 million (A$140 million) each. The retrofitted engines will allow the airline to use the aircraft for another ten years (pers. comm., IATA representative, 3 July, 2002). Therefore a strong financial position can have an effect on whether the airline is ‘motivated’ to invest in the best available environmental technology.

…I want to underline that these investments have been made primarily to improve SAS’s competitiveness and exploit the potential of this growing market. The environmental gains are an added, and very valuable bonus that I believe will enhance our image and highlight our role in the Scandinavian tradition of conserving nature (emphasis added) (Stenberg, 2000a:6).

Referring to the decision to invest in the DAC technology, these comments from Stenberg were published five years after the decision for was made, so it is difficult to establish whether the motivations identified are reflective of the CEO’s initial reasons for choosing to purchase the engines. It also raises questions about the motivations of environmental champions – are they truly green, or are they merely taking advantage of opportunities to, as Stenberg points out, ‘exploit the potential of [a] growing market’? In relation to these comments concerning the motivations for the DAC decision Issak (2002:84) might classify Stenberg as a ‘commercial ecopreneur’: “one who seeks to maximise personal or organisational gains by identifying green business opportunities”.

6.2.4 Initial motivations versus present realities

Delivery of the new B 737s began in late 1998; however, 1999 was the first full operational year with the first group of new aircraft (SAS, 2000a). In 1998 Sweden introduced an environmental charge that applied at nine Swedish airports. This charge is in addition to the landing charge and is according to aircraft engine pollution. At these airports (which includes the largest airport in Sweden, Stockholm-Arlanda), the landing charges an airline pays per landing can increase between zero and 30% depending on the emissions of the aircraft during landing and takeoff (LTO) cycle (LFV, 2000).

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2 The charge is based on the average value of hydrocarbons (HC) and oxides of nitrogen (NOx) during the landing-takeoff (LTO) cycle according to the ICAO engine exhaust emissions data bank (Luftfartsverket, 2000)

3 LTO is defined as being part of the airport operations from ground level up to 3000 ft
In its 1999 Environmental Report SAS described the charges that have been introduced based on NO\textsubscript{x} emissions leave SAS in a favourable position with respect to the 737s (SAS, 2000a:30). Stenberg’s ‘message from the president’ in that same report cited that even if SAS doesn’t necessarily believe that the Swedish emission-based charge system offers the greatest environmental gains, it will result in financial savings (in Sweden) for the airline because of the new aircraft fleet:

In 1999 the costs benefits were limited to one or two million SEK, since few of the aircraft were in traffic yet. Due to rising oil prices in 1999, the new engines’ enhanced fuel-efficiency, which also reduces CO\textsubscript{2} emissions, has an even greater influence on SAS’s results (SAS, 2000a:5).

Since there was – and still is – no other airline in Scandinavia using the same technology, this competitive advantage has been realised since all other airlines have to pay more charges for NO\textsubscript{x} per aircraft than SAS (pers. comm., Environmental Director, SAS, 10 June, 2002). The DAC engines also give the aircraft a favourable position at airports with respect to NO\textsubscript{x}-based environmental charges (e.g. in Switzerland and Sweden) (SAS, 2001a:8). SAS argues that the effect of the charge is only beneficial in the long run if more airports implement the charge, because in the short run there is no net environmental effect.

I believe that SAS can achieve an improvement of 3% [emissions], significantly better than the industry average. Against this background, it is vital that the airlines take every opportunity to decrease their environmental impact. Consequently I am highly disappointed that no other airline has followed our example of choosing DAC engines for the Boeing 737. A few competitors are using this engine in Airbus models, but none of the major players seem interested in DAC as a concept. We were pioneers in making this choice and I had hoped that other airlines would follow our lead. This was not the case, and virtually all of the aircraft now on order by other airlines use traditional combustion technology (Stenberg, SAS, 2000a:6).

In 2000 SAS met with Swissair (the other large airline to be directly affected by NO\textsubscript{x} emission charges), LFV, representatives from Stockholm and Zurich (approx. 914 m). The ICAO engine exhaust emissions standard defines LTO slightly differently by including Take-Off (0.7 min), Climb (2.2min), Approach (4 min) and Taxi (26 min) (Luftfartsverket, 2002)
airports and aircraft manufacturers to discuss the motivations and effects of the charge systems. Minutes from the meeting showed that SAS argued that the result of the charge presently is that it forces SAS to use their best performing aircraft for Stockholm flights and the older aircraft for airports who don’t impose charges on emissions. Therefore, the net environmental benefit is minimal. LFV contends, however, that there is clear evidence that airlines have a tendency to substitute high emission aircraft on some routes (e.g. flights to Stockholm) demonstrating that the charge is affecting the way airlines do business from an environmental point of view. The LFV also argues that the psychological impact of the charge should not be overlooked, as well as the effect the charge has on heightening environmental awareness amongst both airlines and manufacturers (LFV, FOCA, 2000).

From LFV’s point of view, political acceptance of the charge is high, as is the support from the aviation industry and the EU. The introduction of the charge has also improved acceptance (image) of airports at a political level. The charges have also created national and international interest by media, organisations, airlines and airports (LFV, FOCA, 2000). Although all of these arguments are related more to the emissions charge itself, and not directly to the DAC decision, there are several other underlying motivations entrenched in the decision to use a ‘green’ engine such as political acceptance of airlines and positive image-boosting publicity.

According to the Director of Aircraft and Engine Analysis (with whom the Deputy CEO concurred in his discussion on the DAC engines), the decision to go ahead with the DAC engines has cost the company in other areas. “Today there are a number of people in our organisation who would probably argue that we should not have chosen the dual annular combustor because of technical reasons” stated the Director of Aircraft and Engine Analysis during the interview (pers. comm., 11 June, 2002). This could be attributed, in part, to the fact that the engines had not previously been used with commercial aircraft; therefore there was not the opportunity to fix ‘technical glitches’ in the technology as if it were used on a wider level. This, in part, was ameliorated by the cooperative approach Boeing adopted in dealing with technical difficulties encountered. Boeing even went as far as setting up an ‘engine hospital’ in one of SAS’s hangars in Stockholm.
A further discovery after the aircraft were in operation was by Frankfurt Airport who reported that the noise emissions from the DAC engines exceeds the single combustor engine for the B-737 engine by five decibels. The problem appears to be particularly pronounced during idling and lower throttle levels as the aircraft approaches for landing (which is also a crucial phase for minimising noise) (pers. comm., Director Aircraft and Engine Analysis, 11 June, 2002). So although NO\textsubscript{x} emissions have been reduced, the engine has not been as effective in other areas as SAS had hoped. This is one of the first-mover disadvantages of trialling new technology. It also has the potential to make management more conservative in future decisions regarding ‘best available’ technology.

Because of the reduced NO\textsubscript{x} emissions of the DAC engines, SAS is in the lowest category for emissions charges in Sweden (pers. comm., Environmental Director, SAS, 10 June, 2002). There will be positive financial payback based on the charge systems on Swedish domestic flights – but that only accounts for twelve of the fifty aircraft that have the DAC engine (pers. comm., Director, Aircraft & Engine Analysis, SAS, 11 June, 2002). SAS reported that when all 56 aircraft had been phased in there would be a savings of 11 million SEK per year in NO\textsubscript{x} emission charges (on domestic flights in Sweden). (SAS, 2000a). Although initially it was not known whether there would be a positive payback by spending the extra 250 million SEK (A$42 million) on the DAC engines, at the time of the interviews for this study it had recently been calculated by SAS that, as a result of the charges for NO\textsubscript{x} emissions at Stockholm’s Arlanda airport, the cost of the engines will have a positive financial payback in the long run (pers. comm., Environmental Director, SAS, 10 June, 2002). This, he noted, will become increasingly important as the airport nears its emission cap.

6.2.5 Conclusions for the DAC engine decision

1. There were both long-term ‘costs’ and ‘benefits’ associated with the competitive advantage gained from this decision.

SAS wanted to achieve a competitive advantage through early adaptation of the best available environmental technology. After reflecting on the motivations initially identified as driving the decision for purchasing the DAC engines, ‘competitive advantage’ was not achieved from the point of view of ‘first-mover
advantages’ that had been anticipated. Financially however, SAS has reduced the amount it must pay in emission charges so that overall costs are lowered.

2. **Internal environmental leadership was a key aspect of the outcomes of this decision.**

The decision to purchase the DAC engines is an example of how internal environmental champions can influence environmental commitment through decision-making. If Fleet Development had not pushed strongly for the DAC engines, and if the CEO hadn’t had such strong convictions for environmental issues, then the environmental policies SAS had at the time would not have been enough to push the decision through. The long-term strategic thinking of the CEO, with respect to the relationship between sound business and sound environmental performance, was an additional influence.

3. **SAS’s search for political legitimation was an underlying motivation of the DAC decision.**

An underlying, and more subtle motivation was the need for SAS to improve its image in the eyes of regulators, particularly in Scandinavia.

4. **This was not a ‘feel good’ decision.**

The influence of Scandinavian culture to ‘do the right thing’ was not discussed at all by informants in terms of the DAC decision. Instead, most likely due to the scale and investment of the decision (and effect it would have on future operations of the airline), the decision was pragmatic, calculated and all options were deeply considered.

The link between the systems of influence (political, market, social and science) was predominantly focused on the interrelationship the between political and science dimensions and between the science and market systems.
6.3 Part II: the Scandinavian Direct decision

The inflight meal service of an airline is an important aspect of air transportation and one to which travellers have become accustomed. In 2002 SAS launched a new inflight service concept as part of a larger image change called Scandinavian Direct. Unlike the DAC decision which took several years, the new inflight service had to be created and implemented over a period of eight months. This decision analysis critically examines how environmental considerations were factored into the decision-making process for this new inflight meal service concept.

6.3.1 The evolution of the Scandinavian Direct concept

On June 1 [2002] SAS Airline introduced its new Scandinavian Direct customer offering on SAS short haul. The new offering is an adaptation to the customers’ desire for simpler and more value-for-money travel and involves extensive changes to the entire travel chain. In brief, it can be said that, with Scandinavian Direct, SAS Airline is introducing a completely new and modern product, both on the ground and in the air. This means, for example, that the customer can clearly see what he or she is paying for, simple booking procedures and simple in-flight service – all at a lower cost compared with today (SAS, 2002e).

The conception of Scandinavian Direct took place in October 2001 when the SAS management team announced that 12% cost reductions were needed across the company due to the economic downturn in the industry. Each department was responsible for deciding from which part of their budget the costs would be cut. The primary objective of the Scandinavian Direct concept was to find a more cost-effective system that would simplify operations and at the same time provide a new, more modern service image (pers. comm., Vice-President, Inflight Services, SAS, 12 June, 2002; pers. comm., Manager, Product Management Inflight, SAS, 19 June, 2002). Passenger airline meals have historically gone through three cyclical phases which are referred to in the inflight catering industry as ‘steak’, ‘chicken’ and ‘peanuts’. The economic downturn that occurred in 2001 signalled the change into the ‘peanuts’ phase for airline meal service (pers. comm., Environmental Manager LSG SkyChef, 28 June, 2002). The change also came as a response to demands from
passengers for easy, transparent service and as a result of a shift in demand from Business to Economy class (pers. comm., Senior Vice-President Marketing and Product Development, SAS, 14 June, 2002; SAS, 2002, SAS, 1999).

The trend is quite clear…more towards the basics because we have a lot of competition at the moment – low price airlines and a lot of our big customers want to cut down on their expenses, so there's a pressure to lower the price (pers. comm., Health & Environment Coordinator, Inflight Services, 10 June, 2002).

The Scandinavian Direct concept that constituted SAS’s response to these influences offers passengers more choice of fares, one-class service and a new inflight meal concept that relies on the use of disposable items. Scandinavian Direct was first launched from what SAS refers to as the ‘capitals triangle’ (Stockholm, Copenhagen, Oslo) and then gradually introduced on other intra-Scandinavian and domestic routes. The Scandinavian Direct meal is now served in a plastic box or paper bag instead of in the more traditional tray.

The ‘paper bag’ concept can be served either on board or picked up by passengers at the gate, while the box is served on board the flight. Scandinavian Direct also eliminates requests for special meals and instead automatically caters 20% of each flight with a vegetarian meal option (pers. comm., Manager, Product Management Inflight, SAS, 19 June, 2002; SAS, 2002c). The serving of certain beverages on a large portion of the Scandinavian Direct flights was also eliminated, except for tea and coffee. The simpler on-board service has meant that one less flight attendant is needed per flight (pers. comm., Health & Environment Coordinator, 10 June, 2002). Thus, in addition to reducing costs through the new meal concept, SAS was also able to substantially reduce its budget through reduced personnel costs (pers. comm., Manager, Product Management Inflight, SAS, 19 June, 2002). After being the first airline in Europe to offer Business Class service, SAS had now turned out to be one of the first to return to a one-class service on all its short domestic and intra-Scandinavian flights (pers. comm., Manager, Product Management Inflight, SAS, 19 June, 2002; pers. comm., Senior Vice-President Marketing & Product Development, SAS, 14 June, 2002). Figure 6.3 provides an overview of the internal players and issues involved in the decision-making process for the Scandinavian Direct concept.
Group Management

October 2001: 12% cutbacks required across the company

Marketing & Product Development
- What will help the airline gain a competitive edge?
- What is the image SAS wants to display to passengers?

Inflight Services:
- What is practical to serve given time, space restrictions
- Input from flight attendants/unions

Purchasing:
- Availability of materials
- Costs

Development of Scandinavian Direct concept

Advice from Environmental Department
Policy issues:
- Corporate environmental policy
- Interpretation of regulations/taxes

Creation of new product

Unable to get desired material for meal box due to supplier and time constraints

Proceed with plastic box instead of cardboard

June 2002:
Launch of new meal concept

Advice from Health and Environment Coordinator, Inflight:
Technical issues:
- Waste management issues
- Fuel consumption per passenger

Figure 6.3. The decision-making process of Scandinavian Direct.
The development of Scandinavian Direct was conducted primarily from the Marketing and Product Development department, which closely interacted with Inflight Services on this decision (pers. comm., Vice-President, Inflight Services, SAS, 13 June, 2002; Manager, Product Management Inflight, SAS, 19 June, 2002):

When talking about designing a new concept for inflight "you find out, okay, what [are] the customer expectations from the [information] that you have today? And what are the general values in society and what can we foresee in the near future?...are [there] any changes that would have an impact or an influence over what we deliver in the market? (pers. comm., Vice-President, Inflight Services, SAS, 12 June, 2002).

Both management and cabin attendants were involved in the development of the product. Two of the people who worked closest with Product Management on the development of this concept were part-time flight attendants (in addition to working for Cabin Operations in the office) (pers. comm., Vice-President, Inflight Services, SAS, 12 June, 2002; pers. comm., Products Manager, Inflight Services, SAS, 19 June, 2002). Any significant change in the service that is required of cabin attendants must be negotiated with the relevant unions. In this case, both the service and the number of flight attendants required per flight were changed considerably. One of the key considerations for the introduction of a changed inflight service concerned whether the new workload introduced by the service conformed to the relevant collective agreement standards (pers. comm., Environmental Coordinator, SAS, 8 September, 1999; pers. comm., Environmental Advisor, SAS, 2 July, 2001). As demonstrated by this discussion decisions relating to the modification of the type of meals served on SAS flights occurs in a decision framework characterised by a diversity of actors each looking to protect and enhance their own interests. It is within this context that SAS’s Environment Department attempts to influence inflight service decisions.

The role of the environmental department is to provide information for other areas in SAS when required and encourage departments to take environmental impacts into consideration. As a central function, the environmental department generally has the role of policy making and of giving advice on regulations, trends in society etc. They also do a bit of internal ‘pushing’ for environment issues. This was also their role in the Scandinavian Direct project. (pers. comm., Health & Environment Coordinator, SAS; 10 June, 2002; pers. comm.,
Environmental Director, SAS, 10 June, 2002; pers. comm., Vice-President, Procurement, 11 June, 2002). Despite this role, the Vice-President of Inflight Services did not make mention of any interaction with the Environmental Department when questioned about who is involved in the decision-making process (pers. comm., 13 June, 2002). The Product Manager for Inflight Services discussed the importance of consulting the Environmental Department but admitted that the time restrictions they were working under did not allow for the usual interaction in the decision-making process:

…SAS has a strategy which also [Inflight Services] has to contribute to – we can never create something within SAS that effects our environment in a negative way. We are never allowed to do that...But the tight schedule [for Scandinavian Direct] has of course also meant that we haven’t maybe seen [things from] a lot of perspectives. We would have liked to involve more people and their opinions but there simply hasn’t been the time (pers. comm., 19 June, 2002)

Inflight Services and Marketing and Product Development were not able to get as much feedback from other departments (and even from people within these two departments) because of the short lead time (pers. comm., Product Manager, Inflight Services, SAS, 19 June, 2002. Although the environmental department was consulted in this process, the department’s recommendation for the type of box the meal should be served in was not able to be taken into consideration because of the short time available before the product launch date. The supplier was not able to enact changes to the previous design given the time frame (pers. comm., Environmental Director, SAS, 10 June, 2002).

SAS makes clear both in its documentation and through communication with its management and employees that the airline has a corporate purchasing policy stipulating that the environment must be integrated into any decision within the airline (pers. comm., Vice-President Procurement, 11 June, 2002). However, it appears from discussions in the interviews that while other departments such as Marketing and Product Development state that the Environmental Department is consulted, the Environmental Department feels that it was consulted as a formality only, and its advice was not taken into consideration in the final decision:
...But I think that [in regards to] the Scandinavian Direct concept...things were missing in the phase. I don’t know if you’ve heard what [marketing] has said about it?...Marketing is going their own way, they are only thinking about marketing, and the customers and so on, and the environment is ‘oh yes!’, last minute... That how I see it...and that’s how it is...Marketing is not taking environment questions – [seriously]...they forget about environment until it’s too late. Except when we make contact [with] marketing and say ‘hey, there’s a problem here!’...(pers. comm., Environmental Coordinator, SAS, 27 June, 2002).

The Health and Environment Coordinator, Cabin Operations expressed that during the process he was asked by the Product Manager to make a list of environmental consequences associated with the choice of materials for the service. Several discussions were also held between the Health and Environment Coordinator, the Product Manager and with other relevant people in the process who were responsible for dealing with the suppliers (pers. comm., Health & Environment Coordinator, SAS, 10 June, 2002). The Product Manager expressed that there was continuous dialogue in relation to the environmental effects of the ‘meal box’ but admitted that the plastic box chosen to serve the meal in was an interim solution until a more appropriate material could be found that would be “recyclable or reusable” (pers. comm., 19 June, 2002). One year after the launch of Scandinavian Direct, the Health and Environment Coordinator reflected on the decision-making process with respect to environmental considerations:

[I] can’t tell you exactly when [the environmental department] was involved but it was in the later stages of the project. I had some talks with [the Environmental Director] along the way regarding disposable versus rotatable, waste and choice of materials. The Scandinavian Direct project was run with haste and the calculations of the environmental effects, such as waste, fuel consumption etc., were made by myself shortly before the decision of suppliers (pers. comm., July, 2003).

It was initially calculated that the change in service would create 10% more waste per year for SAS because of the move to disposable items. At the same time, the removal of drink carts on board (each weighing 90 kg) would decrease fuel consumption by 180 tonnes per year (based on removing these trolleys from each flight on all applicable aircraft in Scandinavia) (pers. comm., Health & Environment Coordinator, SAS, 10 June 2002; SAS, 2002e). Water usage was
also estimated to decrease since disposable items do not require washing (pers. comm., Health & Environment Coordinator, SAS, 10 June, 2002; pers. comm., Product Manager, 19 June, 2002). Figures from SAS’s Environment and Health Coordinator for Inflight Services (pers. comm., 12 May, 2003) one year into the new concept show that energy consumption per meal (total energy use for meal production at the caterer) dropped by 9.7%. This was expected as a large part of the route network changed to a leaner product. Another positive ‘surprise’ was that the amount of waste per meal also dropped in spite of the increased use of disposable materials. Waste, in fact, dropped by 1.6% per meal at LSG (and by 9.9% including waste collected onboard). One explanation for this is because of the move to a leaner product. Water consumption rose by 8.4%, and at the moment, SAS has not developed a reasonable explanation for this. Another benefit of the simplified service has been a 25% reduction in the number of over-catered meals. This has reduced the number of meals produced by 250,000 and resulted in a waste reduction of 125 tonnes (SAS, 2002a).

6.3.2 Motivations for greening inflight service

Evidence from sources such as the SAS Environmental Reports and the interviews, identified several motivations for greening of inflight service, from which two distinct themes emerged.

1. Factors that have influenced SAS’s decisions regarding inflight meal service in general.

2. Drivers specific to the Scandinavian Direct decision.

The Environmental Director for SAS summed up the factors that were involved in the decision-making for the concept, and not even he made reference to environmental considerations:

To introduce a new [concept] – the focus from SAS is it’s market-driven. We [surveyed] our customers on the short-haul routes [and] they want a simpler product. They want it to be easy. They want e-travel. It’s absolutely also market-driven…we’d like to say that it’s purely market-driven but to be very [up front], it’s not only market-driven, it’s driven by [the fact that] we absolutely want lower costs. It’s a way to really lower the costs and it’s [partly] to get the right purchasing. We have to discuss [it] with our catering. It’s a major change for our catering firm. And then its to negotiate with them.
The analysis of the decision taken by SAS to change inflight service demonstrates that environmental commitment was not a motivation for the introduction of the Scandinavian Direct concept. The interviews revealed that there are some factors that have played a role at other times when economic conditions have not been as severe as those that followed September 11. To investigate why this was the case, and to help identify what the motivations are in decisions relating to inflight service decisions general drivers and influences for inflight service need to be analysed.

**Interpretation of the regulatory environment**

The inflight service of an airline is not subject to the same degree of legislation as other aspects of the airline industry such as the air and noise emissions that result from flight operations. Market-based options such as taxes and charges, as well as the ICAO Standards and Recommended Practices, do not generally address inflight waste issues (pers. comm., ACI representative, 18 June, 2001; pers. comm., ICAO representative, 6 June, 2002). There are, however, exceptions to this rule, such as the recycling tax imposed by the Norwegian government on unsorted waste and the ban of the use of aluminium cans as a form of packaging in Denmark (SAS, 2003a; pers. comm., Environmental Coordinator, SAS, 8 September, 1999). For example, the charges SAS paid in 2002 with regard to unsorted waste amounted to 2 million SEK (A$400,000), but also saved between 6 and 8 million SEK (A$ 1 to 1.5 million) in charges on domestic flights by recycling aluminium beverage cans (Sweden and Norway) (Lönnqvist, n. d. a; SAS, 2002a). Waste issues associated with airlines and airports are generally addressed by individual airport authorities and not collectively by the industry (Lynes, 1999; see Malle-Bader & Tunstall-Pedoe, 1997).

**Image: Being a good corporate citizen**

The EU Environment Commissioner, Margot Wallstrom, stated in an interview with the Inflight Catering Association that, although there is no specific EU legislation in regards to inflight waste from aircraft, airlines have a social responsibility and a marketing opportunity to ‘play their part’ and also have a
common interest in trying to minimise aircraft waste. Therefore, an underlying motivation for improving the environmental performance of inflight service can be to improve the airline’s image. As mentioned earlier in this chapter, inflight service is a highly visual aspect of an airline. It could be argued then that, if passengers see flight attendants sorting waste or using recycling trolleys, then this adds to the airline’s environmental credibility:

The passenger acquires a subjective picture of the airline’s environmental work, but nonetheless it is a perception that the airline must treat seriously. To many people, inflight is the outward environment image of the airline…It is considerably harder for the passenger to see that the aircraft is served by engines that have undergone substantial improvements in the environmental aspect…and how many people are aware that inflight is only responsible for 5 percent of SAS’s total environmental impact? (Lönnqvist, n. d. a)

However, as earlier parts of this thesis have illustrated, passenger demands for a waste-reduced inflight service as a motivation for an airline to ‘green’ its onboard meals remains questionable.

Financial motivations

Our environmental programme is based on evaluating all purchases from an environmental point of view, scrutinising the environmental policies and plans of all major suppliers and specifying environmental requirements in all supplier contracts. The overall goal is twofold – a better environment and a better economy (SAS, 1998c:16).

Much of SAS’s publications emphasise the win-win relationship of environment and economy, particularly with respect to the eco-efficiencies that can be achieved from better management of inflight meal and beverage service. SAS’s 2002 Environmental Report, for example, states that a primary motivation for reducing waste from cabin operations is the associated financial incentives (SAS, 2003a). The financial cost of inflight meals at SAS accounts for approximately 7% of the total cost for the airline operation, or forty 45 SEK ($A 7) per flight hour per passenger4 (pers. comm., Vice-President, Inflight Services, SAS, 12 June, 2002). In recent years, SAS has begun to take a more holistic

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4 The cost includes meals and beverages and equipment for inflight catering (pers. comm. Vice-President, Inflight Services, SAS, 12 June, 2002). For example, on a five hour flight the cost per passenger for the meal and beverage service would be 45 SEK * 5 hours = 225 SEK
approach to the environmental management of cabin operations by taking into account how much fuel is consumed from the extra weight needed to carry the inflight meals and other inflight service products (pers. comm., Vice-President Inflight Services, SAS, 12 June, 2002). Having a ‘lighter’ inflight service, therefore, can reduce both the economic and the environmental costs of air travel by diminishing fuel burn per passenger kilometre (Penner et al., 1999).

As the Environmental Director for SAS described in an interview with the Inflight Catering Association, “10 grams becomes 270 tons…a tray that weighs 10 grams less that serves 27 million meals is 27 million tons less weight, and thus reduced fuel consumption” (Lönnqvist, n. d. a). One example of this win-win situation is the collection of aluminium cans on domestic flights, which has the weight of waste by 360 tons per year and have saved the airline 6-8 million kroner in environmental charges (IFCA, website interview). These types of savings are in addition to resource savings that can be achieved through improved materials efficiencies (e.g. eliminating or changing items on the passenger meal tray). The Environmental Manager for SAS’s caterer, LSG Sky Chefs, agrees that price is a key factor in catering decisions, particularly in the current economic environment:

…I think that mostly price arguments are bringing the [airlines] to these solutions in order to save money to make it more cost-effective. I am seeing the same process here with Lufthansa. Basically the same. The idea that drives them is ‘how can we make it cheaper and cheaper?’…down to that point where the customer changes over to another airline. But the other airlines are doing it at the same time. It’s funny – they are all doing the same thing at the same time so that the passengers have no choice. If they change over to Air France, they get peanuts at the same time (pers. comm., 28 June, 2002).

Earlier, when inflight concepts were being designed, the weight of the fuel used inflight to have this service was not taken into account; now (e.g. for Scandinavian Direct) it is “today we measure every kilo we take on board from a fuel perspective” (SAS, 2002e) which could be seen as a more holistic approach to environmental management or that the purse strings are being tightened, so it is seen as a cost-cutting measure. Either way, it currently appears to deliver the same outcome.
Technological efficiencies: uncertainty of life cycle assessment

Another aspect of inflight service that has been discussed in the literature awaiting verification through further scientific evidence is that of using disposable versus rotatable (washable and reusable) dishes for inflight meals. One side of the argument is that disposable dishes are lighter and require less fuel to carry as well as using less energy and water because they don’t require washing in high temperature water and with heavy detergent as with rotatable dishes. On the other hand, rotatable dishes can be used over and over again and therefore less waste is produced.

An IATA representative who deals with inflight service of airlines felt that, through his experience, disposable items were often cheaper than purchasing items that can be washed and reused (pers. comm., 18 June, 2001). In 1998 SAS demonstrated a commitment to address this uncertainty by collaborating with a Danish consulting group to publish a detailed report concerning life cycle assessment issues associated with disposable versus rotatable (reusable) items on the passenger meal trays (see Christiansen & Hoffman 1995). At the very least, this report demonstrates an attempt by SAS to develop empirical information on which inflight service decisions can be based. The degree to which this information is utilised in these decisions however, depends on the context in which they are made.

6.3.3 Green obstacles

Unions

Relationships with unions were thought to be a factor that inhibited the implementation of some environmental initiatives. SAS indicated that unions ‘were a challenge’ to changes in in-flight waste management, for example:

I’m sorry to say that we have evidence that we haven’t got the right environmental decisions because we couldn’t [convince] the unions to change the concept... the interaction between the company and the unions is very complicated. It’s not only money, it’s power. It’s used as a tool to gain some other benefits or to protect something that you have really got previous so I think it’s part of a gain (pers. comm., Environmental Director, 2 July, 2001).
Several flight attendants who were interviewed for this study commented that they would be willing to do more for the environment “if there was sufficient time” and if “it was not too complicated” (pers. comm., Flight Attendant 3, SAS, 20 June, 2002; pers. comm., Flight Attendant 5, SAS, 20 June, 2002), although in some cases the enthusiasm for doing these extra tasks did not appear convincing. The strength of the unions in Scandinavia can greatly influence the decision-making process in instances such as deciding on new meal service.

**Passenger demands for inflight service**

Despite the awareness SAS may have of the need to reduce waste on-board, they are sometimes reluctant to sacrifice items on the meal tray because of the perceived need to satisfy customer expectations. For the most part, a passenger's expectation of the service he/she should receive onboard outweighs their attitudes towards waste reduction programs (pers. comm., Senior Vice-President, Marketing & Product Development, SAS, 14 June, 2002). However, the Environmental Manager of LSG Sky Chefs revealed that, in general, most airlines are not concerned with the waste produced from inflight meals:

> They just say 'we want to buy this and you have to buy that' and they don’t care about the waste they produce as a result of their meal design. They have absolutely no idea what problems they cause and what it costs to get rid of the waste materials. They just see the meal...when it is ready to eat...they don’t see it going out and how it looks like once the passenger has eaten it (pers. comm., 28 June, 2002).

It is difficult to say whether this is because of the lack of passenger interest in ‘greening’ inflight meals or for other reasons. Until passengers become more concerned with this issue, or until inflight waste makes it to the regulatory agenda of the airline industry, eco-efficiencies will remain the primary motivation for airlines for environmental commitment with respect to inflight service.

**6.3.4 Conclusions for the Scandinavian Direct decision**

This decision analysis demonstrates that, for SAS, whatever formal environmental policies or management systems were in place, there were other, more pressing drivers that took precedence over environmental commitment. Secondly, it illustrates that in an unregulated environment, voluntary
environmental ‘commitment’ will not be a strong enough influence in the decision-making process. In a decision-making environment characterised by numerous actors holding divergent interests it appears environmental concerns are not provided much weight. There are three main conclusions that can be drawn from the discussion on the Scandinavian Direct decision.

1. The negative financial position of the airline affected the level of environmental commitment towards this decision

The decision for the new inflight service was made with haste due to the financial circumstances of the airline industry. SAS needed to get the Scandinavian Direct concept established and implemented in a very short time period and cost savings was the leading criteria in the decision-making process.

2. Any environmental benefits of the new meal concept were merely ‘bonuses’.

The end result of this decision was that the initial environmental outcomes were not very negative; however, it was not as a result of the motivation for SAS to integrate the environmental impacts into the foundation of its decision. A positive point here is that the figures on the environmental effects of the new concept demonstrate that these factors were at least calculated if not factored into the decision. These predominantly included eco-efficiencies through reduced weight on board the aircraft and more efficient materials use, as well as image-based improvements.

3. Drivers and catalysts for environmental commitment were not apparent in this decision.

Even though other motivations for environmental commitment were identified in the interviews and review of SAS documentation regarding inflight service, these were not taken into consideration in this example. There was no ‘environmental champion’ identified in this decision and, even if there was, it is most likely that his/her voice would not have been heard given the financial circumstances of the industry at the time. Although other motivations for environmental commitment were identified in the interviews and review of SAS documentation regarding inflight service (e.g. eco-efficiencies and image-based improvements) these were not taken into consideration in this example. The lack of passenger demand for ‘green’ inflight service further diminished the incentive for SAS to
excel in this area. Even if environmental considerations had been incorporated into the decision-making process, restrictions from the flight attendant unions could have prevented the ‘greener’ options from being chosen.

6.4 Drawing conclusions from the analysis

This chapter examined the motivations (environmental or otherwise) that influenced two decisions at SAS: one strategic long-term decision regarding the airline’s operations; the other also strategic, but in the short to medium term. The two decisions involved very different motivations. With the DAC decision, the financial motivations were predominantly for future savings in emissions charges whereas the financial motivations for ‘greening’ inflight service were identified as being primarily through the realisation of eco-efficiencies. The Scandinavian Direct decision involved little to no environmental motivations, illustrating how the economic circumstances of a company or industry can greatly impact how corporate policies are interpreted. The DAC decision also demonstrated that the environmental champion is an important catalyst in pushing environmentally-favourable decisions forward.

There may be several factors that collaborate together to motivate a firm’s level of corporate greening. For example, SAS’s quest to improve its image was a combination of responding to the need to be environmentally and socially responsible for the Scandinavia people, trying to even out the playing field with respect to other forms of transport and getting the message across to regulators that the airline industry is making an effort (and therefore avoid harsher legislation for the industry in the future).

Identifying and understanding a company’s motivations for environmental commitment reveals the complexities and intertwining aspects of corporate greening. For example, while airlines had little control over the terrorist attacks of September 11, they did have considerable control in how they responded to the crisis. Herein lies the danger of blanket classification of ‘internal’ and ‘external’ drivers. The complex and overlapping relationship between external and internal drivers make a clear distinction between the two impossible. It is important to recognise that corporations not only respond to external conditions, but they can also shape those conditions through interactive engagement with
the wider context including other airlines and international agencies such as the IATA.

As a review of the findings in Chapters Five and Six, an overview of management and employees’ perception of drivers are shown in Table 6.1. This table summarises the catalysts, drivers, non-influences and negative drivers, actions and outcomes for the two decisions that were examined in this chapter as well as for SAS’s overall environmental management as outlined in Chapter Five.
Table 6.1. Summary of SAS’s motivations, catalysts and outcomes in relation to its environmental commitment

<table>
<thead>
<tr>
<th>Motivations &amp; influences (environmental or otherwise)</th>
<th>SAS - General (Chapter Five)</th>
<th>The Green Engine Decision (Chapter Six, Part I)</th>
<th>Scandinavian Direct Decision (Chapter Six, Part II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Financial cost-benefit (short and long term);</td>
<td>• Long-term competitive advantages</td>
<td>• Short-term financial survival;</td>
<td></td>
</tr>
<tr>
<td>• Relationship within aviation community;</td>
<td>• Avoiding more stringent regulatory requirements; and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Image; and</td>
<td>• Minimising potential charges</td>
<td>• Improving branding of SAS for increased competitiveness</td>
<td></td>
</tr>
<tr>
<td>• Being a good corporate citizen</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Negative influences (or non-influences)</th>
<th>SAS as a motivator for...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Passengers demands;</td>
<td>• Suppliers</td>
</tr>
<tr>
<td>• Green marketing as a competitive advantage;</td>
<td>• Aircraft and engine manufacturers</td>
</tr>
<tr>
<td>• Unions; and</td>
<td></td>
</tr>
<tr>
<td>• Investor and shareholder demands (mixed views)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalysts</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Scandinavian culture;</td>
<td>• Environmental report</td>
</tr>
<tr>
<td>• Internal environmental leaders; and</td>
<td>• Environmental index</td>
</tr>
<tr>
<td>• (Positive) financial position</td>
<td>• Corporate environmental policy</td>
</tr>
<tr>
<td></td>
<td>• Supplier agreements</td>
</tr>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Outcomes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improved environmental image and overall image</td>
<td>• Improved NOx emissions</td>
</tr>
<tr>
<td>• Savings on taxes environmentally-related and charges</td>
<td>• Long-term financial payback on savings from charges</td>
</tr>
<tr>
<td>• Continuous improvement on environmental performance index;</td>
<td></td>
</tr>
<tr>
<td>• Good working relationship with regulators</td>
<td>• Costs incurred because of technical problems with engines;</td>
</tr>
<tr>
<td></td>
<td>• Increased credibility with regulatory authorities</td>
</tr>
<tr>
<td></td>
<td>• Increased waste per passenger</td>
</tr>
<tr>
<td></td>
<td>• Fuel savings because of lighter weight of meal</td>
</tr>
</tbody>
</table>

From the discussion presented in Chapters Five and Six, two main conclusions can be made with regards to motivations for environmental commitment within SAS.
1. The main drivers for SAS are the confluence of relationships between the systems of drivers that have been identified previously in Chapter 2 (e.g. markets, social systems, science and political systems). Clearly the drivers are not related to the one of these systems alone. In the case of SAS, scientific understandings of the environmental impacts of airline operations, and which are embodied in the regulatory environment, are unquestioningly accepted by airline management. This is intrinsic to their culture. As an extension to Table 6.1, Table 6.2 illustrates these drivers within the broader context of the four systems of influence of corporate environmental commitment that have used as a common thread throughout this thesis.

2. There was a dissonance between motivations cited in general discussion about environmental commitment and specific motivations for the two decisions that were examined. This reinforces what was discussed in Chapter Two – different drivers exist for different aspects of a firm’s decision-making. When discussed generally, for instance, Scandinavian culture dominated the interviewer-interviewee dialogue on motivations for SAS, while in the context of specific decisions, the themes concentrated more on financial incentives, legislation (or the anticipation of), and environmental champions within the company. Differences therefore begin to emerge between what the informants perceive as drivers and what the drivers are in actual decision-making processes. Motivations fall into several different categories, best described as layers, of internal and external influences and should be considered in a more iterative and dynamic manner.
Table 6.2. Summary of SAS drivers for environmental commitment

<table>
<thead>
<tr>
<th>Systems of influence on environmental commitment</th>
<th>Primary drivers</th>
<th>Subsets of primary drivers</th>
</tr>
</thead>
</table>
| Markets                                         | Financial cost-benefit  
• Immediate or medium-term  
• Eco-efficiencies such as energy and water savings  
• Boosted earnings from avoiding charges and taxes  
• Long-term  
• Competitive advantage (e.g. payback from investment in green engines)  
• Better investor relations – environment can be a ‘selling point’ for the company  
Regulatory Environment  
• Standards and regulations are unquestioningly accepted  
• Anticipating future legislation to gain a competitive advantage  
• Good image lends credibility when dealing with regulatory bodies  
Being a ‘good corporate citizen’  
• Improving image of airline with respect to other forms of transport  
• Wants to have the image ‘we care’  
• Responding to the increased focus society has on the environment  
• Embodying the ‘Scandinavian Spirit’  
Airline Image  
• Positive image in the market place  
• Positive image with suppliers  
• Positive image strengthens credibility with regulatory bodies  
Pressures from industry stakeholders  
• Corporate customers are requiring more environmental information be provided to them  
• Coercive pressure from government (threat of more charges and taxes; especially EU and within Scandinavia)  
• Relationships with unions instrumental in implementing environmental management changes  
Science  
Political /Institutional  
Social  

Catalysts  
Culture  
Internal leadership  
Financial position  
Markets  
Science  
Political /Institutional  
Social
Despite the complexity of relationships between the drivers of corporate greening and the dissonance of motivations cited, one clear theme emerged from the analysis of general motivations for corporate greening at SAS and the specific decisions relating to the DAC engines and Scandinavia Direct. Financial considerations were central in decisions that demonstrated environmental commitment. In the Scandinavia Direct decision the changes made to inflight service were a direct response to changing economic conditions and demonstrated a search for economic efficiencies without consideration of environmental performance. For the DAC engine decision the economic environment was more stable. This provided a foundation to predict future regulatory contexts and enabled SAS to make an investment in environmental performance improvements. Rather than represent an altruistic action the DAC decision represents a calculated decision to capitalise on future market conditions. These findings indicate that while catalysts and drivers for corporate greening come from many and diverse sources (including the four systems of influence) the criteria, or motivations, within a company that push the translation of influence into commitment are, fundamentally, driven by economic circumstances.
Chapter Seven

Conclusions

7.1 Introduction

Using a case study approach, the aim of this research was two-fold: firstly to identify the internal motivations of SAS that influence its commitment to improving environmental outcomes; and secondly, to identify the impact of industry-specific external drivers upon the airline’s capacity to pursue this environmental commitment. This research provides insights into motivations for corporate environmental commitment through both theoretical and empirical findings. The salience of this research with regards to the airline industry is demonstrated through the continuous growth the airline industry has been experiencing and the lack of studies carried out on the airline industry with respect to managing environmental impacts. The dramatic economic downturn of the industry following the events of September 11 further shaped this study as the priorities of airlines have changes dramatically since that time. There is intense focus on efficiently managing resources, on security and, to a lesser extent, on passenger service. Airlines such as British Airways and SAS have identified in their environmental reports the need for industry benchmarks so that environmental performance among airlines can be compared. This study illustrates the need for such indicators to be flexible enough to acknowledge the influence of internal and external drivers on an airline’s commitment to environmental management. The social sciences must play a role in the development of scientific-based indicators in order to have benchmarks that are socially and politically legitimate to those that have to implement them.

The approach to answering the aims of the study used literature from corporate greening and environmental management (Chapter Two); reviewed the technical aspects of environmental management in the airline industry (Chapter Three); developed an interactive discussion tool for the case study approach (Chapter Four); and identified drivers and catalysts for environmental commitment at SAS using the four systems of influence as a base (Chapter Five and Six). Figure 7.1 presents a visual summary of the research approach that was taken in this study. The following section described eight main findings.
that have come from this research. I invite others to challenge or reproduce these findings within other firms in the aviation sector.

Figure 7.1 Process of theory-building in this research
7.2 Main findings from this research

1. The role of the environmental champion is a key catalyst to pushing the decisions through to top management.

A key component of the success of several initiatives were the results of the internal influence of ‘visionaries' working within SAS who put pressure on management to make the environment a greater priority in decision-making. The important role that an individual plays in a firm’s environmental initiatives has been demonstrated in the case of SAS (as has the effect of the lack of presence, or support, of an environmental champion). The environmental champions at SAS saw opportunities where other top managers at SAS saw threats. At least one environmental champion was needed at SAS (ideally at top level and middle management) to get ‘greener’ decisions through. This finding is consistent with several other studies that have examined the determinants and motivations of firms’ commitment to the environment, such as Sharma’s (2000) study on the Canadian oil and gas industry; Prakash’s (2000) study of ‘beyond compliance’ in the pharmaceutical industry and Annandale & Taplin’s (2003) research into determinants of mining companies’ response to regulation). The case study of SAS reinforces similar findings in these studies that internal pressures are an important consideration in developing effective tools for improved environmental performance of business. Success or failure of tools may rest on internal pressures, however, which are outside the scope or control of external mechanisms designed to encourage corporate greening. The development of external mechanisms must therefore take the role of internal pressures (e.g. environmental champions) into consideration.

2. a) External events and pressures (especially those of economic nature) can have an overriding effect on the corporate environmental commitment.

Environmental decisions are not made in a vacuum and are, to a certain extent, dependent on the external pressures and events such as wars, economic downturns and even natural disasters. External events, particularly those of economic nature have the ability to diminish the importance of other company policies (e.g. environmental policies) at SAS. Related to the first finding, while airlines had little control over the terrorist attacks of September 11, they did have considerable control in how they responded to the crisis.
2. b) In the absence of clear regulatory or market-based incentives that encourage corporate greening, an airline is likely to minimise or reduce the importance of environmental commitment in favour of other external and internal pressures.

This was exemplified through the Scandinavian Direct decision which focused on cost efficiency and improving the SAS brand. In this decision, external events and meeting the changing ‘needs’ of the passengers were the main deciding factors.

3. Uncertainty and/or anticipation of future regulatory requirements can lead to increased environmental commitment of airlines.

Regulatory uncertainty was a key aspect of SAS’s corporate environmental commitment through its decision to purchase the green engines and its diligence in environmental reporting. Anticipation of regulations can have a strong influence on how a company considers the environmental impacts of the industry.

4. External culture can play a key role in defining the environmental commitment of an airline firm.

Initially in this study, culture was not closely considered as an influence in the motivations of environmental commitment. The findings, however, have highlighted the importance of culture in determining environmental motivations at SAS. The case study of SAS showed that culture was perceived by management and personnel of SAS as a large influence on SAS’s level of environmental commitment. The ‘Scandinavian Spirit’ of keeping the country clean and green are embedded in day-to-day thinking of SAS. This pressure could be described as being subtle, but consistent, such as the habit of putting on your seatbelt when you get into a car.

Cultural influence is different from external stakeholder pressure because the pressure is not directly on the company but rather an underlying push from society to do the right thing. This is a much-understudied aspect of the literature on environmental drivers. Culturally, Scandinavian companies (including SAS), have a well-documented history of being forward-thinking with respect to environmental initiatives and commitment (Fineman, 1997). Scandinavia also has a reputation for a well-established system of environmental legislation (including charges and taxes) as well as availability of information to consumers (and outlets for queries and claims against companies who pollute (Font, 2001)).
5. One airline may motivate other airlines (or firms within the aviation sector) to increase their level of environmental commitment.

This study demonstrated that consideration of motivations should not be restricted to what influences a company, but should also consider on whom that firm has an influence. This was shown in the SAS case study through the influence the airline had over aircraft manufacturers in order to encourage the development of greener technologies. SAS demonstrated the effectiveness of this chain (as a two-way street) with respect to corporate greening:

- Strongly encouraging large aircraft manufacturers to improve the environmental performance of engines;
- Being involved in international and regional environmental policymaking;
- Working with suppliers to develop ways of minimising the environmental impact of the product they are offering and rewarding those who make the effort;
- Responding to the pressure from large corporate customers to measure the environmental impact of their travel (e.g. emissions calculator)

This has been referred to in the literature as supply-chain management but it could also apply to other firms (e.g. competitors) within an industry. SAS has been identified both internally and externally as a leader in the industry in their level of environmental commitment. As such, the airline has the potential to be a driving force in the overall transition to more sustainable practice and can act as a 'pull factor' to entice others to do the same.

6. The identification of ‘non-drivers’ or ‘negative influences’ is an important aspect of studying motivations of a firm, or group of firms.

The two terms used here – ‘non-drivers’ and ‘negative influences’ – are related but different. ‘Non-drivers’ describe factors that are not identified by firms as drivers while ‘negative influences’ have are identified as things which have an adverse effect on a firm’s level of environmental commitment (e.g. external events such as September 11). Being able to identify what won't work (and more importantly why it won't work) is just as important as
identifying what will improve corporate greening; this is especially useful when looking at individual sectors whose reaction to drivers may be quite different from the generalisations made in the current literature. In the case of SAS, green marketing and, to a certain extent passenger demand to areas advantage, were highlighted by airline management and personnel as not being influential. The results of the SAS case study question the importance portrayed in the literature of the competitive advantage of being green or of marketing ones’ self as green. For example, marketing the airline as ‘green’ would not presently be advantageous for SAS with respect to individual customers since passengers are not putting pressure on the airlines in this way.

7. The financial position of a company affects its level of environmental commitment.

When SAS was trying to decide what type of aircraft and engines to replace its fleet of DC-9s, the airline was able to invest the extra capital in the best available environmental technology because of the financial position of the SAS Group. However, when economic conditions were less favourable after September 11, 2001, it did not have the financial or human resources to devote to the same level of environmental commitment. Another example of the paradox between being able to make environmental commitments through financial investments and financial savings from these investments was shown through SAS’s subsidiary airline, Braathens, who could not afford to invest in the greener engines because of its poor financial position. A critique of using environmental tax and charge systems is that it prevents airlines from investing in new technology because they have to spend their money instead on environmental penalties. A driver is not only to gain profitability but profitability is also a driver to increased environmental investment (see Figure 7.2). That being said, the literature shows that just because a firm makes money, does not mean it will invest it in best available technology. When the airline has the financial and personnel resources to ‘manage’ environmental issues, it is, in some ways, less efficient than when it is fighting for survival in the industry. This demonstrates that corporate greening initiatives, when voluntary, will not survive the cyclical economic ups and downs. And yet, in the case of SAS, the airline’s performance improved during the ‘low’ part of the cycle. In the extreme case of financial disparity, however, an airline will not have the capital resources to purchase newer aircraft with environmentally-superior technology. The environmental-economic relationships in the airline industry appear to be more pronounced (because there is such high capital investment and long term strategic thinking necessary).
Figure 7.2. The paradox between environmental investment and financial gains.
The case of the ‘green engine’ illustrated that a shift had developed in the way SAS approached the concept of ‘eco-efficiencies’. In this particular decision, the projected long-term financial benefits of purchasing the greener engines were perceived by the CEO to outweigh the short-term costs. The CEO, at the time, projected what would be needed in the long run to stay in the market. This decision demonstrates a strategic maturity in the way financial benefits are realised that goes beyond maximising shareholder wealth for that particular financial year.

8. The connection between economic and environmental benefits is a fundamental part of ‘environmental commitment’ of a firm.

An underlying tenet of this thesis has been that financial considerations must take priority in decision-making because of the way in which profit is currently valued in the corporate system. It could be argued that this win-win relationship between economy and environment is the only motivation for environmental commitment, and that all other motivations identified are somehow related to the financial benefits that a firm gains from corporate greening. It also raises the question of whether drivers should be treated individually or simply discussed under the larger umbrella of ‘financial incentives’. Even for an airline like SAS, which is one of the leading companies in the industry for environmental commitment, many of the drivers the airline cited can be reduced to financial gains or cost savings (such as improved image, decision to buy better aircraft, and so on). This is where the role of the environmental champion becomes critical to identifying, packaging and selling ideas to senior management in a way that demonstrates potential financial gain to the company by being ‘green’. This finding reinforces the assertions made by Andersson & Bateman (2000) that environmental champions are an internal driver to encouraging overall environmental commitment within a firm.

7.3 Contributions of this research

The implications of this study are three-fold: Firstly, the study provides empirical evidence of the motivations and influences for an individual company at a level of depth provided in few case studies. Secondly, it considers these motivations from external, industry-specific and internal perspectives. Thirdly, it demonstrates ways in which an airline can be encouraged to continually improve their environmental performance. The significance of this research is founded on the notion that it is crucial to understand the external and internal drivers that
influence the development of airline environmental policy if realistic and appropriate benchmarks are to be set for different sectors of the tourism industry.

The conclusions that have been drawn from this study illustrate a range of internal to external motivations for environmental commitment. While previous studies have generally focused on either internal or external drivers, this study has shown that the complex and overlapping relationship between external and internal drivers makes a clear distinction between the two challenging. It is important to recognise that corporations not only respond to external conditions, but they can also shape those conditions through interactive engagement with the wider context including, for example, other airlines and international agencies within the airline industry. How companies interpret and internally manage these influences is a key aspect of actual outcomes in levels of environmental commitment and, ultimately, performance. This reinforces the importance of considering motivations through three lenses: internal, industry-specific and external. The ‘catalysts’ (identified in Chapter 2 and reinforced in Figure 6.2) – culture, financial position and internal leadership – play a key role in how a firm interprets external and industry influences in order identify its primary drivers (or lack thereof) for environmental commitment. Figure 7.3 provides a conceptual mode of these relationships.
The four systems of influence

Markets  Science  Political /Institutional  Social

Interpretation of these influences

Internal leadership  Catalysts  Financial position

Culture

Company X

Primary Drivers of the firm’s environmental commitment

Figure 7.3. A conceptual model of the relationships between systems of influence, internal catalysts and a company’s primary drivers for environmental commitment.
The research approach taken in this study complements previous empirical studies that focused on either 1) qualitative interviews of one or two managers within a firm from a broad range of companies within or across sectors; 2) quantitative surveys of one or two environmental, operation or procurement management within a many firms. This research expands on this in four ways.

1. **Interviewing management personnel within and external to the ‘environmental management’ sphere of a firm.**

By interviewing a broad range of managers, senior management and frontline employees from various departments within one firm, a deep understanding of the motivations for environmental commitment in the context of other demands on the company’s decision-making regime was established. Valuable information about SAS’s motivations for environmental commitment was obtained from personnel and management external to the environmental department. Studies on motivations should not therefore be restricted to discussions with environmental management and personnel within a firm. In this study, employees and managers of SAS were interviewed from a variety of departments, with several not having direct interaction with environmental issues in their day-to-day job. However, there have been few studies on corporate motivations for environmental commitment that explore the views of individuals outside of this realm. Studies on motivations for corporate greening should not be restricted to the views of environmental departments or employees given the responsibility of handing environmental communications or management within an organisation.

Stated or perceived motivations cannot necessarily be taken at face value. For example, motivations can be subdivided, in some case, into ‘superficial motivations’ and ‘ulterior motives’. Although these links may often be implied, it is important for them to also be stated explicitly.

2. **By considering the motivations of a firm within the larger context of the industry in which they operate.**

This study draws important links between the mechanisms being used within an industry to encourage corporate greening and the individual motivations of a firm. It has been identified
in the literature that different motivations exist for different sectors, therefore it is crucial to understand the larger system in which a firm operates.

3. **By investigating the motivations in relation to specific decisions that have been made within the company.**

This helped to contextualise the motivations that had been identified by personnel and management and also drew the link between what a company states as its motivations versus actual factors that are included in the decision-making process.

4. **Considering the motivations for the environmental commitment of a firm in a service sector.**

To date, most of the empirical studies that have been carried out in relation to corporate environmental commitment have focused on ‘heavy’ industries such as the resource and manufacturing sectors. While some of these studies have included a small number of firms from the service sector (e.g. Henriques & Sadorsky, 1996), this is one of the first studies to concentrate only on a firm from a service sector.

7.3.1 **Limitations of the research**

This study looked at one airline in the aviation sector, which may not be representative of all airlines or all businesses. Therefore, limited generalisations can be made from the findings. The accounts of events such as the DAC and Scandinavian Direct decisions help to understand the influences on particular decisions but cannot necessarily be generalised beyond the airline or to different sectors. However this model could be applied to other companies both within and external to the airline industry to build on the current theory and empirical evidence.

7.4 **Future areas of research**

Based on the findings in this study there are some possible areas of future research. Firstly, the approach used in this study to examine one airline in depth could be applied to other airlines as well as to other sectors. This would help to build the theory behind motivations in relation to corporate greening - particularly with respect to the inter-relationships that occur between drivers and catalysts.
Secondly, although the notion of the corporate green intrapreneur has been identified as a key influence in previous studies, the characteristics and understanding of this role has not been highly researched. The current literature on environmental champions would benefit from a more in-depth theoretical and empirical examination of the role that green intrapreneurs can, and do, play in decision-making processes, as well as how they can be encouraged in both large and small firms. Moreover, it is proposed that further study be completed on corporate green entrepreneurship in instances when the firm as a whole, and not just an individual within the firm, is seen as an environmental champion (e.g. within an airline alliance, regionally, and so on.)

Thirdly, another interesting area to explore would be the cultural aspects of corporate environmental commitment. This was identified as an important catalyst for SAS but not been discussed as such in the literature on corporate greening. For example, does sound environmental legislation create a green culture or does a green culture create sound environmental legislation?

Finally, SAS is an airline in which there is a strong internal culture willing to embrace industry benchmarking and improve environmental performance and one or more environmental champions have played a key role in the success of a company’s environmental management. However, other airlines may not have the benefit of strong internal corporate culture. Future research is needed to identify the needs, not only of successful airlines (with respect to environmental policy-making), but also airlines who have not chosen to follow their ‘greener’ counterparts.

7.5 Final words

In light of the findings that have been presented, it is fitting to come back to Friedman’s remarks, which began this thesis:

There is but one “social responsibility” for corporate executives... they must make as much money as possible for their shareholders. This is a moral imperative. Executives who choose social and environmental goals over profits – who try to act morally – are, in fact, immoral. (in Bakan, 2004:3).

Friedman’s comment reflects a conceptualisation of corporate decision-making in which there is little opportunity for corporations to invest in environmental commitment. The case
study of SAS demonstrates that there are opportunities for a firm to act 'morally' (in regards to shareholders) and pursue environmental commitment. The case study also shows however, the fragility of this 'pursuit' in periods of economic instability.

Understanding influences on decision-making can determine the mechanisms needed to ensure continuous improvement of environmental performance. While ecological sciences have an important role in the development of these indicators, a fundamental tenet of this thesis is that such indicators must acknowledge the cultural drivers, motivations and values of business if they are to be deemed relevant by industry. Support for this argument comes from critics who argue that sustainable environmental management is a cultural construct that requires solid understanding of the complex interactions between the natural and social sciences. Indicators that are based on science alone, and do not take into account the range of circumstances that influence corporate environmental commitment run the risk of non-acceptance.

A fundamental paradigm shift is needed in the way corporations do business, and the public needs to reject this destructive industrialisation process. Despite increased awareness of anthropogenic environmental impacts, financial considerations remain entrenched in business decision-making due to the structure and laws of corporations. In an ideal world (at least an environmentalist’s ideal world) we would be able to move business towards a paradigm shift in its operational values, from an economic base, to a more sustainable view such as welfare of people, and, more importantly the environment. But the reality is that this shift is not going to occur overnight.
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