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Three Essays on Reputational Crises

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"The man of greatest reputation knows how to defend a reputation"

Herakleitos, 540 BC

Unfortunately, defending corporate reputations is a more complicated matter than the saying of Herakleitos implies.

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Abstract

This dissertation studies the dynamics behind sudden, negative shifts in the corporate reputations of business firms, through three independent but related papers, a phenomenon that we refer to as a reputational crisis. This issue is of critical importance because the corporate reputation of a firm is one of its most valuable but potentially volatile intangible resources. Therefore, a better understanding of the situations where business firms suffer significant reputational losses within relatively short periods of time can contribute to both strategic management and business and society. From a strategic management perspective, the examination of sudden major losses in corporate reputation is an examination of the loss of what is potentially one of the most important intangible firm resources, if not *the* most important intangible resource of the firm. While, from a business and society perspective, an examination of sudden drops in corporate reputation could reveal the reputational impact that such sudden events have in the network of stakeholders (Freeman, 1984) who surround the firm and are, in a sense, the 'evaluators' of its reputation.

The first paper of this dissertation consists of a theoretical exploration of the management of reputational crises caused by sudden and unexpected incidents like industrial accidents, scandals, and product failures. Drawing on the stakeholder and crisis management literatures, a model useful in providing a better understanding of reputational crises is developed. The second paper is an empirical investigation into the impact that accidents can have on the corporate reputation of business firms. More specifically the impact that a number of accident characteristics have on the reputational

re-evaluations of two particular stakeholder groups, industry executives and financial analysts, is investigated with data drawn from Lexis-Nexis and the America's Most Admired Corporations (AMAC) survey of FORTUNE magazine. Finally, the third paper of the dissertation examines the Brent Spar controversy to investigate two issues of importance in the management of reputational crises: the reasons behind a company's decisions to buffer or bridge when faced with a reputational crisis; and, the role of stakeholder salience in this decision.

Résumé

À partir de trois articles indépendants, cette thèse étudie la dynamique sous-jacente aux changements négatifs et rapides de la réputation d'une compagnie. Nous appelons ce phénomène une crise de réputation. Cette dynamique est très importante car la réputation d'une compagnie est une ressource parmi les plus importantes mais aussi très volatile. Une meilleure compréhension des situations qui mènent à une perte significative de réputation dans des périodes de temps relativement courtes peut aider la gestion stratégique et la société en général. Du côté de la gestion stratégique, l'examen des pertes de réputation rapides et importantes cible la perte de la ressource intangible la plus importante d'une compagnie. Du côté de la société, l'examen des chutes rapides de réputation peut révéler l'effet sur la réputation que ces événements soudains ont sur le réseau d'acteurs impliqués qui entourent la compagnie et qui, dans un sens, sont les évaluateurs de sa réputation.

Dans le premier article, il s'agit d'une exploration théorique de la gestion des crises de réputation créés par des événements soudains et inattendus comme des accidents industriels, des scandales et des échecs de produits. En se basant sur la littérature qui traite les acteurs impliqués et la gestion des crises, nous développons un modèle qui offre une meilleure compréhension des crises de réputation. Le deuxième article étudie d'une façon empirique l'impact des accidents sur la réputation des compagnies. Plus particulièrement, nous étudions l'impact qu'un certain nombre de caracteristiques des accicent ont sur la ré-évaluation faite par deux groupes d'acteurs impliqués, des executives de l'industrie et des analystes financiers. Cette étude se base sur des faits tirés de Lexis-Nexis et de l'enquête de la revue FORTUNE: "America's Most Admired Corporations" (AMAC). En dernier lieu, dans le troisième article il s'agit d'une examination de la controverse Brent Spar pour cibler deux points importants pour la gestion des crises de réputation: les raisons derrière la décision d'une compagnie de tamponner face à une crise de réputation; et le rôle d'acteurs impliqués dans cette décision.

Acknowledgements to the Thesis

As anyone who has ever completed a dissertation knows there is a great number of people, who one way or another contributed to its completion and that one is bound to forget some in trying to thank them all. However, I will do my best to thank all of those, who in some way or other have assisted me in this endeavor.

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Finally, I would like to dedicate this dissertation in the memory of my father, who passed away before its completion.

Contributions and Publication Status of Papers

According to McGill guidelines, in the case of a manuscript-based thesis, contributions from co-authors and the publication status of the papers must be made explicit in a separate preface to the dissertation.

Chapter 2, "Responding to Reputational Crises: A Stakeholder Perspective" is co-authored with Nelson Phillips as second author. According to McGill University guidelines, it can be included as part of the dissertation provided the 'who' and to what extent each author contributed to the paper is made explicit. This note serves this purpose by acknowledging this co-authorship and stating that the paper was the product a truly collaborative work, such that the division of labor cannot be easily distinguished. However, as primary author, I must assume the responsibility for all the positions and statements that appear in the article. In addition, concerning its publication status, this paper has been accepted by the *Corporate Reputation Review.*

Finally, concerning the status of Chapter 3, "From Buffering to Bridging: An Investigation into the Brent Spar Controversy", it should be mentioned that it has been presented at the conference of the International Association for Business & Society, June 24-28, 1999, Paris, France.

CHAPTER 1
INTRODUCTION
AND LITERATURE REVIEW

This dissertation, through three independent but related papers, studies the dynamics behind sudden, negative shifts in the corporate reputations of business firms, a phenomenon that refferred to as 'reputational crisis[1]'. The corporate reputation of a firm – for the purposes of this dissertation, defined as the knowledge and emotions that stakeholders have about particular aspects of a business firm[2] - is one of its most valuable but potentially volatile intangible resources. Therefore, a better understanding of the situations where business firms suffer significant reputational losses, within relatively short periods of time, can make contributions to both the fields of strategic management and business and society.

The study of corporate reputation as a legitimate field of inquiry can be seen as a consequence of the emergence, in the mid-eighties, of the resource-based view of the firm as a new 'paradigm' in the strategic management field. The resource-based view of the firm, based on previous work by Selznick (1957), Penrose (1959), and Andrews (1971), sees the business firm as a bundle of linked and idiosyncratic resources and resource conversion activities (Rumelt, 1984). This view of the firm was further developed by authors, such as, Wernerfelt (1984), Rumelt (1984), Barney (1986, 1991), Itami (1987), Dierickx and Cool (1989), and Conner (1991). The major premise of this

1 The term is defined more formally in chapter 2.

school of thought is that firms enjoy superior sustainable performance by exploiting the rents of valuable (Barney, 1991), imperfectly imitable (Lippman and Rumelt, 1982), and non-substitutable (Barney, 1991; Dierickx and Cool, 1989) firm resources. As a consequence of this 'new way' of viewing the business firm, the focus of the field shifted from the study of competitive positioning (Caves and Porter, 1977; Porter, 1980) to the study of unique firm resources and capabilities (Barney, 1986, 1991; Rumelt, 1984; Prahalad and Hamel, 1990; Wernerfelt, 1984).

As a result of this shift, strategic management theorists and researchers began looking for sources of sustainable competitive advantage among the firm's unique and unimitable resources and capabilities. This endeavour brought to the attention of the field the potential strategic and societal significance of intangible firm resources[3]. And from the intangible resources studied, corporate reputation was identified as one of the most, if not *the*, most important intangible resource a business firm can have (Hall, 1992, 1993; Itami, 1987).

The importance of corporate reputation is twofold. First, in the strategic management field, it has been argued that a favourable corporate reputation can be the

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2 The term is defined in more detail, also in chapter 2.

[3] However, because the notions of resources and capabilities were not defined according to any formal definition, but where defined in a rather 'loose' manner through the mere listing of various resources and capabilities, this endeavour resulted in the 'discovery' of a number of new intangible firm resources and capabilities. Or, in other words, this endeavour resulted in the viewing from a resource-based view perspective of a number of already known firm aspects as intangible firm resources and capabilities (Hall, 1992, 1993; Itami, 1987). Indeed, one of the most usual criticisms of the resource-based view of the firm is the fact that it fails to clarify what is and what is not a resource or a capability. And, resource-based view theorists are often accused of constructing a tautological argument, where they look for sources of competitive advantage among the firm's resources, and yet they define a 'resource' as anything that can provide a firm with a competitive advantage.

source of sustainable competitive advantage (Barney, 1991; Dierickx and Cool, 1989; Fombrun and Shanley, 1990; Fombrun, 1996; Hall, 1992, 1993; Itami, 1987; Lippman and Rumelt, 1982; McMillan and Maheshkumar, 1997; Roberts and Dowling, 1997). While, in the business and society field, corporate reputation and particularly corporate reputation for social performance (CRSP) has been seen as a mediating variable between corporate social performance (CSP) and corporate financial performance. In the following paragraphs, a brief literature review of the study of corporate reputation in the fields of strategic management and business and society is provided for two reasons. First, such a review can provide a theoretical underpinning for the investigation of reputational crises in subsequent chapters. And, second, such a review can assist in the understanding of the implications, for both the fields of strategic management and business and society, which stem from the findings of this dissertation.

CORPORATE REPUTATION WITHIN THE FIELD OF STRATEGIC MANAGEMENT

From my reading of the relevant literature within the field of strategic management, and particularly within the resource-based view of the firm, there are three types of studies that deal with corporate reputation. Most of these studies seem to agree that corporate reputation is a potentially valuable resource that can provide the business firm with a sustainable competitive advantage. The first type of study consists of studies that are theoretical in nature and draw on selected examples or build on previous conceptual work to argue for the potential strategic value of corporate reputation. The second type of studies consists of empirical work that tries to determine the strategic

value of corporate reputation through its association with performance measures. Finally, the third type of study also consists of empirical research, but researchers engaged in this kind of work try to determine the value of corporate reputation by examining how much value different constituents place on the reputation of a firm. In the following paragraphs, a brief overview of these three types of studies is presented.

Theoretical Studies

According to a major premise of the resource-based view, a resource, such as corporate reputation, can be the source of a sustainable competitive advantage if it is valuable, unimitable, and unsubstitutable (Barney, 1991; Rumelt, 1984), and it has been argued that corporate reputation has all these characteristics. According to Fombrun (1996), a good corporate reputation is valuable because it acts as a warranty in ambiguous situations, and "because it calls attention to a company's attractive features and widens the options available to its managers, for instance whether to charge higher or lower prices for products and services or to implement innovative products" (1996: 5). In addition, Itami (1987) says that corporate reputation, as an intangible resource, can be applied simultaneously in multiple uses. A favorable reputation can be used in areas and activities quite different from those where it was generated in the first place. For example, Itami (1987) reports that once Honda had built a solid reputation for quality engineering in cars and motorcycles, it was able to cash in on this reputation and promote its lawnmowers through an advertising campaign with the message "Put a Second Honda in Your garage".

On the issue of imitability and substitutability, corporate reputation cannot be easily imitated or substituted. According to the resource-based view, reputation is the most difficult to imitate firm resource. The main reason behind this difficulty in imitating corporate reputation is the fact that, although reputations can be under certain conditions treated as a tradeadble asset (Tadelis, 1999), the 'market' for corporate reputations is usually very imperfect (Barney, 1986), or, it does not exist at all (Arrow, 1974; Dierickx and Cool, 1989). Barney (1986) suggests that the sustainability of an advantageous competitive position can be derived from the fact that some of the resources needed to support such a position can only be acquired in imperfect resource markets[4]. The imperfections of these resource markets could be a consequence of the fact that different firms have different expectations about the future value of a particular resource, or, of the fact that firms almost never start accumulating resources from scratch, but most of the times, they start from a unique (valuable or not) resource position, which they acquired through sheer luck. This rational would imply that there is an imperfect market for corporate reputations, or at least for the elements which business firms can use to build up such reputations.

However, Barney's (1986) position has drawn severe criticisms from authors such as Dierickx and Cool (1989). Dierickx and Cool (1989), drawing on prior work by Arrow (1974), argue that valuable resources can be a source of sustainable competitive advantage, not because the markets they can be found in are imperfect, but because these markets are incomplete. In other words, the markets for some resources, simply, do not

4 Actually, Barney (1986) refers to 'resources' as 'strategic factors', and to resource markets as 'strategic factor markets'. However, to avoid confusion the term 'strategic factor' has been replaced with the more conventional term 'resource'.

exist and the business firm has to built these resources itself through a long, hard to imitate, process. According to Itami (1987), this is particularly true for intangible resources that are generated as a by-product of everyday business operations, a by-product generation that cannot not be easily programmed or controlled (Lippman and Rumelt, 1982; Rumelt, 1984). According to this rationale, corporate reputation cannot be bought; it can only be built through the long-term application of certain sound business practices and policies (Dierickx and Cool, 1989). In addition, the process of reputation building, as is the case with a number of other intangible firm resources, is plagued with a great degree of stochasticity and path-dependence (Dierickx and Cool, 1989).

From a managerial perspective, Chajet (1997) has argued that while corporate reputation used to have very little impact on the financial performance of the firm, this is not the case in today's business environment where reputation is of paramount competitive importance. From Chajet's argument, his identification of two driving forces behind this development stand out. First, he says that corporate reputation has become so important because of the "unparalleled access by the public to information and the seemingly insatiable appetite for information either for its own sake or as entertainment" (1997:19). And second, that as industries consolidate, and marketing and production techniques become shared by a relatively few dominant companies most products and services become 'commoditized', leaving reputation as "one of the few tools of differentiation remaining" (1997:20).

Performance related Empirical Studies

Based on the above, mostly theoretical, argumentation, a number of empirical studies have tried to determine the strategic value of corporate reputation by relating it to measures of financial performance. Representative examples of these kind of empirical studies are studies such as Roberts and Dowling (1997), Deephouse (1997), McMillan and Maheshkumar (1997), and McGuire Schneeweiss and Branch (1990).

Roberts and Dowling (1997) relate the quality of corporate reputation to its ability to attain and sustain superior performance outcomes over time. More precisely, Roberts and Dowling (1997) examine two issues. First, they examine whether firms with good reputations have a greater chance of moving from a below average to a superior performance position, an issue that they label *a lead- indicator* effect. And second, they examine whether firms with good reputations tend to remain in superior performance positions, an issue that they call *a carry-over* effect. Using data from the AMAC Survey and Compustat, and analyzing them through event history analysis, they found those firms with superior financial performance and better corporate reputations can sustain their superior performances for longer time periods. In addition, these authors found that business firms with better reputations find it easier to attain a competitive advantage that leads to superior performance.

Deephouse (1997) examines the relationship between corporate reputation and financial performance by relating a company's media and financial reputations with its financial performance. He defines media reputation as the favorableness of a company's media coverage, and financial reputation as the financial rating industry's evaluation of a company's financial prospects. Measuring financial reputation through capital adequacy

and asset quality ratios, and media reputation through the content analysis of two daily newspapers, and after analyzing the data using correlation and regression analyses, he found that both media and financial reputations seem to have a positive and significant impact on financial performance.

McMillan and Maheshkumar (1997), in an empirical work that relates the firm's prior level of intangible resources to subsequent financial performance using the notion of Sustainable Competitive Advantage (SCA) as a latent variable, find a significant ($p<0.01$) correlation between prior reputation (at year t) and subsequent financial performance (at years t+1,t+2,t+3). The data used in this study are drawn from the AMAC survey conducted yearly by FORTUNE magazine and COMPUSTAT.

In an earlier study, and in agreement with the above results, McGuire, Schneeweiss and Branch (1990) found that prior corporate reputation is correlated with subsequent financial performance, but they also found that corporate reputation was more closely related to prior financial performance. These results of McGuire et al. (1990) are in agreement with Itami (1987) who sees intangible resources, in general, and corporate reputation, in particular, as both an 'input' and an 'output' of business operations. The data used in this study came from the AMAC survey, COMPUSTAT and CRSP databases and were analyzed with the help of correlation and regression analyses.

Constituent related Empirical Studies

Finally, from the empirical studies that examine the strategic significance of corporate reputation by examining how much value different constituents place on the

reputation of a firm, the studies by Hall (1992,1993), Srivastava, McInish, Wood and Capraro (1997), and Cordeiro and Sambharya (1997) are typical examples.

Hall (1992,1993) surveyed 847 CEOs throughout the UK from a number of industrial sectors, and found that all CEOs identified corporate reputation as the intangible resource that contributed the most to business success and as the intangible resource that would take them the longest (an average of 10.8 years) to replace if they had to build it from scratch. Shrivastava et al., (1997) examined how a firm's corporate reputation could influence the firm's evaluation by equity markets. Using data from the AMAC survey, COMPUSTAT and CRSP databases, they found that the higher the reputational score of a business firm, the higher the willingness of investors to accept risk[5]. In addition, Cordeiro and Sambhaya (1997), using data from the AMAC survey and the SEC/Disclosure database, found preliminary evidence of a positive relationship between the earning forecasts of security analysts and both stockholder and stakeholder dimensions of reputation.

CORPORATE REPUTATION WITHIN THE FIELD OF BUSINESS AND SOCIETY

Coming now to the field of business and society, an issue of primary concern in this field is whether it pays for firms to act in a socially responsible manner. In other words, does Corporate Social Performance (CSP)[6] pay off? This is an ongoing debate in

5 Measured as increasing Beta.

6 According to Wood (1991), "Corporate social performance (CSP) can be defined as a business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships" (1991: 691).

the literature, with no concluding (or convincing for all) results on the matter. On one side there are those, mostly in the domain of economics, who as followers of the 'shareholder primacy' literature (Clarkson, 1998), say that acting in a socially responsible way cuts into shareholder wealth and that the only business of business firms is to generate profits within the limits of the law (Friedman, 1970). And, on the other side, there are those, most of them within the business and society domain, who say that CSP is a form of enlightened self interest with long term benefits for the socially responsible firm (Clarkson, 1995, 1998; Freeman, 1994; Preston and Post, 1975).[7] According to Preston and Post (1975), "there is an inherently interactive and symbiotic relationship between the private business organization and the larger society that constitutes its host environment" (1975: 12). And, therefore, managers should not only acknowledge, but also monitor the claims of all legitimate stakeholders (Principles of Stakeholder Management, Clarkson Centre, University of Toronto, 1999).

Within this debate, corporate reputation and particularly corporate reputation for social performance (CRSP) can be seen as a mediating variable between corporate social performance (CSP) and financial performance. There are basically two ways that corporate reputation can be seen as intervening between a firm's CSP and its financial performance. The first way looks at corporate reputation as the consequence of CSP, while the second as a cause of CSP. In other words, and running the risk of

[7] Two underlying assumption in this debate are the notions that financial performance is the only motivation behind managerial action, and that managerial actions with business (=financial ends) can be clearly separated from managerial actions with social ends. Freeman (1994) has labelled this second assumption as "the separation thesis". He argues, quite convincingly, that the separation thesis does not always hold and that most of the times it is simplistic to say that moral and financial consequences can be meaningfully separated.

oversimplifying, the matter could be stated as follows: Is a poor level of CSP harmful to the firm's corporate reputation and therefore its bottom line? And consequently, is a concern for their firm's reputation something that will make managers act in a socially responsible manner?

CSP → CR

In viewing corporate reputation as a consequence of CSP, the reasoning would go somewhat as follows. A high degree of CSP has a positive impact on the firm's CRSP, which in turn has a positive effect on the firm's Corporate Reputation, which in turn has a positive effect on financial and competitive performance, as seems to be the overwhelming consensus from the strategic management field. On the other hand, a low degree of CSP would have a negative effect on CRSP, which in turn would have a negative impact on the firm's Corporate Reputation, with a negative effect on financial and competitive performance. A few examples of studies, which examine at a theoretical or empirical level the reputational impact of CSP and the strategic value of CSP are in place here. Specifically, Ackerman, 1975; Brown, 1997; Lukaszewski, 1993; and McGuire, Sundgren and Schneeweiss, 1988 are discussed in the following paragraphs.

According to Ackerman (1975), the attitudes toward the role of business in society have changed dramatically. Business firms are expected to assume a broader range of responsibilities within society and contribute to the quality of life in more ways than just supplying goods and services. Since social demands have a greater impact on the operations of business, managers are obliged to show concern for social performance. In such a climate reputation for social performance will play an increasingly important

role in the determination of a firm's overall reputation and competitiveness. However, this argument runs contrary to the Exxon Valdez experience. Lukaszewski (1993) reports that despite the reputational severity and mismanagement of the 1989 Exxon Valdez accident, the company did not suffer financially, and an attempted boycott of Exxon products and credit cards[8] failed. This development labeled 'the Exxon Valdez Paradox' casts serious doubts in the financial significance of CSP and its reputational counterpart CRSP.

Mixed results concerning the value of CRSP have also been found by Brown (1997), who examined the value that the stock market attaches to a firm's CRSP. Brown (1997) used the Brown and Perry (1995) database[9] as a measure of CRSP and related it to stock market returns for the periods of 1982-1987, 1987-1992, and 1982-1992. He found that while for the years 1982-1987 companies with high CRSP clearly outperformed companies with low CRSP, this was not the case for the period of years 1987-1992, and not the case for the overall period of 1982-1992. Finally, McGuire, Sundgren and Scheneeweiss (1988), using data from the AMAC survey and COMPUSTAT, found that CRSP is more closely associated with prior financial performance than with subsequent performance. These findings, although not in support of the view that sees CRSP as contributing to the financial performance of the firm, are in agreement with Näsi, Näsi,

[8] Out of a base of more than seven million card-carrying customers, 40,000 credit cards were actually returned (Lukaszewski, 1993).

[9] The Brown and Perry (1995) database is a derived by the removing the financial halo from the 'Responsibility to the Community and the Environment' ratings of the AMAC survey conducted yearly, since 1984, by FORTUNE magazine. Brown and Perry have argued that this removal of the financial halo from the data enables them to better capture the firm's reputations for social performance.

Phillips and Zyglidopoulos (1997) who have argued that firms tend to act in a socially responsible way only when they can afford to.

CR → CSP

In viewing corporate reputation as a factor that would influence the firm's CSP, the reasoning would go somewhat as follows. Provided that CSP has an effect on corporate reputation, which in turn influences business performance, managers would tend to act in a socially responsible way because they would be afraid of hurting their firm's reputation, and subsequently their business performance. However, there is not a lot of empirical research that examines Corporate Reputation as a factor influencing CSP, and the matter has been discussed mostly at a theoretical level (Dobson, 1989, 1991; Davidson, 1990; Fombrun, 1996)

Dobson (1989, 1991) argues that "reputation acts as an implicit contractual enforcement mechanism between stakeholders in the corporate domain whose various claims cannot be explicitly enforced" (1989:2). In other words, a corporation who is concerned with the maintenance of its reputation will tend to fulfill its obligations towards its various stakeholders even if these stakeholders do not have the power to make the corporation comply with its commitments towards them. Dobson identifies a number of conditions that must prevail, if reputation is going to be such an effective contractual enforcement mechanism. These conditions are the following: "(1) Contracts between stakeholders cannot be enforced costlessly by any explicit means...(2) Reputation builders believe that they will be entering into future contracts with either, (a) the same stakeholders with whom they are currently dealing or, (b) stakeholders who, although

new to the reputation builders, have access to information concerning the experiences of past stakeholders...(3) the reputation builder s degree of compliance with a contract is observable ex post (i.e. after the fact) by claimants" (1989: 4). This view, however, is not uncontested, Davidson (1990) has argued that the above conditions "while necessary, are certainly not sufficient to ensure ethical behaviour" (1990:39).

Finally, Fombrun (1996) says that companies are beginning to realize that by focusing on building an enduring and resilient reputation, they actually serve their own long-term economic interest. However, building such a reputation requires that companies establish "strong relationships not only with customers but with other key constituents" (1996:60). Such relationships can be created only if companies see themselves not only as economic engines or money machines, but also as social institutions. However, given the inconsistent findings and diverging opinions concerning the role of Corporate Reputation, in general, and CRSP, in particular, within the business and society field, it does not seem that the value of Corporate Reputation as a link between CSP and business performance is adequately understood.

THE PURPOSE OF THIS DISSERTATION

Given the above described study of corporate reputation within the fields of strategic management and business and society, the general aim of this dissertation is to investigate sudden 'drops', or, 'negative shifts' in corporate reputation as a result of unpredictable and often catastrophic events, which will be referred to as reputational crises. Such an investigation could lead to a better understanding of the factors and events, which influence and determine the corporate reputation of a firm.

It is a generally accepted belief that a favorable corporate reputation can only be developed though the long-term persistence to sound business practices and responsible corporate behavior (Dierickx and Cool, 1989; Hall, 1991; Itami, 1987). However, a resource that can only be built through painstaking long-term efforts can be destroyed, practically overnight, as a number of crises due to unforeseen and often quite catastrophic events have shown. Therefore, the study of these sudden drops in corporate reputation has implications for both the fields of strategic management and business as society.

From a strategic management perspective, the examination of sudden major losses in corporate reputation is an examination of the loss of what is potentially one of the most important intangible firm resources, if not *the* most important intangible resource of the firm. Such an examination could lead to a better understanding of the managerial effectiveness in handling such crises in reputation and, eventually, lead to managerial responses, which would minimize the reputational impact of a number of possibly unforeseen events.

From a business and society perspective, an examination of sudden drops in corporate reputation could reveal the reputational impact that such sudden events have in the network of stakeholders (Freeman, 1984) who surround the firm and are, in a sense, the 'evaluators' of its reputation. Their reactions to various reputational crises as well as their reactions to various managerial responses determine the initial reputational suffering and the subsequent recovery that the firm will endure because of its involvement in a reputational crisis. Also, an investigation in such extreme cases of negative reputational shifts could possibly shed light into the relationship that corporate reputation has with corporate social performance and corporate financial performance.

Chapter 2 of this dissertation, "Responding to Reputational Crises: A Stakeholder Perspective" consists of a theoretical exploration of the management of corporate reputation crises caused by sudden and unexpected incidents like industrial accidents, scandals, and product failures. Drawing on the stakeholder and crisis management literatures, a model of reputational crises is developed. This model is useful in providing a better understanding in dynamics of reputational crises, what they are how they develop over time, and how they can be managed. In addition, based on this model, a number of propositions concerning the relationship among the initial triggering event, stakeholder reactions, and managerial responses are presented. For illustration purposes, throughout the chapter, references to the Union Carbide disaster at Bhopal and the Exxon Valdez disaster are being made. And, the chapter concludes with a discussion of some future research directions in the management of corporate reputation.

Chapter 3, "The Reputational Impact of Accidents" is an empirical investigation into the impact that accidents can have on the corporate reputation of business firms. Industrial accidents such as airplane, and railroad accidents, or chemical and oil spills can cause significant damage to the reputation of a firm. However, despite the in depth investigation of a few major accidents that have received a great deal of media attention, a more systematic and general study of the reputational impact of industrial accidents is lacking. In this paper, drawing on the literatures of industrial crises, corporate reputation, and stakeholder theory, the impact that a number of accident characteristics have on the reputational re-evaluations of two particular stakeholder groups, industry executives and financial analysts is examined. A number of hypotheses are developed and tested with

data drawn from Lexis-Nexis and the America's Most Admired Corporations (AMAC) survey of FORTUNE magazine.

The main findings from this paper can be summarized as follows. First, industry executives were influenced by accident severity with respect to environmental damage and media attention, while industry analysts were not. Second, the findings seem to suggest that blame and complexity did not have an impact on the reputational re-evaluations of the two stakeholder groups examined. Third, support was found for the position that while accident characteristics can have an impact on the reputation of the firm, this impact, when it exists, is not always the same with various stakeholder groups. And, the paper concludes with a discussion of the research and managerial implications of these findings.

Chapter 4, "From Buffering to Bridging: An Investigation into the Brent Spar Controversy" draws on the Brent Spar controversy to investigate the reasons behind Shell's initial decision to buffer, and the reasons behind its subsequent change of mind into a bridging position. Understanding the reasons behind such a decision is important for three reasons. First, as prior research has found (Zyglidopoulos and Iqtidar, 1998), business firms facing a reputational crisis usually do not 'change their minds'. Even if this threatens their survival, in a phenomenon resembling the escalation of commitment effect (Staw, 1981), most firms faced with a reputational crisis tend to stick by their initially chosen position to the, often bitter, end. Therefore, the rarity of a major firm changing its mind (Giroux, forthcoming) makes this case worth investigating in more depth. Second, since managers in such a situation have to deal with a number of, often conflicting, demands from various stakeholders, this investigation provides insights into

the issue of stakeholder salience (Mitchell, Agle and Wood, 1997). Third, a better understanding of the reasons and rationale behind such decisions contributes to the development of more effective managerial practices during reputational crises. The main findings from this research can be summed up in the following three points. First, the main reason that Shell UK changed from a buffering to a bridging approach was the fact that its initial decision was fought by a great number of powerful, legitimate stakeholders with urgency behind their claims. Second, the main reason for this intense reaction of stakeholders was that Shell UK acted within a national framework without considering the international reputational 'side-effects' its decisions and actions could have. Finally, managers should consider the matter of stakeholder salience as a dynamic matter and should pay attention not only for changing stakeholder interests and characteristics, but also for the interactions among various stakeholders. The chapter concludes with a discussion of the research and managerial implications of the findings.

Finally, the dissertation concludes with a discussion of the contributions that the three papers presented here make to our understanding of the dynamics behind sudden negative shifts in corporate reputation. More precisely, the findings from each paper are integrated around three open-ended questions about the dynamics of reputational crises. These questions are (1) how do different kinds of 'negative' events cause reputational crises? (2) What factors influence the intensity of a reputational crisis? (3) What determines the reactions of managers faced with a reputational crisis? In addition, directions for future research are also discussed.

Preface to Chapter 2

In order to investigate sudden negative changes in the corporate reputation of a business firm, a theoretical framework within which such negative changes in corporate reputation, their causes, societal consequences, and managerial implications can be examined needs to be developed. Once such a framework has been developed, negative changes in the corporate reputation of business firms be understood and managed. Thus, aiming in this direction, Chapter 2 is a theoretical exploration of the management of corporate reputation crises caused by sudden and unexpected incidents such as industrial accidents, scandals, or even product failures. Drawing on various literatures a model for the better understanding of reputational crises is developed and a number of propositions presented and discussed.

CHAPTER 2
RESPONDING TO REPUTATIONAL CRISES: A STAKEHOLDER PERSPECTIVE

"In the early hours of Monday, December 3, 1984, a toxic cloud of methyl isocynate (MIC) gas enveloped the hundreds of shanties and huts surrounding a pesticide plant in Bhopal, India. Later, as the deadly cloud slowly drifted in the cool night air through streets in surrounding sections, sleeping residents awoke, coughing, and rubbing painfully stinging eyes. By the time the gas cleared at dawn, many were dead or injured. Four months after the tragedy, the Indian government reported to its parliament that 1,430 people had died. In 1991 the official Indian government panel charged with tabulating deaths and injuries updated the count to more than 3,800 dead and approximately 11,000 with disabilities." (Browning, 1993: 365)

[11:40 p.m., Thursday, March 23, 1989] "*the* Exxon Valdez *shuddered. [Captain] Hazelwood raced to the bridge. After the first impact, the tanker advanced 600 feet before it ground to a halt on Bligh Reef. ... [Hazelwood] radioed the Coast Guard traffic control in Valdez. 'It's* Valdez *back. We should be on your radar there. We've fetched up, run aground north of Goose Island, around Bligh Reef. And evidently we are leaking some oil. And we are going to be here awhile.' ... As of April 1990, 170 lawsuits had been filed. Exxon estimated its expenditures to be at the $2 billion mark. ... The spill eventually contaminated 1,567 miles of shoreline; scientists estimated that 300,000 to 645,000 birds and 1,000 to 5,000 sea otters were killed.*" (Lukaszewski, 1993: 192-202)

In the above incidents, Union Carbide and Exxon were suddenly faced with industrial disasters requiring careful and expensive management to minimize damage to local communities and the natural environment. At the same time, they faced reputational crises that threatened to undermine their relationships with important stakeholder groups untouched by the industrial disasters. These reputational crises demanded equally effective, but very different, managerial

responses to minimize potentially catastrophic consequences growing out of damage to their corporate reputations. But, what kinds of managerial responses were available to Exxon and Union Carbide in these cases? What responses would have been most effective in minimizing the damage to their corporate reputations?

Reputational crises like these occur when widely publicized, highly-negative events lead important stakeholders to re-evaluate their impressions of a company and its activities. Managers respond to these events in various ways in an effort to minimize the reputational effects of the crisis. How effective these responses will be depends on the nature of the crises, the response chosen by managers, and the previous relationship between the corporation and its stakeholders. In this paper, we will explore the management of reputational crises and suggest a number of characteristics of reputational crises that determine which managerial responses will be effective in which situations.

Understanding the effectiveness of different managerial responses is a critically important managerial issue as these crises often have a severe impact on the profitability, and even viability, of the corporations involved. However, understanding which responses are effective in which situations requires a broader understanding of the dynamics of reputational crises than currently exists in the corporate reputation literature. We therefore draw on the corporate reputation, stakeholder, and crisis literatures to develop a model of reputational crises that highlights the variables that determine the effectiveness of managerial responses. Beginning with this model, we go on to develop a number of propositions about the management of reputational crises and discuss future directions for research in this area.

In developing our framework and propositions, we contribute to the growing literature on corporate reputation in three ways. First, we bring a range of new theoretical ideas into the

discussion of the effectiveness of managerial responses to reputational crises. The role of managerial action in mediating reputational crises is of critical importance to managers and researchers but has remained relatively under-theorized in the corporate reputation literature. The industrial crisis and stakeholder literatures provide a number of theoretical ideas useful in understanding reputational crises. Second, we develop a process model of reputational crises useful in understanding how they develop over time. Reputational crises generally unfold in a series of phases and understanding these phases, and the relationships between them, is an important part of understanding corporate reputation more generally. Third, the model highlights a number of important questions that remain unanswered about the effectiveness of managerial responses to reputational crises. In particular, the stakeholder perspective that we develop emphasizes the importance of understanding the relationship between that nature of the event, the different responses of stakeholder groups, and the intervening effect of managerial actions.

In the remainder of this paper, we proceed in three steps. We begin by presenting a stakeholder model of reputational crises. We then develop a number of propositions based on the model. Finally, we conclude with a discussion of the implications of our model for research and practice.

A STAKEHOLDER MODEL OF REPUTATIONAL CRISES

In this section, we develop a model of reputational crises based on ideas from the stakeholder, industrial crisis management, and public relations literatures. We begin by developing a stakeholder theory of corporate reputation building on existing definitions of corporate reputation but with the addition of an explicit stakeholder perspective. We then

develop a model of reputational crises and managerial responses based on this stakeholder model of reputation and a number of ideas from these other literatures (see Figure 2-1). In the next section, we propose a number of relationships between the variables in our model as a basis for further research.

Defining Corporate Reputation

While many definitions of corporate reputation have been proposed, the one we find most useful defines corporate reputation as "the overall estimation in which a particular company is held by its various constituents" (Fombrun, 1996: 37). While this definition provides a good starting point for understanding corporate reputation, it leaves at least two important issues in need of further clarification: (1) who are the "constituents" that determine corporate reputation; and (2) what makes up their "overall estimation"? Adding an explicit stakeholder perspective to this definition contributes to the solution of both of these problems.

Beginning with the first issue, we believe that rather than simply "constituents", corporate reputation should be understood as being relative to different stakeholders – "any group or individual who can affect or who is affected by the achievement of an organization's purposes" [1] (Freeman, 1984: 25). This allows the development of a stakeholder theory of corporate reputation (Zyglidopoulos and Phillips, 1998A) and links corporate reputation to the stakeholder literature (e.g., Carroll, 1993; Freeman, 1984; Näsi, 1995). The stakeholder literature provides a useful approach to defining and categorizing the diffuse "constituents" of Fombrun's

[1] Other researchers define 'stakeholder' less inclusively. For example, Carroll (1993:22) defines stakeholders as "individuals or groups with which business interacts who have a stake, or vested interest, in the firm." In other words, stakeholders are individuals or groups that are not only affected by business activities, but that can also exert an influence on these activities.

definition based on the nature of their relationship with the corporation: a constituent or stakeholder group is a collection of actors with a similar interest in the corporation and its activities.

The second, saying that a firm has a good reputation with a particular stakeholder group begs the question of a reputation for what? A corporation can have a reputation for being socially responsible, for being technically advanced, for being a good place to work, or for being very profitable. In each case, we can say that the corporation has a "good" reputation, but in each case we are saying very different things. However, the solution is not to try to list all of the potential dimensions of corporate reputation[2]. Instead, we need to ask about the stakeholders of the corporation. Rather than a single, unidimensional reputation, or even a common bundle of reputational elements that fit all corporations, we can say that corporations have different reputations with different stakeholder groups and that these different reputations will be based on the interests of the stakeholder group in question. What reputation is will not depend on the corporation, *but on the nature and interests of the stakeholders of the corporation.* Reputation is, therefore, fundamentally a stakeholder based concept; it grows out of a stakeholder relationship and its nature is shaped, if not determined, by that relationship.

Combining these points, it is clear that a more precise definition of corporate reputation, a definition that can better facilitate further empirical investigation of the matter, should accommodate the fact that corporate reputation is multidimensional and stakeholder specific (Zyglidopoulos & Phillips, 1998A). We therefore begin with earlier understandings of corporate reputation but we add an explicit stakeholder aspect: corporate reputation is the set of interested

[2] This has been attempted in the stakeholder literature (i.e., to list all of the possible stakeholders) and has proven to be both impossible and unhelpful.

knowledge and emotions held by various stakeholder groups concerning aspects of the firm and its activities. This notion of corporate reputation can be visualized as an *n* x *m* matrix, where one dimension is made up of the *n* stakeholder groups who have an interest in the firm, and the other dimension is composed of the *m* firm aspects that are of interest to stakeholders. Obviously, the important dimensions of reputation will vary from firm to firm depending on the nature of the corporation's stakeholder groups. The nature of corporate reputation will also change over time as new stakeholder groups and new issues appear. From this perspective, corporate reputation becomes a dynamic, stakeholder-based aspect of the corporate environment with which managers and management researchers must come to terms.

Understanding Crises in Corporate Reputation

Despite the fact that corporate reputation develops through the persistent application of sound and responsible business behavior over long time periods (Dierickx and Cool, 1989; Itami, 1987), the experience of Union Carbide and Exxon show that it can be lost in a moment. The occurrence of a reputational crisis means that firms lose, practically overnight, a valuable intangible resource that took years to develop. More formally, a reputational crisis can be defined as a situation in which important stakeholders negatively re-evaluate their opinions and beliefs about the firm. Any number of negative events such as accidents (Buchholz, Evans, and Wagley, 1985; Marcus and Goodman, 1991; Perrow, 1984; Shrivastava, 1987), scandals (Dailey, 1993; Marcus and Goodman, 1991; Sethi, 1977A, and B), or financial problems (Kent, 1993) can cause a reputational crisis.

Such catastrophic events have been dealt with in the crisis management literature from two perspectives: the industrial crisis perspective and the public relations perspective. From the industrial crisis perspective, such events are seen as "organizationally-based disasters which cause extensive damage and social disruption, involve multiple stakeholders, and unfold through complex technological, organizational and social processes" (Shrivastava Mitrof, and Miller, 1988: 285). This perspective examines the situation from a 'macro' point of view, focusing on issues such as the reasons behind the crises (Shrivastava et al., 1988), the role of the media (Nelkin, 1988), and what business organizations and governments can learn in order to prevent future crises (Bowman and Kuntreuther, 1988; Starbuck and Milliken, 1988). On the other hand, the public relations perspective adopts a 'micro-managerial' point of view. The focus is on managerial responses during a crises (Dyer, 1995; Rogers, 1993), on the most effective communication practices during times of crises (Maggart, 1994), and on what steps can be taken to plan for crises during regular operation (Birch, 1994; Mitroff, 1994).

Combining ideas from these perspectives and adding the stakeholder view of corporate reputation discussed above, we propose a fivefold model of reputational crises (see Figure 2-1) that can help us better address reputational crises. The five elements of our model are: (1) triggering event, (2) stakeholder interpretations, (3) stakeholder reactions, (4) managerial interpretations, and (5) managerial reactions.

According to Shrivastava et al. (1988), *triggering events* are sudden destructive events with a low probability of occurrence that initiate crisis processes in product and financial markets, regional and national economies, the physical environment and so on. Depending on the severity of the event there can be damage to facilities and other economic losses, damage to the natural environment, or even loss of human life. Marcus and Goodman (1991) identified three

types of crises that can be seen as types of triggering events: accidents, scandals, and product safety incidents. They argue that the most important dimension in classifying these events is the level of deniability possible. For example, in the case of scandals, where human agency is quite obvious, deniability is very low; while in the case of accidents, and particularly system accidents caused by the interaction of multiple quite improbable failures in a complexly interactive and tightly coupled system (Perrow, 1984), deniability could be very high.

The second aspect of our model refers to the *stakeholder interpretations* of the above triggering events. This aspect of the model reflects the fact that stakeholders will not react to the triggering events themselves, but to their interpretations of these events. These interpretations depend on the previous reputation of the corporation and on the issues underlying the stakeholders' relationship with the firm. According to Fiol and Kovoor-Misra (1997), stakeholders use societal, organizational, and personal filters to view a particular event. Therefore, the same triggering events could look quite different to different stakeholders. More specifically, it has been argued that corporations with positive reputations will tend to suffer less reputational damage when faced with a negative event (Fiol and Kovoor-Misra, 1997; Zyglidopoulos, 1997).

Stakeholder reactions refer to the ways in which the various stakeholders re-evaluate their opinions and beliefs about a particular corporation. Based on the previously described matrix view of corporate reputation (Zyglidopoulos and Phillips, 1998A), there are at least two aspects to the possible re-evaluations of stakeholders: the severity of the re-evaluation and number of reputational aspects re-evaluated. For example, stakeholders that were not effected in any major way by the triggering event can be expected to re-evaluate their notion of corporate reputation much less than stakeholders who were effected in a major way by the event. In

addition, stakeholders will not re-evaluate all aspects of a firm's reputation in a similar manner. For example, when faced with very poor financial results, a given stakeholder group might re-evaluate the firm's financial reputation, while the same group might leave practically intact the firm's reputation for environmental responsibility.

This idea can be applied in turn to managerial reactions to stakeholder responses. Managerial responses should not be seen simply as responses to stakeholder reactions, but as responses to managerial *interpretations* of stakeholder reactions. According to Mitchell, Agle, and Wood, (1997), managers will tend to interpret and evaluate the reactions of the various stakeholders according to the power, legitimacy, and urgency that these stakeholders have in their claims. According to Mitchell et al., (1997), who draw on previous work by Dahl (1957), Pfeffer (1981), and Weber (1947), power is the "relationship among social actors in which one social actor, A, can get another social actor, B, to do something that B would not have otherwise done" (1997: 869). Legitimacy is defined as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed systems of norms, values, beliefs, and definitions" (Suchman, 1995: 574). Finally, urgency refers to the immediacy or 'pressing nature' of the stakeholder claims (Mitchell, et al., 1997). When managers perceive a certain stakeholder as powerful and their claim as urgent and legitimate, then it is highly likely that managers will respond.

The fifth element in our model refers to the *reactions of managers.* Managers, when faced with a reputational crisis, can respond in two ways. They can try to buffer or to bridge their organization's involvement in the events which caused the reputational crisis (Meznar and Nigh, 1995). "Buffering involves trying to keep the environment from interfering with internal operations and trying to influence the external environment" (1995: 976); while bridging

involves trying "to adapt organizational activities so that they conform with external expectations" (1995: 976). If managers follow a buffering strategy during a reputational crisis, they would try to isolate the firm as much as possible from the event, get away with allocating as few financial resources as possible, and admit as little as possible in an attempt to minimize potential liability (Birch, 1994). They may even try to shift the blame for the events to some third party. On the other hand, a bridging strategy would involve the early and visible involvement of the firm in the clean-up or recovery operations and the creation of a direct and reliable supply of information to the press and the public (Maggart, 1994).

LEARNING FROM UNION CARBIDE AND EXXON: EXTENDING THE MODEL

Beginning with the above model, we are now in a position to explore the relationship between the different elements of a reputational crisis in more detail. We will begin by presenting the Union Carbide and Exxon cases in more detail and then develop a number of propositions drawing on the model and the experiences of the two companies in managing their respective crises.

Union Carbide

On December 2nd, 1984, at around 11 p.m., a highly poisonous gas called Methyl Isocyanate (MIC) leaked from a Union Carbide plant in Bhopal, India. The leak occurred when water entered an MIC storage tank and caused a runaway chain reaction. The effects on the surrounding Bhopal community were catastrophic. Accentuated by lack of emergency procedures and a clearly inadequate medical system, over 2500 people died and over 200,000 were injured.

In addition over 2000 animals died and 7000 were injured. The natural environment suffered incalculable damages, and the crops in the area were destroyed. The city's social fabric was further disrupted by two large-scale evacuations (Browning, 1993; Morehouse and Subramanyam, 1986; Shrivastava et al., 1988).

The CEO of Union Carbide, Warren Anderson, visited the Bhopal plant immediately after the accident. Although this move generally earned him high marks around the world as the "kind of swift action required to manage such corporate crises", the Indian government charged him with "corporate and criminal liability" (Browning, 1993) and he was briefly placed under house arrest. This was the beginning of a long legal battle between the Indian government, representing the Bhopal victims, and Union Carbide. Between the years 1985 and 1989, when a final settlement of $470 million between Union Carbide and the Indian government was reached, a long legal saga took place in a number of courtrooms in both India and the U.S., where the Indian government tried unsuccessfully to bring the case.

In addition to the above legal battle, the Bhopal incident set off another series of events. As a result of the accident, the company's market value dropped by two-thirds to less than $ 3 billion. This enabled GAF Corp. to mount a takeover bid for $ 5.3 billion. Union Carbide's management was able to fight off this takeover attempt, but only after it borrowed $2.8 billion and sold 20 per cent of its assets (Shrivastava, 1987). After decades of careful development, Union Carbide had to sell off its Consumer Products Division. The group included Glad trash bags, EverReady batteries, Prestone, and STP automobile products, businesses that were among the company's most profitable. This left the company with three main lines of business, chemicals and plastics, industrial gases, and carbon products, a "dramatically changed company" (Union Carbide, 1986).

Exxon

On March 24 1989, the Exxon Valdez ran aground in Prince William Sound off the coast of Valdez, Alaska, and released over 250,000 barrels of crude oil into the ocean. The incident was the worst tanker spill in U.S. waters, and the situation became even worse because of bad weather and administrative holdups that delayed the cleanup operations until after the oil spill had spread widely (Lukaszewski, 1993; Martin, 1993). There was no loss of human life in this accident, but the environmental consequences were severe. Over 2,500 miles of beaches were blackened with 11 million gallons of oil, 36,000 birds including at least 100 bald eagles were killed, and a many other species of wildlife were decimated (Galen and Cahan, 1990).

The immediate reaction of its top management was less than spectacular. Exxon's top management, and particularly Lawrence Rawl (its CEO), kept a low profile, staying out of the public's eye for about a week after the accident. This decision drew extensive criticism from a range of stakeholder groups (Fortune, 1989). However, after the accident, Exxon started showing greater sensitivity to environmental and safety issues, and worked to promote environmental issues by bringing to the forefront of its marketing agenda a number of related issues such as cleaner burning gasolines, oil recycling programs, and other environmentally friendly products (Martin, 1993).

As a result of the Exxon Valdez accident, the company faced more than 170 civil and criminal lawsuits, including 58 class action suits, by various constituents, including local businesses, shareholders, the state of Alaska, environmentalists, consumers, and various opportunists. These lawsuits resulted in a $125 million criminal fine, a $12 million compensation to the North American Wetlands Conservation Fund, a $13 million compensation to the United States Treasury, and a $1 billion payment for restoration of the spill area. These fines were paid

by the company in addition to the clean up costs that, as early as 1989, reached $1.7 billion and, by late 1991, stood at $2.2 billion.

However, not all the results from the spill were negative. Valdez, Alaska became the centre of a $2 billion cleanup operation as flood of people and money poured into town. The population of Valdez went from 3,200 to 10,000 in a matter of weeks, tent cities sprang up, food prices surged, restaurants had long lines, and, in a city without a single traffic light, there were traffic jams. All this activity gave rise to a new breed of citizens, the "spillionairs", who became rich virtually over night by providing their services to the huge cleanup operation (Shao, 1990).

Finally, another consequence of this incident, less visible but with potentially long term implications, was the fact that a number of government agencies, both U.S. and foreign, started discussing new legislation that would require oil companies to be more prepared for such emergencies. In addition, the U.S. Congress started to stall its approval for the development of the Arctic National Wildlife Refuge (Fortune, 1989).

Insert Figure 2-1 about here

Triggering Events

From the perspective of a manager or a researcher interested in reputational crises, triggering events are of great interest because they can be clearly identified in time and place as the starting points of a reputational crisis (Shrivastava, et. al., 1988). Furthermore, triggering events can be used as a template for categorizing reputational crises. In other words, we should expect the nature of a triggering event to influence how a crisis unfolds, in general, and the

stakeholder interpretations and reactions, in particular. However, the 'nature' of a triggering event could refer to a great number of aspects of the triggering event, such as location, severity, time duration, plausible deniability, complexity, and so on. In this paper, we will only include two aspects of a triggering event that we believe are particularly important: the severity of the event and its degree of deniability.

The severity of a triggering event can refer to three things: the extent of damage or loss of human life, the extent of damage to the environment, and the extent of financial costs. The severity of the triggering event, beyond the fact that it will influence the extent of stakeholder reactions, is also important as it can influence '*who*' can be seen as an influencing stakeholder. Severe triggering events often create new sets of stakeholder interests and issues, and, therefore, change the power, legitimacy, and urgency (Mithcel, Agle and Wood, 1997) different stakeholder groups have. The Bhopal accident is a good example of such an event. The thousands of people living in shanties across the street from the Union Carbide plant were, at best, latent stakeholders (Mittchel et al., 1997) with no impact on the firm's operations, prior to the accident. They were, for the most part, illiterate and did not have any real interest in the plant or in Union Carbide. In fact, most of the local residents simply believed that it produced "'plant medicine' to keep plants healthy and free from insects" (Shrivastava, 1987:4). The Union Carbide plant had an insignificant influence on their daily lives just as they had an insignificant influence on the everyday operations of the plant. However, all this changed dramatically after the accident. The Bhopal community was transformed from a marginal, or 'latent' (Mitchell, Agle, and Wood, 1997) stakeholder group at best to "the victims of Bhopal", one of the most significant stakeholder groups of the firm. Restated as a proposition:

Proposition 1: The greater the severity of a triggering event, the more likely it will be that new influencing stakeholder groups will be formed.

But the severity of a triggering event does not only affect *who* can be seen as an influencing stakeholder, it also affects *how* triggering events affect stakeholder reactions. From a stakeholder point of view, severe triggering events affect stakeholder reactions by influencing and altering the issues that underlie the firm-stakeholder relationship (Dutton and Dukerich, 1991; Zyglidopoulos and Phillips, 1998A). In the business and society literature, the term 'issue' is used primarily in relation to social issues (Ackerman, 1975; Bigelow and Fahey, 1993; Downs, 1972; Mahon and Waddock, 1992; Post, 1978). However, in this paper, the term 'issue' is used in a broader sense to refer to any of a number of stakeholder concerns that include, but are not limited to, social issues. Examples of issues include financial performance (for stockholders), product/service quality and reliability (for customers), workplace safety (for employees), general social responsibility (for the local community), and so on (Fombrun, 1996). Accordingly, stakeholders will tend to construct their notion of corporate reputation for a particular firm based on how well the firm addresses their issues of concern.

According to Dutton and Dukerich (1991), issues can arise from internal organizational changes or from "changes originating externally, such as a demographic trend, a regulatory act, or a supply shortage" (1991: 518). In reputational crises, severe triggering events create new issues or alter the priority that stakeholders allocate among already existing issues. This point can be illustrated by drawing on the Union Carbide case, and particularly with the issues of concern to the Indian government. Prior to the accident, the main issues of concern for the Indian government in its dealings with Union Carbide were to increase industrialization while

maintaining self-sufficiency and local control (Browning, 1993). These issues were more or less addressed, given that in 1984 Union Carbide India operated 14 plants with 9,000 employees, 24 percent of its shares were owned by government-run insurance companies, and the work force at the Bhopal plant was entirely Indian. However, after the accident, the most important issue of concern for the Indian government became the management of its own legitimacy with the people of Bhopal, and the shedding of all its responsibility for the accident. These issues were addressed by transferring the blame to Union Carbide through a number of actions including the control of information and the quick identification and punishment of those believed to be responsible (Shrivastava, 1987).

Proposition 2: The greater the severity of a triggering event, the greater the effect on the issues underlying the firm's relationships with its existing stakeholders.

The second aspect of a triggering events that we believe is critically important in understanding its affect on reputation is the event's plausible deniability. Plausible deniability, according to Marcus and Goodman (1991) refers to what can be plausibly said about the causes of the event. For example, it is easier for a company to "deny responsibility for an accident because it can claim that the events occurred almost entirely by chance" (1991: 284). This is especially so in the case of 'system accidents' (Perrow, 1984), where the accident is the result of the interaction of multiple quite improbable failures in a complexly interactive and tightly coupled system. In system accidents, a number of failures interact in a non-linear and unpredictable way, and given tight-coupling the system does not have the time or the resources to recuperate. It is possible to attribute 'operator error' among the causes of the accident, but given

the complexity of the events "the operator is confronted by unexpected and usually mysterious interactions among failures, saying that he or she should have zigged instead of zagged is possible only after the fact" (Perrow, 1984: 9). Therefore, in the case of system accidents, the fact that blame is so difficult to trace within the organization leads to plausible deniability and less reputational damage. On the other hand, in relatively simple accidents where operator error can be easily established plausible deniability is much more difficult to attain. Similarly, in scandals, plausible deniability is extremely difficult to achieve due to the very nature of scandals. According to Marcus and Goodman, "responsibility for a scandal is hard to deny because the events usually are the result of faults and misdeeds" (1991: 284).

Beginning with this line of reasoning, it is reasonable to expect that the plausible deniability of a triggering event and the reputational re-evaluations of stakeholders to be inversely related. The rational behind this position is that in dealing with triggering events that have a high degree of plausible deniability, stakeholders will be faced with events where the allocation of blame will not be an easy or straightforward task. Therefore, doubt and ambiguity concerning managerial and organizational responsibility will make stakeholders re-evaluate in a more modest way their opinions about the particular organization (Brockner, DeWitt, Grover, and Reed, 1992). Stated in the form of a proposition:

Proposition 3: The greater the plausible deniability of a triggering event the less severe the re-evaluations of the stakeholders involved will be.

Stakeholder Interpretations and Reactions

As we have argued above, stakeholders will react not to the triggering events themselves, but to their interpretations of these events. These interpretations, we contend, depend on the issues of concern that shape the stakeholders' relationships with the firm (Zyglidopoulos and Phillips, 1998A) and on the previous reputation of the corporation (Fiol and Kovoor-Misra, 1997; Zyglidopoulos, 1997). We discuss each of these influences in turn.

According to Fiol and Kovoor-Misra (1997), stakeholders interpret events through societal, organizational, and personal filters. Societal filters enable stakeholders to evaluate an event based on widely-held social norms, while organizational ones enable stakeholders "to assess the consistency between present and past behaviors" (1997: 147). In addition, stakeholders will tend to evaluate the same triggering event differently based on how this event will affect their respective issues of concern.

The fact that the same triggering events could be evaluated quite differently by various stakeholders can be easily seen in the Bhopal case by simply looking at the terms used by various stakeholder groups in referring to the event:

> "To Union Carbide, the 'incident' was a technical malfunction that needed to be corrected without causing major financial damage to the company. To the government [of India], it was an 'accident' that required relief without damaging the political position of the ruling regime. To the victims, it was a disaster that had irrevocably changed their lives; it required grief and anger and beginning the slow process of putting the pieces back together again. To the activists who sympathized with the victims, it was an unnecessary tragedy for which a negligent company and a culpable government ought to be taken to task." (Shrivastava, 1987: 85)

The above discussion can be summarized in the following proposition:

Proposition 4: Stakeholders will tend to interpret a particular triggering event according to the issues that are of concern to them.

Another issue that plays an important role in stakeholder interpretations of a triggering event is the corporation's prior reputation. In evaluating the reputational significance of a particular event, stakeholders will be influenced not only by the nature of the event and its effect on their issues of concern but also by the firm's prior reputation. In other words, in addition to *what* happened, stakeholders will also be influenced by *to whom* it happened.

One way of understanding how a firm's prior reputation can affect the stakeholder interpretation of events and therefore their re-evaluation of the firm's reputation can be drawn from Simon's (1955, 1956) notion of bounded rationality. Simon argued that rational actors are constrained by limitations in their ability to acquire and process all relevant information when making a decision. They therefore tend to follow rules-of thumb and heuristic procedures in their decision-making process. He referred to this notion as 'bounded rationality'. It is therefore reasonable to expect that stakeholders faced with an event which forces them to re-evaluate their opinion of a firm's reputation do this re-evaluation in a fashion characterized by bounded rationality resulting in a bias towards previous levels of reputation. As Fiol and Kovoor-Misra (1997) phrase it:

> "Information that is perceived to be consistent with existing definitions will not be resisted, because it is perceived as credible. Thus, organizations with negative reputations will incorporate negative attributes more readily and those with positive reputations will resist assimilation of the stigma" (1997: 150).

Therefore, we can say that, not only will prior levels of corporate reputation influence the interpretation of triggering events by various stakeholders, but also that stakeholders will tend to discount negative events which happen in firms with high prior levels of corporate reputation.

This seems to be the case for a number of reasons. First, companies with good reputations are usually given the benefit of the doubt (Fombrun, 1996). Put simply, a trusted friend is usually given the benefit of the doubt, even in the most incriminating circumstances. Second, during the process of acquiring a positive reputation, it is likely that the firm became, at least to some degree, institutionalized (Selznick, 1957). In other words, the corporation became infused with value beyond its requirements as a 'technical' instrument. According to Selznick (1957), "the test of infusion with value is expendability"; if an organization has been infused with value, its stakeholders will defend it when it is threatened even when such a defense would not be mounted for another company in a similar situation. These defenses are often rationalized in terms of the historical contribution of the firm, its role in the social fabric of the community, and its value as a symbol. If one takes a good reputation as an indication of infusion with value, then it is reasonable to expect that, at least some, stakeholder groups will be reluctant to see the corporation dismantled. So, at least initially, we should expect that some stakeholders would discount any negative events that would threaten the survival of the firm. The above discussion can be summarized in the following proposition:

Proposition 5: Corporations with a positive prior corporate reputation will tend to suffer less reputational losses during a reputational crisis.

Drawing from the Bhopal case, we can see that in the U.S., where Union Carbide had a long reputation as a socially responsible company, the company was given the benefit of the doubt by the American press and public. However, this was not the case in India, where the media was more accusatory and blame was attributed directly to Union Carbide. Of course, this

is not surprising, given that no American was injured in any way by the accident, and that it was only Indian citizens, who suffered and died from it. In addition, prior to the accident, Union Carbide hardly had a reputation of its own in India, and whatever reputation it had was not particularly positive, since all multinational corporations were seen with skepticism and hostility. This can be seen in the different stances that the media in India and the United States held towards the company. According to Shrivastava:

> "Indian news reports were more critical of Union Carbide and the government of India than were news reports in the United States: more critical and accusatory; more questioning of the organizational, social, ethical, and moral aspects of the accident; more open in addressing conflicts and contradictions; and more descriptive of the plight of the injured ... American news reports, by comparison, focused on technical and legal matters. They were more concerned about the possibility of a similar accident happening in the United States and about the general issue of environmental pollution, and less critical of the company's behavior." (1987: 76).

However, prior corporate reputation does not have the same effect on all kinds of triggering events. In events with high levels of plausible deniability, often characterized by a high degree of ambiguity and incomprehensibility (Perrow, 1984), we should expect that prior corporate reputation would play a more important role. In such situations, despite extensive media coverage, stakeholders suffer from a lack of concrete information. This can be seen in the Bhopal case where a high level of ambiguity concerning the causes of the accident remained long after the event. In such cases, while much critical information will not be available, one piece of information that will definitely be available to stakeholders is their notion of the firm's prior reputation. Therefore, faced with triggering events with a high degree of plausible deniability, and consequently ambiguity, stakeholders would rely more on their previous impressions of the corporation than they would have otherwise. Restated as propositions:

Proposition 6: Prior corporate reputation will tend to have more of an effect in reputational crises where the triggering event is characterized by a high degree of plausible deniability.

Managerial Interpretations and Reactions

Faced with a reputational crisis, managers have to decide on two things. First, given limited resources, managers have to decide which stakeholders to attend to first. This issue has been discussed in the stakeholder literature as an issue of salience (Mitchell, Agle, and Wood, 1997: 869) and managerial responsiveness (Näsi et al., 1997; Miles, 1987). According to Mitchell et al., salience refers to "the degree to which managers give priority to competing stakeholders claims" (1997: 869), and managerial responsiveness to the willingness of management to attend to the resolution of an issue (Näsi et al., 1997). In this paper, we are using the term 'managerial responsiveness' to refer to the prioritization performed by managers faced with a reputational crisis.

Second, managers must decide on the kind of response to be followed. As we have argued above, managers could try to follow a buffering or a bridging strategy (Meznar and Nigh, 1995) in dealing with stakeholder claims. What determines whether managers will tend to follow a buffering or a bridging strategy depends, as Meznar and Nigh (1995) have argued, on the size of the organization and, as we shall argue, on the power of the stakeholders involved. In short, managers have to decide on *whose* claims to address and on *how* to best address them.

According to Mitchell et al. (1997), managers interpret and evaluate the reactions of their stakeholders according to their perceptions of the power, legitimacy, and urgency of stakeholder claims. Therefore, we should expect managerial responsiveness to depend on and be positively related to the power, legitimacy, and urgency of stakeholders behind a particular issue. There are

a number of reasons why this should be the case. First, the more power a particular stakeholder group has, the more it will be able to 'force' its claims on the firm. Therefore, to the extent that managers perceive this they will address the claims of powerful groups first, before the escalating confrontation further damages the already wounded reputation of their firm. Legitimacy should also be positively associated with managerial responsiveness for at least two reasons. Highly legitimacy stakeholder claims may bring into the debate other more powerful stakeholders (Mitchell et al., 1997). This is obviously something that managers would rather avoid. Examples of this can be seen in both the Bhopal and Exxon cases. In the Bhopal case, the legitimacy of the claims of the Bhopal victims brought in the Indian government, while in the Exxon case, the legitimacy that the natural environment as a stakeholder has led to a range of lawsuits and other actions on the part of various stakeholders in the domain. Furthermore, as Freeman (1994) has argued, when faced with an ethical dilemma most managers want to do the right thing and compensate those with a legitimate claim to such compensation.

Finally, urgency will be positively associated with managerial responsiveness for the same sorts of reasons: a fear of intervention by more powerful stakeholders on behalf of the claimants and the tendency of managers as members of the society to be responsive to what would be considered appropriate by social norms and standards. This can be seen in the Bhopal case where the initial reaction of the Union Carbide top management was to try and directly compensate and address the concerns of those with the most urgency in their claims, the Bhopal victims. Restated as a proposition:

Proposition 7: Managerial responsiveness will be positively related to the relative power, legitimacy, and urgency of the various stakeholder groups.

However, this is only part of the story. An even more interesting issue is how managers deal with tradeoffs between power, legitimacy, and urgency. When faced with multiple and competing claims, we argue that stakeholder power has primacy over legitimacy and urgency in determining managerial responses. Or, in other words, that when it comes to stakeholder claims, "the squeaky wheel gets the grease, and, even more, the loudest squeak of the most important wheel gets the most grease" (Näsi et al., 1997: 317).

Therefore, we do not agree with Mitchell et al. (1997) who treat power, legitimacy, and urgency as equals. Instead, we believe that in a reputational crises, powerful stakeholders will be compensated first and receive a larger portion of available resources. This is so for two reasons. First, it is reasonable to expect that managers, no matter how responsive they are to legitimate and urgent claims, are realistic enough to give priority to claims that are backed up by powerful stakeholders. Second, powerful stakeholders may use their power to force their claims on management. In such cases, managers are forced to compensate powerful stakeholders first no matter how responsive they might be to the legitimate and urgent claims of other stakeholders. Of course, we are not saying that legitimacy and urgency are not important. In fact, we believe that they play an important role in determining managerial responses when stakeholder power is relatively equal. When faced with two equally powerful stakeholder groups, management will tend to respond to the concerns of the stakeholder group that has the greatest degree of legitimacy first. In a similar manner, we could argue that managers faced with two equally powerful groups they would try to compensate or address the concerns of the group with the greatest degree of urgency. It is only in cases where there is a tradeoff between power and

urgency, or power and legitimacy, that we say that power comes first. We can summarize our views as a proposition:

> **Proposition 8: Stakeholder power will have primacy over legitimacy and urgency in determining managerial responses and responsiveness.**

Using terminology from Mitchell et al., (1997) and drawing from the Bhopal case, we can see a good example of a tradeoff between power and urgency during a reputational crisis. In this case, Union Carbide had to deal, primarily, with two stakeholder groups in India, the Bhopal community and the Indian Government. The Bhopal community was propelled by the accident from a position of virtually no power, legitimacy, or urgency to a position of high legitimacy and urgency, but very little power. They were, according to Mitchell et al., (1997) 'dependent stakeholders' expecting the 'advocacy or guardianship of other stakeholders'. This guardianship came from the Indian government who had virtually no urgency in its claims, but was legitimate, and had a great deal of power.

Given that the Bhopal accident took place, and the damage from it could not be 'undone', the second best solution for the Bhopal victims would have been, according to a number of researchers (see Shivastava, 1987), the direct compensation of the Bhopal community by Union Carbide. This path was the one that the management of Union Carbide initially tried to take. However, the direct compensation of the Bhopal victims, for a number of internal political reasons, was not on the agenda of the Indian government who quickly stepped in and forced the company to deal only through it. The Indian government was able to do this by passing the Bhopal Gas Disaster Bill in the national parliament. This bill gave the Indian government the exclusive right to represent the Bhopal victims (Shrivastava, 1987). Therefore, the avenue of directly compensating the Bhopal victims was closed to Union Carbide by a stakeholder who had

very little urgency, but a great deal of power and was legitimate. And, Union Carbide after a few failed attempts to deal directly with the Bhopal victims, was forced to compensate the Indian government after a prolonged legal battle that left the Bhopal victims to deal with the tragedy on their own (Browning, 1993).

But, this leaves the question of what strategy managers will adopt in dealing with a reputational crisis. We argue that at the broadest level, managers must decide between adopting a buffering strategy or a bridging strategy (Meznar and Nigh, 1995). As mentioned above, the idea behind a buffering strategy is to isolate the firm from the triggering event as much as possible. On the other hand, the idea behind a bridging strategy is to link the firm with the triggering event and its solution early on. Of course, these types of managerial strategies should be seen only as ideal archetypes that can help us visualize actual managerial responses. Business firms faced with real reputational crises do not respond in ways that can be characterized as 100% buffering or 100% bridging. However, visualizing a continuum with buffering at one end and bridging at the other, we can say that a firm's response falls more towards one side than the other. As we have mentioned above, two factors that will influence whether a firm's response falls more on the buffering or more on the bridging side are stakeholder power and firm size. Mitchell et al., (1997), drawing on previous work by Dahl (1957), Pfeffer (1981), and Weber (1947), define power as the "relationship among social actors in which one social actor, A, can get another social actor, B, to do something that B would not have otherwise done" (1997: 869). Based in this definition of power, we should expect that the greater the power of a particular stakeholder group the greater the ability of this stakeholder group to force its claims on management will be. Therefore, management's ability to follow a 'buffering' strategy, will be more restricted the greater the power of the stakeholders having claims during a reputational crisis.

To a certain extent, this can be seen from the Exxon Valdez case. Exxon was slow to react, lacked top management involvement, tried to shift the blame to Captain Hazelwood, the government, and environmentalists, and in general gave the overall impression that it was trying to duck responsibility (Lukaszewski, 1993). These are the characteristics of a buffering strategy. According to Lukaszewski (1993):

> "The perception almost from the beginning was that Exxon was trying to limit its exposure, resist the efforts of others to help, and refuse to publicly take the responsibility the public seemed to demand" (1993: 203)

An important factor in all this was the fact that, despite the 170 lawsuits it faced, Exxon did not have to deal with any powerful stakeholders in its environment. Stakeholders, who could in a sense 'force' Exxon to be more accommodating, and follow an approach closer to a bridging strategy. Restated as proposition:

> **Proposition 9: Stakeholder power will be negatively associated with a buffering strategy and positively associated with a bridging strategy.**

Furthermore, Meznar and Nigh (1995) found empirical evidence in support of the position that the size of a firm is positively associated with buffering. Based on prior work by Pfeffer and Salancik (1978), Meznar and Nigh (1995) argue that larger organizations are better able to resist environmental pressures due to the web of interdependencies that surround them. While their study was based on survey data from large American corporations operating under normal conditions, it is reasonable to expect that size is positively associated with the choice of a buffering strategy during a reputational crisis.

This can be also seen in the Exxon and Union Carbide cases. Exxon, a much larger company (about ten times the size of Union Carbide) followed from the very beginning of the

crisis a buffering strategy. On the other hand, Union Carbide, at least early on in the crisis and before the legal implications of the matter became painfully obvious, showed signs of following a bridging strategy. Indeed, Union Carbide's initial response to the Bhopal accident was characterized by direct, fast, and highly visible involvement from top management. The early acceptance of moral responsibility, the dispatch of a medical and technical team to Bhopal within 24 hours of the accident, and the pledge of an immediate $1 million in aid (Browning, 1993). All of these characteristics related to a bridging type of strategy. Of course, this 'bridging' phase did not last long and Union Carbide changed into a more defensive approach as soon as the legal implications of the matter became more obvious. But, one could argue that this initial reaction shows to a certain extent the company's pre-disposition. Restated as a proposition:

Proposition 10: The larger the firm the more likely it will adopt a buffering strategy. Conversely, the smaller the firm the more likely the firm will adopt a bridging strategy.

DISCUSSION AND CONCLUSIONS

In the end, the crises faced by Union Carbide and Exxon affected the two companies quite differently. According to the FORTUNE ratings, Union Carbide's reputation recovered faster than Exxon's (especially the reputational rating for the community and the environment – see Figures 2-2, and 2-3), yet Union Carbide suffered a lot more financial damage. Because of the accident, the company's market value dropped by two-thirds to less than $ 3 billion. This enabled GAF Corp. to mount a takeover bid for $ 5.3 billion. Union Carbide's management was able to fight off this takeover attempt, but only after it borrowed $2.8 billion and sold 20 per cent

of its assets (Shrivastava, 1987). After decades of building it, Union Carbide had to sell-off its Consumer Products Division. The group included Glad trash bags, EverReady batteries, Prestone, and STP automobile products, businesses that were among the company's most profitable. This left the company with three main lines of business, chemicals and plastics, industrial gases, and carbon products, a "dramatically changed company" (Union Carbide, 1986).

Insert Figures 2-2 and 2-3 about here

Exxon, on the other hand, despite related costs exceeding $2.2 billion, suffered little long-term damage. While there was a temporary dip in earnings due to the costs of the cleanup, and while there were some stakeholder unhappiness in terms of consumer boycotts and other protests, the effects of the crisis passed relatively quickly. Three factors seemed to have played an important role in these developments. First, Exxon is about ten times larger than Union Carbide. Therefore, it could better absorb cleanup costs and was relatively less vulnerable to takeovers. Second, Exxon did not face formidable and intractable stakeholders like the Indian Government. The actions of the Indian government and its appropriation of the event for political reasons made resolving the Bhopal crisis very difficult and very expensive for Union Carbide. Third, the Bhopal accident, no matter how bad for the Indian community it was, took place very far away from the U.S. managers and analysts, who evaluate the reputations of major U.S. companies in the FORTUNE survey. On the other hand, the Exxon disaster, even though not a single life was lost, took place practically next door, and the media kept bombarding the FORTUNE raters with images of the Exxon disaster many years after the event.

We believe the model we have presented in this paper is useful in understanding the nature of reputational crises, how they develop over time, and how they can be managed. While the model requires further theoretical developments and empirical verification, it links reputation to a range of other ideas and provides a rich view of reputation crises. Such a model has a number of implications. The model provides a basic framework for understanding the stages of development of a reputation crises, highlights a number of important characteristics that differentiate reputation crises, and suggest ways to approach the management of reputation. But, it also raises several questions regarding management of reputation crises. First, given the complexity and difficulty of managing reputation, is the management of reputational always worth it? In some cases, it may be that the stakeholder dynamics make any attempt to manage reputation ineffectual or may, even worse, be seen as admission of guilt. For example, Exxon's reaction to the Exxon Valdez disaster was a study in resistance and unhelpfulness. Yet, the company suffered relatively little long-term finacial damage. Therefore, one could say that the issue of whether non-compliance with the normative principles of stakeholder management (see Principles of Stakeholder Management, Clarkson Centr, 1999) has a negative impact on financial performance is still not resolved. Second, to what extent is corporate reputation under the control of managers? Following our model, if corporate reputation grows out of a stakeholder relationship, then it is at best only partially under the control of managers. Therefore, the ability of managers to manage will depend on the structure of the stakeholder relations.

Third, most importantly, we have examined reputational crises from a stakeholder perspective. The study of reputational crises is enhanced by a framework that explicitly draws on stakeholder theory to argue that stakeholders are the evaluators of the firm's reputation and that, therefore, their perspectives, interpretations, and reactions will influence the reputational damage

that the firm will suffer during a reputational crisis. An important implication of examining reputational crises from a stakeholder perspective is the conceptualization of reputational crises as events that disturb the network of stakeholder relationships within which the firm exists. This way of viewing reputational crises could provide researchers and managers with insights which could lead to a better understanding of the reputational impact of a number of triggering events such as accidents, scandals, and product safety incidents. Another issue, refers to the fact that while in this paper the discussion has concentrated on reputational crises at the business firm level of analysis, a framework similar to the one developed in this paper could be applied to the study of reputational crises at different levels of analysis, like industries, and countries. Industries, just like organizations have reputations (Dowell, Sastry, Hart, and Bernicke, 1997) and these reputations rest with groups which can be perceived as industry stakeholders. A similar argument can be made for countries. In addition, a similar framework as the one developed in this paper could be applied to the study of the reputational impact of 'positive' events, such as major technological breakthroughs, unusually high financial results, and outstanding acts of corporate philanthropy.

Figures to Chapter 2

Figure 2-1
A Stakeholder Model of Reputational Crises

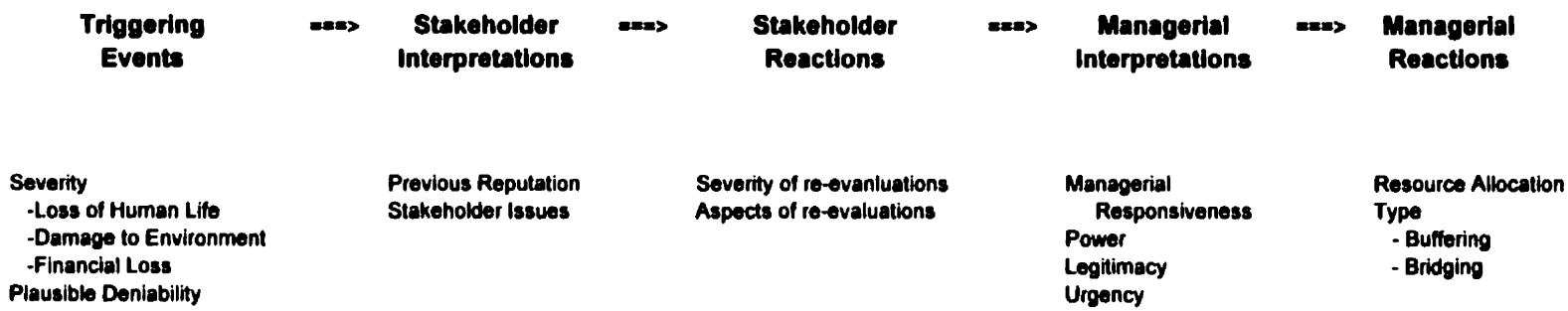
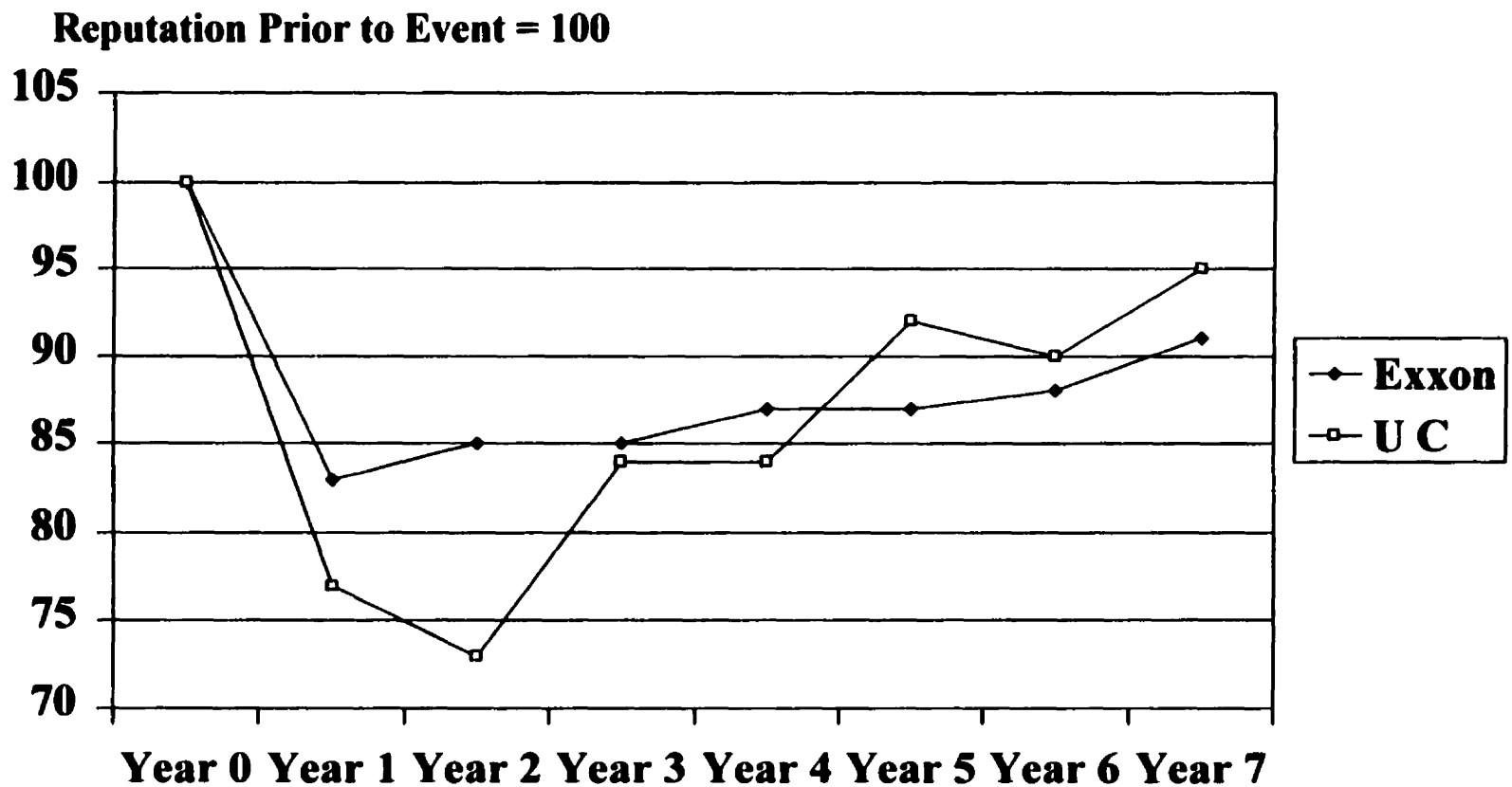
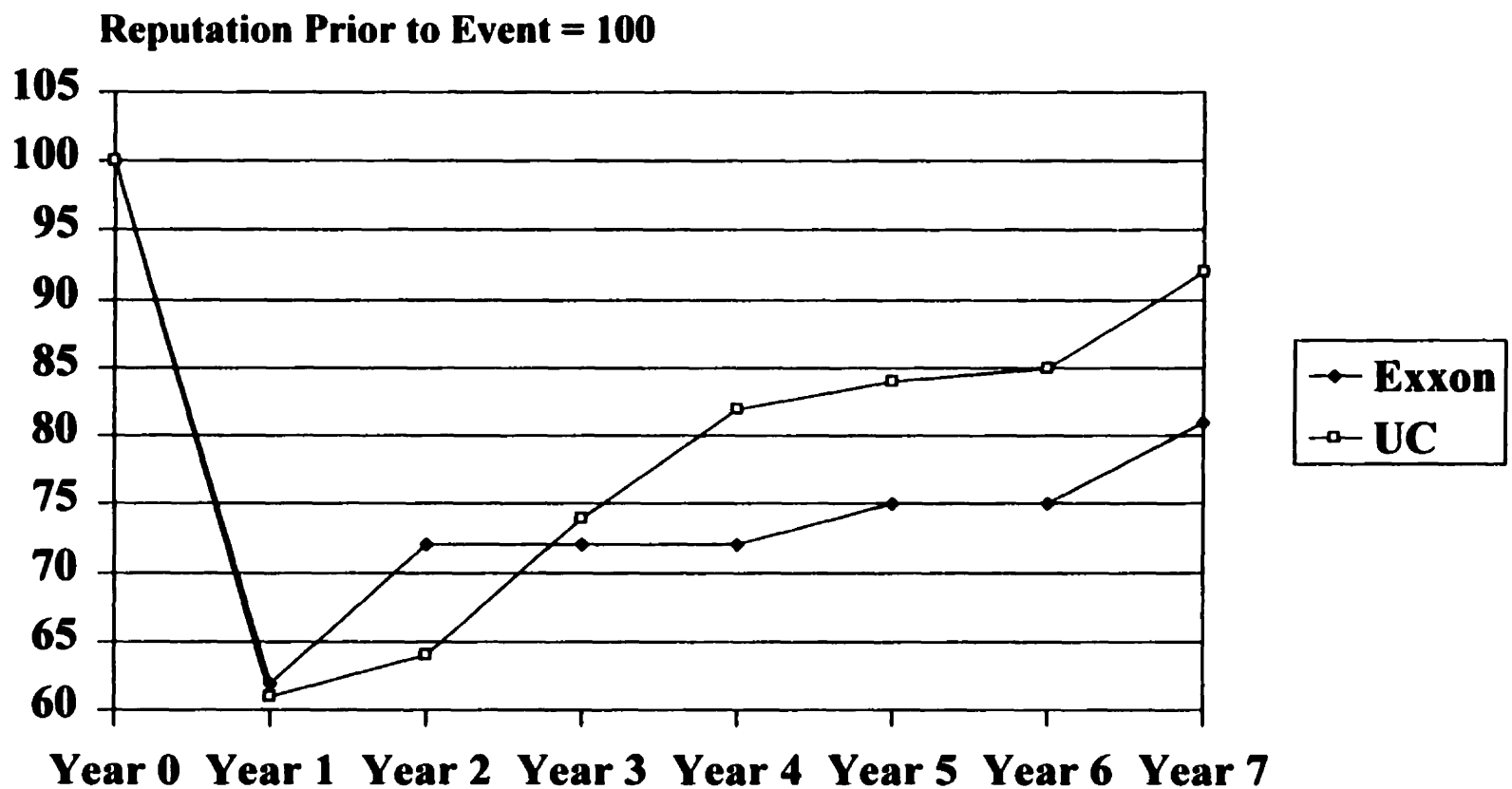


Figure 2-2
Comparison of the Reputational Recoveries of Exxon and UC
Overall Reputational Score



Source: AMAC Survey, FORTUNE Magazine.

Figure 2-3
Comparison of the Reputational Recoveries of Exxon and UC
Reputational Score for the Community and the Environment



Source: AMAC Survey, FORTUNE Magazine.

Preface to Chapter 3

Given the overall theme of this dissertation – the study of reputational crises – chapter two examined at a theoretical level some of the dynamics of reputational crises. Drawing on the stakeholder and crisis management literatures, a general model of reputational crises was developed and a number of propositions presented and argued for. The work in chapter two was purely theoretical and the two cases of reputational crises – Exxon Valdez and Union Carbide Bhopal – were used only for illustrative purposes. In addition, the model developed applied to reputational crises, in general, without any emphasis on any particular kind or type of crisis.

This, however, is not the case with the chapter three. Chapter three, building upon and drawing on some of the issues discussed and developed in chapter two, investigates empirically the reputational impact of a particular kind of negative events – accidents. Major industrial accidents have been known to cause reputational crises, indeed the two cases examined in chapter two can be easily labeled as accidents. But, although a few well-publicized accidents that caused major reputational crises have been investigated in some depth, a more systematic and general study of the reputational impact of industrial accidents is lacking. Chapter 3 does just that, by empirically investigating the reputational impact that accident characteristics, such as severity, blame, media attention, and complexity have on the reputational re-evaluations of two groups of stakeholders – industry executives and industry analysts.

CHAPTER 3
THE REPUTATIONAL IMPACT OF ACCIDENTS

In this paper, the results from an empirical investigation into the reputational impact of accidents are being presented. Industrial accidents such as airplane crashes, railroad accidents, and chemical or oil spills can cause significant damage to the reputation of a business firm. However, despite the in depth investigation of a few major accidents that received a great deal of media attention, such as the Exxon-Valdez oil spill and the 1984 Union Carbide-Bhopal chemical leak[1], a more systematic and general study of the reputational impact of industrial accidents is lacking. This paper, drawing on the literatures of industrial crises, corporate reputation, and stakeholder theory, investigates in a systematic way the impact that a number of accident characteristics, such as accident severity, accident complexity, blame, and media attention have on the reputation of a business firm.

Understanding the impact that different kinds of accidents have on the corporate reputation of a business firm is important because, as a number of authors have argued (Barney, 1991; Dierickx and Cool, 1989; Fombrun, 1996; Hall, 1992, 1993; Itami, 1987; Lippman and Rumelt, 1982; McMillan and Maheshkumar, 1997; and Roberts and Dowling, 1997), corporate reputation is one of the most important intangible resources of a business firm that can be a major source of sustainable competitive advantage. Corporate reputation can be a source of competitive advantage

1 See Chapter 2 of the present dissertation for a brief description of these two events.

for many reasons. Among others, a good corporate reputation can act a warranty in ambiguous situations (Fombrun, 1996), allow managers to charge higher prices, attract talented people, and can be applied simultaneously in multiple uses (Itami, 1987). In addition, corporate reputation can contribute to the sustainability of a firm's competitive advantage because it usually takes a long period of time for a business firm to develop a solid reputation (Itami, 1987; Hall, 1992,1993).[2] So, the corporate reputation of a business firm cannot be easily or quickly imitated by an actual or potential competitor. But, in contrast to the long time it takes to build a reputation, a number of dramatic events, such as accidents, scandals, and product safety incidents can cause significant, and sudden, damages to a firm's reputation.

This paper focuses on the investigation of the reputational impact of accidents, and proceeds as follows. First, the major concepts of the paper, 'corporate reputation' and 'accident' are discussed. Then, drawing on the literatures of industrial crises, corporate reputation, and stakeholder theory, the possible 'links' between accidents and corporate reputation are developed and a number of hypotheses presented. Thirdly, the methodology of the study is described. Following, the main findings of this study are presented. And, the paper concludes with a discussion of the contributions, implications, and limitations of this study.

MAJOR CONCEPTS

In this section the main constructs of the paper, 'corporate reputation' and 'accident' are described and discussed, so that, drawing on these constructs can facilitate the development of

2 Hall (1992,1993), who surveyed 847 CEOs throughout the UK from a number of industrial sectors, found that these CEOs estimated that it would take them, on average, 10.8 years to rebuild their firm's reputation if they had to start from scratch.

testable hypotheses relating accident characteristics and changes in corporate reputation, which follows.

Corporate Reputation

For the purposes of this paper, drawing on prior work by the author, corporate reputation is defined as the set of interested knowledge and emotions held by various stakeholder groups concerning aspects of the firm and its activities[3]. Two aspects of corporate reputations, which follow from this definition, in need further clarification and discussion, are multidimensionality and stakeholder specificity. These two aspects can be "visualized as an *n* x *m* matrix, where one dimension is made up of the *n* stakeholder groups who have an interest in the firm, and the other dimension is composed of the *m* firm aspects that are of interest to stakeholders" (chapter 2 of current dissertation, p 25). From these two aspects of corporate reputation, in this paper, due to data limitations, only the stakeholder specificity aspect of corporate reputation is investigated, but for clarity purposes, both aspects of reputation are briefly discussed in the following paragraphs.

1. Multidimensionality refers to the fact that a business firm could be known as a good or bad performer on a number of issues. For example, a firm could have a reputation for being innovative, for being a quality producer, for being a good (or bad) place to work in, for being socially responsible, and so on. In all of these cases, one could say that a firm has a good (or bad) reputation, but in reality one would be referring to different things. Over the years a number of scholars have examined and used different aspects of corporate reputation in their work. For example, Brown (1997) and McGuire, Sundgren and Scheneeweiss (1988) have investigated the

3 See Chapter 2 of current dissertation.

'social responsibility' aspect of corporate reputation, while Deephouse (1997) investigated the financial aspect of a firm's reputation, and Fombrun (1996) identified at least three aspects of corporate reputation: trustworthiness, reliability, and credibility. In addition, the AMAC survey, conducted yearly since 1984 by FORTUNE magazine, tried to capture this multidimensionality of corporate reputation by surveying over 8.000 executives and industry analysts who are asked to rank the ten top companies in their industry along eight dimensions. These dimensions are (1) quality of management, (2) quality of products or services, (3) innovativeness, (4) ability to attract, develop, and keep talented people, (5) long-term investment value, (6) financial soundness, (7) use of corporate assets, and (8) community and environmental responsibility.

2. Stakeholder specificity refers to the fact that various stakeholders could have different notions regarding the reputation of a business firm. There are at least three reasons why one would expect this to be so. First, given the diversity of all the stakeholder groups, each group will be interested in different firm aspects and activities (Fombrun, 1996). Therefore, each group's notion of reputation would tend to include different firm aspects, or reputational dimensions. Second, this diversity of perspectives would tend to increase because of the halo effect. People tend to construct overall images by generalizing from attributes they are familiar with to attributes they know nothing or very little about (Dowling, 1988; Reynolds, 1965). And since the various firm stakeholders will be extrapolating from different corporate attributes they are familiar with, their notions of reputation will tend to diverge even more. For example, one would expect that environmental groups would tend to overestimate the financial prospects of environmentally responsible firms, while investment analysts would overestimate the environmental responsibility of financially healthy firms.

Third, the existence of cognitive filters adds to the potential stakeholder specificity of

corporate reputation. According to Fiol and Kovoor-Misra (1997), "filtering occurs through the use of cognitive categories that all of us apply to situations and events around us all the time to determine what is 'right' or 'wrong', 'expensive' or 'cheap', 'young' or 'old', and so on" (1997: 149). It is to be expected that stakeholders would use similar societal, organizational, and personal filters (Fiol and Kovoor-Misra, 1997) to view a particular business firm. Using these filters, organizational stakeholders who are constantly bombarded by multiple images about a given business firm selectively retain those elements that will form their notion of the firm's corporate reputation (Rindova, 1997). Finally, not all stakeholders are exposed to the same information (Alvesson, 1990; Fombrun and Shanley, 1990) or images (Rindova, 1997) regarding a particular corporation, different stakeholders depending on their relationship with the organization have different access to various information.

Accidents

Drawing on work done in the study of industrial crises by Marcus and Goodman (1991), Perrow (1984), Shrivastava (1987), and Shrivastava, Mitrof, Miller, and Migliani. (1988), accidents can be defined as discrete one-time undesirable or unfortunate events that happen unexpectedly in the life of a corporation[4] and cause damage to any number or kind of stakeholders. Examples of accidents which happened in the life of business firms, and which received a great deal of media and research attention are the 1984 Bhopal chemical leak, the 1979 Three Mile Island radiation leak, and

4 It would be more appropriate to refer to the accidents which will be examined in this work as "company accidents", but since the term "accidents" has been in use in the crisis management literature, it is used here to refer to what for all practical purposes could be, more accurately, labelled "company accidents".

the 1989 Exxon Valdez oil spill. And, while accidents can be quite diverse and to a certain extend unique events, they do share a number of common characteristics (Marcus and Goodman, 1991; Shrivastava et al., 1988). Characteristics that can be linked to reputational changes and form the basis for a number of hypotheses, which after empirical verification can serve as the nucleus of a theory dealing with the reputational impact of accidents. These common accident characteristics are (1) Accident severity, (2) Media Attention, (3) Blame, and (4) Complexity (Marcus and Goodman, 1991; Perrow, 1984; and Shrivastava, 1987).

(1) Accident Severity refers to the extent of the 'damage' caused by a particular accident, and, at least two kinds of damage can be identified to any accident, damage to human life and environmental damage. Damage to human life refers to the people who where injured or killed because of the particular accident, while environmental damage refers to the harm done to various aspects of the environment such as wild life, natural resources, and human and animal ecosystems. So, since two kinds of damage can be identified, accident severity would also have two aspects to it according to the extent of damage that a particular accident caused to human life and the environment. The potential that accidents have to cause damage to human life and the environment can be vividly illustrated by reference to the 1984 Bhopal chemical leak and the and the 1989 Exxon Valdez oil spill. In the Bhopal case, over 2,500 people died and over 200,000 were injured (Browning, 1993; Morehouse and Subramanyam, 1986; Shrivastava et al., 1988). While in the Exxon case, over 2,500 miles of beaches were blackened with 11 million gallons of oil, 36,000 birds including at least 100 bald eagles were killed, and a great number of other species of wildlife suffered similar consequences (Galen and Cahan, 1989, 1990).

(2) Media Attention refers to the amount of publicity that a particular accident receives.

This publicity could take the form of newspaper articles, magazine articles, or television and radio broadcasts. In a world characterised by what Kiely calls "the instant and worldwide photographic reporting of calamity" (1983:xi), some accidents can receive such an extensive amount of media coverage that they become landmarks in the history of a particular industry or sector. This is especially the case with accidents that are considered to be more 'news-worthy' because they provide the permanently starved for news media with graphic photographs, which improves their ratings.[5]

(3) Blame refers to the responsibility that a particular stakeholder group attributes to the company involved for a given accident. Depending on the nature of the event and the bias of the particular stakeholder group, varying degrees of blame can be attributed to a company for an accident. Blame can be seen as inversely related to plausible deniabilty, the extent to which the company can plausibly deny responsibility for the accident and disassociate itself its causes of the accident (Marcus and Goodman, 1991; Fombrun and Shanley, 1990).

(4) Complexity, finally, refers to the extent that which the events which led to the accident are easily (or not) understood. For some accidents, figuring out what exactly happened is relatively easy and obvious, while for other, it is next to impossible. Perrow (1984) refers to accidents of high complexity as 'system accidents', where the accident is the result of the interaction of multiple quite improbable failures in a complexly interactive and tightly coupled system. In such system accidents, a number of failures interact in non-linear and unpredictable ways, and given tight-coupling the system does not have the time or the resources to recuperate[6]. Therefore in the case of system

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5 An interesting issue, which falls outside the scope of this paper, is whether it is severe accidents that are reported more intensely by the media, or that accidents, which are reported more intensely by the media 'become' severe in the eyes of the public.

[6]It is possible to attribute 'operator error' among the causes of the accident, but given the complexity of the events "the operator is confronted by unexpected and usually mysterious interactions among

accidents, blame cannot be easily traced to a person within the business firm, or even to the firm itself.

ACCIDENTS AND CHANGES IN REPUTATION

A major premise on which this work is based on is that accidents can damage the reputation of a business firm. There are a number of reasons why this should be so. First, stakeholders who are the evaluators of a business firm's reputation react emotionally to accidents in which business firms are involved and could conceivably be blamed for. This emotional reaction of stakeholders can be clearly seen in cases such as the 1984 Union Carbide-Bhopal accident. Due to its high degree of human suffering, the Union Carbide-Bhopal accident caused a great deal of emotional reaction all over the world. Of course the Bhopal accident was one of the worst accidents that have ever taken place, but it vividly illustrates the potential of accidents to scar and injure, possibly permanently, a business firm's reputation.

Second, stakeholders who are interested observers of the business firm's operations, in addition to their potential emotional reaction, also evaluate an accident as an event that provides them with information concerning a particular business firm and their stakes in it. Quite often, accidents reveal that some business firms are not as dependable as they appeared to be. In other words, accidents can bring to the public's attention an unflattering side of the firm, a side that may have been successfully kept secret until then. And third, accidents, depending on their severity, usually trigger investigations into their causes. These investigations put under intense public scrutiny large parts of a business firm's everyday operations, and could bring into the light of publicity any

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failures, saying that he or she should have zigged instead of zagged is possible only after the fact"

number of 'irregularities'. And, while such irregularities might not be dangerous or harmful in the least, and might even be standard operating procedures for a given industry, these irregularities seen under the particular 'post-accident' circumstances can be quite damaging for the reputation of a firm (Perrow, 1984).

Accidents are, of course, unique events. And, therefore, one would expect that the impact of a particular accident to the reputation of the firm involved is also unique. However, accidents tend to have a number of common characteristics, a few of which have been identified and briefly discussed in the previous section. And, one would also expect that these characteristics influence the reputational impact of accidents, across accidents. So, in the following paragraphs, the influence that the accident characteristics of severity, media attention, blame, and complexity can have on the reputation of the corporation involved is discussed, and a number of testable hypotheses are set forth.

Accident severity should be expected to play a crucial role in the reputational impact of an accident. The greater the severity of an accident, the greater its potential for causing damage to human life, or the environment, and consequently, the greater the potential emotional response by stakeholders. In addition, the greater the severity of an accident, the greater the probability that the victims[7] of the accident will have a high degree of legitimacy and urgency behind their claims (chapter 2 of current dissertation). These victims, having legitimate and urgent demands, would be able to obtain the assistance and advocacy of more powerful stakeholder groups, if they themselves

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(Perrow, 1984: 9).

7 Victims are "the people who are killed, injured or otherwise suffer loss or misfortune" (Marcus and Goodman, 1991: 285) as a result of the accident. Victims, often seek legal counsel and press charges against the company. Victims can be seen as a new kind of stakeholders that was created suddenly because of the accident (Marcus and Goodman, 1991;chapter 2 of current dissertation). Or, using the terminology of Mithcell, Agle, and Wood (1997), victims are 'latent' stakeholders who became 'definitive' ones as a result of the accident.

do not have the power to fight for their claims (Mitchell, Agle and Wood, 1997). Such potential developments would not only cause a greater 'stir' followed by greater 'negative publicity', but it would also cause a greater disturbance in the network of stakeholder interests in which a business firm operates. And, both these outcomes could have a negative impact on the reputation of the firm. Finally, severe accidents are more likely to call for an in depth investigation into the company's operations. And, quite often, such investigations, as mentioned above, can reveal more embarrassing facts that cause further reputational damage to the firm. Hypotheses 1A and 1B follow:

Hypothesis 1A: The greater the severity of an accident with respect to the damage it caused to human life, the greater the negative reputational impact the company involved will suffer.

Hypothesis 1B: The greater the severity of an accident with respect to the environmental damage it caused, the greater the negative reputational impact the company involved will suffer.

A second accident characteristic with the potential of having an influence on the reputational impact of an accident, is the degree of media attention an accident receives. The relationship between media attention and corporate reputation has been examined by authors such as Weinberger and Romeo (1989), Fombrun and Shanley (1990), and Wartick (1992). From these authors, Weinberger and Romeo (1989) found that negative media attention has a negative impact on corporate reputation, while Fombrun and Shanley (1990) found that any kind of increase in (negative, positive, mixed, or neutral) media attention has a negative impact on corporate reputation. However, this last finding was not supported by further research. Wartick (1992) found no statistically significant association between changes in corporate reputation and changes in the amount of media attention. However, Wartick (1992) found that the tone of media attention was "a key factor associated with

both the direction of the change in corporate reputation and the total movement of the change" (1992: 43).

So, given these findings, and the reasonably safe assumption that the media attention that a firm receives due to an accident is 'negative media attention', the following hypothesis can be reasonable made:

> **Hypothesis 2:The greater the media attention an accident receives the greater the reputational damage the related firm will suffer.**

The third accident characteristic expected to have an impact on the reputation of the firm involved in the accident is blame. As mentioned above, it is reasonable to expect that different accidents would differ with respect to the degree of blame that can be reasonably (or unreasonably) attributed to the company involved by different stakeholder groups. In addition, it is reasonable to expect that the degree of blame would have an impact on the reputation of the firm and that the greater the blame attributed to a firm, the greater the reputational loss the firm will suffer. Hypothesis 3 follows:

> **Hypothesis 3:The greater the blame, the greater the reputational damage the involved firm will suffer.**

The next accident characteristic to be considered is complexity. As mentioned above, complex accidents do not have transparent causes (Perrow, 1984). Therefore, in the cases of complex accidents the extent of the blame of the firm involved cannot be easily determined and in the terms of Marcus and Goodman (1991) one can say that the greater the complexity of an accident, the greater the plausible deniability the firm has. So, the greater the complexity of an accident, the greater the benefit of the doubt the firm involved will have. Hypotheses 4 follows:

> **Hypothesis 4: The complexity of the accident will be inversely related with the reputational damage the firm will suffer.**

Finally, given what has been said above about the stakeholder specific nature of corporate reputation, it should be expected that a given accident would not have the same reputational impact on different stakeholder groups. There are a number of reasons for this. First, because various stakeholders view the same events through different cognitive filters (Fiol and Kovoor-Misra, 1997), it is reasonable to expect that they would interpret the same accident in different ways. Second, because stakeholders have different, and sometimes even conflicting, interests in a particular firm, different stakeholders will not be affected in the same way by particular accidents. Third, not all stakeholders would have the same 'view' of an accident. Depending on their sources of information, stakeholders might be more or less informed, they might have different parts of the whole picture, or they might be receiving a biased picture all together (Alvesson, 1990; Fombrun and Shanley, 1990). And, finally Zyglidopoulos and Phillips (1998B), using the reputational scores of the AMAC survey of FORTUNE for the period 1984-1994, found that the reputational ratings of industry executives were consistently and significantly higher than the reputational scores of industry analysts. Hypothesis 5, labeled 'stakeholder specificity hypothesis', follows:

> **Hypothesis 5: The reputational impact of a particular accident characteristic will differ between different stakeholder groups.**

METHODS

In order to test the above hypotheses, two sources of data were used. The data to measure the dependent and control variables was drawn from Fortune's 'America's Most Admired Companies Surveys' (AMAC). While, the data for the measurement of the independent variables was collected through a rating process based on newspaper articles collected through Lexis-Nexis and in a few

cases through the collection of data from newspaper indexes.

The Fortune Database[8]

The AMAC survey has been conducted by Fortune Magazine every year since 1983. In this survey, each corporation is rated relative to its competitors on eight key attributes. These attributes are: (1) quality of management, (2) quality of products or services, (3) innovativeness, (4) ability to attract, develop, and keep talented people, (5) long-term investment value, (6) financial soundness, (7) use of corporate assets, and (8) community and environmental responsibility. For this rating an eleven-point scale is being used (0= poor, 10=excellent).

The companies that appear in the AMAC survey consist of the 5 to 10 largest companies in each of 46 industries from the Fortune 1,000 lists for the year prior to the year of the survey. The respondent sample consists of senior executives and outside directors of Fortune 1,000 companies and financial analysts who cover these companies. Throughout its fourteen-year history, the survey has experienced a response rate of approximately 50%. The total number of questionnaire mailed varied from year to year, but it was generally about 8,000. Questionnaires are mailed in early fall and are followed up by two subsequent mailings as well as phone calls and faxes. Responses are received by November and the highlights of this survey are usually presented in a January issue of FORTUNE

8 There is a debate in the field of corporate reputation management, around the importance of the 'financial halo effect' that the reputational scores of the AMAC database have. There are those in the field, who argue that given the financial halo of the data, they depict little else than financial performance (Fryxell & Wang, 1994); those who argue that there is a financial halo, but that it can be removed and the data are still useful (Brown, 1997; Brown and Perry, 1995); and those, who argue that the influence of the financial halo has been, indeed, overstated (Carparo and Srivastava, 1997). However, for this paper, the financial halo of the data is not a major issue because financial performance (ROA, and ROE) is controlled for in all regression models.

magazine.

The Search for Accidents

Between the years 1984-1995, 652 companies appear in the AMAC database. However, these companies do not appear every year, with their appearance rate ranging from all 11 years to just one year. Therefore, in order to facilitate the search for accidents related with companies in the database, 211 companies, for which continuous reputational data between the years 1989-1995 existed, were selected (See Appendix 3-A: List of Companies Investigated and Yearly Reputational Scores). Subsequently, an extensive Lexis-Nexis for accidents related to these companies during the 1989-1995 time period, revealed 109 accidents[9] related to the companies researched (See Appendix 3-B: List of Accident-Companies).

Measuring the characteristics of accidents

Once the accidents had been identified and their relationship to specific companies established a Lexis-Nexis search for newspaper articles describing these events was conducted. This search revealed the first few articles (min 1, max 3) in major US newspapers[10] that reported on the event. These articles made-up an 'accident profile' for each event. (See Appendix 3-C: Sample Accident Profiles). Based on these profiles, independent raters who were trained and under close supervision evaluated and quantified the accident characteristics of severity media attention, blame,

9 The criterion as to whether an event was characterized as an accident was simply the fact that Lexis-Nexis referred to the event as an accident related in some way with the company under investigation. Three kinds of accidents were found, railway accidents (RA), Chemical-oil spills (COS), and air-related accidents.

10 However, given limitations of the Lexis-Nexis version available, only articles from the New York Times have been collected.

and complexity using a standardised questionnaire with a 7 point Likert scale (See Appendix 3-D: Rater Questionaire).

Newspaper articles were considered to be appropriate sources of information for this research for the following reasons. First, newspaper articles immediately after the accident usually contain detailed descriptions of the events. Second, newspaper articles are written by professional reporters who have been trained in reporting and discovering most aspects of such kinds of events. Of course, there is a real and present danger that the mental maps and cognitive schemas of the reporters limit their depicting of accidents. However, in this particular case this potential for reporter bias should not present a major problem. Because, even if the news articles reporting on particular accidents present a distorted or biased picture of reality, this picture *is* the reality for most stakeholders. In other words, very few of the company stakeholders would have immediate and direct knowledge of these accidents, the majority of stakeholders[11] would base their reputational re-evaluations on the accident reports presented by the media. So, in a sense, this rating process 'mimics' and makes explicit the implicit process which takes place within most company stakeholders when they get confronted with a particular company related accident, in the press.

Definition and measurement of variables

In order to test the above hypotheses, three kinds of variables were needed: independent, dependent, and control variables. The summary statistics of all three types of the variables used can be seen in table 3-1. However, because the rating process, which is used to generate the independent

11 This should be particularly true for the two stakeholder groups that make up the AMAC database: investment analysts, and industry executives.

variables relies so much on the inferences of raters, to the extent possible, steps to ensure the reliability and validity of the rater scores had to be taken. In addition, because all these variables were used in a multivariate statistical analysis, steps to ensure that they do not substantially deviate from normality had to be also taken. A detailed description of these tests is to be found in Appendix 3-E: Diagnostics. All that is needed at this point, before proceeding to a description of the variables used, is to mention the general findings of these tests. First, to the extent that testing was possible, the reliability and validity of the independent variables was quite satisfactory. Second, all the variables used did not substantially deviate from normality, and could, therefore, be analyzed with the help of multivariable regression techniques.

Insert Table 3-1 about here

Independent Variables

As independent variables, the accident characteristics of severity, media attention, blame, and complexity were operationalized along the Likert scale seen in Appendix 3-D. As mentioned above, raters were asked to rate these characteristics on a seven-point scale. More precisely, the following variables were used to measure accident characteristics. Two variables (HL and ENV) were used to measure **accident severity.** Variable **(HL)**, accident severity with respect to human life, was defined as the extent of damage that humans (dead or injured in any way) suffered as a result of this accident. Variable **(ENV)**, accident severity with respect to environmental damage, was defined as the damage that the environment suffered as a result of this accident. **Media attention** was measured by variable

(MA), and was defined as the number of newspaper articles and media time that this particular event received. As for the company's **blame (Bl)** for the accident, given that the notion of blame is quite clear, rater were simply asked how much blame they attributed to the company for the accident.

Drawing on Perrow (1984), three variables were used to measure three aspects of **complexity**: (1) the number of factors involved in the event, (2) the transparency of its causes, and (3) the number of interactions among the factors involved. The underlying assumption was, that complex events (accidents in this case) would tend to have a great number of factors involved, would not have transparent causes, and would have a great number of interactions among the factors involved. However, most raters did not consider that there was adequate information in the accident profiles to evaluate all three aspects of complexity. Therefore, complexity was measured only as the number of factors involved in the event **(Com-Fs)**.

Finally, adjustments had to be made so that the independent variables match the dependent because while independent variables consisted of measurements that corresponded to particular irregularly spaced events, dependent variables consisted of yearly measurements. To correct this discrepancy, the yearly scores of the independent variables per company were added and these sums were used as independent variables. The result was a reduction in data points, from 106 to 71[12].

Dependent Variables

The dependent variables consisted of yearly changes in corporate reputation, where corporate reputation was measured from the yearly reputational scores of the AMAC survey. As has been mentioned above, the AMAC survey drawing on questionnaires from two stakeholder groups

12 Actually, 72 data points were left after this reduction, but one was excluded from the analysis

(industry executives and industry analysts) provides yearly reputational scores for eight dimensions of reputation. Based on these data, three kinds of dependent variables were identified. The yearly first differences of the collective[13] overall[14] reputational score for each company involved were used to measure yearly changes in the corporate reputation of the firm with both stakeholder groups **(Y1)**. And, the yearly first differences of the overall reputational scores of analysts and executives were used as indicators of changes in the corporate reputation of the firm with analysts **(Y2)** and executives **(Y3)** respectively.

Control Variables

As control variables, the constructs of firm size, financial performance, prior corporate reputation, and type of accident were used. **Firm size** was controlled for because it could influence the visibility of a company, and was measured by the logarithmic transformation of the number of employees the firm had during the relevant year. **Financial performance** was controlled for because it has been found that financial performance is significantly correlated with corporate reputation (McGuire, Schneeweiss and Branch, 1990). Due to its 'stability and comparability across firms' (Kim, Hwang and Burgers, 1989; cited in Carter and Dukerich, 1998) a Return on Assets (ROA) ratio, drawn from the AMAC survey, was used as an indicator of financial performance. And, to increase the sensitivity to financial performance the Return on Equity (ROE) ratio was also used. **Prior corporate reputation** (at year t-1) was also controlled for, for two reasons. First, it has been argued that prior levels of reputation can influence the way that stakeholders react to particular

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as an extreme outlier.

13 This means both groups: executives and analysts.

14 Average of all eight dimensions.

events (Fiol and Kovoor-Misra, 1997; Fombrun, 1996; Zyglidopoulos, 1997). And, given that changes in corporate reputation are being investigated, controlling for prior reputation means that one is controlling for regression towards the mean effects. Finally, **type of accident**[15] was controlled for, by including the necessary indicator variables.

Insert Table 3-2 about here

Statistical Analysis

A number of multivariate regressions were used to analyse the variables presented above. Multivariate regression was considered to be an appropriate statistical technique for this analysis because, even though the data consisted of observations at different points in time for quite often the same companies, given the relative 'lack of pattern' in the data collecting process, no autocorrelation or heteroscedasticity problems were expected and indeed none were found.

To test the above hypotheses, the analysis proceeds as follows. First, for the three dependent variables, using only the above control variables, three control models were constructed. To these models, each independent variable was added and its significance evaluated. Given the three dependent variables and the five independent ones, 18 regression models were investigated[16].

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15 Based on the classification scheme used by the New York Times, three kinds of accidents have been identified and included in this research: chemical- oil spills (COS), railway accidents (RA), and air accidents (See table 3-1).

16 Tests for the normality of the residuals and for potential interaction effects between the independent variables and the indicator-control variables for the type of accident, were conducted and can be seen in Appendix 3E: Diagnostics. In general, it was found that the major assumptions on which regression models rest were not violated. In addition, no significant interaction effects were

FINDINGS

As mentioned above, the descriptive statistics of the variables used in the analyses are presented in table 3-1, while the correlations of the variables are shown in table 3-2. In the following paragraphs, the models investigating the reputational impact of the five independent variables are discussed. Tables 3-3, 3-4, 3-5, 3-6, and 3-7 present the control models for all three dependent variables and the models with the added independent variable.

Accident Severity with respect to Human Life (HL)

Hypothesis 1A predicted a negative relationship between accident severity with respect to human life and changes in corporate reputation. As can be seen from table 3-3, no support for this hypothesis was found with any of the three dependent variables.

Insert Table 3-3 about here

Accident Severity with respect to Environmental Damage (Env)

Hypothesis 1B predicted a negative relationship between accident severity with respect to the environment and changes in corporate reputation. As can be seen in table 3-4, such support was found, at least for two of the three variables (Y1) and (Y3). In other words, the correlation coefficient of the relevant variable was negative and did reach a level of significance ($p < 0.05$) for the both models dealing with changes in the collective reputational scores (Y1) and with changes in the executive reputational scores (Y3). The hypothesis was not supported for the model dealing with

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found between the independent and indicator variables.

changes in the reputational score of analysts.

Insert Table 3-4 about here

Media Attention (MA)

Hypothesis 2 predicted a negative relationship between media attention and change in corporate reputation. As shown on table 3-5, support for this hypothesis was found in the model examining changes in the collective reputational score ($p<0.05$) and the model examining changes in the executive reputational score ($p<0.01$). For the model examining changes in the reputational score of analysts, the correlation coefficient of the variable measuring media attention, failed to reach a significance level.

Insert Table 3-5 about here

Blame (Bl)

Hypothesis 3 predicted a negative relationship between blame for the accident and changes in corporate reputation. From table 3-6, it can be seen that this hypothesis was mostly not supported from the analysis. Although the correlation coefficient of the relevant variable remained negative for all three models considered, it failed to reach significant levels. Only for the model investigating the changes in reputational score of executives it came pretty close ($p=0.052$) but did not reach significance levels.

Insert Table 3-6 about here

Complexity (COM-Fs)

Hypothesis 4 predicted a negative relationship between event complexity and change in corporate reputation. However, support for this hypothesis was not found in any of the models examined. In all cases, the data did not provide support for this hypothesis, as can be seen from table 3-7.

Insert Table 3-7 about here

Stakeholder Specificity

Finally, hypothesis 5, the stakeholder specificity hypothesis, predicted that the reputational impact of the same accident characteristic would differ between executives and analysts. Partial support for this hypothesis was found, because as can be seen from tables 3-4, and 3-5, while accident severity with respect to environmental damage, and media attention, were both significant for the executive models, they were not significant for the analyst models. In other words, it seems that executives were more sensitive to these variables than analysts were.

DISCUSSION, IMPLICATIONS AND CONCLUSION

While previous research has examined in depth a few extreme accidents that have caused major reputational crises in the business organizations involved, no systematic research on the

reputational impact of accidents has been done. This paper is a first attempt into a systematic investigation into the effect that accidents can have on the reputations of the firms involved. Such an investigation is of interest to both the areas of strategic management and business and society. First, within the field of strategic management, and particularly within the resource-based view of the firm, it is of interest to the field to understand the impact that various events (accidents in this case) can have on one of the most important intangible firm resources, corporate reputation. And, while there is a plethora of empirical and theoretical studies that deal with the potential value of corporate reputation as a source of sustainable competitive advantage, there is a relative lack of studies, which try to understand how various events and their characteristics can influence corporate reputation. Second, within the business and society domain, the research in this paper contributes to a better understanding of the impact that events that can traumatise the society at large can have on the reputation of a firm.

Specifically, based on the findings from this research, there are a number of issues in need of further discussion. First, concerning accident severity with respect to environmental damage, it seems that the findings from this paper are in agreement with the idea that the environment, following a social issue life cycle (Ackerman, 1975; Bigelow and Fahey, 1993; Mahon and Waddock, 1992; Post, 1978), has emerged as an issue of great importance, at least for the management of corporate reputation.

Second, concerning the accident severity with respect to damage to human life, it was quite surprising to find that accident severity with respect to human life never reached significant levels, even though severity with respect to environmental damage was significant. A reason for this unexpected phenomenon can be suggested. It could be that the data used to capture accident severity

did not differentiate between different categories of the people who suffered due to the accident. For example, it is conceivable that the suffering of innocent bystanders might have much more of a reputational impact than suffering of firm employees, who in a sense were doing their job and had assumed the associated risks.

Third, while the findings concerning media attention were in accordance with prior research on the matter, and not surprising; a more interesting finding was the fact that media attention was significant (at least at the collective and executive levels), but that blame was not. This could imply that even if the firm is not directly blamed for the accident, its presentation and depiction with a negative event could have a negative impact to its reputation. This finding, to a certain extent, could also be seen as supporting Fombrun and Shanley (1990), who found that any kind of increase in media attention has a negative impact on the firm's reputation.

Fourth, the findings from this research provide preliminary support for, what has been referred to in this paper as the 'stakeholder specificity hypothesis'. In other words, that stakeholders would differ in their reputational evaluations of particular firms and would also differ in their reputational re-evaluations of events that take place in the life of these firms (current dissertation, Chapter two, Fiol and Kovoor-Misra, 1997, Zyglidopoulos and Phillips, 1998B). Of course, due to data availability, only two stakeholder groups were examined in this paper, and two stakeholder groups (industry analysts and executives) that could be seen as quite similar ones. But, one could argue that if significant differences were found in these two stakeholder groups that are pretty similar to one another, it should be reasonable to expect that stakeholder groups more dissimilar to differ in their reputational evaluations and re-evaluations of a particular firm, even more.

Research and Managerial Implications

The research implications of this article are twofold. First, an approach similar to the one used here could be applied to examine and investigate the reputational impact of other kinds of events, which could be possibly linked with changes in corporate reputation. For example, the reputational impact of events both within and outside the control of managers can be investigated this way. A great number of strategic decisions such as downsizing, diversifying, or internationalising, can be seen as events with a potentially significant reputational impact that are within the control of managers. On the other hand, events such as scandals, and product safety incidents can be seen as events with potentially significant reputational implications that occur outside the immediate control of managers. Second, the approach used in this paper can be used to examine the reputational impact of accidents, or other kind of events, at a different level of analysis, such as an industry, or a country level.

From a managerial perspective, there are two issues with managerial implications. First, the fact that accident severity with respect to the environment had a significant reputational impact means that managers should pay more attention to environmental issues. Because, among others, it seems that environmental damage associated with a particular business firm, even when the firm is not blamed directly for the event[17], has a negative impact on the firm's reputation. Second, given that the research in this paper has found support for the 'stakeholder specificity hypothesis', managers should take the time and effort to understand how different stakeholder groups form and change their minds about the reputation of a particular firm.

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17 Blame did not reach high levels of significance.

Limitations and further research

Although this paper can be seen as a potentially important step towards the direction of better understanding the impact that accidents, and particularly specific accident characteristics, can have on the reputation of a firm, it has a number of limitations, which need to be addressed in future research. First, the measurement and identification of relevant accident characteristics needs to be refined by future research. Second, the work of this paper needs to be expanded and tested against a greater variety of stakeholder groups, types of accidents, and reputational dimensions. To do this further research has to identify not only more refined ways of accident identification, but also better ways of measuring the corporate reputation of a firm, taking into consideration both its characteristics of stakeholder specificity and multidimensionality.

Finally, a major limitation of this paper is that it does not examine in any way the reactions of the firm's managers to accidents. In other words, managerial agency is not accounted for. This is a serious limitation that needs to be addressed in future research, because managerial responses to accidents can reduce or intensify the reputational impact of a given accident (Zygldiopoulos and Iqtidar, 1998).

Conclusion

In conclusion, it can be said that some accident characteristics can have an impact on the reputation of the firm, however this impact, when it exists, is not always the same with various stakeholder groups. General speaking, industry executives were found to be influenced by accident severity with respect to environmental damage and media attention, while industry analysts were not. More precisely, it was found that accident severity with respect to environmental damage and media

attention both have a significant negative impact on the reputational changes of reputational scores at the collectives and executive levels, but not at the analysts level. In addition, the findings suggest that blame and complexity did not have an impact on the reputational re-evaluations of either of the two stakeholder groups examined.

Tables to Chapter 3

Table 3-1

Descriptive Statistics According to Accident Type

	Chemical-Oil Spills			Railway Accidents			Airplane Accidents			Overall		
	N	Mean	Std	N	Mean	Std	N	Mean	Std	N	Mean	Std
Y1	25	-0.06	0.37	9	0.16	0.36	36	-0.06	0.41	70	-0.03	0.40
Y2	25	-0.10	0.62	9	0.24	0.47	36	-0.02	0.56	70	-0.01	0.58
Y3	25	-0.04	0.32	9	0.12	0.39	36	-0.01	0.40	70	-0.01	0.37
SIZE	25	10.61	0.56	9	10.80	0.04	37	11.35	0.50	71	11.02	0.60
ROA	24	3.73	3.02	9	2.79	2.18	37	1.52	8.83	70	2.44	6.78
ROE	24	10.68	8.99	9	9.11	7.68	33	7.59	20.05	66	8.92	15.51
CR	25	6.79	0.87	9	6.41	0.70	36	6.24	1.04	70	6.46	0.98
HL	26	3.98	1.70	9	4.50	1.58	37	5.55	4.43	72	4.85	3.46
ENV	26	5.42	2.09	9	3.44	2.05	37	3.84	3.15	72	4.36	2.80
MA	26	5.31	2.15	9	5.83	2.79	37	6.50	4.76	72	5.99	3.82
BL	18	5.42	1.80	8	3.81	2.61	33	5.79	3.55	59	5.41	3.06
COM-Fs	24	3.98	1.39	9	4.44	1.34	37	4.59	3.97	70	4.36	3.05

Y1 = Change in Overall, Collective Reputational Score
Y2 = Change in Overall, Reputational Score of Analysts
Y3 = Change in Overall, Reputational Score of Executives
SIZE = Organizational Size, measured as the Ln transformation of the number of employees
ROA = Return on Assets
ROE = Return on Equity
CR = Corporate Reputation at time (t-1)
HL = Accident Severity with respect to damage to human life
ENV = Accident Severity with respect to damage to the environment
MA = Media Attetnion
BL = Blame for Accident
COM-Fs = Complexity - Number of factors involved in accident

Table 3-2
Pairwise Correlations

		1	2	3	4	5	6	7	8	9	10	11	12
1	Y1	1.000											
2	Y2	0.786**	1.000										
3	Y3	0.894**	0.695**	1.000									
4	SIZE	-0.141	0.004	-0.095	1.000								
5	ROA	0.095	0.128	0.080	0.018	1.000							
6	ROE	0.052	0.148	0.017	-0.082	0.947**	1.000						
7	CR	-0.172	-0.163	-0.229	0.194	0.422**	0.132	1.000					
8	HL	-0.036	0.021	-0.007	0.162	-0.173	-0.155	-0.161	1.000				
9	ENV	-0.215	-0.148	-0.240*	-0.093	-0.112	-0.138	0.020	0.727**	1.000			
10	MA	-0.146	-0.065	-0.161	0.187	-0.153	-0.196	-0.072	0.873**	0.805**	1.000		
11	BL	-0.223	-0.199	-0.214	0.056	-0.160	-0.165	-0.113	0.633**	0.658**	0.720**	1.000	
12	Fs	-0.046	0.053	0.001	0.194	-0.074	-0.106	-0.007	0.884**	0.733**	0.882**	0.632**	1.000

Y1 = Change in Overall, Collective Reputational Score
Y2 = Change in Overall, Reputational Score of Analysts
Y3 = Change in Overall, Reputational Score of Executives
SIZE = Organizational Size, measured as the Ln transformation of the number of employees
ROA = Return on Assets
ROE = Return on Equity
CR = Corporate Reputation at time (t-1)
HL = Accident Severity with respect to damage to human life
ENV = Accident Severity with respect to damage to the environment
MA = Media Attetnion
BL = Blame for Accident
COM-Fs = Complexity - Number of factors involved in accident

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 3-3
Impact of Accident Severity with respect to Human Life

Variable	Change in Collective Reputational Score(Y1)		Change in Reputational Score of Analysts(Y2)		Change in Reputational Score of Executives(Y3)	
	Control Model [3-3, 1]	Plus HL Model [3-3, 2]	Control Model [3-3, 3]	Plus HL Model [3-3, 4]	Control Model [3-3, 5]	Plus HL Model [3-3, 6]
R-squared	11.40%	12.40%	10.40%	10.60%	13.50%	14.00%
F-ratio	1.376	1.274	1.241	1.063	1.666	1.47
Constant	1.328	1.261	-6.21E-02	-9.84E-02	1.113	1.067
	[1.110]	[1.115]	[1.639]	[1.655]	[1.031]	[1.038]
Control for COS	-7.14E-03	-4.51E-03	4.68E-02	4.82E-02	1.05E-02	1.24E-02
	[0.137]	[0.137]	[0.202]	[0.204]	[0.127]	[0.128]
Control for RA	0.184	0.188	0.315	0.317	0.127	0.129
	[0.159]	[0.159]	[0.234]	[0.236]	[0.147]	[0.148]
Size	-5.90E-02	-4.06E-02	9.43E-02	0.104	-1.72E-02	-4.51E-03
	[0.104]	[0.107]	[0.154]	[0.159]	[0.097]	[0.099]
ROA	2.16E-02	2.08E-02	2.06E-02	2.02E-02	2.54E-02	2.48E-02
	[0.012]	[0.012]	[0.018]	[0.018]	[0.012]	[0.012]
ROE	-5.24E-03	-4.93E-03	2.22E-04	3.88E-04	-7.17E-03	-6.96E-03
	[0.005]	[0.005]	[0.008]	[0.008]	[0.005]	[0.005]
Corp. Reputation(t-1)	-0.114	-0.124	-0.171	-0.176	-0.147	-0.153
	[0.062]	[0.063]	[0.092]	[0.094]	[0.058]	[0.059]
Damage to HL		-1.64E-02		-8.94E-03		-1.14E-02
		[0.020]		[0.029]		[0.018]

**p< 0.01
* p< 0.05

Table 3-4

Impact of Accident Severity with respect to Environmental Damage

Variable	Change in Collective Reputational Score(Y1)		Change in Reputational Score of Analysts(Y2)		Change in Reputational Score of Executives(Y3)	
	Control Model [3-4, 1]	Plus Env Model [3-4, 2]	Control Model [3-4, 3]	Plus Env Model [3-4, 4]	Control Model [3-4, 5]	Plus Env Model [3-4, 6]
R-squared	11.40%	20.00%	10.40%	13.50%	13.50%	24.00%
F-ratio	1.376	2.256 *	1.241	1.41	1.666	2.842
Constant	1.328	1.178	-6.21E-02	-1.94E-01	1.113	0.958
	[1.110]	[1.064]	[1.639]	[0.1625]	[1.031]	[0.975]
Control for COS	-7.14E-03	1.41E-01	4.68E-02	1.78E-01	1.05E-02	1.64E-01
	[0.137]	[0.143]	[0.202]	[0.218]	[0.127]	[0.131]
Control for RA	0.184	0.209	0.315	0.337	0.127	0.152
	[0.159]	[0.152]	[0.234]	[0.233]	[0.147]	[0.140]
Size	-5.90E-02	-2.23E-02	9.43E-02	0.127	-1.72E-02	2.08E-02
	[0.104]	[0.101]	[0.154]	[0.154]	[0.097]	[0.092]
ROA	2.16E-02	1.90E-02	2.06E-02	1.83E-02	2.54E-02	2.27E-02 *
	[0.012]	[0.012]	[0.018]	[0.018]	[0.012]	[0.011]
ROE	-5.24E-03	-4.77E-03	2.22E-04	6.33E-04	-7.17E-03	-6.69E-03
	[0.005]	[0.005]	[0.008]	[0.008]	[0.005]	[0.005]
Corp. Reputation(t-1)	-0.114	-0.126 *	-0.171	-0.181	-0.147	-0.159 *
	[0.062]	[0.060]	[0.092]	[0.091]	[0.058]	[0.055]
Damage to Environment		-5.62E-02 *		-4.97E-02		-5.82E-02 *
		[0.022]		[0.033]		[0.020]

** p< 0.01

* p< 0.05

Table 3-5
Impact of Media Attention

Variable	Change in (Y1) Collective Reputational Score		Change in (Y2) Reputational Score of Analysts		Change in (Y3) Reputational Score of Executives	
	Control Model [3-5, 1]	Plus Media Attention [3-5, 2]	Control Model [3-5, 3]	Plus Media Attention [3-5, 4]	Control Model [3-5, 5]	Plus Media Attention [3-5, 6]
R-squared	11.40%	18.00%	10.40%	12.80%	13.50%	22.20%
F-ratio	1.376	1.982	1.241	1.316	1.666	2.563 *
Constant	1.328	0.937	-6.21E-02	-0.402	1.113	0.693
	[1.110]	[1.090]	[1.639]	[1.651]	[1.031]	[0.998]
Control for COS	-7.14E-03	3.17E-02	4.68E-02	8.06E-02	1.05E-02	5.23E-02
	[0.137]	[0.134]	[0.202]	[0.203]	[0.127]	[0.122]
Control for RA	0.184	0.223	0.315	0.35	0.127	0.169
	[0.159]	[0.155]	[0.234]	[0.235]	[0.147]	[0.142]
Size	-5.90E-02	7.50E-03	9.43E-02	0.152	-1.72E-02	5.42E-02
	[0.104]	[0.105]	[0.154]	[0.160]	[0.097]	[0.097]
ROA	2.16E-02	2.09E-02	2.06E-02	2.00E-02	2.54E-02	2.46E-02
	[0.012]	[0.012]	[0.018]	[0.018]	[0.012]	[0.011]
ROE	-5.24E-03	-5.37E-03	2.22E-04	1.04E-04	-7.17E-03	-7.32E-03
	[0.005]	[0.005]	[0.008]	[0.008]	[0.005]	[0.005]
Corp. Reputation(t-1)	-0.114	-0.135 *	-0.171	-0.189 *	-0.147	-0.169 *
	[0.062]	[0.061]	[0.092]	[0.092]	[0.058]	[0.056]
Media Attention		-3.98E-02 *		-3.47E-02		-4.27E-02 **
		[0.018]		[0.027]		[0.010]

** p< 0.01
* p< 0.05

Table 3-6
Impact of Blame

Variable	Change in (Y1) Collective Reputational Score		Change in (Y2) Reputational Score of Analysts		Change in (Y3) Reputational Score of Executives	
	Control Model [3-6, 1]	Plus Blame Model [3-6, 2]	Control Model [3-6, 3]	Plus Blame Model [3-6, 4]	Control Model [3-6, 5]	Plus Blame Model [3-6, 6]
R-squared	11.40%	16.00%	10.40%	13.70%	13.50%	18.60%
F-ratio	1.376	1.717	1.241	1.423	1.666	2.056
Constant	1.328	1.462	-6.21E-02	0.104	1.113	1.246
	[1.110]	[1.092]	[1.639]	[1.626]	[1.031]	[1.018]
Control for COS	-7.14E-03	3.68E-03	4.68E-02	6.01E-02	1.05E-02	2.12E-02
	[0.137]	[0.134]	[0.202]	[0.200]	[0.127]	[0.124]
Control for RA	0.184	0.141	0.315	0.263	0.127	8.43E-02
	[0.159]	[0.158]	[0.234]	[0.235]	[0.147]	[0.148]
Size	-5.90E-02	-4.84E-02	9.43E-02	0.107	-1.72E-02	-6.78E-03
	[0.104]	[0.103]	[0.154]	[0.153]	[0.097]	[0.095]
ROA	2.16E-02	2.09E-02	2.06E-02	1.98E-02	2.54E-02	2.47E-02
	[0.012]	[0.012]	[0.018]	[0.018]	[0.012]	[0.011]
ROE	-5.24E-03	-5.49E-03	2.22E-04	-9.06E-05	-7.17E-03	-7.42E-03
	[0.005]	[0.005]	[0.008]	[0.008]	[0.005]	[0.005]
Corp. Reputation(t-1)	-0.114	-0.125 *	-0.171	-0.184 *	-0.147	-0.157 **
	[0.062]	[0.061]	[0.092]	[0.091]	[0.058]	[0.057]
Blame		-3.36E-02		-4.14E-02		-3.32E-02 #
		[0.018]		[0.027]		[0.017]

** p< 0.01
* p< 0.05
# p=0.052

Table 3-7
Impact of Complexity (Fs)

Variable	Change in (Y1) Collective Reputational Score		Change in (Y2) Reputational Score of Analysts		Change in (Y3) Reputational Score of Executives	
	Control Model [3-7, 1]	Plus Compelxity Model [3-7, 2]	Control Model [3-7, 3]	Plus Compelxity Model [3-7, 4]	Control Model [3-7, 5]	Plus Compelxity Model [3-7, 6]
R-squared	11.40%	12.60%	10.40%	10.40%	13.50%	13.70%
F-ratio	1.376	1.297	1.241	1.049	1.666	1.424
Constant	1.328	1.06	-6.21E-02	-1.35E-02	1.113	1.022
	[1.110]	[1.149]	[1.639]	[1.708]	[1.031]	[1.073]
Control for COS	-7.14E-03	1.99E-02	4.68E-02	4.18E-02	1.05E-02	1.97E-02
	[0.137]	[0.140]	[0.202]	[0.208]	[0.127]	[0.131]
Control for RA	0.184	0.213	0.315	0.31	0.127	1.36E-01
	[0.159]	[0.162]	[0.234]	[0.241]	[0.147]	[0.151]
Size	-5.90E-02	-2.41E-02	9.43E-02	8.80E-02	-1.72E-02	-5.46E-03
	[0.104]	[0.111]	[0.154]	[0.165]	[0.097]	[0.104]
ROA	2.16E-02	2.11E-02	2.06E-02	2.07E-02	2.54E-02	2.52E-02
	[0.012]	[0.012]	[0.018]	[0.018]	[0.012]	[0.012]
ROE	-5.24E-03	-4.82E-03	2.22E-04	1.47E-04	-7.17E-03	-7.03E-03
	[0.005]	[0.005]	[0.008]	[0.008]	[0.005]	[0.005]
Corp. Reputation(t-1)	-0.114	-0.12	-0.171	-0.17	-0.147	-0.149 *
	[0.062]	[0.063]	[0.092]	[0.093]	[0.058]	[0.059]
Complexity (COM-Fs)		-2.22E-02		4.02E-03		-7.50E-03
		[0.024]		[0.036]		[0.023]

** p< 0.01
* p< 0.05

APPENDICES
TO CHAPTER 3

APPENDIX 3A
LIST OF COMPANIES INVESTIGATED AND YEARLY REPUTATIONAL SCORES

Companies with continuous reputational data between 89-95	Collective Reputational Score 1989	1990	1991	1992	1993	1994	1995	AVG per firm	STD firm
1 AMR	7.16	7.05	6.95	6.41	6.51	6.29	6.73	6.73	0.31
2 Abbott Labs	7.25	7.08	7.44	7.26	7.12	7.12	7.22	7.21	0.11
3 Aetna L & C	6.19	5.81	5.32	5.12	5.65	4.99	5.17	5.46	0.40
4 Ahmanson	7.28	7.07	6.68	6.92	6.65	6.53	5.88	6.72	0.42
5 Alberto-Culver	6.03	5.94	5.94	5.54	6.00	5.42	5.64	5.79	0.23
6 Alcoa	7.13	6.94	6.87	7.16	7.10	6.85	7.28	7.05	0.15
7 AlliedSignal	5.76	5.75	5.53	6.30	6.87	7.06	7.28	6.36	0.66
8 Amer Brands	6.83	7.06	6.63	7.56	7.24	6.73	6.65	6.96	0.32
9 Amer Express	7.42	6.48	6.28	5.58	5.92	5.98	6.40	6.29	0.54
10 Amer Home Prod	6.51	6.31	6.43	6.45	6.48	6.08	6.61	6.41	0.16
11 Amer Intl Grp	7.30	7.00	7.05	7.16	7.00	7.13	7.15	7.11	0.10
12 Amer Std	6.29	5.87	6.05	5.97	6.40	6.07	6.05	6.10	0.17
13 Amer Stores	5.55	5.58	5.66	5.59	6.21	6.09	6.04	5.82	0.26
14 AT&T	7.30	7.33	7.30	7.22	7.96	7.68	7.35	7.45	0.25
15 Ameritech	7.09	7.00	7.14	6.95	6.59	6.50	6.68	6.85	0.24
16 Amoco	7.70	7.73	7.24	7.09	7.05	7.28	7.12	7.32	0.26
17 Anheuser-Busch	7.96	7.60	7.75	7.28	6.98	6.93	7.02	7.36	0.38
18 Apple	7.16	6.45	6.96	7.25	6.12	6.38	5.85	6.60	0.50
19 Archer-Daniels	6.54	6.49	6.76	6.54	6.32	6.61	5.25	6.36	0.47

20 Arco	7.47	7.72	7.37	6.91	6.93	6.34	6.38	7.02	0.49
21 Armstrong World	6.92	6.15	6.64	6.61	6.55	7.13	7.05	6.72	0.31
22 Asarco	5.48	5.77	5.64	6.01	5.49	5.61	5.46	5.64	0.18
23 A&P	6.11	5.62	4.91	4.96	4.49	4.58	4.25	4.99	0.61
24 Avon Prod	5.04	4.92	5.69	5.85	6.39	6.21	6.59	5.81	0.60
25 BASF	6.60	6.33	6.47	6.20	6.31	6.36	6.32	6.37	0.12
26 BankAmerica	5.46	6.13	6.96	6.78	6.59	6.52	6.80	6.46	0.48
27 Bankers Trust NY	7.04	6.74	7.05	7.15	7.42	6.97	5.87	6.89	0.46
28 Baxter Intl	6.43	6.34	6.40	6.49	5.70	6.04	5.94	6.19	0.28
29 Bayer	6.89	6.50	6.53	6.40	6.45	6.36	6.60	6.53	0.16
30 Becton Dickinson	6.42	6.51	6.46	6.28	6.21	6.33	6.19	6.34	0.12
31 Bell Atlantic	7.33	7.28	7.22	7.09	7.16	6.79	6.52	7.06	0.27
32 BellSouth	7.65	7.47	7.33	7.44	7.17	6.83	6.88	7.25	0.29
33 Berkshire Hathaway	7.70	7.64	7.92	7.15	7.59	7.30	7.97	7.61	0.28
34 Bethlehem	4.67	4.71	4.84	4.01	4.81	5.06	4.83	4.70	0.31
35 Black & Decker	6.87	6.63	6.44	6.53	6.50	6.18	6.44	6.51	0.19
36 Boeing	7.92	7.92	7.98	7.88	7.85	7.88	7.81	7.89	0.05
37 Boise Cascade	5.94	5.29	4.64	4.24	4.47	4.39	5.04	4.86	0.56
38 Bristol-Myers Squibb	7.51	7.61	7.99	7.06	6.96	6.48	6.64	7.18	0.51
39 Brown-Forman	6.53	6.45	6.37	5.94	5.97	5.62	5.51	6.06	0.38
40 Burlington Ind	5.37	4.90	4.33	5.15	5.79	5.91	5.98	5.35	0.56
41 CSX	5.47	5.58	5.92	6.35	6.82	6.98	6.86	6.28	0.59
42 California Fed	5.30	4.97	3.95	3.72	3.96	4.11	4.45	4.35	0.54
43 Caterpillar	7.25	6.83	6.59	6.62	6.83	6.96	7.16	6.89	0.23
44 Champion Intl	5.54	5.08	4.49	4.59	4.81	4.82	5.71	5.01	0.43
45 Chase Manhattan	5.60	4.23	4.68	5.21	5.75	5.78	5.96	5.32	0.60
46 Chemical Banking	5.34	4.34	4.99	5.65	6.32	6.09	6.46	5.60	0.71
47 Chevron	6.81	6.85	6.56	6.53	6.85	7.02	6.77	6.77	0.16

48 Chrysler	5.84	4.27	4.27	5.69	6.92	7.01	6.85	5.84	1.10
49 Cigna	5.82	5.44	5.37	5.42	5.34	5.15	5.35	5.41	0.19
50 Citicorp	7.22	6.02	5.11	4.78	5.95	6.38	7.15	6.09	0.86
51 Clorox	6.91	6.30	6.22	6.33	6.55	6.74	7.19	6.61	0.33
52 Coca-Cola	8.15	8.12	8.13	8.19	8.30	8.39	8.70	8.28	0.19
53 Coca-Cola Ent	6.31	6.26	6.06	5.80	6.33	6.06	6.87	6.24	0.31
54 Colgate-Palmolive	6.79	6.55	6.80	7.17	7.24	6.99	6.94	6.93	0.22
55 ConAgra	6.98	6.96	7.28	6.89	6.47	6.92	6.87	6.91	0.22
56 Continental Air	3.72	3.33	2.87	3.05	3.88	4.11	4.27	3.60	0.49
57 Cooper Tire	6.91	7.11	7.16	7.56	7.28	6.83	6.69	7.08	0.27
58 Coors	6.16	6.49	6.37	5.99	6.25	6.38	6.01	6.24	0.18
59 Corning	7.49	7.42	7.72	7.86	8.01	7.76	7.68	7.71	0.19
60 Crown Cork & Seal	6.63	6.37	6.36	6.75	6.40	6.24	6.46	6.46	0.16
61 Cummins Engine	6.47	6.15	5.73	6.14	6.50	6.60	6.41	6.29	0.28
62 Dana	6.66	6.37	6.45	6.28	6.54	6.68	6.69	6.52	0.15
63 Dayton Hudson	6.84	6.96	6.82	6.86	6.69	6.51	6.46	6.73	0.17
64 Deere	7.30	7.13	7.07	6.90	6.95	7.19	7.23	7.11	0.14
65 Delta Air	6.89	7.10	7.27	6.21	5.89	5.62	6.06	6.43	0.60
66 Dibrell Bros	6.16	6.20	6.25	6.34	5.94	6.23	5.21	6.05	0.36
67 DEC	6.70	6.13	6.00	4.82	5.41	4.36	5.61	5.58	0.74
68 Donnelley	6.94	7.04	6.94	7.03	6.92	6.74	7.10	6.96	0.11
69 Dow Chemical	7.85	7.50	7.44	7.33	7.23	7.38	7.19	7.42	0.20
70 Dresser Ind	6.31	6.16	5.97	6.18	6.12	6.05	5.83	6.09	0.14
71 Du Pont	7.93	7.84	7.59	7.46	7.32	7.53	7.71	7.63	0.20
72 Eaton	6.80	6.76	6.62	6.86	6.88	6.78	6.65	6.76	0.09
73 Emerson Elec	7.08	6.93	7.04	6.98	7.21	7.25	7.22	7.10	0.12
74 Exxon	6.70	6.82	6.84	7.03	6.99	7.11	7.36	6.98	0.20
75 FNMA	6.40	6.42	6.40	6.55	6.67	6.82	6.93	6.60	0.20

76 Fleming	5.87	6.09	6.47	5.94	6.12	5.83	6.04	6.05	0.20
77 Ford Motor	7.69	6.91	6.34	6.78	7.14	7.32	7.04	7.03	0.39
78 Fruit of the Loom	5.37	5.42	5.73	5.99	6.09	5.94	5.24	5.68	0.31
79 GTE	6.58	6.75	6.83	6.76	6.35	5.96	6.12	6.48	0.32
80 Gannett	7.13	6.97	7.12	6.72	6.78	6.86	6.95	6.93	0.15
81 General Dynamics	6.47	5.94	5.79	5.88	6.07	6.14	6.54	6.12	0.27
82 General Electric	7.62	7.64	7.67	7.37	7.81	7.84	7.63	7.65	0.14
83 General Mills	7.24	7.16	7.55	7.71	7.76	7.42	7.15	7.43	0.24
84 General Motors	6.08	5.98	5.93	5.14	5.07	5.99	6.00	5.74	0.41
85 Georgia-Pacific	6.72	6.14	5.83	5.89	5.83	6.07	6.50	6.14	0.32
86 Gillette	6.84	6.90	7.12	7.28	7.70	7.91	8.00	7.39	0.44
87 Glendale Fed	5.32	4.91	4.10	3.49	3.92	4.16	4.77	4.38	0.59
88 Golden West	7.24	7.45	7.24	7.58	7.50	7.13	6.71	7.26	0.27
89 Goodyear Tire	6.61	6.33	5.79	6.75	7.49	7.37	7.51	6.84	0.61
90 Grace	5.22	5.40	5.47	5.46	5.74	5.48	4.98	5.39	0.22
91 Great Western	7.60	6.84	6.76	7.16	6.69	6.39	5.95	6.77	0.49
92 Hanson Ind	5.46	5.18	6.11	6.27	6.20	6.13	6.39	5.96	0.42
93 Herman Miller	7.40	7.67	7.59	7.36	7.46	7.58	6.83	7.41	0.26
94 Hewlett-Packard	7.62	7.28	7.34	7.44	7.81	8.04	8.19	7.67	0.33
95 Hoechst Celanese	6.49	6.26	6.34	6.38	6.44	6.48	6.35	6.39	0.08
96 HON Industries	6.26	6.33	6.52	6.43	6.29	6.92	6.80	6.51	0.24
97 Honeywell	5.65	6.05	5.96	6.66	6.67	6.28	6.67	6.28	0.38
98 Illinois Tool Works	7.19	7.32	6.99	7.24	6.99	7.12	7.36	7.17	0.14
99 Ingersoll-Rand	6.60	6.50	6.43	6.88	6.77	6.61	6.40	6.60	0.16
100 Inland Steel	6.06	5.62	5.01	4.99	5.36	5.49	5.39	5.42	0.34
101 Interco	4.95	4.27	4.10	4.52	5.20	5.63	5.58	4.89	0.57
102 IBM	7.26	7.34	6.50	5.96	5.25	5.94	6.58	6.40	0.70
103 Intl Paper	6.32	6.49	6.77	6.97	6.81	6.86	6.94	6.74	0.22

104 James River	6.45	5.83	5.66	5.27	4.99	4.81	4.80	5.40	0.57
105 Johnson & Johnson	7.91	8.01	8.22	7.83	7.98	7.81	8.32	8.01	0.18
106 Johnson Controls	7.01	6.66	6.58	6.44	6.54	6.49	6.62	6.62	0.17
107 Kellwood	6.43	5.35	5.77	5.86	6.00	5.94	5.27	5.80	0.37
108 Kimball Intl	6.15	6.31	6.47	6.08	6.03	6.26	5.89	6.17	0.18
109 Kimberly-Clark	7.39	7.48	7.71	7.87	7.78	7.50	7.40	7.59	0.18
110 Kmart	5.65	5.19	5.77	6.11	5.26	3.68	3.36	5.00	0.98
111 Knight-Ridder	6.61	6.78	6.95	6.91	6.59	6.64	6.67	6.74	0.14
112 Kodak	6.49	6.36	6.19	6.18	5.52	6.26	6.59	6.23	0.32
113 Kroger	5.74	5.68	5.78	5.68	6.29	6.74	6.63	6.08	0.43
114 LTV	3.86	3.81	3.70	3.58	4.61	5.05	5.30	4.27	0.65
115 Leggett & Platt	6.73	6.90	6.95	6.95	7.00	7.40	7.10	7.00	0.19
116 Eli Lilly	7.47	7.90	7.89	7.17	6.56	6.51	7.11	7.23	0.52
117 Lockheed	6.27	5.53	6.37	6.49	6.56	6.80	7.00	6.43	0.43
118 Louisiana Land	6.31	6.38	6.22	6.47	6.37	6.27	5.79	6.26	0.21
119 Martin Marietta	7.27	6.70	6.93	6.94	7.00	7.05	7.09	7.00	0.16
120 Masco	6.88	6.69	6.21	6.24	6.48	6.52	6.07	6.44	0.27
121 May Dpt Stores	6.51	6.45	6.26	6.36	6.57	6.47	6.69	6.47	0.13
122 McDonnell Douglas	5.82	4.99	4.56	4.53	4.98	5.95	6.37	5.31	0.67
123 McGraw-Hill	5.97	5.77	5.95	5.86	6.01	6.22	6.23	6.00	0.16
124 McKesson	6.33	6.61	6.49	6.46	6.56	7.04	6.91	6.63	0.24
125 Mead	6.83	6.27	6.13	6.30	6.44	6.39	6.55	6.42	0.21
126 Merck	8.90	8.86	9.02	8.74	8.10	7.59	8.26	8.50	0.49
127 Merrill Lynch	6.15	5.27	6.05	6.61	7.24	6.97	7.45	6.53	0.71
128 Met Life	6.31	6.40	6.73	6.65	6.27	5.66	5.72	6.25	0.39
129 3M	8.21	8.12	8.12	8.41	8.19	8.09	8.08	8.17	0.11
130 Mobil	6.96	7.02	6.97	6.81	6.88	7.22	7.28	7.02	0.16
131 Monsanto	7.03	7.06	6.94	6.54	6.64	6.85	6.83	6.84	0.18

132 Morgan	7.54	7.48	7.79	7.93	8.14	7.63	7.65	7.74	0.22
133 Morgan Stanley	7.21	6.75	7.18	7.30	7.38	7.12	6.71	7.09	0.24
134 Motorola	7.24	7.63	7.42	7.69	8.16	8.38	8.19	7.82	0.40
135 Natl Steel	4.01	4.11	4.28	4.62	4.82	4.59	5.02	4.49	0.35
136 Navistar Intl	5.03	4.78	4.83	4.50	4.80	5.09	5.25	4.90	0.23
137 NY Life	6.19	6.18	6.53	6.83	6.87	6.81	6.37	6.54	0.28
138 NY Times	7.15	7.09	6.85	6.77	6.40	6.47	6.45	6.74	0.29
139 Northrop Grumman	4.88	4.44	5.03	5.32	5.56	5.90	6.18	5.33	0.56
140 Nynex	6.32	5.85	5.79	6.12	5.82	5.29	5.62	5.83	0.31
141 Occidental Petro	5.23	4.88	4.70	5.96	5.44	5.55	5.51	5.32	0.40
142 Owens-Illinois	5.92	6.06	5.85	5.78	5.74	5.88	6.10	5.90	0.12
143 Owens-Corning	6.45	6.34	6.54	6.25	6.51	6.57	6.53	6.46	0.11
144 PPG Ind	6.88	6.59	7.12	7.04	7.00	6.83	6.76	6.89	0.17
145 Paccar	6.60	6.46	6.51	6.60	6.51	6.57	6.28	6.50	0.10
146 Pacific G&E	6.54	6.85	7.22	7.00	6.93	6.70	6.54	6.83	0.23
147 Parker Hannifin	6.66	6.47	6.35	6.58	6.50	6.51	6.25	6.47	0.13
148 Penney	6.54	6.53	5.68	6.34	6.80	6.73	6.81	6.49	0.37
149 PepsiCo	8.16	8.19	8.00	7.77	7.67	7.07	7.74	7.80	0.35
150 Pfizer	6.41	6.81	7.73	7.76	7.93	7.64	8.06	7.48	0.57
151 Phelps Dodge	6.29	6.21	6.39	6.90	6.69	6.65	6.91	6.58	0.26
152 Philip Morris	8.78	6.83	7.22	7.13	6.36	6.34	6.53	7.03	0.79
153 Phillips Petro	6.21	6.39	6.08	5.85	6.04	6.10	6.34	6.14	0.17
154 Pitney Bowes	5.74	5.32	5.82	5.89	5.81	5.93	5.86	5.77	0.19
155 Polaroid	6.02	5.62	5.60	5.73	5.83	5.97	5.93	5.81	0.16
156 Premark Intl	6.67	6.57	5.82	6.21	6.18	6.63	6.71	6.40	0.31
157 Procter & Gamble	8.37	8.42	8.00	8.09	8.14	8.13	8.55	8.24	0.19
158 Prudential	6.94	6.97	6.77	6.69	6.23	5.55	5.09	6.32	0.68
159 RJR Nabisco	5.27	5.09	6.58	6.50	5.09	6.19	5.45	5.74	0.61

160 Ralston Purina	6.68	6.20	6.23	5.79	5.55	5.89	6.07	6.06	0.34
161 Raytheon	6.40	6.20	6.48	6.17	6.41	6.39	6.31	6.34	0.11
162 Reynolds Metals	6.84	6.86	6.81	6.97	6.73	6.29	6.71	6.74	0.20
163 Rockwell Intl	6.44	6.60	6.05	5.96	6.31	6.34	6.32	6.29	0.20
164 Rubbermaid	8.42	8.58	8.66	8.58	8.68	8.65	8.35	8.56	0.12
165 SBC Communications	6.93	6.91	6.98	7.15	6.83	7.07	7.36	7.03	0.17
166 Safeway	5.45	5.42	5.92	5.52	6.17	6.64	6.88	6.00	0.55
167 Salomon	6.07	5.79	4.51	5.53	5.96	6.10	4.34	5.47	0.69
168 Sara Lee	7.51	7.02	7.19	7.42	7.48	7.21	7.15	7.28	0.17
169 Scott Paper	7.14	6.83	6.35	6.21	5.96	5.06	5.39	6.13	0.69
170 Seagram	6.51	6.27	6.17	6.01	6.11	5.85	5.40	6.05	0.33
171 Sears Roebuck	5.17	4.34	4.24	4.16	5.37	5.98	6.33	5.08	0.81
172 Shaw Ind	7.25	7.30	7.40	7.38	7.66	7.36	6.93	7.33	0.20
173 Shell Oil	7.85	7.88	6.83	6.94	7.13	7.38	7.46	7.35	0.38
174 Southern	6.21	6.17	6.25	6.44	6.83	6.81	7.08	6.54	0.34
175 Springs Ind	7.09	7.18	6.99	7.21	6.97	6.88	6.90	7.03	0.12
176 Sprint	6.52	6.37	6.16	6.16	5.82	6.07	6.02	6.16	0.21
177 Std Commercial	6.04	5.58	5.73	6.17	4.66	5.52	4.44	5.45	0.61
178 Std Prod	6.71	6.55	5.96	6.25	6.29	6.39	6.06	6.32	0.24
179 Stanley Works	7.05	6.86	6.76	6.76	6.95	6.64	6.43	6.78	0.19
180 Stone Container	5.92	5.00	4.95	4.80	3.80	4.43	4.84	4.82	0.59
181 Supervalu	6.31	6.43	6.48	6.15	6.90	6.59	6.54	6.49	0.22
182 TRW	6.28	6.17	6.04	6.51	6.42	6.68	6.50	6.37	0.20
183 Teachers Ins	6.04	6.09	6.02	6.05	6.12	6.25	6.33	6.13	0.11
184 Tenneco	5.84	6.09	5.15	5.51	6.12	6.18	6.16	5.86	0.37
185 Texaco	5.73	6.43	6.36	6.43	6.56	6.51	6.43	6.35	0.26
186 Texas Instruments	6.55	6.24	6.12	5.94	6.68	6.67	7.03	6.46	0.35
187 Textron	5.77	5.71	5.64	5.81	6.01	6.26	6.24	5.92	0.23

188 Time Warner	6.36	6.25	5.56	6.15	7.30	6.95	6.18	6.39	0.53
189 Times Mirror	6.72	6.60	6.66	6.35	5.94	6.21	5.67	6.31	0.37
190 Triarc	5.09	4.64	5.21	4.33	5.19	5.57	5.12	5.02	0.38
191 Tribune	6.80	6.67	6.67	6.38	6.62	6.78	7.08	6.71	0.20
192 UAL	5.73	5.13	6.31	5.85	6.07	5.52	6.64	5.89	0.46
193 USG	5.23	5.14	4.74	4.86	5.54	5.66	5.95	5.30	0.40
194 UST	7.58	7.43	7.21	6.76	6.17	6.98	6.11	6.89	0.54
195 USX	5.50	5.51	5.50	5.13	5.23	5.30	5.46	5.38	0.14
196 Union Carbide	5.21	5.10	5.42	5.08	5.57	6.25	6.39	5.57	0.50
197 Union Pacific	6.30	6.28	6.43	6.75	7.47	7.40	7.10	6.82	0.47
198 Unisys	4.18	3.57	3.32	3.93	5.26	5.02	4.77	4.29	0.69
199 UPS	7.56	7.43	7.52	7.70	8.13	8.05	7.71	7.73	0.25
200 USAir	6.13	4.74	4.47	4.45	4.78	3.65	3.77	4.57	0.76
201 United Tech	6.54	6.56	6.13	6.17	5.95	6.44	6.52	6.33	0.23
202 Universal	6.81	6.54	6.28	6.42	6.06	6.70	5.47	6.33	0.42
203 VF	7.32	6.10	6.93	7.05	7.42	6.98	6.88	6.95	0.40
204 Vulcan Materials	6.28	6.10	6.00	6.34	5.78	6.06	6.05	6.09	0.17
205 Wal-Mart Stores	8.16	8.35	8.58	8.42	7.46	7.23	7.25	7.92	0.54
206 Warner-Lambert	6.60	6.82	6.80	6.22	6.30	6.07	5.88	6.38	0.34
207 West Point Stevens	5.18	4.30	4.86	4.57	5.78	5.97	6.26	5.27	0.69
208 Westinghouse	6.56	6.58	5.65	4.85	4.84	4.88	4.77	5.45	0.76
209 Weyerhaeuser	5.94	5.49	5.80	6.02	6.58	6.70	6.69	6.17	0.45
210 Whirlpool	6.32	6.19	6.29	6.04	6.55	6.50	6.28	6.31	0.16
211 Xerox	6.58	6.32	6.67	7.11	7.04	7.00	7.12	6.83	0.29
= =	=	=	=	=	=	=	=	=	=
Avergage Reputational Score	6.41								
Maximum Reputational Score	9.02								
Minimum Reputational Score	2.87								

Standard Deviation	0.93

APPENDIX 3B
LIST OF ACCIDENT-COMPANIES

No	Date	Place	Type of Accident	Company	Description of Accident
1	2/3/90	Arthur Kill	COS	Texaco	Barge spills oil
2	31/5/91	Fairfax city	COS	Texaco	Major underground spill found
3	24/12/89	Baton Rouge	COS	Exxon	raptured pipelene releases a cloud of propane
4	24/3/89	Valdez	COS	Exxon	Exxon Valdez runs ashore, 11 mil galons oil spill
5	3/1/90	Linden,NJ	COS	Exxon	Raptured pipe from Exxon refinery spills 5000 gallons, Arthur Kill NY
6	19/7/90	Arthur Kill	COS	Exxon	Barge leaving Exxon's refinery at Linden slums and dumps 37000 gallons of oil
7	14/3/91	Korea	COS	Allied Signal	Chemical leak in Korea by D&E, 40% owned by Allied
8	28/11/92	West Texas	COS	AMOCO	Oil spill from pipeline owned by Shell, AMOCO, ARCO
9	5/9/91	Galveston	COS	AMOCO	40th gallons of oil spilled from broken AMOCO pipeline
10	21/2/90	Indianna	COS	AMOCO	Explosion at AMOCO refinery, 2 dead, 3 injured
11	12/12/89	Gasper	COS	AMOCO	Butane explosion at refinery , 1 dead, 1 injured
12	19/7/91	Cincinati	COS	BASF	Fire and explosion at coating plant, 2 dead, 80 injured
13	2/5/91	Clean Crest	COS	Coors	Spill of Beer kills 3000 fish
14	19/6/91	Michigan	COS	Dow	2000 gls of hydrocloric acid leak from tanker vaporized in

				Chemical	cloud
15	22/7/89	Michigan	COS	Dow Chemical	Toxic chemicals are set afire as train derails
16	5/7/90	Texas	COS	ARCO	Explosion kills 17 workers at petrochemical plant
17	28/11/92	West Texas	COS	ARCO	Oil spill from pipeline owned by Shell, AMOCO, ARCO
18	21/3/89	Gulf Mex.	COS	ARCO	7 missing, 10 hurt in gulf big blast
19	17/2/90	W Virginia	COS	Union Carbide	Chemical leak at Institute in West Virginia, 500 gallons muriatic acid
20	12/3/91	Texas	COS	Union Carbide	explosion at plant kills 1 and injures 19
21	8/7/88	Aberdeen	COS	Occ. Petr.	165 feared dead from oil rig blast
22	23/10/89	Texas	COS	Phillips Petr.	valve left open, explosion 3 dead, 232 injured
23	15/4/91	Texas	COS	Phillips Petr.	2 workers injured in fire
24	10/7/90	Brooklin	COS	Mobil	Agrees for cleanup Bills for polluting Greenpoint, Brooklyn
25	3/3/90	NY	COS	Mobil	Greenpoint Kerosene leak
26	26/12/92	NY Harbor	COS	Mobil	Mobil tanker runs aground in Kil van Kull spilling 19000 gl gasoline in NY harbor
27	20/10/94	California	COS	Mobil	Refinery blast injures 30
28	9/2/95	San Fransisco	COS	Shell	Illegal dumping of Selenium
29	1/12/92	W.Texas	COS	Shell	Rupture of oil pipe line
30	28/11/92	West Texas	COS	Shell	Oil spill from pipeline owned by Shell, AMOCO, ARCO
31	9/6/95	Oregon	RA	Union Pacific	Family of 7 workers killed in an Amtrack crash

32	15/7/94	Texas	RA	Union Pacific	Train kills 4 lying in tracks
33	13/11/93	Na	RA	Union Pacific	5 dead in collision of 2 trains
34	16/5/94	Florida	RA	CSX	Derailment injures 97 and kills 1.
35	22/9/93	Alabama	RA	CSX	Over 40 people dead in wreck of train
36	30/12/92	Michigan	RA	CSX	Train derailment minor injuries
37	12/8/92	Virginia	RA	CSX	Dozens hurt as train derails
38	20/11/91	Kentucky	RA	CSX	Train derailment leads into chemical leak into river
39	31/7/91	S. Carolina	RA	CSX	Amtrak passengers train derails, 7 killed, 15 injured
40	21/6/91	Indiana	RA	CSX	Train strikes truck in Indiana
41	24/9/90	Ohio	RA	CSX	Freight train derails
42	13/3/90	R.Mount	RA	CSX	31 hurt as engine rams Amtrak train
43	22/10/89	Ohio	RA	CSX	2 trains collide in Ohio, hurting 4
44	22/7/89	Michigan	RA	CSX	Toxic chemicals are set afire as train derails in Michigan
45	10/7/95	Chicago	AA	AMR	1 hurt as door falls off Amer. Eagle plane
46	28/6/95	Wisconsin	AA	AMR	Turbulent air violently shakes plane, 17 injured
47	13/12/94	N.Carolina	AA	AMR	American Eagle crashes in NC, 15 dead
48	31/10/94	Indiana	AA	AMR	Am. Eagle crashes 68 dead
49	10/3/94	Ohio	AA	AMR	AA jet with 60 passengers skids off runway
50	19/11/91	NY	AA	AMR	2 planes bump wings in runway, nobody hurt
51	Jul 2, 91	Puerto Rico	AA	AMR (AA)	5 people on board AA flight to Puerto Rico runs into turbulence injured
52	16/1/89	Washington	AA	AMR	AA jet returns to Washington after takeoff due to engine fire
53	24/7/89	USA	AA	AMR	AA jet with 248 people hits turbulence, 45 people in hospital
54	21/11/89	Boston	AA	AMR	AA flight emergency landing after smoke detected in rear

					cargo
55	2/1/90	NY	AA	AMR	AA DC-10 to NY emergency landing at Baltimore after smoke detected
56	12 /3/90	Kenedy	AA	AMR	Commuter plane blown off runway at Kennedy airport,... no passengers
57	Mar 3, 94	Laguardia	AA	Cont Air	Cont air jet aborts takeoff due to snowstorm, minor injuries, flushing bay
58	13/8/89	Denver	AA	Cont Air	B 727 aborts takeoff after engine disintegrates
59	24/7/89	Newark	AA	Cont Air	DC-9 emergency landing in Newark after malfunction
60	21/8/95	W Georgia	AA	Delta	29 survive crash landing, lost engine mid-flight
61	22/4/92	NY	AA	Delta	Nose of plane on fire as touches down La Guardia
62	11/3/92	NY	AA	Delta	Plane skids off icy runway, no injuries
63	19/11/91	NY	AA	Delta	2 planes bump wings at runway
64	28/1/90	Tampa	AA	Delta	Smoke detected passengers skid down escape chute
65	14/10/89	Salt Lake	AA	Delta	Plane loading caught fire, 6 injured
66	17/6/89	Alabama	AA	Delta	Delta jet hits turbulence injuring 22 people.
67	3/7/94	Charlotown	AA	Usair	Jet crashes into house during snowstorm, 18 dead
68	9/9/94	Chicago	AA	Usair	Usair from Chicago crashes 6 miles from Pittsburg, 131 dead.
69	Mar 23, 92	Laguardia	AA	Usair	Usair jet crashes while taking off from Laguardia, 19 dead
70	Feb 2, 91	LA	AA	Usair	737 landing collides on runway, flames, 15 killed, # injured na
71	28/7/89	Newark	AA	USAIR	Usair jet makes emergency landing at Newark after hydraulic problems
72	21/9/89	LaGuardia	AA	USAIR	Jet skids of runway, 3 dead, 51 injured
73	Mar 9, 91	Colorado	AA	UAL	UAL 737 crashes into park in Colorado, 25 people dead ...
74	Aug 22, 90	L A	AA	UAL	UAL 737 unable to lock landing gear skids to safe

					emergency landing
75	5/1/90	Washington	AA	UAL	UAL jet goes off taxiway after landing no injuries
76	2/10/89	New Orleans	AA	UAL	UAL jet makes emergency landing in New Orleans due to hydraulic failure
77	23/7/89	Sioux, Iowa	AA	UAL	Jet with 293 p. struggles to make emergency landing, but crashes, 186 survived
78	20/2/89	Syracuse	AA	UAL	UAL Boeing is forced to land at Syracuse due to malfunctions
79	25/2/89	Pacific	AA	UAL	Outer fuselage rips,9 passengers lost, 23 injured
80	26/3/89	Manila	AA	UAL	UAL B747 safely returns to Manila after piece of a wing falls off.
81	4/10/92	Holland	AM	Boeing	Boeing 747 plowed into apartment building, over 200 dead
82	28/4/92	California	AM	Boeing	F-22 test model plane crashes
83	3/3/91	Colorado	AM	Boeing	Jetliner crash in Colorado kills 25
84	13/8/89	Denver	AM	Boeing	Boeing 727 aborts takeoff after tail engine disintegrated
85	26/3/93	Florida	AM	Gen Dynamics	Navy satellite in useless orbit after engine in rocket fails
86	9/2/92	Africa	AM	Gen Dynamics	30 killed as charter crashes
87	19/4/91	Florida	AM	Gen Dynamics	Rocket by GD carrying a Japanese satellite lost over Atlantic
88	26/8/95	Brasil	AM	United Tech.	FAA after a crash orders scrutiny on propeller
89	22/8/95	Georgia	AM	United Tech.	25 Survive plane crash in Georgia
90	28/4/94	Japan	AM	United Tech.	Plane crash in Japan 271 dead
91	20/5/93	USA	AM	United	4 marines die in Presidential copter

				Tech.	crashes
92	8/4/91	Georgia	AM	United Tech.	Air crash kills senator
93	14/5/90	India	AM	United Tech.	Engine failure reputed in Indian Jet crash
94	11/8/89	USA	AM	United Tech.	Engine breakup
95	14/3/89	Arizona	AM	United Tech.	Helicopter crash kills 15
96	21/7/92	USA	AM	Textron	Disputed military aircraft crashes
97	4/8/93	Florida	AM	Martin Marieta	Titan lost payload
98	8/9/90	USA	AM	Martin Marieta	Rocket motor fire kills and injures 9
99	16/8/95	California	AM	Lockheed	Commercial rocket destroyed after launching
100	6/2/95	NY	AM	Lockheed	Jet makes emergency landing
101	7/1/95	Iran	AM	Lockheed	Airplane crash kills Iran Airforce top staff
102	8/10/92	USA	AM	Lockheed	6 killed in crash of national Guard plane
103	28/9/92	Nigeria	AM	Lockheed	163 Nigerians dead after plane crash near Lagos
104	31/7/92	California	AM	Lockheed	291 escape burning jetliner at Kennedy
105	7/2/92	Indiana	AM	Lockheed	Military plane crashes into motel, 16 dead
106	15/1/92	S. Korea	AM	Lockheed	US spy satellite lost off South Korea
107	28/4/92	Florida	AM	Lockheed	F-22 test model plane crashes
108	25/3/90	Tokyo	AM	Lockheed	27 injured at Tokyo airport
109	16/8/89	Florida	AM	Lockheed	Trident missile explodes in test

Type of Accident

COS = Chemical/Oil Spill
RA = Railroad Accident
AA= Air accident

Appendix 3C
Sample Accident Profiles
AMR1, CSX30, COORS40, GEND54.

AMR1

Dec 22, 95

Companies involved: AMR, Boeing (Americal Airlines is a subsidiary of AMR)

An American Airlines Boeing 757 jet crashed in Colombia late Wednesday night, killing most of the 164 people aboard.

The New York Times: December 30, 1995, Saturday, Late Edition - Final

SECTION: Section 1; Page 6; Column 1; National Desk
LENGTH: 1097 words
HEADLINE: Sweeping Inquiry on Airline Is Set After Colombia Crash
BYLINE: By DOUGLAS FRANTZ
BODY:

Federal regulators said yesterday that they were following the airliner crash in Colombia last week with an investigation into training and operational procedures at American Airlines that will be more thorough than any such review in history. The inquiry, which is expected to take several months, will focus on the human factors involved in air safety, ranging from pilot training and cockpit behavior to the way flights are dispatched and procedures are followed. The officials said the inquiry would be comprehensive not because they expected to find much wrong, but because the airline was safe and it would be difficult to diagnose what were expected to be nuanced problems. "It is quite clear that we are not looking at a couple of days and finding big problems," Anthony J. Broderick, associate administrator of the Federal Aviation Administration, said in an interview. "This is an extraordinarily safe airline and we are going to be looking at subtle, innovative ways to improve a very good safety record."

Senior officials of the aviation agency said the inquiry, which will be conducted with the cooperation of American Airlines and its pilots' union, went beyond anything Federal aviation investigators had done at other airlines after accidents. Aviation officials have already met with airline executives at American's headquarters in Fort Worth, and the inquiry will begin early next
week. Officials of the airline declined to answer questions about the Colombia crash or the aviation agency's investigation. In a statement, the airline said: "With 16 consecutive years of fatality-free flying, American Airlines has a very high level of confidence in our flight training program and procedures. We are already deeply involved in a review of all the factors that may have contributed to the tragedy and we welcome the involvement of the F.A.A. and our pilots' union."

Earlier, the airline's chief pilot, Capt. C. D. Ewell, issued a statement lamenting that human error appeared to have contributed to the crash and noting that aviation was "terribly unforgiving of any inattention to detail."Because American had not had a fatal crash since May 1979, when 275 people were killed outside Chicago, aviation safety experts said they

were startled by the evidence of pilot errors in the crash of the carrier's Boeing 757 on its approach to Cali, Colombia, on Dec. 20. The Federal review of American will go well beyond that flight. Officials said that in addition to focusing on training and flight procedures throughout the airline, they would examine an accident near Hartford on Nov. 12 in which an American Airlines jetliner sheared off 15 feet of treetops on a ridge 2.65 miles from the runway before bouncing to a landing. One passenger was slightly injured when the plane was evacuated. In both the Hartford and Colombian incidents, American planes were well off assigned flight paths and there were no obvious mechanical failures. Investigators from the National Transportation Safety Board, the independent fedderal agency that conducts accident inquiries, are still investigating the Hartford accident, but have found nothing wrong with the aircraft, a McDonnell Douglas Super 80, or its engines.

Senior officials of the aviation agency said the Hartford accident would be examined as part of the overall inquiry into American's procedures. But they said there were a number of differences between the two flights, like strong winds and a storm in Connecticut as opposed to the clear, calm weather in Colombia. Data released by Colombian officials in Bogota on Thursday showed that the flight's "black box" recorders indicated that the captain and co-pilot had failed to observe critical procedures during the approach in calm, clear weather.

There was no evidence that the crew conducted a required briefing as they began their descent or followed a mandatory checklist of procedures before a landing. Instead, the cockpit voice recorder at one point picked up the two-man crew discussing duty times of the flight attendants. They also appeared to misunderstand clearance instructions from the air traffic controller. While the evidence is inconclusive, the failures apparently led the aircraft to fly past one of its checkpoints without noticing. When the pilot tried to change course, the plane turned toward a mountain ridge and crashed nine seconds after a cockpit warning went off.

"They simply didn't know where they were," said Rudolf Kapustin, an aviation safety consultant and former Federal accident investigator. "This was a highly experienced crew and a state-of-the art aircraft. The question is, why did they fly into a mountain?"

By the time the pilots discovered their mistake, data showed, they had slowed too much and were unable to pull up the airplane to avoid the mountainside. Data indicated that the aircraft could not gain enough speed to avoid the mountainside in part because the flight spoilers, or "speed brakes," had been deployed for landing and the pilots did not retract them as they should have in an emergency climb.

Federal safety officials said the inquiry into American's training and operations procedures was not expected to cover American Eagle, the commuter airline with the same parent company, AMR Corporation. Two American Eagle aircraft were involved in fatal crashes in 1994 and the transportation safety board concluded that pilot error was a factor in one of them. Four out of five fatal crashes involve pilot error, but aviation safety experts said it was rarely a single error. More often, a series of mistakes occur that defeat the safety features built into modern aircraft. Because of this complexity, Federal officials said, the investigation into American's training and procedures will be subtle and time-consuming. Officials of the aviation agency said they expected to take several months to understand why proper procedures were apparently not followed by the two experienced pilots of Flight 965, Capt. Nicholas Tafuri, 57, of Marco Island, Fla., and the co-pilot, Don Williams, 39, of New Smyrna Beach, Fla. One aspect of the investigation will focus on whether the pilots were lulled into complacency by the automated nature of the 757's cockpit, and whether industrywide steps could be adopted to insure that pilots paid closer attention

when a plane was under the control of a computer. Mr. Kapustin, who investigated dozens of crashes for the safety board, said relying too heavily on automation could lead pilots to pay less attention to proper procedures.

GRAPHIC: Photo: Federal regulators are opening an inquiry into safety practices at American Airlines because one of its jets crashed into a mountain in Colombia on Dec. 20. Two men stood near the wreckage last week. (Associated Press)

The New York Times, January 18, 1996, Thursday, Late Edition - Final

SECTION: Section D;Page 2;Column 5;Business/Financial Desk
LENGTH: 377 words
HEADLINE: COMPANY REPORTS;
AMR Posts 78.4% Increase From Operations in Quarter
BYLINE: By Bloomberg Business News
DATELINE: FORT WORTH, Jan. 17
BODY:

The parent of American Airlines, the AMR Corporation, posted a 78.4 percent rise in its operating profit for the fourth quarter today, but after taking $372 million of charges, it had a net loss of $281 million.....It also took a charge of $26 million for possible uninsured costs of the Dec.20 crash of an American Airlines Boeing 757 near Cali, Colombia.

CSX30
July 31 1991, S.Carolina
Amtrak passenger train derails, 7 killed, 15 injured

The New York Times August 1, 1991, Thursday, Late Edition - Final
SECTION: Section A; Page 14; Column 1; National Desk
LENGTH: 1274 words
HEADLINE: 7 Killed in South Carolina In Crash of an Amtrak Train
BYLINE: By RONALD SMOTHERS,Special to The New York Times
DATELINE: CAMDEN, S.C., July, 31

Seven people were killed and as many as 125 were injured today when an Amtrak passenger train traveling from Miami to New York derailed near this central South Carolina city and crashed into freight cars sitting on a factory railroad siding. The predawn crash of the Silver Star pinned some of the 426 passengers in their seats. Many were sleeping when the train crashed. Howard Robertson, a spokesman for Amtrak, said that all of the seven people were declared dead by officials at the scene of the crash. Most of the 81 people who were taken to hospitals for treatment were later released but 15 were admitted, with four reported in critical condition.Teams from the National Transportation Safety Board were at the scene and had
roped off the area as workers attempted to right the wrecked cars. Little information was available on the possible causes of the crash, which was the worst in terms of fatalities since a 1987 crash in Chase, Md., in which 16 people were killed. The last six cars of the 18-car train jumped the tracks in the wreck, which occurred at 5:02 A.M. The sides of some of the cars were sheered off in the collision with the freight cars, according to witnesses and surviving passengers. Six of the dead were found in the last car and the other fatality was found

in the third from the last car. Investigators for the board said it was too early to pinpoint the cause of theaccident.But Christopher Hart, head of the board's investigative team, said that the derailment was near a switch that took trains from the main line to a siding. "That makes the switch a supect," he said.

Passengers described a scene of chaos and fear.

"It literally looked as if somebody took a can opener and peeled the sides of the car away," said Stephen Clark, a passenger who was on the way to his home in Philadelphia, as he described the last car.Bill Foushee, 42 years old, also of Philadelphia, was in a coach two cars in front of those most heavily damaged.He recalled being jolted from his sleep by bumping and side to side movement. He said there was no panic in the car he was riding in, just confusion. But he said it was a different story as he walked toward the rear of the train in the near darkness.

'Screaming From Hell'

"It was unbelievable," he said as he sat in a temporary Red Cross shelter set up in the cafeteria of Camden High School. "It was like screaming from hell.There was blood and people bruised. It wasn't long before help arrived, but they just seemed overwhelmed because of all the injuries." Cora Smith was traveling with her mother and six children from a visit to Disney World in Orlando to here home in Chicago. She was in the last car, one of those that ended up leaning at about a 60 degree angle near the factory siding. "You just can't believe it, coming from a fun, fun trip to Disney World and then seeing people you were just talking to dead," she said, before she began crying.

R. Lindsay Leckie, a vice president withCSXTransportation, the Jacksonville, Fla.-based rail company that owns and maintains the right of way, said that the switching mechanism in question was the type that was controlled manually, not remotely. But the switch had a time delay device that prevents moving the switch while a train is approaching or going through that point. According to investigators, the front set of wheels of the 13th car, the first care to derail, were on the tracks while the rear wheels of the sleeping car were off the tracks. The last five cars were completely off the tracks.

Tracks Inspected Tuesday

Mr. Leckie said that the tracks at that point must be inspected twice a week and had been inspected as recently as Tuesday. Mr. Hars said the investigators would also be looking at the train equipment. He indicated that four miles before the point of theaccidenta piece of equipment designed to detact malfunctioning trains had detected no problems with the locomotives or cars. As standard procedure, Mr. Hart said, the train crew members were immediately tested for drugs and alcohol. Results of those tests were not yet available, he said. The train was traveling at 79 miles per hour he said, and it appeared that the impact with the freight cars on the siding "was pretty severe,' he said. "That would appear to be the cause of most of the fatalities," he said. Investigators also said that they were trying to determine why it took the train crew 11 minutes to contact dispatchers by radio. Brent Bahler, a spokesman for the safety board said that the crew never actually reached their dispatcher, but did reach a nearby maintenance yard and personnel there contacted the dispatcher and had emergency vehicles sent to the scene. An Amtrak spokesman said that the next of kin of those killed were being notified. There have been several derailments of Amtrak passenger trains in recent years, but few of those have resulted in fatalities. Mr. Robertson said that the switch where the crash occurred was at a siding behind a plant of the E.I. du Pont de Nemours & Company. The first dozen cars and the two locomotives of the train appeared to have passed over the switch without problems, he said. "But the rear cars didn't," he said.

According to officials at three area hospitals, 81 people were taken to the hospital and 15 were admitted. The injuries ranged from minor cuts to broken bones to internal injuries, said Georgianna Puckett, a spokesman for Richland Memorial Hospital in Columbia, 20 miles southwest of here where some of the injured were taken. Four of the 10 people admitted at Richland, she said, were listed in critical condition while five were said to be stable and one was in good condition. Five others admitted to two other hospitals in the area were reported in
stable condition.While some of the passengers described the scene immediately after the crash
as chaotic, others commented that it was remarkably calm. Denise Mulhearn, an Amtrak employee who lives in Lindenhurst, N.Y. and was returning from vacationing in Florida, said there was no screaming. "Everybody was helping everybody," she said. Destalear Randolph, a
grandmother from Chicago who was traveling with Ms. Smith and her grandchildren also said that things were calm at first with everyone in the last car giving "calm commands" to exit the train from the rear.

Top of Car Collapsed

The top of the last car, according to many, collapsed on top of those in the cabin and the sheering of the side of the car extended from the front to about the middle. Ms. Randolph was well behind this point. Mr. Foushee said that it was 15 to 20 minutes after theaccidentthat
emergency personnel arrived. He said that as he walked amid the debris and wreckage he saw one passenger pinned in his seat and being attended by a fellow passenger who just urged him to "keep breathing." He also heard emergency personnel moving from those for whom there was little chance of helping to the less seriously injured.

"I heard one saying, 'Let's tend to the living."

Pat Patteson, general manager of of the Kord Corporation, a factory just a half a mile west of the site of theaccident,arrived at the scene about three hours after the crash and said that it was still strewn with blankets, seats and luggage. He said that the axle of one of the freight cars that had been struck was broken and its wheels were lying on the ground nearby. One rail of the main
line was bent and curled off to the right while the other just was no where to be found.

"It was just a mess, an unbelievable mess," he said.

GRAPHIC: Photo: A ripped-open Amtrak car, 1 of 6 in the 18-car train that derailed yesterday near Camden, S.C., killing 7 people and injuring about 125. (Associated Press)
Map of South Carolina highlighting Camden LANGUAGE: ENGLISH
LOAD-DATE: August 1, 1991

The New York Times August 2, 1991, Friday, Late Edition - Final
SECTION: Section A; Page 11; Column 1; National Desk
LENGTH: 1141 words
HEADLINE: Investigators Link Damaged Switch to Fatal Amtrak Crash in S. Carolina
BYLINE: By JOHN H. CUSHMAN Jr.,Special to The New York Times
DATELINE: CAMDEN, S.C., Aug. 1

A railroad track switch at the spot where an Amtrak passenger train derailed on Wednesday was damaged and askew when investigators examined it after the crash, officials of the National Transportation Safety Board said today. It is still not clear whether the switch was damaged during theaccident, or whether its condition might have caused the crash. But investigators said today that they have turned up the first evidence that the switch might have

been defective before the crash. They disclosed that a metal pin holding the switch together had been missing from the assembly for some time before theaccident.The pin was found at the accidentsite covered with rust and broken in two, indicating that it had not been in place for some time.Without the pin in place, it is possible that the switch could have shifted and derailed the train, investigators said.

Examination the Day Before

But they also said that the switch worked properly when railroad inspectors examined it the day before accident, and also when trains passed over the switch as recently as five hours before the Amtrak train derailed. Federal crash investigators today closely examined both the switch and the derailed train's cars, asking themselves why the train from Miami to New York, with 407 passengers and crew members aboard, jumped the track at 79 miles per hour after two-thirds of the train had passed over the switch safely.

Seven Killed

The crash killed seven passengers who were riding on two derailed cars that smashed into idle freight cars on a side track. It was the worst Amtrak accidentin more than four years.

Two of the 15 people hospitalized after the crash remained in critical condition today at Richland Memorial Hospital in Columbia, S.C., while two others were released from Kershaw County Memorial Hospital in Camden. The other 11 passengers were in either satisfactory or good condition. No further deaths have occurred, hospital officials said. Investigators were also trying to determine today why it took rescue teams up to 45 minutes to arrive at the crash site.

Safety Board member, Christopher Hart, said that the first call to rescue officials fromCSXTransportation, the owner of the tracks, came at 5:10 A.M., 9 minutes after theaccident.He said communication between the train and the CSXdispatchers in Jacksonville, Fla., had been disrupted for several minutes because of a defective radio relay. The police arrived on the scene at 5:25 and the first ambulance at 5:45. "I can't answer why the delay took place," Mr. Hart said. "We are still asking why that occurred." Some passengers have said that at least one person died waiting for help to arrive. The switch at the center of the investigation is a short, moveable set of rails, which is used to divert traffic from the main track onto a siding. Every day thousands of rail cars move across thousands of similar switches, which are among the most common spots for derailments. The safety board is keenly interested in any lessons that might be learned from this especially severe accident. CSXTransportaion, one of the nation's biggest railroads, is responsible for maintaining, inspecting and operating the track, including the switching mechanism, and the company's performance of these tasks is under investigation.

But so is the condition of the Amtrak cars, which are operated by the passenger rail corporation, often on tracks owned by other railroads.

Safety board investigators interviewed inspectors fromCSXwho last examined the track and the switch just a day before the crash, and no problems with the mechanism were reported, investigators said."I don't want to leave the misimpression that the switch is the only thing we are looking at," said Mr. Hart, who was at the scene of theaccidenttoday. As he spoke, investigators began to look at the wheels of one of the train's sleeper cars. That car the 13th car, behind two locomotives, to pass over the switch, and it was the first of six to derail. Investigators found that the handle used to move the switch was locked into the correct position after the wreck. But a rod that connects the handle to the to the switching device was

out of place and the rails controlled by the switch were slightly askew. The missing pin is potentially important, investigators explained, because it holds in place parts of the switching device. A theory being pursued by the investigators is that the rod in the switch somehow came lose just before the accidentperhaps because the pin was missing.Gilbert Carmichael, the Federal railroad administrator in Washington, said in a telephone interview that it would take time to determine whether the switch was misaligned before theaccidentor whether there was something wrong with the sleeper car that was the first to derail. "When that car got there, there was either something wrong with that car, or something wrong with that switch," he said. "We will be able to reconstruct that. We will be able to tell in a few days."Mr. Carmichael said that a recent spate of highly publicized train accidentsis a statistical fluke, and does not show any trend toward worsening rail safety. Every year, there are hundreds of train derailments, including more than
1,800 in both 1989 and 1990. Most of them are not severe, and the only ones that receive much attention are those involving dangerous chemical freight or passenger trains. Two major hazardous chemical spills in recent weeks, along with assorted lesseraccidentsand the Amtrak wreck, did not appear to have much in common with each other, Mr. Carmichael said.
"The first question is, is this systemic, and the answer is no," he said.
" Accidentshappen at random, and all the statistics we have show that they sometimes bunch up." He said that theaccidentrate has declined 74 percent in 12 years, and that after major investments by the big railroads "the main track line in the United States is in the best condition it has ever been in." Robert Moore, 35, a passenger on the train and a Brooklyn resident,
complained today from his home about what he called "the callousness" of the Amtrak crew in the wake of theaccidentand the "long delay" before the arrival of emergency personnel. He said that he had sat beside a man suffering internal injuries from the crash and tried to keep him alive during what was an "hour and eight minute" wait for emergency medical technicians.
"That man did not have to die," said Mr. Moore, who complained that Amtrak crew members milled about confused and unhelpful as passengers were left to fend for themselves. "I was giving this man CPR and they just stood around doing nothing. These people should have had some training.They can't just run and hide when something like this happens."
GRAPHIC: Photo: National Transportation Safety Board inspectors examined a track switch yesterday in an effort to find the cause of an Amtrak train derailment on Wednesday near Camden, S.C. An official passed by the wreckage. (Associated Press)

COORS40
May 2-3, 1991, Clean Creek
Spill of Beer kills 3,000 fish.

The New York Times May 11, 1991, Saturday, Late Edition - Final
SECTION: Section 1; Page 9; Column 4; National Desk
LENGTH: 78 words
HEADLINE: Spill of Beer Kills 3,000 Fish
BYLINE: AP
DATELINE: GOLDEN, Colo., May 10

Some 3,000 fish died after many thousands of gallons ofCoorsbeer spilled into a creek byaccidentlast weekend. John Schallenkamp, director of environmental control for the AdolphCoorsCompany, said an operator apparently opened a valve and diverted the beer to a wastewater treatment plant that empties into the Clear Creek. The spill, estimated at 155,000 to 310,000 gallons, killed white suckers, bass fry and trout along a three-mile stretch of the creek.
LANGUAGE: ENGLISH
LOAD-DATE: May 11, 1991

GEND54
April 19, 1991, Florida
Rocket by GD carrying a Japanese satelite is lost over the Atlantic

The New York Times April 20, 1991, Saturday, Late Edition - Final
SECTION: Section 1; Page 6; Column 1; National Desk
LENGTH: 573 words
HEADLINE: Builder Suspects Engine Failure In Rocket's Loss
BYLINE: AP
DATELINE: CAPE CANAVERAL, Fla., April 19

The builder of a rocket that had to be destroyed after it careened out of control over the Atlantic Ocean focused its investigation today on engine failure. A multimillion-dollar Japanese broadcasting satellite was aboard the rocket. The television network in Tokyo that was counting on quick use of the spacecraft said the loss might result in a service disruption for its four million customers. The Atlas-Centaur rocket was blown up by remote control six minutes after it lifted off Thursday night from Cape Canaveral Air Force Station, sending a hail of debris into the ocean about 240 miles away. The explosion was too far away to be seen or heard from shore.

The rocket and satellite were valued at more than $100 million. The spacecraft was insured.

Cause of Failure. The builder of the rocket, theGeneral DynamicsCorporation, said the problem occurred just after the Centaur upper stage separated from the Atlas booster as planned. A preliminary review indicated that one of the two engines on the upper stage had failed to ignite, the company said. The 30-foot Centaur, with the satellite still attached, immediately lost speed and began tumbling toward earth. The Air Force sent commands that destroyed the rocket to keep it from falling on land. The company that makes Centaur engines, the Pratt & Whitney division of the
United Technologies Corporation, said today that it would not speculate on the cause of theaccident"until the results from the investigation are known." The Pratt & Whitney engine, which weighs 305 pounds and stands more than five feet high, is the world's first liquid hydrogen-fueled space engine. It was designed in the late 1950's and has been used since 1963 to power the Centaur upper stage, which guides spacecraft to their proper orbit.

Record of Successes

Before theaccidenton Thursday, 178 of the engines had fired in space, all successfully, the company said. The last Atlas-Centaur failure, in 1984, was caused by a fuel-tank leak that
had nothing to do with the engine. Three years later, lightning destroyed an Atlas-Centaur rocket shortly after liftoff. The last Atlas-Centaur launching, which was the first commercial version of the rocket, successfully put a NASA scientific satellite in orbit in July. The Japan Broadcasting Corporation ordered the satellite to replace one that was destroyed in the explosion of a European Ariane rocket in February 1990. It was to have been a backup for one put in orbit last August that recently developed solar panel trouble.Japan's national NHK television network had asked the satellite's owner, the Astro Space Division of the General Electric Corporation, to get the spacecraft up and running as quickly as possible. G.E. Astro planned to pass ownership of
the satellite to the broadcasting company once it was in orbit 22,300 miles above Borneo. Officials at G.E. Astro talked to executives of Japan Broadcasting on Friday, and further telephone conferences were planned.

"It certainly was a service NHK was counting on," said Lawrence Greenwood, vice president and general manager of G.E. Astro. The accidentwas a major setback forGeneral Dynamics,a

newcomer in the commercial launching business. The industry was formed after President Ronald Reagan ordered all commercial cargo off space shuttles after the 1986 Challenger accident. General Dynamics' Atlas program lost $300 million last year.
GRAPHIC: Photo: An Atlas-Centaur rocket blasting off on Thursday night at Cape Canaveral carrying a Japanese broadcasting satellite. Minutes later, the rocket veered out of control and had to be destroyed by remote control. (Associated Press)
LANGUAGE: ENGLISH
LOAD-DATE: April 20, 1991

Appendix 3D
Rater Questionnaire

Based on the description of the event that you just read please try to answer the following questions. If you think that there is not enough information to answer any of the questions indicate so by marking the info Not Available (N/A) category.

1. If, by **accident severity with respect to human life**, we mean the extend of damage that humans (dead or injured in any way) have suffered as a result of this accident, then what do you think is the severity with respect to human life of this particular accident?

Not at all Severe						Very Severe	
1	2	3	4	5	6	7	N/A

2. If, by **accident severity with respect to environmental damage**, we mean the extend of damage that the environment has suffered as a result of this accident, then what do you think is the severity with respect to environmental damage of this particular accident?

Not at all Severe						Very Severe	
1	2	3	4	5	6	7	N/A

3. If by **media attention**, we mean the number of newspaper articles, media time and so on that this particular event received, how much media attention would you expect that this event has received?

Low levels						High levels	
1	2	3	4	5	6	7	N/A

4. Concerning the **company's responsibility** for this event, how much would you blame the company for the accident?

Not at all						Very much	
1	2	3	3	4	5	6	7	N/A

5. If by **complexity** of a particular event we mean the **number of factors** involved in the event, the **transparency of causes**, and the **number of interactions** characterizing this event, then how would you characterize the complexity of this event according to these three dimensions?

Number of factors involved

Low						High	
1	2	3	4	5	6	7	Info N/A

Transparency of causes

Low						High	
1	2	3	4	5	6	7	Info N/A

Number of Interactions among factors

Low						High	
1	2	3	4	5	6	7	Info N/A

Appendix 3E: Diagnostics

Reliability

As previously mentioned, because the rating process used to generate the independent variables relies so much on the inferences of raters, steps to ensure the reliability of the rater scores had to be taken. Therefore a number of cases were scored twice and the inter-rater reliability coefficient and cronbach alpha calculated.

Variables	Inter-rater reliability Coefficient	Cronbach Alpha	Number of case double-tested
Damage to Human Life (HL)	0.862	0.92	53
Damage to the Environment (ENV)	0.766	0.86	53
Blame (BL)	0.692	0.81	39
Media Attention (MA)	0.602	0.73	53
Complexity (all three variables)	0.718	0.834	17

The above results were considered satisfactory since the inter-rater reliability coefficient was consistently significant ($p<0.001$) and the cronbach alpha indicator was always over 0.70, and in all but one cases over 0.80.

Validity Analysis

Unfortunately it was possible to test for the validity of only the variables measuring for severity. An independent index from the human casualties mentioned in (about 50% of) the accident profiles, was constructed and correlated with the rater's scores of accident severity. This index was constructed by allocating different weights to different kinds of casualties and then adding them up. More specifically, the following arbitrary weights were attributed, dead =1, heavily injured = 0.5, mildly injured = 0.2.

The two variables HL and ENV, measuring for accident severity were then correlated with this index. The correlation coefficients were, for variable HL, 0.619 (level of significance 0.01), and for variable ENV, 0.312 (level of significance 0.05). These results were considered to be adequate evidence of validity for two reasons. First, since HL measures the same aspect of accident severity as the objectively constructed index, damage to human life, a higher correlation was expected and indeed found. Second, variable ENV measures a different aspect of accident severity than the objectively constructed index. But, since it would be reasonable to expect some positive correlation between damage to human life and damage to the environment a lower, but significant, correlation was expected and also found.

Testing for Normality

First, using the Kolmogorov-Smirnof test the normality of the independent variables was tested for. It was found that in all cases the data did not deviate from normality, at least at 0.05 significance.

Second, the normality of the residuals from all the multiple regression models of the paper was tested through the construction of the normal probability plots of the standardized residuals. An examination of these plots did not reveal any significant deviation from normality. In general, no major violations of the assumptions underlying the multivariate regression model were found.

Interaction Effects

Given the existence of three kinds of accidents in the study, represented by indicator variables, the possibility for interaction between the indicator variables and the independent ones had to be examined. Over fifty such tests were conducted and in most cases no interaction effects were found. In the few cases, that some interaction effects were observed,

when the interaction terms were included in the regression model, the term failed to reach any level of significance, so these terms were not included I the models. In general, it can be said that, in a few cases, minor interaction effects were present, that they did not have any statistical significance, so they were excluded from the models.

Preface to Chapter 4

Chapter 2 has, for illustration purposes, drawn on two cases of reputational crises, and chapter 3 has empirically examined a particular type of event – accidents – that often cause reputational crises. Chapter 4 investigates in more depth a controversial case of reputational crisis that a major multinational company (Shell) faced a few years ago. To a certain extent this chapter can be seen as a continuation of chapter 2, because the two issues investigated have been discussed at a theoretical level in chapter 2. More specifically, the 'dilemma' that managers have in choosing between buffering and bridging was discussed in chapter 2, but the actual reasons that the management of a firm faced with a reputational crisis might have in choosing buffering over bridging (or vice versa) were not empirically investigated. This chapter does just that by investigating the reasons that the Shell's management chose to buffer at first and subsequently changed its mind into a bridging position. In the same spirit, while the issue of stakeholder salience was discussed in chapter 2, the actual role that stakeholders played in the decision of a given firm was not examined. Chapter 4 investigates the role of stakeholder salience in Shell's decision to reverse from its initial buffering into a bridging position.

CHAPTER 4
FROM BUFFERING TO BRIDGING: AN INVESTIGATION INTO THE BRENT SPAR CONTROVERSY

During reputational crises, managers have to deal with a number of, often conflicting, demands from various stakeholder groups. In dealing with these demands, managers have two broad categories of strategic approaches available to them, buffering and bridging (Meznar and Nigh, 1995; van den Bosch and van Riel, 1998). However, despite the fact that the choice between a buffering or a bridging approach can have a major impact on the reputation and quite often the survival of a business firm (Zyglidopoulos and Iqtidar, 1998), the reasons behind management's decisions to follow one or the other approach are not adequately understood. This paper, drawing on the Brent Spar controversy, investigates the reasons behind Shell's initial decision to buffer, and the reasons behind its subsequent change of mind into a bridging position. Such an investigation could not only give a better understanding of the effective management of reputational crises in an international setting, but also provide significant insights into the issue of stakeholder salience, "the degree to which managers give priority to competing stakeholder claims" (Mitchell, Agle and Wood, 1997: 854).

A reputational crisis is a situation during which a great number of stakeholders re-evaluate in a negative way their opinion about a particular firm (Chapter 2, current

dissertation). Such crises can be caused by a great number of events including accidents, scandals, product safety incidents or firm decisions and actions opposed by various stakeholders. In trying to repair the damage and restore confidence in their firm, as mentioned above, managers have two broad categories of strategic approaches available to them, a buffering approach and a bridging one (Meznar and Nigh, 1995; van den Bosch and van Riel, 1998). A buffering approach involves a path of actions that tries to distance, as much as possible, the company from any responsibility or blame for the event(s) behind the crisis. A bridging approach, on the other hand, means that the company fully acknowledges its responsibility for the event(s) and tries to accommodate the dissatisfied stakeholders, to the extent possible.

From a business and society perspective, there are at least two research issues involved in the decision of management to choose a buffering or a bridging approach during a reputational crisis. First, simply understanding the reasons behind the decision of managers to follow a particular approach is quite significant. Especially since prior research has shown that a bridging approach usually has better results, as far as reputational recovery is concerned. And, second, the fact that managers have to deal with a number of often conflicting stakeholder claims means that this topic has significance for a better understanding of stakeholder salience (Mitchell, Agle and Wood, 1997). In other words, a better understanding of the priority managers give to various stakeholder claims.

In order to investigate these issues, this paper proceeds as follows. First, drawing on the literatures of corporate reputation and crisis management, the major constructs of the paper are defined and briefly discussed. Second, building on these constructs a number of research issues are identified and discussed. Third, the methodology followed as well as the

major events of the Brent Spar case are presented. Fourth, the research findings of the above issues are presented and discussed. And, finally, the paper concludes with a discussion of the research and managerial implications, as well as the limitations and implications, of this work, for future research.

MAJOR CONSTRUCTS

Corporate Reputation and Reputational Crises

Drawing on the work of a number of authors (Carroll, 1993; Freeman, 1984; Fombrun, 1996; Näsi, 1995, Zyglidopoulos and Phillips, 1997), the notion of corporate reputation used in this paper can be defined as "the set of interested knowledge and emotions held by various stakeholder groups concerning aspects of the firm and its activities" (Chapter 2, p.24.).

Based on this notion of corporate reputation, a reputational crisis can defined as "a situation in which important stakeholders negatively re-evaluate their opinions and beliefs about the firm" (Chapter 2, p. 25). Reputational crises can be caused by events such as accidents (Buchholz, Evans, and Wagley, 1985; Marcus and Goodman, 1991; Perrow, 1984; Shrivastava, 1987, Zyglidopoulos and Iqtidar, 1998), scandals (Dailey, 1993; Marcus and Goodman, 1991; Sethi, 1977A, B), financial problems (Kent, 1993), or company actions and decisions that cause serious distress in one or more stakeholder groups – as was the case with the Brent Spar controversy.

Buffering versus Bridging

Drawing on the prior work of Post, Murray, Dickie & Mahon, (1983), Fennell and Alexander (1987) and Thompson (1967), Meznar and Nigh (1995) conceptualise the management of public affairs as a 'boundary-spanning function' that can serve two roles. "One role is to "buffer", or protect an organisation from the external environment.... A second role of boundary spanning units is to serve as a "bridge" with the external environment' (1995: 976). In other words, in an organization's dealings with its environment, Meznar and Nigh (1995) identify two kinds of activities, buffering activities and bridging ones. Generally speaking, buffering activities are activities in which the organization is "trying to keep the environment from interfering with internal operations and trying to influence the external environment" (1995: 976). Bridging activities, on the other hand, are activities that "promote internal adaptation to changing external circumstances" (1995: 977).

Meznar and Nigh (1995), apply the terms buffering and bridging to specific organisational activities, these activities are not mutually exclusive. In other words, a firm can at the same time perform both bridging and buffering activities. Of course, at different points of time a firm might emphasise one approach over the other but according to this way of viewing buffering and bridging, both activities are possible at the same time.

Another use of the terms buffering and bridging is the one presented by van den Bosch and van Riel (1998). Drawing on Meznar and Nigh (1995), van den Bosch and van Riel apply the terms at a higher level of abstraction and talk about buffering and bridging strategies. According to these authors, "buffering strategies are used by managers to help seal off the firm from disturbances in the business environment", while "bridging strategies

seek to adapt organisational activities in such a way that they conform to the expectations of external stakeholders" (1998: 24). Although in the same spirit, there are two main differences of the buffering and bridging strategies of van den Bosch and van Riel (1998) from the buffering and bridging activities of Meznar and Nigh (1995). First, van den Bosch and van Riel use the terms to refer to the 'overall' strategy or approach that a business organisation adopts in dealing with its environment, and not, to particular activities. Second, because of this higher level of abstraction, buffering and bridging strategies can only be seen as mutually exclusive.

In this paper, drawing on the crisis management literature and both of the above uses of the terms 'buffering' and 'bridging', these notions are being used as follows. First, both terms are seen as 'overall' strategies or approaches that a business organisation can have with respect to a particular reputational crisis. And, second, in the sense used here, buffering and bridging strategies are mutually exclusive. While a firm could, at any point in time, be involved in particular buffering or bridging activities, it is the overall attitude and top management intentions and strategy that characterise a firm's approach as buffering or bridging. More specifically, the following characteristics would tend to be included in the notions of buffering and bridging, as these terms are being used in this paper, see table 4-1.

Table 4-1: Buffering and Bridging

Characteristics with Respect to	Buffering	Bridging
Attitude	Defensive	Accommodating
Influence from External Stakeholders	Closed	Open
Change	Emphasis on status quo	Emphasis on change
Managing Legitimacy (Sethi, 1978)[1],	Attempt to change either public perceptions, or symbols, or societal expectations	Attempt to change performance
External Responsibility	Avoidance	Acceptance
Resource Allocation	Minimum	As needed or sometimes even more

In other words, organisations following a buffering strategy would tend to have a defensive attitude (Marcus and Goodman, 1991), would be relatively closed to external stakeholder interference (van den Bosch and van Riel, 1998), would try to avoid (or shift) responsibility for the events in an attempt to protect itself from potential litigation (Birch, 1994), and, would try to minimise the resources allocated in dealing with the crisis. In addition, organisations following a buffering strategy would attempt to change either public perceptions, or symbols, or societal expectations, anything but actual business performance (Sethi, 1978). On the other hand, organisations following a bridging strategy would tend to have an accommodating attitude (Marcus and Goodman, 1991), would be relatively open to external stakeholder interference (van den Bosch and van Riel, 1998), would accept responsibility for the events behind the crisis, and would allocate the resources necessary to

1 Sethi (1978) deals with the issue of legitimacy gaps, a construct quite similar to that of

deal with the crisis. And, following Sethi's (1978) terminology, organisations following a bridging strategy would actually change their business performance to accommodate the requirements of the situation, or close the legitimacy gap.

RESEARCH ISSUES

As mentioned in the introduction, there are two main research issues investigated in this paper. First, faced with a reputational crisis, a business firm can choose to follow a buffering or a bridging approach. The reasons and process through which the decision to follow a buffering or a bridging strategy is of great interest for the management of reputational crises and the first research issue of this paper. Second, given the above process, what is the role of various stakeholders? In other words what is the role of stakeholder salience (Michell, Agle, and Wood, 1997) in the organisational decision to buffer or bridge.

Choosing between buffering and bridging

Drawing on previous work by Pfeffer and Salancik (1978), Thompson (1967), Katz and Kahn (1978), Meznar and Nigh (1995) argue that the main factors which influence the buffering or bridging activities of a business organisation are: environmental uncertainty, organisational size, the importance of the resources the firm controls, and the firm's visibility. They go on and empirically investigate these factors and find the following. First, they find that environmental uncertainty is positively correlated with the increase in both buffering and bridging activities. Second, in accordance with a resource dependence perspective, they find, that "organisational size is the single most important variable (of

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reputational crises.

those included in the model) in explaining a firm's buffering behavior" (1995: 990). Third, they find that, as expected by a resource dependence perspective, there is "a positive relationship between the importance of the resources controlled by the firm and its propensity to buffer" (1995: 990). But, a negative relationship between resource importance and bridging was not found. Finally, they find no evidence for a relationship associating buffering and bridging with the visibility of an organisation.

Given the different way that the terms 'buffering' and 'bridging' are being used in this paper, the significance of Meznar and Nigh's (1995) findings need to be discussed and put in perspective. First, the finding that environmental uncertainty is positively associated with both buffering and bridging activities ('boundary spanning functions') cannot lead to any clear expectations concerning the role of environmental uncertainty with buffering and bridging strategies, as the terms are being used here. A number of arguments could be made all going in different directions. It could, very well be, that firms facing a reputational crisis characterised by low levels of environmental uncertainty[2] feel safe enough to buffer, while others, just because they feel safe, react by bridging. By replacing 'feeling safe' by 'feeling threatened', similar arguments can be made for firms facing reputational crises of high environmental uncertainty. In addition, an argument for a curvilinear relationship between environmental uncertainty and buffering – bridging strategies could be made. Firms faced with environmental uncertainty beneath a certain level, feel 'safe enough' to buffer, while firms faced with higher levels of environmental uncertainty feel 'threatened enough' to bridge.

2 I have serious doubts as to whether a reputational crisis characterized by low levels of environmental uncertainty is possible, but let us assume it is, for argument sake.

On the issues of organisational size and control of important resources, things are clearer. To the extent that an emphasis on buffering activities can be reasonably associated with a buffering strategy, then, one might expect that larger firms controlling important resources in their environments would tend to follow a buffering strategy when faced with a reputational crisis. Finally, no clear expectations concerning organisational visibility and buffering – bridging strategies can be developed.

Therefore, given the vague and rather limited theoretical expectations concerning the choice of a buffering or a bridging strategy by a business firm facing a reputational crisis, there is a clear need to examine, and even more so, to explore, the factors that influence a business firm into making the choice between buffering and bridging. Research Questions 1, and 2 follow:

> **Research Question 1: When faced with a reputational crisis why do business organisations choose a buffering strategy? In other words, what are the reasons behind the choice of a buffering approach by business firms, and how is such a choice being made?**
>
> **Research Question 2: When faced with a reputational crisis why do business organisations choose a bridging strategy? In other words, what are the reasons behind the choice of a bridging approach by business firms, and how is such a choice being made?**

Another finding concerning the buffering and bridging strategies of business firms facing a reputational crisis, comes from Zyglidopoulos and Iqtidar (1998) who investigated a number of reputational crises and found that business organisations tend to 'stick' to their original choice to buffer or to bridge, in a phenomenon resembling the escalation of

commitment effect (Staw, 1981), no matter the consequences[3]. In other words, organisations rarely change their minds and switch from a buffering to a bridging strategy, or vice versa[4]. However, an investigation of such a rare event where a business organisation did change its mind (Giroux, forthcoming) from one kind of a strategy to another is worth investigating for two reasons. First, most unusual or rare events are worthy of further investigation even without any prior theoretical concerns or reasons, due to their potential of providing new, 'frame breaking' insights (Kuhn, 1962). Second, such an investigation can provide unique insights into what really matters in the choice between buffering and bridging. In other words, the investigation into such an unusual event can help one focus into the factors that are critical for the organisational decision to buffer or bridge. So, faced with such an unusual event, as is the Brent Spar case, research question 3, following, can be seen as an attempt to investigate a rather rare phenomenon as well as an attempt to further investigate research questions 1 and 2.

Research Question 3: How and why do business organisations change 'their minds' from a buffering to a bridging approach?

Stakeholder Salience

From a stakeholder perspective, any organizational decision can be seen as a balancing act among different, and often conflicting, stakeholder interests (Freeman,

3 These results should be seen as tentative, given the exploratory nature of their work and the limited (6) number of cases investigated.

4 This is in accordance with more other findings in the field of strategic management concerning business strategies in a more general sense. According to these findings, organizations tend to spend long periods of time following the same business strategy and short periods of time changing between strategies (Miller and Friesen, 1984; Gersick, 1991; Tushman and Romanelli, 1985).

1984). However, despite the rather general agreement of the field "on what kind of entity can be a stakeholder" (Mitchell, Agle, and Wood, 1997)[5], there is not much agreement on "the principle of who or what really counts" (Freeman, 1994). In other words, there is not much agreement on the issue of stakeholder salience (Mitchell, et al., 1997).

This is not a simple matter, and it goes back to the heart of a formal kind of definition of the term 'stakeholder'. According to a broader kind of definition, a stakeholder is "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984: 46). In this definition, stakeholders can be seen as potentially having the role of 'claimant' or/and the role of 'influencer' towards the firm.

> "Influencers have power over the firm, whether or not they have valid claims or any claims at all and whether or not they wish to press their claims. Claimants may have legitimate claims or illegitimate ones, and they may or may not have any power to influence the firm" (Mithcell, et al., 1997: 859).

On the other hand, according to a narrow kind of stakeholder definition, in accordance with a resource dependence perspective, and supported by authors such as Bowie (1988), Freeman and Reed (1983), and Näsi (1995), stakeholders are only those groups or individuals "on which the organization is dependent for its continued survival" (Freeman and Reed, 1983: 91). Therefore, according to a narrow perspective,

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5 According to Mitchell et al., any entity such as "persons, groups, neighbohoods, organizations, institutions, societies, and even the natural environment are generally thought to qualify as actual or potential stakeholders" (1997: 855).

stakeholders are only those who have power over business firms, in other words, only influencers.

Drawing on the wide range of views of authors who deal with stakeholders in a broad or narrow way, Mitchell, et al. (1997) argue that stakeholder salience is determined by the interplay of three stakeholder attributes: power, legitimacy, and urgency. Where, they define these terms as follows. Power is defined as "the probability that one actor within a social relationship would be in a position to carry out his own will despite resistance" (Weber, 1947, cited in Mitchell et al., 1997: 865). Legitimacy, according to the latest and most comprehensive definition by Suchman (1995), can be defined as "a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (1995: 574). Finally, Mitchell et al. define and use the term, 'urgency' to describe a situation that is time-sensitive, in the sense that it requires immediate managerial attention, and critical, in the sense that it is of great importance for the stakeholders involved.

This perspective of Mitchell et al. (1997) can be contrasted to the perspective of authors such as Näsi, Näsi, Phillips, and Zyglidopoulos (1997) who have argued that what really determines stakeholder salience is power. In other words, that issues such as legitimacy and urgency play a role only when the manager has to deal with conflicting demands from stakeholders who have equal levels of power. In addition, these authors argued, and found evidence, that managers tend to pay attention and allocate scarce resources to stakeholders according to their levels of power.

However, a critical issue that has not been addressed by Näsi, et al. (1997), but that has been discussed by Mitchell et all. (1997), is the ability of stakeholders who lack power, but have legitimacy or/and urgency behind their claims to rally powerful stakeholders to act on their behalf. In a sense this kind of 'derivative' power by stakeholders who have legitimacy and/or urgency behind their claims can lead to the reconciliation or a position in support of one of the two views mentioned here. An issue worthy of further investigation is whether stakeholders with legitimate and/or urgent claims can reach some kind of satisfaction of their demands without the advocacy of other powerful stakeholders (Mitchell, et al., 1997).

Now, in the particular case of business firms facing a reputational crisis, the issue of stakeholder salience is worthy of investigation because such an investigation can provide better understanding and insights for both the issues of the management of reputational crises and stakeholder salience. Since it is stakeholders who are the evaluators of a business firm's reputation (Fombrun, 1996; Zyglidopoulos and Phillips, 1998A), a better understanding of the matter of stakeholder salience can provide useful insights in the understanding of the dynamics and management of reputational crises.

In addition, investigating the issue of stakeholder salience during reputational crises can be quite illuminating for understanding stakeholder salience in general. There are two reasons for this. First, during a reputational crisis, stakeholder interests, claims, and power become more obvious and even exaggerated. Such developments lead to increased levels of publicity as the press reports on unfolding events much more often. Therefore observing the interplay between various stakeholders and the business firm could be achieved much easier, since the visibility of the events is much higher. Second,

events during reputational crises evolve much faster. Therefore observing the interplay among stakeholders can be achieved in a much shorter period of time than under normal operating conditions. In other words, investigating stakeholder salience during reputational crises is as close as one can get in conducting a social experiment on the matter.

In accordance with what has been discussed in this section, research question 4 follows.

Research Question 4: What is the role of stakeholder salience in the above decision making process? In other words, which stakeholders had a significant influence in the above process and how was this influence exercised?

METHODS

Case Study Methodology

A case study methodology was chosen as the most suitable method for this research project, for a number of reasons. First, a case study methodology is most appropriate for asking how and why questions in relatively new topic areas, like the one investigated here (Eisenhart, 1989; Yin, 1989). Second, a case study approach allows the researcher to draw on different theoretical perspectives[6]. And, third, a case study methodology allows the researcher to focus on a limited - a single case in this paper -

6 For example, in this paper the research questions are drawn from the reputational management and stakeholder management literatures.

number of cases over time (Dutton, 1988; Eisenhart, 1989; Pettigrew, 1988; Yin, 1989; Smith, 1993).

The case analyzed in this paper was chosen based on the principles of theoretical sampling (Glaser and Strauss, 1967; Pettigrew, 1988; Harris and Sutton, 1986). According to Glaser and Strauss (1967), in theoretical sampling, the cases to be investigated are chosen because of theoretical and not statistical reasons. In other words, cases are chosen because of their potential to replicate, extend or refine emergent or existing but unrefined theory. Some examples of studies that have used a theoretical sampling approach in choosing their cases are Harris and Sutton (1986), Pettigrew (1988), and Bourgeois and Eisenhart (1988). In this particular paper, as mentioned above, instances of companies facing reputational crises and shifting from a buffering to a bridging position were sought. Building on a prior research project (Zyglidopoulos and Iqtidar, 1998), the author identified and reviewed over 30 reputational crises. The Brent Spar case was the only instance found where a business firm facing a reputational crisis reversed its position from buffering to bridging. In addition, the Brent Spar case had received a lot of publicity and therefore a wealth of information was easily accessible, and organization members of both Shell and Greenpeace who were involved in the Brent Spar controversy were easily found, very helpful, and accessible to interviewing.

However, the fact that this study uses a single case design to investigate its topic does not mean that it cannot provide significant insights for the field. According to Yin (1989), a single case design is appropriate when one is dealing with *extreme or unique* cases. And, the study of extreme cases can be valuable and especially revealing because the processes of interest are "transparently observable" (Eisenhart, 1989; Petigrew, 1988; Yin,

1989). Thus, the study of such extreme or unique cases - as the Brent Spar case – can fulfil the above mentioned goals of theoretical sampling.

Data Collection and Analysis

In accordance with case study methodology, and in order to assure the validity and reliability of the data, multiple data sources were used (Eisenhart, 1989; Yin, 1989). Data for this research came from trade and business magazines, business and general newspapers, academic magazines, Shell annual reports and other publications, Greenpeace publications and documents, and field interviews at both Shell and Greenpeace. More specifically, the data collection for this paper began with the collection and reviewing of articles in the press relating to the Brent Spar case. This was supplemented by the review of Shell and Greenpeace publications. Following this data collection efforts, a research protocol (Yin, 1989) that guided further data collection through field interviews at Shell and Greenpeace was developed.

Data analysis is one of the least codified aspects of case study research (Eisenhart, 1989). In this research project, and in line with research practices followed by Van Maanen (1988) and Burgelman (1983), two kinds of notes were accumulated during data collection, one that described events and observations and one that referred to thoughts, and insights derived from the data collected. The first stream of notes was chronologically ordered so that the story of Brent Spar (a very brief overview of which can be seen in the following section) could be observed through them. The second stream of notes was used as a starting point from which, eventually, the findings of this paper emerged. In particular, these second type of notes were organized according to their

relevance for each research issue, and underwent numerous revisions as the author was undergoing, what Eisenhart (1989) calls, an extensive familiarization process with the case data and consulting relevant literature. These revisions stopped and the notes were summarized as research findings when repeated data consultations and re-examinations did not lead to any new insights and incremental learning could be considered minimal (Glaser and Strauss, 1967).

The Brent Spar Story[7]

The Royal Dutch/Shell Group of Companies – known as Shell – grew out of an alliance made in 1907 between Royal Dutch Petroleum Company in the Netherlands and the 'Shell' Transport and trading Company in the UK. It is considered to be one of the largest multinational oil companies with a significant global presence, and five core businesses: Exploration & Production, Oil Products, Chemicals, Gas & Power Generation, and Renewables. In the 1970s, Shell invested heavily in the exploration and subsequent extraction of major oil and gas deposits, in the North Sea. It was a profitable investment, since Shell Expro (a 50%-50% joint venture between Shell and Esso) discovered the Auk and Brent fields in 1971, the Cormorant and the Dunlin in 1972, the Tern in 1975 and the Eider in 1976.

The Brent Spar, located in the North Sea, was a *very* large floating oil storage buoy that had used for the storing of oil from the Brent 'A' platform and acted as a loading facility for the Brent Field. It was first put in operation in December 1976. The unit was owned by Shell-Expro, but the management of the Spar was the responsibility of

7 For a Chronology of the main events in the Brent Spar story, please refer to Appendix

Shell UK. Unlike most other installations in the North Sea, the Brent Spar had most of its bulk (six huge storage tanks) under water. The Spar weighed 14,500 tonnes, the equivalent of two thousand double-decker buses, and had a displacement of 66,500 tonnes of water. Or in an even more picturesque description, the Spar had a capacity that could hold the equivalent of four Big Bens. After 15 years of operation, the Spar was decommissioned in 1991, when a review of refurbishment costs showed that further use would not be economical.

After the Spar's decommission, in October 1991, Shell UK started a number of decommissioning studies. The main problem in the decommissioning of the Brent Spar was its size. Given its size it could not be moved around easily, and except for the waters to the North of Orkney, most of the North Sea was not deep enough to accommodate it. In a search to find the Best Practicable Environmental Option (BPEO), six options were considered: horizontal dismantling and onshore disposal, vertical dismantling and onshore disposal, infield disposal, deepwater disposal, refurbishment and reuse, and continued maintenance. From these initial options, after a preliminary study, Shell UK chose to carry out feasibility studies[8] only on the options of horizontal[9] onshore

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4-A.

8 "In-field disposal was rejected as unacceptable compared with other options, even though it was the least expensive. Reuse was rejected because no one wanted to buy the spar. And continued maintenance was dismissed as too costly: an estimated $ 7.5-9 million/year and expected to increase with time" (Oil & Gas Journal, March 20, 1995).

9 Vertical dismantling was rejected because of the need for an inshore deepwater dismantling site, not available anywhere around Britain. The Spar had been originally put together at a Fjord off the shore of Norway, but the Norwegian government did not, at this phase, give its permission for such a procedure to be considered.

dismantling and deepwater disposal[10] (For more details See Appendix 4-B: The Brent Spar Abandonment – BPEO Report).

However, there were a number of technical problems involved in a horizontal onshore dismantling. Calculations on the structural strength of the Spar under various stresses showed that any attempt to rotate it in a horizontal position could pose a significant risk to its structural integrity. The situation was further complicated by the fact that two of the six storage tanks of the Spar had been damaged during operation. In addition, a number of studies conducted by independent engineering firms placed the cost of horizontal dismantling at about $ 69 million, and the cost of deepwater disposal at about $ 18 million. And, even though environmentally an onshore disposal would have been preferable, and the structure was expected to remain intact on the seabed for as much as 4,000 years, little leakage and environmental impact was expected from a deepwater disposal. Finally, on February 1994 an Aberdeen University study endorses deepwater disposal.

Based on these studies, Shell UK started formal consultations with local governments, conservation bodies, and fishing interests. Following, in October 1994 a final draft of the Best Practicable Environmental Option (BPEO) and Impact Hypothesis was submitted to the UK Government's Department of Trade and Industry (DTI) which is the regulating body for the Oil industry in the UK. In February 1995, the UK government announced its intention to approve of the deepwater disposal option and

10 It should be mentioned at this point that according to the OSPAR (the association of nations around the North Sea) the disposal of oil platforms in the North Sea was to be evaluated on a per case basis, including a deepwater disposal option, if a proper study had been conducted and the platform was in water more than 75m deep. Any platform in less than 75m of water had to drawn on land and dismantled.

informed, according to international regulations, the OSPAR governments[11], the other 12 nation states of the EU, and the EU itself. Since, within the normally allocated time limit no objections were raised, the UK government gave its approval, for Shell UK to proceed with deepwater disposal as the Best Practicable Environmental Option (For more details, see Appendix 4-B: The Brent Spar Abandonment – BPEO Report).

However, the deepwater disposal option was opposed by Greenpeace. Greenpeace is a global organization, with offices in over 30 countries, campaigning all over the world on environmental issues. Greenpeace was born in 1971, in Vancouver, Canada, when members of the Don't Make A Wave Committee renamed their organization to better proclaim their purpose: to create a GREEN and PEACEful world. Greenpeace remains an independent, non-partisan and non-profit organization, supported by more than three million members worldwide. It is best known for its non-violent direct actions, which raise awareness and bring public opinion to bear on decision-makers.

Greenpeace had been campaigning against dumping at sea for a long time and saw this issue as a dangerous precedent and a threat to prior gains such as the international ban on radioactive waste dumping at sea and the prohibition of the dumping of industrial wastes at sea (both international bans reached in 1993). Therefore, in September 1994, Greenpeace commissioned a report dealing with the issue of decommissioning and abandonment of offshore oil and gas platforms in general, titled "No Grounds for Dumping", and submitted it to the DTI in December 1994. In the particular Brent Spar case, Greenpeace opposed deepwater disposal for the following reasons.

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11 The OSPAR countries are: the Netherlands, Norway, Germany, and Denmark.

First, it was worried about the precedent the deepwater disposal of Brent Spar would set for the 130 offshore Spars existing in the North Sea and coming up for decommissioning in the not so distant future. At this point it should be mentioned that oil industry and the UK government, despite its public position of assessing the off shore disposal of oil platforms on a case-by-case basis, also saw the Brent Spar case as a test case. This was quite obvious from articles in trade publications of the period and was clearly admitted by DTI Minister Tim Eggar in a public briefing, issued after 20 June[12]. Second, Greenpeace disputed the environmental assessment of the deepwater disposal option and argued that the damage to the environment would be significantly greater. And, third, Greenpeace objected to the deepwater disposal as a matter of principle. As a member of Greenpeace involved in the Spar campaign told the author, "We have been trying for a number of years to teach people not to pollute. Now if one of the largest and richest multinational in the world can get away with dumping at sea something as big as the Brent Spar, what is the message that it sends to the rest of the world?"

However, despite its attempts to get involved, Greenpeace was not included or invited in the consultations between the DTI and Shell UK that took place early in 1995. So, after the decision for deepwater disposal was reached, in a meeting between the British, Dutch, and German branches of Greenpeace the initial occupation of the Spar was decided. And, in a later meeting the German division came up with the funds for a prolonged occupation, until September, when the weather would make the towing of the Spar to its dumping site impossible. As a result, on April 30, 1995:

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12 Tim Eggar, according to Greenpeace sources admitted that "There was never any question that Brent Spar would set a precedent."

"Around lunchtime, Greenpeace ship Moby Dick and an escort of inflatable crafts sped out to the disused Brent field spar loading buoy in North Sea Block 211/29...Four protesters climbed from their boat onto a steel ladder on the side of the buoy. They climbed part of the way to the top of the buoy on the ladder and the rest of the way using ropes and winches. Five standby vessels were in Brent field at the time but could do little about the invasion" (Oil & Gas Journal, May 8, 1995)

Despite the occupation, on May 5th 1995, the UK government proceeded and granted the disposal license to Shell UK. However, nobody, not even Greenpeace, was prepared for the publicity that the issue took, especially in continental Europe. As a result of this publicity, an increasing number of consumers, politicians, and governments started voicing their opposition to the 'dumping of the Spar'. For example, on May 9, 1995, the German Ministry for the Environment protested against the deepwater disposal plan; on May 16, 1995, all opposition parties in the UK condemned the dumping of the Spar; and on May 17, 1995, in Belgium, the European ministers for foreign affairs, the environment and trade, condemned the British Government for allowing the dumping of the Spar.

Defending its position, and with the support of the British Government, Shell UK initiated legal procedures and the activists occupying the Spar were removed on May 23, 1995. Responding to this, Greenpeace started calling for a Shell boycott in Continental Europe, and, on June 2 1995, Greenpeace supporters started leafleting gas stations and motorists at over 3000 locations throughout Germany .On June 11, 1995, Shell UK began to tow the Spar to its planned disposal site. But, in Continental Europe, the opposition to the sinking of the Spar was intensifying. In Germany, some Shell petrol stations reported

50% loss in income as protests against dumping the Spar increased. Protesters threatened to damage 200 Shell service stations - 50 were subsequently damaged, two fire-bombed and one raked with bullets. In addition, on June 15, 1995 Chancellor Kohl protested to UK Prime Minister, John Major, at the G7 summit. Following, on June 16, 1995, a second occupation of the Spar began as two Greenpeace activists landed on the Spar by helicopter, and Greenpeace released the results of the samples taken by its members during the first occupation. According to these results, a potential for up to 5000 tones of oil and a significant number of toxic materials was estimated as being on the Spar.

Finally, on June 20 1995, after a meeting between the top managers of Shell UK, Shell Netherlands, and Shell Germany, Shell UK realised that its position was no longer sustainable, and decided not to sink the Spar. This reversal, by Shell UK, was not seen in the same manner by all. Greenpeace hailed it as "A victory for everybody, a victory for common sense and a victory for the environment". On the other hand Shell described it as a victory of "the heart over the head" and insisted that deepwater disposal was the Best Practicable Environmental Option. In addition, the British Government who alone defended (and one might even say championed) Shell's decision to sink the Spar, felt betrayed and let down. As the Industry & Energy Minister said a license to dispose the Spar on shore would not be automatic, and that "Shell would have to convince us that its 3 years of studies into the Brent Spar disposal were inaccurate". He also added that the British Government was considering withdrawing its 50% contribution to the disposal costs it was obliged to make under the original license agreement[13].

13 Eventually Shell covered all the decommissioning costs without any help from the UK Government.

Nevertheless, despite the different perspectives with which this decision was seen, it was the beginning of a new era of compromise and cooperation among a great number of stakeholders, in an attempt to find an acceptable by all solution to the dismantling of the Spar. In brief, the main developments in the aftermath of Shell's decision to reverse the deepwater disposal of the Spar are as follows[14]. On the 7 July 1995, the Norwegian Government granted Shell permission to moor the Spar in the deep waters of Erfjord in Norway until the new disposal options were considered. On 12 July 1995, Shell UK commissioned the Norwegian certification authority Det Norske Veritas (DNV) to conduct an independent audit of the Spar and verify its contents and re-check Shell UK's previous inventory. On the 5 September 1995, Greenpeace apologized to Shell UK for sampling errors and admitted to the inaccuracy of its claims that the Spar contained as much as 5,000 tones of oil. Finally, in the following two years, a number of Brent Spar Dialogue seminars took place in many European cities, until the Spar was finally to be decommissioned off the coast of Norway, and the discussion of a possible moratorium on deep water disposal of offshore installations was initiated in the OSPARCOM meetings.

FINDINGS

In this section, the findings of the research are reported as follows. First, using terminology drawn from stakeholder theory (Mitchell et. al, 1997), and the process model of Elsbach and Sutton (1992), on how illegitimate actions can lead to organizational legitimacy, the above story is in a sense re-told, and three distinct periods identified (Initial consultation period, Buffering period, and Bridging period). Second, the findings

14 For more details, please refer to Appendix 4-A.

related to the factors that influence a buffering or bridging decisions (Research questions 1,2&3) are presented and their relation to the above expectations is discussed. Third, the findings related to the issue of stakeholder salience (Research question 4) are presented.

Initial Consultation, Buffering and Bridging Periods

The first period, which is referred to as 'initial consultation' covers the period between the decommissioning of the Spar (1991) and the final announcement by Shell UK of its decision to follow the deepwater disposal option (February 1995). During this period, Shell UK started consulting with a number of engineering firms and the Department of Trade and Industry (DTI) as early as 1992. Eventually, when the initial options had been 'pruned' down to two and it seemed that deepwater disposal was the BPEO to be chosen, a number of other organizations required by the 1987 Petroleum act were notified by Shell UK (See Table 4-2 for more details). In addition, the UK government informed the other European governments about the Brent Spar. Since, none of the above stakeholders brought any objections to the deepwater disposal option, in February 1995, this option was chosen by Shell UK. A noticeable absence from the parties involved in this initial consultation period is Greenpeace.

However, this is not the case during the second period, which, following van den Bosch and van Riel (1998), is referred to as 'buffering period'. A major characteristic of the period is conflict. Greenpeace tries in a number of ways, and finally through its occupation of the Spar, to prevent its deepwater disposal, and Shell UK, with the support of the British Government, tries to 'defend' its position. During this period a number of new stakeholders get involved for the first time. The issue, then, becomes a European

matter versus a British matter that it had been that far. The story of this period can be described or seen in two ways, either through the use of Mitchel's et al. (1997) stakeholder salience perspective or through the process model of Elsbach and Sutton (1992) about how organizations can acquire legitimacy through illegitimate acts.

Using the stakeholder terminology developed by Mitchel, et al. (1997), the major lines of the story of this period goes as follows. Greenpeace, a stakeholder with low levels of legitimacy and power in the UK, tried to prevent the deepwater disposal of the Spar, a claim for which it had a great degree of urgency. Not been able to influence the decision in any other way, in coordination with its divisions in Germany and the Netherlands, Greenpeace proceeded to the occupation of the Spar. However, this act brought a great deal of publicity to the issue, publicity that had the following effects (See Figure 4-1).

First of all, the matter stopped being a local British issue and it became a European issue. And, given the greater environmental sensitivity that continental Europe has, Greenpeace, as a stakeholder, moved from the low legitimacy, high urgency position it had within the UK, to a high legitimacy, high urgency position, within Europe. Second, because of its greater levels of environmental sensitivity, and in response to a Greenpeace campaign, the European public mostly in Germany, Denmark, and the Netherlands started showing, in no uncertain terms, its disapproval of the deepwater disposal plan to the respective Shell subsidiaries of their countries. Third, in response to the public opinion in their country, the governments of most continental European countries started pressuring the UK government and Shell to abandon the deepwater disposal option. Finally, Shell Germany, the Shell headquarters in Holland, and Shell Denmark, who were suffering the immediate

consequences of the opposition of the European public pressured Shell UK into realizing that its position in support of deepwater disposal was not sustainable.

Table 4-2

Initial Consultation, Buffering and Bridging Periods

Period	Stakeholders Involved	Summary
Initial Consultation Sep. 91 – Feb. 95	**Engineering firms, DTI, Local governments, Other interested government bodies, organizations required under the 1987 Petroleum Act[15], and European Governments.**	**Following its legal obligations, and from a UK perspective, Shell UK consults with the relevant stakeholders.**
Buffering Feb. 95 – June 20, 95	**Greenpeace, Shell customers in Continental Europe, German, Dutch, and Danish Governments, Shell Germany, Shell Holland, Shell Denmark, DTI.**	**During this period, Greenpeace gets actively involved and a number of 'new' stakeholders start pressuring Shell UK to reverse its decision for deepwater disposal of the Spar.**
Bridging June 20, 95 – today	**Continental Shell's, New engineering firms and independent bodies, Greenpeace, various European publics, and governments.**	**During this period, Shell tries to repair the reputational damage it had suffered during the previous period and initiates a number of discussions and consultations into finding an acceptable by all solution to the disposal of the Spar.**

In other words, Greenpeace by moving from a position of high urgency to a position of high urgency and legitimacy (1)[16], influenced both the European consumers,

15 Under the Petroleum Act 1987, consultation on the Abandonment Plan is required with the following organizations: Scottish National Heritage Joint Nature Conservancy Committee (Seabirds at Sea) Legitimate Users of the Sea: Scottish Fishermen's Federation (SFF) Orkney Fishermen's Association Firth of Forth Fishermen's Association Federation of Highlands and Islands Fishermen Western Isles Fishermen's Association British Telecom International.

16 Numbers refer to arrows in Figure 4-1.

definite stakeholders, with high degrees of urgency, power, and legitimacy (3) and the European governments, stakeholders with high levels of legitimacy and power (2). In their turn, the European consumers and their respective governments pressured the continental Shell's (5&6), stakeholders with high degrees of urgency, power, and legitimacy, to pressure Shell UK (7) to reverse its decision.

A similar picture emerges, if one examines the events of this period through the process model of Elsbach and Sutton (1992) on how illegitimate actions by members of radical social movement organizations can ultimately contribute to organizational legitimacy. According to Elsbach and Sutton (1992), illegitimate activities create legitimacy dilemmas for radical social movement organizations:

> "On the one hand, culturally illegitimate activities can provoke negative comments and attacks that drive away members and jeopardize outside support. On the other hand, the resulting publicity can bolster an organization's reputation within the very narrow segments of society that endorse such controversial actions. Furthermore, such publicity, if managed correctly, can indirectly lead the organization to acquire legitimacy from these relatively broad segments of society that support its culturally acceptable goals. As a result, the survival and effectiveness of such organizations hinge partly on violating widely held norms to gain endorsement and support from a sufficiently large segment of society." (1992: 701)

In order to explain how social movement organizations can take advantage of the publicity created by illegitimate activities and increase the legitimacy of their

organization, while avoiding their negative consequences, Elsbach and Sutton (1992) developed a five step process model: (1) Illegitimate action by organization member attracts attention to the organization, (2A) Institutional conformity: organization exhibits structures and procedures that are isomorphic with those of legitimate organizations, (2B) Decoupling: separation of legitimate structures from member's illegitimate actions, (3) Justifications and defenses of innocence to reduce the negative consequences of the illegitimate event, (4) Enhancements to improve the positive aspects of the event, and (5) Organizational legitimacy acquired through increased endorsement and support.

The above model applies to, and is reconfirmed by the Brent Spar case to the extent that Greenpeace did use the publicity that was generated by an illegitimate act to increase its own legitimacy. But, decoupling (step 2B) and justifications and defenses of innocence (step 3) were neither used, nor actually required. Greenpeace never denounced or distanced itself from its members who occupied the Spar. It was quite clear from beginning to end that the occupation of the Spar was carried out by a group of activists on behalf of Greenpeace. However, this clear endorsement of an illegitimate act neither hurt the legitimacy of Greenpeace nor hindered its goal. This could be the case for three reasons. First, unlike some of the, relatively more 'violent' actions studied by Elsbach and Sutton, the occupation of the Spar by members of Greenpeace was an action of passive resistance, where nobody got hurt, or inconvenienced. Second, the public had come to 'expect' such actions from Greenpeace. And, third, such actions of passive resistance are viewed with greater sympathy than other kinds of illegitimate acts.

These findings suggest a refinement to the model developed by Elsbach and Sutton (1992). Elsbach and Sutton argue that in order for social activist organizations to

be able to use the publicity generated from illegitimate events to increase their legitimacy a certain degree of decoupling and justification of innocence is required. However, the findings of this research suggest that this might not apply to instances of passive resistance. Rephrased as a proposition:

Proposition 1: Social activist organizations can acquire legitimacy from illegitimate events, even without decoupling and justifications and defenses of innocence, when these illegitimate acts are actions of passive resistance.

Finally, the period referred to as the 'bridging period' (van den Bosch and van Riel, 1998) begins with the reversal of Shell's decision for deepwater disposal of the Spar. During this period, Shell tries to repair the reputational damage it had suffered in the previous period and initiates a number of discussions and consultations into finding an acceptable by all solution to the disposal of the Spar and rebuilding its image. Conciliation is the main characteristic of this period and a great number of stakeholders, who had not been involved in the initial consultation phase, got involved at this point.

Factors influencing the choice between Buffering and Bridging

In the particular Brent Spar case, it seems that, at least, the following four factors played a role in Shell's initial decision to buffer: (1) Organisational structure of Shell, (2) Legitimacy of initial consultations, (3) Cost, and (4) DTI pressure.

Since the 1950s, at an international level, Shell operated under a 'matrix' structure designed by McKinsey. Under this structure, each operating company reported to a manager responsible for the region, and another responsible for the

function. This gave a great deal of autonomy to each Shell subsidiary, making Shell a 'loose association' of companies[17] as is quite often the case with European firms (Bartlett and Ghoshal, 1995). This autonomy meant that the initial decision of Shell UK for deepwater disposal and its subsequent decision to buffer or defend its decision had been reached mostly from a national-UK perspective. This is significant, because environmental awareness and a recycling mentality are not as strong in the UK as they are in Continental Europe. So the reaction to the Brent Spar issue could not have been foreseen by Shell UK based on their local experience[18]. Indeed, a fact that played an important role in the success of the Greenpeace campaign, and was mentioned independently by both Shell managers and Greenpeace members, was this recycling mentality that is quite high in countries like Germany, the Netherlands, and Denmark. This recycling mentality was clearly against the dumping at sea of something as large as the Spar. In most of Continental Europe people walk an extra mile to recycle a pack of cigarettes, and the 'throwing away of the Spar' was something counterintuitive to them, no matter what arguments Shell had.

The second factor that seemed to have played a role in Shell's decision to buffer was the legitimacy of the initial consultations through which the decision for deepwater disposal of the Spar had been reached. According to the Shell UK point

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17 The structure of Shell has changed ever since to a more centralized kind of structure, also designed by McKinsey, where operating companies will have a single line of command and will report only to a functional boss. Some say that this restructuring was partly due to incidents like the Brent Spar and Nigeria.

18 Of course, it cannot be said that the situation could have been foreseen based on a broader-European perspective. All that is being said here is that it could not have been foreseen based only on an UK perspective.

of view, the deepwater disposal option had been reached through a series of legitimate consultations. So, the deepwater disposal option was 'right' and had to be defended. In addition, the European Governments that objected the deepwater disposal option after the Greenpeace campaign had not, originally, brought any objections to it.

A third factor, quite significant for any business organisation, was cost. The cost differential between the horizontal offshore disposal option considered and the deepwater disposal option chosen was $ 51 million. A non-negligible amount, even for a company the size of Shell. Finally, an issue, not unrelated to the cost advantage of offshore disposal, was the 'pressure' (or preference) from the DTI. The British Government had a financial interest to set a precedent for the cheapest disposal option, because, according to its licence agreements, the Government had to contribute 50% of all abandonment costs. This would set the precedent for the other potential 50 offshore platforms eligible for dumping at sea and coming up for disposal in the not too distant future.

From these findings, it would seem that there are at least four factors influencing the decision of a company facing a reputational crisis to follow a buffering strategy. First, cost seems to play an important role in a firm's selection of a buffering or a bridging strategy. And, since buffering strategies are usually cheaper than bridging ones, cost considerations would tend to favour the choice of a buffering strategy, the greater the cost benefit associated with it. Second, the extent to which company managers believe that their company did not do anything wrong would play a role in their choice of a buffering strategy. In other words, the more the

managers of a company facing a reputational crisis believe that this crisis is unjustified, a result of a misunderstanding, the more they would tend to follow a buffering approach.

Third, managerial expectations would tend to influence the choice of a buffering (or bridging strategy). But this is a rather trivial and obvious finding. What is more interesting is to go one step back and look at what influences the formation of these expectations. From what can be seen in the Brent Spar case, it would seem that these expectations are shaped by the information, which in turn are heavily influenced by the organisational structure, and the dominant logic[19] of the firm (Prahalad and Bettis, 1986). Finally, the choice of a buffering (or bridging) approach will be influenced by the degree of external pressure by powerful stakeholders, who are pressuring the firm to follow a buffering (or bridging) approach because of their own interests.

The above discussion can be summarised in the following propositions:

Proposition 2: Companies facing reputational crises would tend to follow buffering strategies[20], the greater the cost benefits associated with them.

Proposition 3: Companies facing reputational crises would tend to follow buffering strategies, the greater the belief among its management is in the lack of any wrong doing on their company's part.

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19 Bettis and Prahalad (1986) define dominant logic as "the way in which managers conceptualize the business and make critical resource allocation decisions" (1986: 489).
20 Since "Buffering" and "Bridging" have been set as polar alternative strategies for a business organization facing a reputational crisis, an argument for or against buffering is at the same time an argument against or for bridging.

Proposition 4: Companies facing reputational crises would tend to follow buffering strategies, in accordance to their expectations for them. However, these expectations will be shaped by information available to managers given the structure of the company and their dominant logic.

Proposition 5: Companies facing reputational crises, would tend to follow buffering (or bridging) strategies, the greater the pressure they receive from powerful external stakeholders.

From Buffering to Bridging

In order to see what the Brent Spar case implies for the factors influencing a business organisation into choosing a bridging approach (Research Question 2), the issue of why did Shell UK change its mind (Research Question 3) must be addressed first. The critical question is 'what were the critical changes that took place during the period between of February to June 1995, changes that made Shell UK reverse its decision and enter into what has been labelled the bridging phase?'

From the investigation into this period, it seems that the following factors played a significant role in this change of mind: (1) the extreme publicity of the matter, (2) the reaction of stakeholders that had not previously salient, and (3) the unexpected interplay among various stakeholders.

As both main actors (Shell and Greenpeace) admitted, neither of them was ready for the publicity that the matter received as a result of the Spar occupation. This publicity played an important role because it brought the issue to the attention stakeholders across the national boundaries. And, these new stakeholders were legitimate and powerful enough to 'force' Shell to change its mind. These

stakeholders, mainly because they were outside the national boundaries of the UK, had not been taken into consideration by Shell UK in its initial consultations.

However, these reactions from new stakeholders should not be seen as independent from the interplay between stakeholder interests (see Figure 4-1), which characterise this case. These reactions from new stakeholders should be seen as a result of the interaction between stakeholder interests, which was initiated by the Greenpeace occupation of the Spar. In particular and in danger of repeating what has been described above, it was the Spar occupation by Greenpeace that made the European consumers and their governments to put pressure, anyway they could, on Shell and the UK government for a reversal in the deepwater disposal option. Therefore, it seems that stakeholder salience did play a significant role in Shell's reversal from buffering to bridging.

From these findings, the following generalisations can be made. First, the main reason behind the decision of a company facing a reputational crisis to reverse its position from a buffering to a bridging one seems to be the unexpected reactions from stakeholders with a high degree of legitimacy, power, and urgency in their claims. Second, a high degree of visibility and publicity of a reputational crisis would seem to contribute to the inclusion in the debate of stakeholders, whose reactions had not been accounted for originally. This inclusion of relatively new stakeholders in the debate could contribute to the inclusion of powerful stakeholders opposing the company's position, thus contributing to a possible reversal from buffering to bridging. Third, the existence of a 'critical stakeholder' (Zyglidopoulos and Iqtidar, 1998) – in the particular case, Greenpeace - that is willing to oppose the

buffering firm's position, and orchestrate an opposition among various stakeholders could contribute to the reversal of the firm's position from buffering to bridging.

Rephrased as propositions:

Proposition 6: The greater the power, legitimacy, and urgency behind the demands of the stakeholders, which are the focus of a company's buffering efforts in a reputational crisis, the greater the chances that a reversal to bridging will occur.

Proposition 7: The greater the visibility and publicity received by a reputational crisis, the greater the possibility that a reversal from buffering to bridging will occur.

Proposition 8: The presence of a critical stakeholder will increase the possibilities for a reversal from buffering to bridging to occur.

Theoretical Expectations and Findings

Before proceeding to the matter of stakeholder salience, the role of environmental uncertainty, resource dependence, organisational size, and visibility, issues which have been raised above as expectations resulting from prior theoretical developments (Pfeffer and Salancik, 1978; Thompson, 1967; Katz and Kahn, 1978; and Meznar and Nigh, 1995), need to be discussed in light of the events in the Brent Spar case.

First of all, as far as environmental uncertainty is concerned, the Brent Spar case was from the beginning characterised by a high level of environmental uncertainty. The disposal of the Spar was one of the first platforms that came up for

disposal, the first of its size, and the first for which a deepwater disposal option was seriously considered. However, given the publicity that the matter took and the intense reactions from stakeholders across Europe, environmental uncertainty, as perceived from Shell UK, increased as time went on. Therefore, this particular case can be seen as an example of the previously hypothesised curvilinear relationship between environmental uncertainty and buffering – bridging strategies. It can be argued that although Shell UK was faced from the beginning with a highly uncertain situation, it felt 'safe enough' to follow a buffering strategy, but that this changed as environmental uncertainty kept increasing. In other words, faced with higher levels of environmental uncertainty, Shell UK felt 'threatened enough' to change to a bridging strategy.

Second, on the issue of the role of organisational size, of course one can simply observe that Shell UK, or Shell as a multinational is one of the largest oil companies in UK, or in the world and so its initial choice to buffer was to be expected. However, this observation cannot be very helpful in understanding Shell's reversal, given that Shell at an UK or an international level did not change size during the relevant period. A more helpful way of examining the matter would be not to look at organisational size in absolute terms, but in relative ones. In other words, in looking at the size of a business firm versus its opponents. In this particular case, at first Shell UK was opposed to Greenpeace, but later on, as the matter became a European issue, Shell – Europe, had to face a virtual revolt in some of its largest consumer markets and the opposition from most European governments. Therefore, it can be said that as the Brent Spar issue went from a

national UK matter to an international European matter, although the absolute size of Shell did not change, the relative size of Shell versus its opponents did decrease.

On the third issue of resource dependence, as previously mentioned, one would expect that a business firm who has control of valuable resources, or of all the resources it needs for its survival, would tend to follow a buffering approach. And, that a firm who depends on its environments or outside constituents for valuable resources to follow a bridging approach. These expectations are clearly realised in the Brent Spar case. In the beginning of the buffering period, Shell UK did not have to face any outside constituents, who controlled any valuable resources. However, this changed drastically when the matter became a pan-European issue, and Shell, as a multinational, started facing the opposition of governments and large parts of its consuming public, both constituents in control of valuable resources.

Finally, on the matter of organisational visibility, no clear expectations had been formulated above. Of course, in the Brent Spar case, the extreme publicity that the matter received did play a role, but the real question is what would have happened if the Brent Spar had happened to another less visible business firm. One could tentatively say that the fact that Shell has a high level of organisational visibility did contribute to the affair by making Shell an easier target for the Greenpeace campaign. Therefore, in this particular case organisational visibility did play a role in enhancing the reaction to Shell's buffering and so, in a sense, contributing to the Shell's change of mind into a bridging approach.

Given the above theoretical expectations discussed in light of the findings from this case, the following theoretical points can be made. First, a curvilinear

relationship between environmental uncertainty and a firm's decision to buffer or bridge could be reasonably proposed. In other words, as environmental uncertainty increases a reversal from buffering to bridging becomes more likely. Second, a refinement to what Meznar and Nigh (1995) had said about organisational size and the choice of buffering and bridging could be proposed. In other words, it is not absolute organisational size that plays a role in a firm's decision to buffer or bridge but relative size depending on the size of the stakeholders, who are opposing the firm's position. Third, the confirmation of the expectations of resource dependence theory provide additional support for propositions 5 and 6, above, which basically state that powerful – in control of valuable resources - stakeholders would have more influence in the strategic direction of a firm facing a reputational crisis. Fourth, a high level of organisational visibility would increase the possibility of a company reversing its position from buffering to bridging because it would add to the visibility of the whole crisis, as has been argued above in proposition 7.

Summarised as propositions:

Proposition 9: As environmental uncertainty increases a reversal from buffering to bridging becomes more likely.

Proposition 10: The greater the *relative* size of an organisation facing a reputational crisis, the greater the chances it would tend to follow a buffering strategy (the opposite would of course hold for bridging).

Proposition 11: Stakeholders in control of valuable resources would tend to have more of an influence on the strategic direction of a business firm facing a reputational crisis.

Proposition 12: A high level of organisational visibility would increase the probability of a firm's reversal from a buffering to a bridging position.

Stakeholder Salience

The issue of stakeholder salience can be examined at two different levels of analysis. First, stakeholder salience can be examined at the Shell-UK level, and, second, the matter can be examined at the Shell-MNC level. From a Shell-UK perspective, the stakeholders that clearly mattered and 'convinced' Shell-UK to reverse its position were the Shell Headquarters and the continental Shell subsidiaries (Shell Germany, the Netherlands, and Denmark). On the other hand, from a Shell-MNC perspective it was the intense reaction of large sections of consumers, in continental Europe and their governments that made Shell reverse its position.

However, while the stakeholders that tipped the scale were different depending on the level of analysis one is contemplating, in both cases these stakeholders had enough power to back up their demands. In other words, the stakeholders that made all the differece, in both cases, were, influencers and not claimants (Mithcell, et al., 1997). So, one could say that, in the end, it was power, as a stakeholder characteristic that overrode both legitimacy and urgency (Näsi, Näsi, Phillips, and Zyglidopoulos, 1997; Chapter 2 of current dissertation). But, even if this is the case in the end, such a statement oversimplifies the issue of stakeholder salience by largely ignoring the dynamic interactions among the various stakeholders. Power did matter in the end, but the powerful stakeholders who made the difference were not involved, or interested, at first. The issue started from an expectant[21]

21 According to Michell, Agle, and Wood (1997), expectant stakeholders are stakeholders

stakeholder group, Greenpeace, who managed to get the advocacy of other more powerful stakeholders through an effective and rather radical campaign. So, even if it was powerful stakeholders who made the difference in the end, this can and should only be seen as the last phase of a continuous interaction of stakeholders with varying over time and space levels of power, legitimacy, and urgency (Mitchel, et al., 1997).

From the above findings, it can be said that the estimation of stakeholder salience is one of the, if not *the*, most important factor that can lead to wrong managerial expectations in reputational crises. However, it is also the hardest to achieve, given the increased level of interactions among different, and often completely new, stakeholders that takes place in short periods of time. Restated as a proposition:

Proposition 13: From a managerial perspective, estimating stakeholder salience during reputational crises will be harder the greater the number of stakeholders involved, the greater the proportion of new stakeholders, the greater the number of interactions among these stakeholders, and the shorter the time span of unfolding events.

DISCUSION, IMPLICATIONS, AND CONCLUSION

The purpose of this paper has been to investigate the factors influencing the choice of a buffering or bridging strategy by a firm facing a reputational crisis and the role of stakeholder salience (Michell, Agle, and Wood, 1997) in this choice. However, the above findings seem to suggest, at least three issues, relating to the fields of stakeholder theory, the management of corporate reputation, and the management of corporate

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who have legitimacy and urgency behind their demands, but have no power and depend on

reputation within multinational corporations, which require further discussion because of their significant theoretical, managerial, and societal implications.

Seeing the 'new', from the Shell UK point of view, stakeholders who came in the Brent Spar debate during the Buffering period, the first issue can be summarized in the question "Who are the stakeholders of a Multinational Subsidiary?" According to British law, and the institutional arrangements in which it existed, Shell UK did consult all the relevant stakeholders. However, problems arose from parties, who were not considered to be stakeholders of the firm, and most of them were in other countries. It seems that the actions of a particular subsidiary of a multinational can have significant reputational 'side-effects' with stakeholders in other countries. Especially in the cases where a subsidiary is relatively independent and the local managers operate under a strictly national frame of mind. Therefore, the matter of stakeholder salience takes a different dimension for the subsidiaries of multinational corporations. Some actions with the potential of reputational 'side-effects' across national borders have to be evaluated with respect to the reactions of potential stakeholders from other countries, with whom local managers are not familiar with.

The second issue, which can be seeing as a logical continuation of the first is the issue of the administrative level at which matters relating to the corporate reputation of a multinational corporation should be managed. The debate of headquarter centralization versus local-subsidiary autonomy is a well established one in the field of international business (Doz and Prahalad, 1981; Bartlett and Ghoshal, 1995), and the usual answer in the field is that it depends on circumstances of the particular market. However, this

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the advocacy of other powerful stakeholders to accomplish their claims.

research would seem to point in the direction of the need for a centralized, by headquarters, management of corporate reputation, because of the possible across border 'side-effects' that could occur if the corporate reputation of a multinational is managed in a local, kind of fashion[22].

Finally, the third, issue requiring further discussion, relates to the issue of whether concern about its corporate reputation makes a firm act in a socially responsibility way. A line of argumentation in the Business and Society field goes that business firms would tend to act in a socially responsible way because they would be afraid of hurting their corporate reputations. Something that is in turn expected to hurt overall financial performance (Dobson, 1989,1991[23]; Fombrun, 1996[24]). And while this line of reasoning implies that national firms would have to behave according to the norms and values of the society in which they operate; this might not always be the case for multinationals operating in different countries. The main difference is the fact that a multinational is 'assumed' by consumers and the public, in general, to be the same entity across national borders. This is so, even if the multinational is in reality a loose coalition of national firms, sharing very little else but a common name.

As a Shell executive told the author, "I realized during this debate, that while for me Shell UK was different from Shell Netherlands, and different again from Shell Germany, for the consumer Shell was Shell, the yellow and red sign down the road". In terms of corporate

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22 A similar argument has been made by Prahalad and Hamel (1990) for another kind intangible resources, core competencies.

23 Dobson (1989, 1991) had argued that reputation can act as "an implicit contractual enforcement mechanism between stakeholders in the corporate domain whose various claims cannot be explicitly enforced" (1989:2).

24 Fombrun (1996) argues that companies are realizing that by focusing on the building of a resilient reputation, they actually serve their own long-term economic interest.

social responsibility, this means that multinationals with a high level of visibility across nations have to act as if their actions would be evaluated in the country with the highest moral, environmental, or social standards. For example, even if bribing is an acceptable way of doing business in a particular country, and even if local companies can bribe expecting little if any reputational backlash, such a path might be out of the question for a multinational, who has to be accountable for such practices in countries where bribing is clearly illegal and socially unacceptable. Therefore, it would seem that in order for multinational corporations to avoid reputational crises, they would have to operate under the most 'restrictive' social norms from all the countries they operate in. This is something that is well understood by environmental advocacy groups, such as Greenpeace, who often try to play the social norms and attitudes of one country against another in an effort to achieve higher international standards for the environment.

Limitations and Future Research

Examining the factors influencing the buffering or bridging choice of a firm facing a reputational crisis and the role of stakeholder salience in the Brent Spar case has provided significant insights. But, a major limitation of this work comes from the fact that it investigates the matter drawing on a single case study. An unusual, and extremely rich, as has been argued above, case study, but a single, nevertheless case study. There is clearly a need to further investigate the matter drawing on multiple cases, and, drawing on some of the findings and proposition developed in this work, to formulate testable hypotheses and test them.

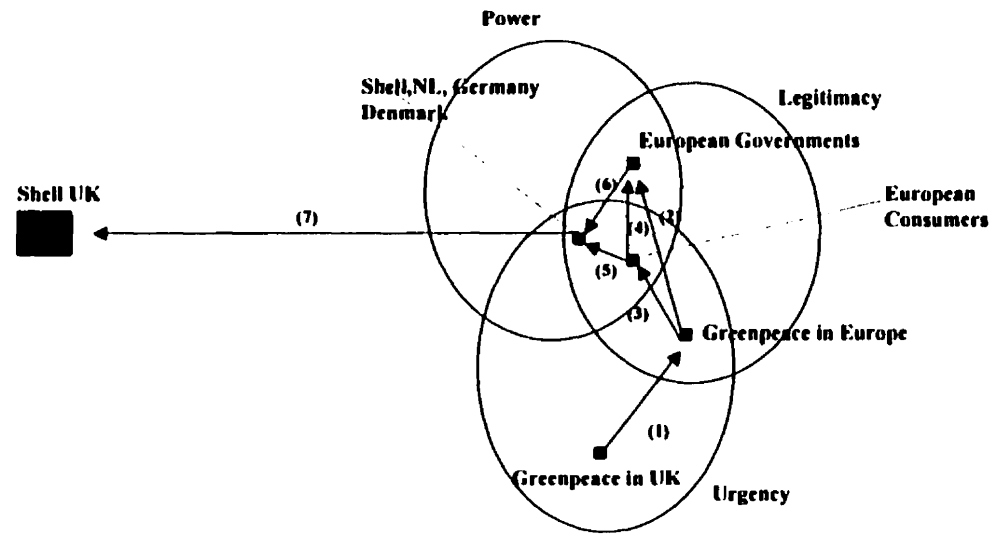
In addition, even if this paper is a first step in empirically investigating the interaction and interplay among different stakeholder groups during a reputational crisis, more work needs to be done in the domain of stakeholder interaction and the implications of this interplay for stakeholder salience. In other words, more work is needed for a better understanding on how stakeholder salience (Mitchell et al., 1997) changes and how issues emerge through the interactions, negotiations (Näsi, et al., 1997), and institutional processes (Powell & DiMaggio, 1991) of various stakeholders.

Conclusion

In this paper, the factors influencing the choice of buffering or bridging strategy of a firm facing a reputational crisis and the role of stakeholder salience (Michell, Agle, and Wood, 1997) in this choice were investigated through an in depth case study of the Brent Spar controversy. These issues were examined in the context of this particular case because the case was unique with the potential of being extremely valuable and revealing. Based on this empirical research, the following three points can be concluded. First, the main reason that Shell UK changed from a buffering to a bridging approach was the fact that its initial decision was fought by a great number of powerful, legitimate stakeholders with urgency behind their claims. Second, the main reason for this intense reaction of stakeholders was that Shell UK acted within a national framework without considering the international reputational 'side-effects' its decisions and actions could have. Finally, managers should consider the matter of stakeholder salience as a dynamic matter and pay attention not only for changing stakeholder interests and characteristics, but also for the interactions among various stakeholders.

Figures to Chapter 4

Figure 4-1
Stakeholder Interactions in the Brent Spar Case



APPENDICES TO CHAPTER 4

APPENDIX 4-A
Chronology of Major Events in the Brent Spar Story
[Sources: Shell and Greenpeace Web sites]

29 January 1998
Shell announces its choice of solution for Spar - a 'one-off' re-use as a Norwegian Ro/Ro ferry quay. Decommissioning Plan to be submitted to UK Government - the first step in gaining approval.

November 1997 - January 1998
Shell carries out its final BPEO evaluation

28 October 1997
More Brent Spar Dialogue seminars in London, Copenhagen, Rotterdam and Hamburg

13 October 1997
New Det Norske Veritas (DNV) study reveals all key facts and figures in the publication of their independent assessment of the final list of proposed solutions.

17 June 1997
Shell Expro produces a CD-ROM (and video) showing how the six international construction groups bidding to dispose of the Brent Spar would carry out the nine proposals they have developed.

2 June 1997
Detailed bids covering nine of the original eleven Short List solutions are delivered to Shell by the six international contractors/consortia.

30 May 1997
Third Brent Spar Dialogue Seminar takes place in Rotterdam, The Netherlands.

9 April 1997
Shell extends the deadline for delivery of bids from the short-list contractors by one month. The original delivery date of 30 April has been deferred to Monday 2 June 1997.

11 March 1997
Brent Spar Dialogue Seminar held in Copenhagen, Denmark.

20 February 1997
Shell ask Def structures like Brent Spar would be very small.

22 March 1996
The Brent Spar web site is launched.

6 March 1996
The House of Lords Science & Technology Committee inquiry into decommissioning finds no overriding grounds for excluding deep- sea disposal, but suggests wider consultation in future

22 February 1996
In a speech to an Institute of Petroleum conference in London, Eric Faulds, the Brent Spar Decommissioning project manager, discusses the unprecedented challenges and opportunities presented by Brent Spar and explains why the main dismantling options will require an exeptional feat of civil engineering.

February 1996
OSPAR's Working Group on Sea-Based Activities (SEBA) refers decommissioning and the call for moratorium to a working group led by Norway. Its recommendations will be reported to OSPAR in June 1997

4-8 December 1995
The OSPARCOM call for a moratorium on deep water disposal of offshore installations is rejected by the global London Convention, whose 72 member governments are concerned with the world-wide protection of the marine environment. London Convention agrees to establish a Standing Scientific Group of Experts to examine the full range of decommissioning issues

30 November 1995
The international offshore oil and natural gas exploration and production industry launches a discussion paper: "Decommissioning Offshore Oil & Gas Installations: Finding the right balance". (Go to our Links page to read this document.) Follow-up studies by DNV on Spar show that there are no PCBs in the light-fittings or electrical items.

11 September 1995
UK scientists re-iterate their support for rational, science-based environmental decisions at the British Association for the Advancement of Science.

19 October 1995
Shell welcomes the UK Government initiative to form an independent international group of scientists and engineers under the aegis of the Natural Environment Research Council (NERC).The group will examine the scientific and technical considerations raised by the disposal of Brent Spar.

8 September 1995
After a meeting on 6 September between Chris Fay, Chairman and Chief Executive of Shell UK and Peter Melchett, Executive Director of Greenpeace UK, Greenpeace says that although it does not support the BPEO concept, it recognises that if Shell UK seeks relicensing for the Spar's disposal, the company will have to work within the legal framework of UK Government policy and the BPEO.

5 September 1995
Greenpeace apologises to Shell UK for sampling errors and admits to the inaccuracy of its claims that Spar contained 5,550 tonnes of oil.

26 August 1995
UK television executives admit to a lack of objectivity and balance in their coverage of the Spar story, and to using dramatic film footage supplied by Greenpeace which eclipsed the facts.

12-18 July 1995
The UK Government insists that in any future disposal application, Shell UK must ensure that risks to environment, human health and safety are no greater than those calculated for the existing Best Practicable Environmental Option of deep water disposal.

12 July 1995
Shell UK commissions the Norwegian certification authority Det Norske Veritas (DNV) to conduct an independent audit of Spar to verify its contents and re-check Shell UK's previous inventory.

7 July 1995
Permission is granted to moor the Spar in the deep waters of Erfjord in Norway while new disposal options are considered.

30 June 1995
Eleven states call for a moratorium on the disposal at sea of decommissioned offshore installations at a meeting of the Oslo and Paris Commissions (OSPARCOM). It is opposed by Britain and Norway, the only North Sea states with larger, heavier installations in deeper waters.

21 June 1995
Shell apologises to UK Prime Minister John Major for any embarrassment caused by the decision.

20 June 1995
Several governments in Continental northern Europe now indicate opposition. Shell UK decides to abort operation in view of untenable position caused by the opposition of some European governments, and by the increased safety threat from actions on the Continent and by Greenpeace activists interfering with the disposal operation. Shell UK announces it will seek a licence for onshore disposal, while still believing that deep water disposal is Best Practicable Environmental Option.

15-17 June 1995
Public opinion in Continental northern Europe strongly opposes deep water disposal. Chancellor Kohl protests to UK Prime Minister, John Major, at the G7 summit.

16 June 1995
Second occupation begins as two Greenpeace activists are landed on Spar by helicopter

The results of samples taken by Greenpeace during the first occupation are released, estimating a potential for up to 5000 tonnes of oil to be on the Brent Spar (Greenpeace subsequently found this to be wrong and admitted the mistake).

14-20 June 1995

In Germany, some Shell petrol stations are reporting 50% loss in income as protests against dumping the 'Spar increase. In addition, protesters threaten to damage 200 Shell service stations - 50 are subsequently damaged, two fire-bombed and one raked with bullets.

11 June 1995
Shell UK begins to tow Spar to deep Atlantic disposal site.

8-9 June 1995
Fourth North Sea Conference at Esbjerg in Denmark - several European countries call for all oil installations to be disposed of on land. UK and Norway argue for case-by-case approach.

June 1995
Scientific debate intensifies in the UK.

June 1995 - early 1996
Shell UK receives some 400 letter proposing many imaginative solutions for Brent Spar.

2 June 1995
Greenpeace supporters start leafleting petrol stations and motorists at over 300 locations throughout Germany

23 May 1995
Activists are removed from Spar. Demands for Shell boycott begin in Continental Europe.

17 May 1995
In Belgium, ministers for foreign affairs, the environment and trade, condemn the British Government for allowing the dumping of the Brent Spar

Iceland urges the British Government not to dump the Brent Spar

16 May 1995
All opposition parties in the UK condemn the dumping of the Brent Spar

13 May 1995
Several independent UK scientists begin stating support for deep water disposal as a balanced decision.

9 May 1995
German Ministry of the Environment protests against disposal plan.

5 May 1995
UK Government grants disposal licence to Shell UK.

30 April 1995
Greenpeace activists occupy Spar.

29 April 1995
Moby Dick leaves Lerwick for Brent Field

February 1995
The UK Government announces its intention to approve deep water disposal and notifies the other 13 contracting parties (12 nation states and the EU) which are signatories to the Oslo Convention covering the protection of the marine environment. Within the normal time limit, no objections are raised.

1 December 1994
Executive summary of Greenpeace report on decommissioning, "No Grounds for Dumping" is sent to DTI.

October 1994
A final draft of the Best Practicable Environmental Option (BPEO) and Impact Hypothesis is submitted to the UK Government's Department of Trade and Industry.

26 September 1994
Greenpeace commissions report titled "No Grounds for Dumping"

February 1994
Aberdeen University study endorses deep water disposal. Formal consultations are conducted with conservation bodies and fishing interests.

1993
Decommissioning studies continue.

September 1992
Shell UK begins discussing disposal with regulatory authorities.

October 1991
Decommissioning studies begin.

September 1991
Brent Spar ceases operating.

Appendix 4-B

Brent Spar Abandonment BPEO, December 1994

Report prepared for Shell U.K. Exploration and Production by Rudall Blanchard Associates Limited

1.SYNOPSIS

1.1. The Brent Spar was commissioned in 1976. It is a cylindrical buoy, moored to the sea bed by six anchors and is made up of oil storage tanks at the bottom, buoyancy tanks toward the middle and a topside containing the offshore tanker loading equipment. A full description is provided in Section 3 - 'Summary of Information on the Brent Spar'.

1.2. The costs of maintaining the Spar increased substantially in the period 1987 to 1990. In 1991, a review concluded that the work necessary to refurbish the facility to extend its operational life could cost over L90 million. The buoy would have to be out of commission for a 2 - 3 year period during the refurbishment. Given the age of the structure, the presence of a pipeline system for the export of crude oil and the substantial cost of refurbishment, it was decided that the Brent Spar should cease operations. It was taken out of commission in September 1991 after 15 years service.

1.3. The Brent Spar is presently classified as a "not normally manned installation" and, following decommissioning, a letter of limitation to its Certificate of Fitness prevents its use as a storage or tanker loading facility. This certificate expires in 1995 and if it is to be renewed, refurbishment would be required before that date. The operators, Shell UK Exploration & Production (Shell Expro) have recognised that the Spar is now obsolete and wish to abandon the structure, in accordance with all regulatory requirements.

1.4. Thirteen possible methods of abandoning or re-using the buoy were initially put forward for consideration, of which six were identified as viable options: Horizontal Dismantling (and Onshore Disposal), Vertical Dismantling (and Onshore Disposal), In-Field Disposal, Deep Water Disposal, Refurbishment and Re-Use, Continued Maintenance Of these, horizontal dismantling and deepwater disposal were considered in detail.

1.5. This document describes the assessment undertaken to determine the Best Practicable Environmental Option (BPEO) for the abandonment and disposal of the Brent Spar. The details of the BPEO assessment are described in Section 2 - 'Structure of the BPEO Assessment'. It includes consideration of technical feasibility, risks to health and safety of the workforce, environmental impacts, public acceptability and costs.

1.6. The BPEO Assessment demonstrates that the most appropriate action is to dispose of the Brent Spar at an authorised deep water disposal site, as it is the option of least technical risk, minimises exposure of the workforce to accidents, will have small but insignificant impacts on the environment and is economically the most attractive.

2. STRUCTURE OF THE BPEO ASSESSMENT

2.1. The document provides a detailed assessment of the feasible disposal options of the Brent Spar, together with a statement setting out reasons which have led to the conclusion that deep sea disposal is the Best Practicable Environmental Option.

2.2. This assessment is supported by a full set of engineering, safety and environmental study documentation, referenced in Section 12.

2.3. A short summary of the Brent Spar is presented in Section 3 describing the facility, its location, history and current status, and a brief overview of the UK legal framework.

2.4. Following an examination of all the feasible options, six were selected for further study and appraisal. These six were screened and a summary of the findings provided in Section 4.

2.5. The screening process described in Section 4 established that only two options presented realistic solutions. These are described in detail in Section 5 and the remainder of the report is given over to comparing and assessing the relative merits of these. The following aspects were looked at in detail:

Engineering Complexity (Section 6) - The difficulty of carrying out the engineering procedures considering the range of tasks to be performed, the locations in which they might be carried out and the type of vessels required;

Risk to Health & Safety of Workforce (Section 7) - The likelihood of serious injury and fatality in each option, based on an assessment of the tasks and the number of man hours dedicated to each task;

Environmental Impact (Section 8) - The range of impacts on the environment and resource users as a result of carrying out the option, including an assessment of the consequences of possible accidents;

Cost (Section 9) - The estimated gross cost of the short-listed options.

Consultation Process (Section 10) - Discussion of the process used to ascertain acceptability to the authorities and other interested parties;

2.6 Section 11 provides the final logic for selection of the Best Practicable Environmental Option.

3. SUMMARY INFORMATION ON THE BRENT SPAR

3.1. DESCRIPTION OF THE FACILITY

3.1.1. The Brent Spar is a 29m diameter cylindrical buoy which floats vertically in the water with a draft of lO9m and a height above water of 28m. It was constructed using techniques similar to those of ship building and consists of a thin outer skin of 20 mm plate steel, stiffened by ribs and bulkheads. [FIGURE OMITTED]

3.1.2. The total weight of the structure is 14,500t made up of 6,700t of structural steel, 6,800t of permanent haematite ballast and lOOOt of equipment.

3.1.3. The upper section consists of a helideck, crane, tanker mooring/loading boom and accommodation for 30 people.

3.1.4. The top of the lower section is made up of twelve buoyancy tanks. Below this, the main storage area is divided into six tanks which extend to the base of the buoy. The total storage capacity is 300,000 barrels of oil. At the base of the buoy there is a sealed compartment containing the permanent ballast. which is composed of haematite embedded in concrete.

3.1.5. During operations, the buoy was used to store oil from Brent 'A', and also acted as a tanker loading facility for the whole Brent Field. It was the sole route for the export of crude oil until the Brent System Pipeline was commissioned in 1978. After this, it continued to be used as an alternative to the pipeline system.

3.1.6. The Brent Spar is held on location by a six leg catenary mooring system. Each mooring line is made up of a 285m length of 4" chain, one end of which is attached to the buoy and the other to 800m of 3.5" wire length, connected directly to the anchor block. [FIGURE OMITTED]

3.1.7. The manifold, located on the sea bed directly below the Spar. is now isolated and will remain in place after removal of the Spar. It acts as a junction in the pipeline between Brent 'A' and 'B' platforms. It will operate as a fully maintained sub- sea facility. [FIGURE OMITTED]

3.2 LOCATION, HISTORY AND CURRENT STATUS

3.2.1. The Brent Spar was constructed in a horizontal position and was installed in the Brent Field in 1976. The Brent Field is located in UK Block 211/29 in the North Sea, some 190 km ENE of Shetland. The Spar is located at Latitude 61 deg 03'14.7" N, Longitude 01 deg 40'04" E, approximately 2.9 km from the Brent 'A' platform and 1.9 km from Brent 'B' platform. The water depth at the Spar location is 140m.

3.2.2. During a nine day operation in a Norwegian fjord, the Spar was upended by the gradual ballasting of the storage tanks. Despite the care taken during this operation, subsequent analysis has indicated that the buoy was overstressed to some extent by the pressures it experienced . [FIGURE OMITTED]

3.2.3. In January 1977, two of the main storage tanks were ruptured by the accidental build up of differential pressures, which were in excess of design limits, between the inside and outside of the tanks. The subsequent repairs were conducted only to maintain structural integrity of the buoy not to make the tanks water tight. The tanks were not used again for oil storage and remained filled with sea water.

3.2.4. In 1978, the Brent System Pipeline to Sullom Voe Terminal was commissioned and became the main export route for the Brent crude. After this, the Spar continued to be used only as an alternative export.

3.2.5. Between 1987 and 1990, the maintenance costs of the facility increased substantially. In 1991, a review of the refurbishment requirements concluded repair costs of over œ90 million were necessary to extend the buoy's life and the facility would be out of commission for two to three years. Given the age of the structure, the cost of refurbishment and the

presence of the Brent System Pipeline, it was concluded that the facility should be withdrawn from service.

3.2.6. The Brent Spar was taken out of commission in October 1991, during which time the undamaged storage tanks were emptied of crude oil and filled with sea water. The process pipework was flushed through with sea water and the storage tank oil/water interface emulsion and slops were pumped into the final shuttle tanker. All buoyancy tanks were emptied and all valves, watertight hatches and doors were shut to prevent flooding. Items of loose equipment, including fire fighting equipment, life saving appliances and spares were removed. In November 1991, the manifold was isolated and the flexible risers were removed.

3.2.7. The Spar is presently classified as a "not normally manned installation" and a letter of limitation to its Certificate of Fitness prevents its use as a storage or tanker loading facility. This certificate expires in 1995 and, if it is to be renewed, a detailed structural integrity survey and refurbishment programme would be required before this deadline. Page 6

3.3. INVENTORY OF MATERIALS

3.3.1. The bulk of the structure is composed of structural steel (approximately 7,700t) and haematite embedded in concrete (some 6,800t). Inventory items have been classified in accordance with the ' Convention for the Protection of the Marine Environment of the North East Atlantic 1992" (Oslo and Paris Commissions - OSPARREV). This Convention regulates substances and materials whose disposal at sea is controlled and are referred to as "Regulated Substances".
[FIGURE OMITTED]

3.3.2. Equipment throughout the structure contains small quantities of heavy metals (in metallic form) as an integral part of the materials of construction. The sacrificial anodes contain an estimated 28.7t of aluminium, 10.2t of zinc metal and minor quantities of cadmium (8 kg), lead (0.6kg) and mercury (0.1kg). Electric cables contain some 13.5t of copper and paint on the structure includes some 3.5t of zinc. Small quantities of lead (2.5kg) and of nickel (3.5kg) are contained in remaining batteries. Small quantities of other materials are also contained in some of the equipment. Traces of PCB (<20ml) may still remain in the two transformers, although PCB-containing transformer fluids were replaced some years ago. Synthetic materials and plastics are also located on the structure (eg. in fittings in the accommodation/control room and cable insulation) but the exact quantities are not known (AURIS,1994,1; Metocean 1993, 7, 8&9).

3.3.3. The oil storage tanks contain some 48,000m3 of sea water together with an estimated 100t of oily sludge at the bottom. A 1991 analysis indicated that the oily sludge contains an estimated 9.2t of oil and a number of heavy metals, including cadmium (5.8kg), chromium (2.1kg) copper (42.9kg), nickel (3.9kg), lead (8.9kg), zinc (87.4kg), arsenic (0.3kg), and mercury (0.2kg). The remainder of the sludge is composed of a mixture of sand and scale. The walls of the storage tanks are also coated with an estimated 41.3t of hydrocarbons, in the form of thin layer of oil and wax. The sea water has not been analysed in detail and it has been conservatively assumed that it will contain hydrocarbons (up to 40ppm) from the residual oil in the tanks, together with zinc (up to 12ppm) and aluminium (up to 19ppm) from the internal anodes (AURIS, 1994,1)

3.3.4. Scale is commonly found in oil processing facilities throughout the world. In many areas scale may be contaminated by small amounts of naturally occurring radioactive salts from the oil reservoir formation to form low specific activity (LSA) scale.LSA scale is present in the sludge (with average activity of radium-226 and actinium-228 of 4.5 and 3 Bq g-1, respectively) in the storage tanks and as hard scale (with average activity of radium-226 and actinium-228 of 17.6 and 15.2 Bq g-1, respectively) in the internals of the pipework. Conservatively, taking the total mass of sludge to be 100t and the hard scale to be 30t, the total mean activity of the LSA scale is 11.96 GBq (AURIS, 1994,1; ICI Tracerco, 1993,5&6).

3.4. REGULATORY FRAMEWORK

3.4.1. The abandonment of the Brent Spar will comply with all United Kingdom legislation. The following diagram summarises the regulatory framework relating to the abandonment of structures on the United Kingdom Continental Shelf.
[diagram omitted]

4. OPTION SCREENING

4.1. INTRODUCTION

Thirteen options for abandoning or re-using the structure were considered in the preliminary study (McDermott, 1993, 10).
These have been screened to identify those most suitable for detailed study. Four abandonment and two re-use options remained after this process and these are examined in this section. The table below briefly summarises the six options considered and the reason for their selection.

OPTION 1 Horizontal Dismantling

Remove the topsides and transport ashore for mechanical breaking and disposal. Deballast the remaining hull to the horizontal by emptying storage tanks and tow to a suitable inshore site for transfer to a transport barge. Transport the hull to a suitable onshore for decontamination, mechanical breaking and disposal

Provides a feasible method albeit complex to bring the buoy ashore for mechanical breaking and disposal without depth restrictions at the landing site (Reverse of installation)

OPTION 2 Vertical Dismantling

Tow the Spar intact and in the vertical to altered deep water site. Partially decontaminate and dismantle the structure by cutting horizontally into sections. Transport each section to shore for total decontamination, mechanical breaking and disposal

Provides a feasible way to bring the buoy ashore for mechanical breakage and disposal but with depth restrictions at vertical dismantling site (Reverse of construction)

OPTION 3

In-Field Disposal

Sink the Spar intact at or near its present position in the Brent Field

Simplest abandonment option

OPTION 4

Deep Water Disposal

Tow the Spar intact to an authorised deep ocean disposal site and sink it

Logical alternative to Option 3

OPTION 5

Refurbish and Re-Use

Carry out refurbishment of the Spar to make it fully operational at an alternative site

Alternative to abandonment if a suitable use or buyer could be found

OPTION 6

Continued Maintenance

Carry out the minimum of maintenance and repair to keep the buoy in its existing condition at its present site

Possible option to delay abandonment and combine it with other field abandonment programmes

4.2. ASSESSMENT OF OPTIONS

4.2.1. INTRODUCTION

Each option was assessed against the criteria specified in Paragraph 2.5. The findings of the screening study are summarised in the text below:

4.2.2. OPTION 1 - HORIZONTAL DISMANTLING

This option involves removal of the topsides, repair of the damaged tanks, rotation of the buoy to the horizontal, transfer to a cargo barge, transport to shore and onshore dismantling (AURIS, 1994, 1&2; McDermott 1993, 10&11).

CRITERIA: Engineering complexity

FINDINGS: involves extremely complex operations to upend the structure and transport it ashore but provides a feasible method of bringing the buoy ashore for breaking and disposal

the most critical operation is upending the buoy to the horizontal to reduce the draft sufficiently to permit it to be towed to a suitable breaking and disposal location in the UK

the complexity of operations provides high potential for unplanned events (eg. accidental flooding of tank(s) during upending/horizontal tow resulting in aborting the operation or sinking of the structure)

CRITERIA: Safety and Risk

FINDINGS: significant exposure of the workforce to hazardous operations there would be occupational exposures to hazardous materials
during decontaminating and breaking the buoy under controlled onshore conditions; these would be less than the same operations in Option 2

CRITERIA: Environment and Resource Use

FINDINGS: negligible risk to environment through planned operations although more sensitive inshore environments exposed to risks from unplanned events high potential for unplanned events, at worst premature loss of buoy (particularly in shallow inshore waters)

could have significant localised impacts particularly to other users of the sea (eg. shipping and fishing activities

CRITERIA: Acceptablilty

this option considered to be acceptable to the authorities and other interested parties

CRITERIA: Cost

FINDINGS: high comparative cost - £46.0 million

This option was considered the most feasible onshore disposal method and was put forward for detailed consideration.

4.2.3. OPTION 2 - VERTICAL DISMANTLING

This option involves in-situ repair to the damaged tanks, a tow to a deep water inshore site. removal of the topsides and vertical dismantling the hull in sections, transferring the hull sections ashore and finally breaking the structure/disposing of the materials onshore (AURIS, 1994,1&2; McDermott, 1993, 10).

CRITERIA: Engineering Complexity

FINDINGS: involves slightly less complex operations than Option 1

requires deep water site as the draught of the buoy is 109m; the only suitable UK deep water site identified was Loch Kishorn on the west coast of Scotland which has a draught restriction of c80m and would require deballasting of the structure making the operation more complex, increasing the risks and further increasing the costs.

alternative deep water sites were investigated in Europe but were eliminated due to regulatory constraints

the most critical operation Is maintaining stability/ballast control during vertical cutting/sectioning of the structure hence the requirement to conduct the operation in sheltered inshore waters less complex operation than Option 1 but still high potential for unplanned events (eg loss of hull during sectioning)

CRITERIA: Safety and Risk

FINDINGS: significant exposure of the workforce to hazardous operations exposures during decontaminating and dismantling the buoy would be greater (ie. offshore confined spaces) than the same operations in the controlled onshore conditions provided in
Option 1

CRITERIA: Environment and Resource Use

FINDINGS: negligible risk to environment through planned operations although more sensitive inshore environments exposed to risks of unplanned events

high potential for unplanned events including loss of containment of contaminants during vertical sectioning or at worst premature loss of buoy in inshore waters which could have significant localised impacts particularly to other users of the sea (eg. shipping and fishing activities)

CRITERIA: Acceptabillty

FINDINGS: this option considered to be acceptable to the authorities and other interested parties

CRITERIA: Cost

FINDINGS: high comparative cost - £44.0 million

This option had no advantage over Option 1 and was dismissed as no suitable deep water sites were identified.

4.2.3 OPTION 3 - IN-FIELD DISPOSAL

This option involves clean-up of the topsides, placement of explosives, a short tow to the disposal site and sinking of the
structure (AURIS 1994, 1 & 2).

CRITERIA: Engineering Complexity

FINDINGS: technically the simplest option

lower potential for unplanned events than the other abandonment options

CRITERIA: Safety and risk

FINDINGS:

minimal exposures of workforce to hazardous operations regarded as safest option

CRITERIA: Environment and Resource Use

all materials released to North Sea environment with potential for local impacts

long term restriction to access by resource users (notably fishing activities in the area) through exclusion zone at wreck site

CRITERIA: Acceptability

FINDINGS:

this option was not considered to be acceptable to Shell Expro or permissible to the authorities given the alternatives

CRITERIA: Cost

FINDINGS:

no costs estimated though undoubtedly the cheapest option

This option was dismissed on the grounds that this option would not be acceptable given the alternatives for abandoning the structure.

4.2.5. OPTION 4 - DEEP SEA DISPOSAL

This option involves clean-up of topsides, placement of explosives long tow to the disposal site in the North East Atlantic and sinking of the structure (AURIS 1994, 1&2; Global 1993,4).

CRITERIA: Engineering Complexity

FINDINGS:

relatively simple option

most complex operation is the long tow to the dump site

lower potential for unplanned events compared to the onshore disposal options

CRITERIA: Safety and Risk

FINDINGS:

comparatively low exposures of workforce to hazardous operations

CRITERIA: Environment and Resource Use

FINDINGS:

impacts through planned operations would be small and localised at a deep water site authorised for disposal of such materials medium potential for unplanned events during tow at worst premature loss of the buoy would have localised impacts on the environment and resource users, the significance to the latter depending on location

CRITERIA: Acceptability:

FINDINGS:

this option considered to be acceptable to the authorities and other interested parties

CRITERIA: Cost

low comparative costs - £11.8 million

This option was a preferred abandonment option on the basis of relative technical simplicity, low risks to the workforce and costs and was considered for further appraisal

4.2.6. OPTIONS - REFURBISH AND RE-USE

This is a re-use option rather than abandonment and is dependent on finding an alternative use, refitting the buoy offshore or at a suitable deep water site and then towing the structure to its eventual end location (McDermott 1993, 10).

CRITERIA: Engineering Complexity

FINDINGS:

complexity would depend on the re-use requirement extensive engineering would be required over a long period (c.2 years) to refurbish and refit the buoy to current standards

CRITERIA: Safety and Risk

FINDINGS:

comparatively low exposures to hazardous operations envisaged but will depend on re-use requirements

CRITERIA: Environment and Resource Use

FINDINGS:

very low impacts

CRITERIA: Acceptability

FINDINGS

this option considered to be acceptable to the authorities and other interested parties

the most critical factor was that no alternative users or buyers were found

CRITERIA: Cost

FINDINGS:

very high (up to £90 million depending on re-use requirements) but may be partially offset by sale value

This option was dismissed on the basis that no alternative users or buyers were found.

4.2.7. OPTION 6 - CONTINUED MAINTENANCE

This is a re-use option rather than abandonment and would involve continued maintenance of the structure to maintain the Certificate of Fitness until the structure was eventually abandoned (AURIS 1994, 1&2).

CRITERIA: Engineering Complexity

FINDINGS:

complexity of engineering work required would increase over time as main structural components exceeded their design life and required replacement extended period of ad hoc repairs would make ultimate disposal more difficult

CRITERIA: Safety and Risk

FINDINGS:

comparatively low exposures to hazardous operations envisaged

CRITERIA: Environment and Resource Use

FINDINGS:

very low impact

CRITERIA: Acceptability

FINDINGS:

this option considered to be acceptable to the authorities for a specified period of time only

CRITERIA: Cost

FINDINGS:

c. £5 - 6 million initially plus annual maintenance which will increase with time

This option was dismissed on the basis that Shell Expro do not wish to incur continued maintenance costs when they do not foresee any future use for the structure.

4.3. SUMMARY OF SCREENING FINDINGS

The main findings and conclusions of the screening studies are highlighted below: .

Option 1: Horizontal Dismantling; feasible onshore disposal option; option put forward for further consideration

Option 2: Vertical Dismantling; no advantage over Option 1, limited availability of suitable deep water dismantling sites in U.K; option dismissed

Option 3: In-Field Disposal; unsuitable given the alternative options available; option not acceptable to Shell Expro or the
regulating authorities

Option 4; Deep Water Disposal; feasible offshore disposal option; option put forward for further consideration

Option 5; Refurbish and Re-Use; no potential for sale or re-use was found for the structure: option dismissed

Option 6; Continued Maintenance; Shell Expro do not wish to incur continued maintenance costs when no future use for the structure is foreseen; option dismissed

Only two options were considered suitable for detailed review; Option 1 - Horizontal Dismantling and Option 4 - Deep Water Disposal. These two are discussed in greater detail in the remaining sections of this document. Page 15

5. DESCRIPTION OFSHORT-LISTED OPTIONS

5.1. DESCRIPTION OF HORIZONTAL DISMANTLING OPERATIONS

5.1.1. -The onshore dismantling option would involve a number of sequential and concurrent operations encompassing a wide range of technical activities and operating environments (AURIS, 1994, 1&2; McDermott, 1993, 11).

5.1.2. The most critical stage of this option would be the rotation of the buoy in the water to a horizontal position. This procedure is called "reverse upending" and would be accomplished by the controlled removal of water (deballasting) from the oil storage tanks. This operation has to be carried out offshore, in water of sufficient depth to accommodate the draft of the buoy (i.e. 102 m after topsides removal).
[FIGURE OMITTED]

5.1.3. The first step in the disposal process would be to carry out detailed internal and external surveys of Brent Spar to determine its present structural condition. Temporary systems such as power, lighting, life support (ventilation), fire fighting and safety equipment would have to be installed to permit personnel to work inside the buoy safely.

5.1.4. After disconnecting the internal pipework, bulkheads and decks across the cutline, the outer structure would be cut using automated equipment and 1570t topsides lifted onto a cargo barge using a heavy lift vessel.

5.1.5. The two damaged storage tanks would be repaired by divers using welded patches to make them leak-tight. The reverse upending control system consisting of valves, pumps, pressure transducers and pipework would be fitted to the storage tanks. Two of the six anchor lines would be removed completely. The remaining four would be retained to form tow line attachments and emergency lines.

5.1.6. The buoy would be towed to a reverse upending site, located some 80 km north-west of the present site, to ensure the operation was carried out well away from existing installation and pipelines. The tow would take approximately one day.

5.1.7 At the upending site, the buoy would be stationed in a pre-installed mooring system, together with a heavy lift vessel, work barge and tanker. Once all connections to floating hoses were made, the contaminated water would be pumped from the storage tanks across to the tanker via the barge, thus deballasting the buoy. An inert gas mixture of nitrogen and carbon dioxide would replace the water in tanks. The sequence and rates of deballasting would be controlled to minimise differential pressures on the emptying tanks, and as far as possible to orientate the damaged tanks out of the water. The pumping equipment would need to be disconnected prior to the tow, and it would therefore not be possible to remove any water that subsequently leaked into the tanks.

5.1.8. The buoy would then be towed in its horizontal attitude to a sheltered site, such as Scapa Flow, for loading onto a submersible cargo vessel. This operation is necessary to reduce the draught sufficiently to enable the structure to be towed to a suitable dockside and to provide a stable and horizontal platform for dismantling of the hull prior to transfer ashore (see Paragraph 5.1.11).

[FIGURE OMITTED]

5.1.9. On arrival at the loading site, the buoy would again be stationed in a pre-installed mooring system. Two 2000t capacity shearlegs would be used to raise the base of the buoy, reducing the draught at the deepest point to allow the semi- submersible cargo vessel to manoeuvre beneath it. The semi- submersible vessel would then deballast, lifting the buoy clear of the water. A sheltered site would be required for this operation because the lifting operations would be very weather sensitive.
[FIGURE OMITTED]

5.1.10. The buoy would be transported on the semi-submersible cargo vessel to the final breaking and disposal site on the UK mainland. Access holes would be cut in the sides of the tanks to allow personnel to enter. The inside of the tanks would then be cleaned by high pressure water jetting, and the resulting effluent collected and filtered. The filtration unit would remove solids for authorised disposal, leaving an oily water mixture for further treatment and eventual disposal.

5 1.11. Transfer of the buoy ashore would be complicated because of the uneven weight distribution, caused by the haematite ballast at its base. The buoy would have to be cut into

two sections, with the upper section being removed first. exposing the lower regions of the storage tanks. The ballast would be excavated and removed before transfer of the lower hull section to shore.

5.1.12. Mechanical breaking of the structure would be conducted according to strict operational procedures. Components which had been in contact with crude oil when the facility was operational would be assumed to contain scale, contaminated with naturally occurring radioactive materials. These would be decontaminated and the scale disposed of in accordance with current regulations. Once the scale had been removed, the main hull sections would be mechanically cut into manageable pieces and offered for sale as scrap steel. All internal and external anodes would be removed separately. All material, including inert, hazardous and non-hazardous wastes would require disposal via an acceptable route complying with all relevant legislation.

5.2. DESCRIPTION OF DEEP SEA DISPOSAL OPERATIONS

5.2.1. Deep water disposal could be carried out with or without the topsides in place and the advantages and disadvantages of these options have been assessed. It has been concluded that removing the topsides would increase the risks to the workforce, but would not result in any significant reduction in environmental impact. Therefore it is not planned to remove the topsides for the deep water disposal of Brent Spar (AURIS, 1994, 1&2; Global, 1993, 4).

5.2.2. The deep water disposal option would involve less complex engineering works and less offshore activity than the onshore dismantling option.

5.2.3. The Spar would be 're-entered', the topsides made safe and the state of the structure evaluated. In order to minimise the environmental impact of deep sea disposal, as much of the potentially hazardous materials as possible will be removed consistent with safety. feasibility and cost (Metocean, 1993,7). This would involve draining down remaining equipment (eg. lubricating oil, fuel oil etc.,), removing loose equipment and some of the fittings and transporting recovered materials ashore for disposal at an authorised site .

5.2.4. Explosives experts, would then board the buoy and place the charges, eventually used to sink the Spar. Sufficient charges would be placed to ensure that when they were detonated, all the buoyancy tanks would be opened to the sea, even if some of them failed to detonate. Flooding of these tanks would be sufficient to sink the buoy.

5.2.5 Two tugs accompanied by an attendant survey vessel would then tow the buoy to the selected deep sea disposal site. Two of the anchor chains would be used to tow Brent Spar out to the deep sea dump site. The remaining chains would be used as emergency tow lines.

5.2.6. Three general areas have been identified by the Scottish Office Agriculture and Fisheries Department (SOAFD) as potentially suitable for disposal of redundant offshore structures. as follows:

* Maury Channel * North Feni Ridge * Rockall Trough

These sites are located within U.K. waters and lie in water depths in excess of 2000m. A detailed survey has been undertaken by Shell Expro and SOAFD to confirm the 'suitability' of

the potential disposal sites and to provide baseline environmental data for future monitoring programmes.

5.2.7. Towing would be conducted using conventional maritime practices. All routes from the Brent Field to potential dump sites pass to the north of the Shetland Islands and to the north and west of the Outer Hebrides. Whichever site is selected, the earlier stages of the planned routes would essentially be common. The routes will be determined by the requirement for adequate water depth, sufficient clearance from installations and the need for sufficient sea room for manoeuvre should bad weather or accident result in breaking of the tow. The first part of the tow, from the present location to the 200m contour, would be subject to detailed survey, to ensure that the buoy did not encounter any unexpected obstructions. The route for the latter stage of the tow would depend on the disposal site selected. The tow is planned to take between 15 - 25 days, depending on the weather conditions and final location. [FIGURE OMITTED]

5.2.8. When the Spar arrived at the disposal site, the correct position would be confirmed and the tow lines mechanically released from the tugs. All vessels would then stand off and the explosives would be detonated simultaneously by remote control.

6. ENGINEERING COMPLEXITY

6.1. INTRODUCTION

6.1.1. Both options are significantly different in terms of their engineering complexity and uncertainties inherent in their execution, but both are considered technically feasible (AURIS, 1994, 1&2; Global, 1993, 4; McDermott 1993, 11).

6.2 OPTION 1 - HORIZONTAL DISMANTLING

6.2.1. The main objective of this operation is to transport the Spar ashore for onshore breaking, to recycle the steel and to properly dispose of any waste materials. Transportation requires a reduction in the draught of the buoy, sufficient to permit entry to a suitable port and transfer to an onshore quay. To do this requires an intermediate stage of transfer to a semi-submersible cargo vessel. This option involves nineteen principle operations and is technically complex. [FIGURE OMITTED]

6.2.2. The operations, whilst they have been used in the offshore oil and gas industry, involve technically demanding marine engineering techniques. Although all stages are considered technically feasible, the damage to the storage tanks would have to be repaired underwater to ensure that they were water-tight and could provide buoyancy during the upending operation. A detailed survey will be required to examine the structure before operations commence to confirm integrity.

6.2.3. The upending operation would have to take place in deep water due to the draught of the buoy (currently 109m), which would be reduced to 102m by removing the topsides. This operation would be subject to offshore weather and sea conditions. The original up-ending operation was subsequently demonstrated to have caused local yielding of the submerged part of the structure. It is believed that a similar condition would occur during reverse up-ending, potentially leading to stability and control problems, particularly if the yielding led to a breach and accidental flooding of the storage chambers. This coupled with the difficulties of

assuring integrity of the field repairs to the tanks introduces technical risks. To mitigate this, the up-ending operation would need to be carried out slowly (over a period of 5-10 days) which make this a highly vulnerable to poor weather

6.2.4. Following up-ending, the draught of the Spar would be reduced from 102m to 15m, enabling it to be towed in a horizontal aspect to a suitable inshore location (e.g. Scapa Flow) for transfer to a semi-submersible cargo vessel. The horizontal tow from the up-ending site to a sheltered site involves a technical risk, since pumping equipment installed to facilitate the reverse up-ending would have to be removed prior to the tow. As a result of this, there would be no capability to remove any water that subsequently leaked into the buoy. This makes the Spar vulnerable to grounding or sinking in the event of damage occurring during the tow.

6.2.5. The 15m draft of the Spar is too deep for direct transfer onto a semi-submersible cargo vessel and would require two sheerlegs to lift it into position. The lift is also critically dependent upon weather and sea state, hence the preference to complete the operation in a sheltered area such as Scapa Flow. Once on the vessel, the Spar would be transported to a suitable onshore site for decontamination and breaking on the UK mainland.

6.3. OPTION 4 - DEEP WATER DISPOSAL [FIGURE OMITTED]

6.3.1. This option involves towing the Spar to a licensed deep water disposal site and sinking it. Seven principle engineering and marine operations have been identified. In relative terms, the option is considered technically simple and again, all aspects of the operation are within normal offshore industry practices. Proper disposal would require that the buoy does not implode or break up during sinking. The preferred method would be to use linear explosive devices to breach the ballast tanks and allow flooding of all the buoyancy compartments of the Spar.

6.3.2. Preparatory works would be required prior to the tow to remove as much of the 'regulated materials' as is reasonably practicable and to install explosive devices with dual fail-safe detonation system.

6.3.3. The tow and sinking operation would be carried out in the summer months. Its exact timing would be subject to the availability of a good weather window. No repairs would be required to the damaged tanks as the buoy has sufficient intrinsic buoyancy for the tow. The buoy would be towed in the vertical aspect from the Brent Field. Detailed route planning would be conducted to ensure the requirement for adequate water depth, sufficient clearance from installations and the need for sufficient sea room to manoeuvre should bad weather or accident result in loss of the tow. The first part of the tow, from the Spar's present location to the 200m depth contour, would be subject to a route survey, ahead of the tow.

6.4. SUMMARY OF ENGINEERING COMPLEXITY

6.4.1. While both options are technically feasible, deep sea disposal involves fewer operations (7 versus 19) and these are less complex and involve less technical risk than those required for horizontal dismantling. On this basis, the deep sea disposal option is preferred.

7 SAFETY AND RISK IMPLICATIONS

7.1. INTRODUCTION

7.1.1. Both options have a common safety and risk element regarding the initial entry and preparatory works aboard the Spar. This involves providing safe access to the buoy and will require ventilation of spaces, testing and monitoring of the atmosphere and placement of temporary life support, safety and fire systems. The safety and risk exposure during these works are comparable to those experienced in normal offshore construction activities.

7.2. OPTION 1 - HORIZONTAL DISMANTLING

7.2.1. The large number of activities required for this option means that it is highly labour intensive and involves some complex and potentially hazardous operations. The safety and risk exposures are consequently high (AURIS, 1994,2).

7.2.2. Risk analysis indicates that the probabilities of fatal injuries are between 0.030 - 0.088 for this option. This is due, in part, to the hazardous nature of some of the more complex operations, but mainly to the high exposures (large number of man hours) to the hazards of the onshore breaking operations.

7.2.3. The onshore breaking and disposal of the structure introduces significant potential for occupational health risks. The workforce would be exposed in varying degrees to low specific activity scales, asbestos, heavy metals etc., during the breaking and subsequent disposal of waste. Strict controls would be necessary to protect them from unnecessary exposures.

7.3. OPTION 4 - DEEP WATER DISPOSAL

7.3.1. This option involves a much smaller workforce and relatively straight forward marine operations. Consequently the exposures are low (AURIS, 1994,2).

7.3.2. Risk analysis indicates that the probabilities of a fatal injury occurring are between 0.005 - 0.014 for this option. This is due in part to the comparatively low hazard potential of the deep sea disposal operations, but is mainly the result of the low exposures (low number of man-hours) involved.

7.3.3. Occupational health risks will be minimal in this option, as onshore dismantling is not required.

7.4. SUMMARY OF SAFETY AND RISK IMPLICATIONS

7.4.1. The complex and labour intensive requirements of horizontal dismantling make the health and safety risks higher for this option than deep sea disposal. On this basis, the deep sea disposal option is preferred.

8. ENVIRONMENTAL CONSIDERATIONS

8.1. INTRODUCTION

8.1.1. Each option has the potential to affect different environments. Horizontal dismantling operations take place in the North Sea, the shallow coastal environment, an estuarine environment and the onshore dismantling and disposal locations. Deep sea disposal operation takes place in the North Sea and the NE Atlantic.

8.1.2. Brent Spar contains small, residual quantities of materials and substances which have the potential to cause impact if released to the environment. Three groups of materials have been subjected to particular consideration, these are heavy metals and quantities of other regulated materials, petrogenic hydrocarbons and naturally occurring radioactive materials.

8.2. OPTION 1 - HORIZONTAL DISMANTLING

8.2.1. Successful execution of the horizontal, onshore dismantling of the Spar would result in negligible impacts to the marine environment of the North Sea (AURIS, 1994,1).

8.2.2. Impacts to onshore, terrestrial environments associated with dismantling the buoy and the removal of its contents are considered mostly short lived and geographically localised, similar to the everyday impacts that might be experienced at any coastal, industrial facility.

8.2.3. Material retrieved from the buoy during onshore dismantling would either be sold for scrap, recycled or disposed of at authorised sites. These sites are properly designed, constructed and managed for disposal of materials and no impacts would be anticipated from these activities.

8.2.4. The complex operations involved create a potential for unplanned events to occur, and subsequent impact to North Sea or coastal environments through the accidental release of materials, or at worst, premature loss of the structure. Impacts from accidental releases would be confined to the immediate vicinity of the structure. Depending on the location, premature of loss of the structure could cause significant local impacts on fishing, shipping and other users of the sea, particularly if it occurred in a shallow water coastal area.

8.3. OPTION 4- DEEP WATER DISPOSAL

8.3.1. Successful execution of the deep water disposal option would result in small localised impacts at an authorised dumping site in the NE Atlantic. It would have little or no risk to the North Sea or coastal environments (AURIS, 1994,1 ;Metocean, 1993,8&9).

8.3.2. Regulated materials contained within the topsides of the Spar would be removed, as far as is reasonably practicable, in order to minimise any potential for environmental impact. These materials would be disposed of at authorised land-fill sites and no impacts are envisaged from these activities.

8.3.3. The deep ocean environment supports low densities of animals and a small range of species, and is essentially isolated from the surface and upper ocean. From the results of available deep ocean survey data, the environmental impacts of deep water disposal would be small and confined to a small area of the deep sea bed at the NE Atlantic disposal site, and to that part of the water column immediately adjacent to the sea bed.

8.3.4. Exploitation of resources of the deep ocean (> 1 ,500m) is currently limited to laying of submarine cables and military activities. The sites have been selected to avoid interactions with these interests. This option provides no potential for interaction with other resource users at the present time or, indeed, for the foreseeable future.

8.3.5. The potential for unplanned events exist during the tow. There is less risk of premature sinking of the Spar as its floatation in the vertical does not rely on integrity of the storage tanks. As the majority of the towing route is in deep water, away from the coast, the impact of premature sinking would be less significant than a similar event occurring in shallow coastal waters.

8.4. SUMMARY OF ENVIRONMENTAL CONSIDERATIONS

8.4.1. - The relatively small amount of contaminants on and in the Brent Spar means that the impacts arising from their discharge or release into any environment would be small and localised.

8.4.2. In the event of premature sinking of the Spar, the physical presence of the structure on the sea bed would be of greater significance to other users of the sea, in the shallow North Sea or coastal environment than in the deep waters of the North East Atlantic. Although the areas of the North Sea along the tow routes would be exposed to this risk in both options, only the horizontal dismantling option would expose the coastal environment to risks of this nature .

8.4.3. Deep sea disposal will have a small localised impact at the deep water disposal site but no effect on the coastal or onshore environment. As planned, horizontal dismantling will have negligible impacts on the marine environment, and any effects onshore will be extremely localised. However, there is greater potential for an unplanned event during horizontal dismantling, and if this were to occur in shallow inshore waters there could be a significant impact on other users of the sea. The environmental impacts of each option are therefore evenly balanced.

9. COST CONSIDERATIONS

9.1. INTRODUCTION

9.1.1. The cost estimates in this section have been compiled to reflect the latest figures derived during option development.

9.2. OPTION 1 - HORIZONTAL DISMANTLING

9.2.1. The Cost estimates for horizontal dismantling total £46 million. The cost breakdown is summarised below: _

1. TOPSIDES ACCESS a Engineering £953.6 b Offshore structural survey, DSV support £833.9 2. DISPOSAL a
Decommission & make safe £1 368.5 b Topsides removal engineering £489.7 c Topsides removal marine support £1
260.2 d Topsides salvage £1 456.9 e Spar body removal engineering £1 217.9 f Spar body removal (heavy lift vessel)
£6 468.1 9 Spar body removal (marine support) £13 567.1 h. Spar body salvage £5 355.4

CONTINGENCY (specific items) £6 594.2

Sub-Total (specific Items) £39 565.5

3. FEASIBILITY STUDIES £864.0 _

4 MANIFOLD COVER £1 317.8 _

5 DEBRIS CLEARANCE £468.5

6. PROJECT MANAGEMENT £2 671.6

CONTINGENCY (common items) £1 064. 4

Sub-Total (common items) £6 386.2

TOTAL £45 951.7

9.3. OPTION 4 - DEEP WATER DISPOSAL

9.3.1. The cost estimates for deep water disposal total ,11.8 million. The cost breakdown is summarised below:

1. TOPSIDES ACCESS/MATERIAL REMOVAL a Engineering/Procurement £638.0 b DSV support . £1 712.6

2. TOW & DISPOSE

a Concept design £329.0 b Phase 1 - engineering/testing £606.0 c Phase 2 - procurement/offshore implementation £1
944.0 d DSV support £964.0

.

CONTINGENCY (specific items) £1 238.9 Sub-Total (specific Items) £7 433.2

3. FEASIBILITY STUDIES £864.0 4. MANIFOLD COVER £1 317.8 5. DEBRIS CLEARANCE £468.5 6.
PROJECT MANAGEMENT £961.1 CONTINGENCY (common items) £722.3 Sub-Total (common items) ,4 333.6

TOTAL £11,766.8

9.4. SUMMARY OF COST CONSIDERATIONS

9.4.1.- Horizontal dismantling represents a significantly higher cost than deep water disposal. The more attractive option economically is deep sea disposal.

10. CONSULTATION PROCESS

10.1. CONSULTATIONS

10.1.1. Discussions on the proposed Abandonment Plan for the Brent Spar were initiated between Shell Expro and the Department of Trade and industry in 1992. Under the Petroleum Act 1987, consultation on the Abandonment Plan is required with the following organisations:

Government Bodies: Scottish National Heritage Joint Nature Conservancy Committee (Seabirds at Sea) Legitimate Users of the Sea: Scottish Fishermen's Federation (SFF) Orkney Fishermen's Association Firth of Forth Fishermen's Association Federation of Highlands and Islands Fishermen Western Isles Fishermen's Association British Telecom International

10.1.2. During the first quarter of 1994, Shell Expro notified these organisations of the proposed Abandonment Plan, appraised them of the options considered, and their preferred choice. Consultation meetings with the fishermens' organisations have also been held through the Scottish Fishermen's Federation. Detailed discussions have been held with the Scottish Office Agriculture and Fisheries Department, Her Majesty's Industrial Pollution Inspectorate and the Health and Safety Executive. Other interested government bodies were also notified of the Abandonment Plan, including the Ministry of Defence, Hydrographer of the Navy, Crown Estates Commissioners for Scotland and the Department of Transport.

10.2. ACCEPTABILITY

10.2.1. No objections have been raised to Shell Expro's conclusion that deep sea disposal is the preferred option for abandoning the Brent Spar.

11. OPTION SELECTION

11.1. BEST PRACTICABLE ENVIRONMENTAL OPTION

11.1.1. From a technical perspective the deep sea disposal option is demonstrated to be simpler than the horizontal dismantling option. The latter involves more complex engineering and marine operations and higher risk of unplanned events and technical uncertainties.

11.1.2. The safety and risk implications demonstrate that the complex and labour intensive activities involved in horizontal dismantling constitutes a higher safety and risk exposure to the workforce, compared to deep sea disposal.

11.1.3. In either option, it can be demonstrated that there is a small or negligible environmental impact. The operations associated with the deep water disposal would have small localised effects at the deep water site. The planned operations associated with onshore dismantling and disposal would have negligible impacts.

11.1.4. Although horizontal dismantling would lead to negligible environmental effects, provided no-mishaps occur, the more complicated activities involved lead to an increased potential for unplanned events. The areas that might be affected have higher sensitivity than those affected by deep sea disposal, particularly in the event of premature loss of the buoy where the physical presence of the wreck could present an obstruction to shipping or fishing activities.

11.1.5. From a cost perspective the deep water option is significantly less expensive compared with horizontal onshore disposal.

11.1.6. Consultations have been held with responsible government departments and other interested parties. No objections to the deep water disposal option have been raised.

11.2. CONCLUSION

The Best Practicable Environmental Option assessment significantly favours Deep Sea Disposal of the Brent Spar on the basis that:

Alternative methods are technically complex

It greatly reduces the risks to personnel engaged in the abandonment

It offers negligible environmental disadvantages and reduces the risk to other assets and resources at sea and on the coast

It is the lowest cost option It is acceptable to the authorities and their consultees

The Deep Sea Disposal option has therefore been selected for the abandonment of the Brent Spar Buoy in the 2nd and 3rd quarters of 1995.

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CHAPTER 5
CONCLUSIONS, IMPLICATIONS, AND DIRECTIONS FOR FUTURE RESEARCH

This dissertation, as mentioned in the introduction, studies the dynamics of reputational crises. Among others, the causes, effects, intensity, stakeholder reactions, and managerial responses associated with a reputational crisis are investigated. This is achieved, through three independent but related papers, which have been presented as chapters two, three, and four. However, as each paper has its own goals, an effort to integrate the findings and conclusions of the papers into the overall goal of the dissertation is made in this section. While there are many questions one could ask about the dynamics of reputational crises, this section focuses only on three questions, which have been already introduced in chapter one, and, are used as an integration device for the findings of the three papers of the dissertation. These questions are:

1. **How do different kinds of 'negative' events cause reputational crises?**
2. **What factors influence the intensity of a reputational crisis?**
3. **What determines the reactions of managers faced with a reputational crisis?**

In order to achieve its goal of integrating the findings from the three papers around the above questions, this section is organized as follows. First, the conclusions and findings from each paper (chapters 2,3 and 4) are briefly summarized. Second, drawing

on these findings, each of the above questions is addressed. Third, the research implications of the work presented in this dissertation for the fields of strategic management and business and society are being discussed. And, finally, the section concludes with a discussion of future research directions that follow from the research presented in this dissertation.

BRIEF REVIEW OF PAPERS

Chapter Two

Chapter two is a theoretical exploration of the management of corporate reputation crises. Drawing on the stakeholder, reputation management and crisis management literatures, and using the Union Carbide disaster at Bhopal and the Exxon Valdez disaster at Valdez, Alaska for illustration purposes, a model for reputational crises is developed, and a number of propositions suggested. The contribution of these propositions can be summarised as follows. First, concerning triggering events, it was argued that the severity of a triggering event can not only have an impact on the issues underlying the firm's relationships with its existing stakeholders, but in cases of triggering events of great severity, new stakeholder groups can be formed. In addition, it was argued that the greater the plausible deniability of a triggering event, the less severe its reputational impact.

Second, concerning the interpretations and reactions of stakeholders, the position supported was that stakeholders not only tend to interpret triggering events according to the issues that are of concern to them, but also that they take into consideration the firm's

prior reputation – especially in cases characterised by high levels of plausible deniability. Third, concerning the interpretations and responses of mangers, it was argued that managerial responsiveness is positively related with the levels of power, legitimacy and urgency of the stakeholders involved, but that stakeholder power would have primacy over the other two. In addition, it was argued that stakeholder power should have positive influence on the management's choice of a bridging strategy, and a negative one on the management's choice of a buffering strategy, while, the opposite would be expected to hold for organizational size.

Chapter Three

Chapter 3 investigates the impact that accident characteristics can have on the corporate reputation of business firms. Drawing on the literatures of industrial crises, corporate reputation, and stakeholder theory, a number of hypotheses are developed and empirically tested. The main findings from this paper can be summed up as follows. First, it was found that accident characteristics can have an impact on the reputational re-evaluations of various stakeholder groups. However, this impact was found to differ between the two stakeholder groups (executives and analysts) that were examined. It was found that industry executives were influenced by media attention and accident severity with respect to environmental damage, while industry analysts were not influenced. In addition, it was found that accident complexity and blame did not have an impact with the reputational re-evaluations of any stakeholder group.

Chapter Four

Chapter 4 draws on the Brent Spar controversy to investigate the main factors influencing Shell's initial decision to buffer and its subsequent reversal into a bridging position. This in depth investigation into a unique and extreme reputational crisis provided numerous insights concerning the reasons behind the decision of a firm facing a reputational crisis to follow a buffering or a bridging strategy, the factors that might influence the firm's possible reversal from buffering to bridging, and the role of stakeholder salience in all this. These insights have been summarized in thirteen propositions, a summary of which follows.

First, concerning the potential acquisition of legitimacy from illegitimate acts by social activist organizations (Elsbach and Sutton, 1992), the findings from this research indicate that this is possible even without decoupling and justifications and defenses of innocence. This is so, when these illegitimate acts are actions of passive resistance. Second, the findings from this research indicate a number of factors that can have a negative or positive influence on the decision of management to follow a bridging or a buffering strategy. These factors are: cost of related strategy, managerial beliefs or wrong-doing, managerial expectations, pressure from powerful stakeholders, and relative organizational size. Third, concerning the chances that a firm facing a reputation crises will reverse its strategy from a buffering to a bridging one, the findings from this research indicate a number of factors that can have a positive impact on this possibility. These factors are: the power, legitimacy, and urgency of the stakeholders involved, the visibility and publicity received by the event, the presence of a critical stakeholder, and

environmental uncertainty. Finally, concerning the estimation of stakeholder salience by managers, this research suggests that this would be harder the greater the number of stakeholders involved, the greater the proportion of new stakeholders, the greater the number of interactions among these stakeholders, and the shorter the time span of unfolding events.

INTEGRATING THE RESEARCH FINDINGS

1. How do different kinds of 'negative' events cause reputational crises?

In an attempt to answer this question one would have to start by briefly looking at the kinds of 'negative' events examined in this dissertation. In chapter two, two accidents (Exxon Valdez and Union Carbide Bhopal) were used for illustrative purposes. In chapter three, the reputational impact of three kinds of accidents (chemical/oil spills, railway accidents, and airline accidents) was examined in a more systematic way. While in chapter four, the reputational impact around a controversial decision by Shell UK about the disposal of an oil platform was investigated. Of course more kinds of negative events than the ones investigated in this dissertation, such as scandals and product safety incidents (Marcus and Goodman, 1995), can cause a reputational crisis. However, if not all kinds of possible negative events have been investigated in this work, from the theoretical developments and drawing on the similarities of the events investigated empirically here, the following tentative answer to the above question can be suggested.

What these negative, or triggering, events have in common is that they can all cause damage to some stakeholder group of the firm, and depending on the severity of the damage, new stakeholder groups can even be formed. The major negative reputational re-

evaluations, that are for all practical purposes what is meant by the term 'reputational crisis', can be seen as a direct or indirect result of the 'damage' that some stakeholder group(s) suffered. There are at least two, not mutually exclusive, ways that this can happen. First, the stakeholders who suffered damage because of the triggering event will re-evaluate in a negative way their opinions about the firm. If these stakeholders are numerous and/or powerful enough, they can cause a reputational crisis. Second, stakeholders, who did not suffer any immediate damage, but, who became aware of the event because of the publicity it received or because of their interaction with stakeholders who directly suffered because of it, might also re-evaluate in a negative way their opinions about the firm. They might re-evaluate their opinions due to two kinds of reasons, emotional – sympathy for the suffering stakeholders – or rational – they might perceive the events as a threat to their interests in the company. However, as can be clearly seen from the theoretical argumentation in chapter two, and the empirical findings of chapters three and four, stakeholders do not interpret events in the same way. The findings from this research indicate that the more 'dissimilar' stakeholders are, the more divergent their interpretations of, and therefore, their reactions to, the events will be[1]. Some of the factors that seem to influence the intensity of stakeholder reactions and, therefore, the intensity of a reputational crisis are discussed following.

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1 In chapter 2, based on theoretical argumentation this can be expected as a consequence of proposition 4. In chapter 3, this is indicated by the fact that executives and analysts, two stakeholder groups relatively 'similar' to each other, seemed to have paid attention to different factors. And, finally, from chapter 4, the divergent reactions to the same event by different stakeholders can be seen from the whole range of reactions of the various Shell stakeholders to the Brent Spar case.

2. What factors influence the intensity of a reputational crisis?

From the three papers of this dissertation, the following factors can be seen as playing a role in the intensity, or severity of a reputational crisis: (1) Event Severity, (2) Blame (the reverse of the notion of plausible deniability), (3) Media attention, (4) Event complexity, (5) Managerial responses, (6) Existence of a critical stakeholder, (7) Stakeholder characteristics, and (8) Stakeholder pre-disposition.

(1) Event Severity, as has been argued in chapter two, can be expected to be positively associated with the severity of the reputational crisis. Based on this rationale, in chapter three the reputational impact of the severity of accidents with respect to environmental damage and human life was investigated. In the case of environmental damage, the expected association between accident severity and reputational damage was found. However, accident severity with respect to human life was not found to be significant with any of the stakeholder groups investigated – a controversial finding in need of further investigation.

(2) Blame, or its reverse plausible deniability, should be expected to have an impact on the reputational losses of a firm. However, according to evidence from chapter three, blame, although its coefficient was in the direction predicted, was not found to have a significant impact on the severity of reputational losses, at least in the case of accidents.

(3) Media attention. From the argumentation of chapter two, it should be expected that the greater the media attention of an event, the greater the reputational damage the firm associated with it would suffer. However, in chapter three, this was found to hold only for the reputational re-evaluations at the collective and executive

levels, while it did not hold for investment analysts. This finding was, to a certain extent, re-confirmed by the role of media attention in the intensification of the reputational crisis that Shell faced, in chapter four.

(4) Event complexity. Event complexity, as argued in chapter two was expected to play a negative role in the intensity of a reputational crisis. However, evidence from chapter three suggests that complexity did not play a significant role in the case of reputational losses due to accidents.

(5) Managerial responses. According to the argumentation in chapter two, a bridging strategy would be more successful in reducing the severity of a reputational crisis than a buffering approach. And, to a certain extent this was confirmed by the evidence of chapter four, where Shell had to reverse to a bridging strategy in order to recover, to the extent possible, its reputational losses.

(6) Existence of a critical stakeholder. On the evidence of chapter four, it would seem that the existence of a critical stakeholder, like Greenpeace in the Brent Spar case, who would be willing and able to champion the needs of the 'victimized' stakeholders and campaign against the company's position, is something that would tend to intensify the severity of the crisis.

(7) Stakeholder characteristics. In chapter two, drawing on prior theoretical research in the relevant fields (Mitchell, et al., 1997; Näsi, et al., 1997) it was argued that while power, legitimacy, and urgency behind stakeholder claims would play a role in determining stakeholder interpretations and reactions; power would have supremacy over legitimacy and urgency. According to the evidence from chapter four, it seems that this might be the case if one was to take a static perspective of reputational crises. However,

if one was to include stakeholder interactions over time, all three characteristics played a role in determining the final outcome of a reputational crisis.

(8) Stakeholder pre-disposition includes two aspects to it. First, the prior reputation of the company with the particular stakeholder group seems to play a role in their reputational re-evaluations, as has been argued on theoretical grounds in chapter two. And second, the values, beliefs, and attitudes of stakeholders towards an event or a particular type of events can play a role in their reputational re-evaluations. This can be clearly seen in chapter four, where the divergent reactions to the Brent Spar's offshore disposal of the UK consumers versus the continental European ones (Germany, Holland, Danemark), was influenced by the levels of environmentalism[2] prevalent in their respective countries.

3. What determines the reactions of managers faced with a reputational crisis?

Since two kinds of 'strategies' have been investigated in this dissertation as possible managerial responses to a reputational crisis, buffering and bridging, the factors that seem to play a role in the choice of one over the other are presented here. Drawing, for the greater part, on chapter four, two sets of factors can be identified as playing a role in the decision of managers to buffer or to bridge. A set of factors related to the firm, and a set of factors related to the firm's environment.

Firm factors influencing the decision of managers to buffer or bridge would include the cost differential between the two options, the convictions of managers with respect to their being right or wrong, their general expectations from following a

2 Referred to as level of 'greenness' by a member of Greenpeace.

buffering or bridging approach, and possibly the relative size of the firm. In addition, external or environmental factors influencing the decision of firm managers to buffer or bridge would, in turn, include the attitudes of powerful stakeholders towards the firm, the existence and ability of a critical stakeholder, uncertainty, and in general the power of the environment on the firm.

Of course the answers to the above questions are far from being complete. However, it is hoped that the findings from this research have contributed to the discourses in the fields of strategic management and business and society by raising the level of discussion and contributing to the research processes in these fields. A brief review of the implications from this research follows.

IMPLICATIONS

From the research presented in this dissertation, implications for both the fields of strategic management and business and society can be identified. The research presented here has implications for the field of strategic management because it deals with sudden losses of one of the most important intangible resources of the firm, its corporate reputation. In addition, the research in this dissertation has implications for the field of business and society because the processes through which a firm can suffer sudden reputational losses are embedded and influence the broader society within which the firm exists and operates.

As mentioned in chapter one, within the field of strategic management, there are three types of studies dealing with corporate reputation. First, there are theoretical studies, which argue for the potential strategic value of corporate reputation. Second,

there are empirical studies that try to determine the strategic value of corporate reputation through its association with performance measures. And, third, there are empirical studies that try to determine the value of corporate reputation by examining the value that different constituents place on the corporate reputation of the firm. Implications and contributions from the research presented in this dissertation can be identified for the first and third types of studies.

This dissertation[3] contributes to the first kind theoretical studies on corporate reputation by developing further and exploring the stakeholder nature of corporate reputation. The implications from this contribution are twofold. First, the multidimensional and stakeholder specific nature of corporate reputation is further developed. And, second, it becomes clear that the management of corporate reputation is related to stakeholder management, since reputational crises are conceptualized as events that disturb the network of stakeholder relationships within which the business firm exists.

Concerning the third type of empirical studies within the strategic management domain, this dissertation[4] contributes by examining the ways that different stakeholder groups re-evaluate their opinions about a firm because of a particular event. And, a better understanding of the factors that impact the firm's reputation with a particular stakeholder group can improve the value of the firm's reputation with a specific stakeholder group as an indicators for a broader reputational assessment. And, in addition, understanding the factors influencing the view of different stakeholders can also

3 Mostly chapter 2.
4 Mostly chapters 3 and 4.

improve the fields understanding of what kind of events and when can these events prevent corporate reputation from being a source of competitive advantage.

In the field of business and society, as has been mentioned in the introduction, corporate reputation is examined as a mediating variable between corporate responsibility and financial performance. As described in the introduction, corporate reputation can be seen as a cause or as an effect of corporate social responsibility. However, the research in the papers presented in this dissertation would suggest that the interactions between corporate reputation and corporate social responsibility are much more complex and the result of an interactive process between the various stakeholder groups surrounding the firm and its management.

DIRECTIONS FOR FUTURE RESEARCH

Although many directions for further research can be reasonably identified from the work presented in this dissertation, three directions are identified here as the most prevalent ones. First, further research needs to address and investigate 'what kinds of events can cause reputational crises?' Second, there is a need to further investigate the processes through which different events can cause a reputational crisis. And, third, the effectiveness of different types of managerial responses to different types of crises needs to be investigated.

In investigating the kinds of events that can cause a reputational crisis, at least, two ways of proceeding are conceivable. First, one could start by identifying significantly large reputational drops, as indicators of reputational crises, and then trying to deduce

their causes from the events that occurred to the business firm during the relevant time frame. Of course, the main difficulty with this method is the establishment of a causal relationship between the event and the reported reputational losses. This causal relationship could be argued for on theoretical grounds after repeated similar findings, or an experimental type design – utilising raters - could be used to bridge the 'causality' gap between events and reputational losses. Second, one could try and identify the events that can cause reputational crises by examining, in a manner similar to the ones used in chapters three and four, the reputational impact of various events, such as major strategic re-orientations, scandals, financial downturns, mergers and take-overs, or major downsizing decisions and divestments. In other words, one could try to find the causes of a reputational crisis, starting from the crisis and going 'back' to its causes or by starting from the event and going 'forward' to its reputational impact.

Second, in investigating further the processes through which particular events can cause a reputational crisis to the firm, two paths, again, can be seen. First, reputational crises could be studied in a holistic way in an attempt to identify the major processes through which stakeholders were influenced. Or, second, specific processes or even factors can be 'singled out' and their role investigated across numerous reputational crises. It would seem that the first type of study would be more amenable to case study research, which can provide deep insights due to the richness of its material. While the second type of study would be more amenable to statistical methods, which can provide findings of greater power and generalizability. Finally, in investigating the effectiveness of different types of managerial responses to different types of crises, a case study

methodology using polar cases of successful versus unsuccessful reputational recoveries for different types of crises, and/or managerial responses could be used.

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