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Crisis management in organizations: an exploratory study of factors that affect strategy formation and selection

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CRISIS MANAGEMENT IN ORGANIZATIONS: AN EXPLORATORY STUDY OF
FACTORS THAT AFFECT STRATEGY FORMATION AND SELECTION

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
In partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Manship School of Mass Communication

by
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B.Sc., Delhi University, 1995
M.S., Ohio University, 2005
August 2011

DEDICATION

To my parents, Rita and Arun; my son, Jyotiraditya; and my sister, Sonali without whose

boundless patience, support, understanding, and love this dissertation would have been

impossible to complete.

I love you.

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ABSTRACT

This study investigated factors that influence the strategic decision-making process, specifically, strategy formation and selection during a crisis. It accomplished this by integrating theoretical concepts from both strategic management and crisis communication literature. Key organizational, environmental, and management factors--comprehensiveness, formalization, uncertainty, politicization, external corporate environment, crisis responsibility, impact of the crisis, stakeholder interests, and top management characteristics --were tested for their role in the strategy formation and selection process using regression analysis.

This study used both quantitative and qualitative research methods. The quantitative aspect of the research involved conducting online surveys of senior management within the chemical industry and the qualitative phase of the project involved conducting in-depth interview with top management within chemical organization.

The findings of this study indicate that decision-making during a crisis follows a logical incrementalism path and not a linear sequential path as implicit in the crisis communication literature. Decision-making during a crisis is influenced by a host of factors, most significantly by uncertainty, politicization, formalization and standardization, financial reporting, stakeholder interests, external corporate environment, and impact of the crisis. Even though some ready-made solutions might be available, decision-makers have to consider the organizational context as much as the content of the strategy to manage the crisis. Development and refinement of the alternatives have to be done to reach the most satisfactory solution to the problem.

This dissertation develops a model of strategy formation and selection in chemical organizations. In addition, this dissertation recommends a set of best practices that communication managers within a chemical organization will be able to adopt to better prepare for crisis. Other implications and future areas for research are suggested.

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CHAPTER 1. INTRODUCTION

Modern organizations it appears are more prone to crisis as evidenced by the recent spate of crises covered in the media. Even though such an assumption might be flawed, an argument can be made that advancement in technology and the concomitant rise in complexity of modern living have increased the likelihood of the occurrence of accidents. Though organizations might experience crises of varying magnitude on a fairly regular basis, in some instances, the type of the organization itself might exponentially increase the risks or damages associated with these crises. The often hazardous, toxic, and the inflammable nature of the chemical products manufactured by the chemical industry makes it particularly relevant to examine crisis communication strategies. Correspondingly, it seemed reasonable to assume that since the chemical industry function in a highly risky environment, it would have comparatively well-developed crisis communication strategies, which would make it germane to the examination of crisis communication. Even so, when a crisis does not directly affect the chemical industry directly, as in the case of hurricanes Katrina and Rita, the consequences for the chemical industry were relatively more devastating than other industries. In a more recent crisis that struck the chemical industry, the case of the Deepwater Horizon oil spill on April 22, 2010 (Yarett & Jones, 2010) it is clear even to a casual observer the impact it can have on the lives of people and the environment. These types of events therefore, underscore the importance of studying crisis communication within the chemical industry. This study is therefore, limited to the examination of crisis communication strategies with the chemical industry.

A substantial amount of research (Allen & Caillouet, 1994; Benoit & Brinson, 1994; Hearit, 1996; Coombs, 1998; Coombs, 2002; Vlad, Sallot, & Reber, 2006) within crisis communications focuses on the selection of the most optimal strategy; while important, it is equally important to understand strategic decision-making as it is and not merely as it might be.

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The purpose of this dissertation is to understand how managers formulate and select strategies during a crisis. The proposed framework is based on the contingency model that assumes that strategy selection is contingent upon the characteristics of the decision-maker, the nature of the decision task, and the external environmental heterogeneity. The contingency model is evident in many areas of management, for example, in leadership, organizational design, and investment decision-making; (Beach & Mitchell, 1977); however, it has not been used to examine strategy formulation and selection during a crisis.

The field of public relations is experiencing changes and there has been a perceptible shift from tactical communications to strategic communications. Tactical communication roles involve making day-to-day decisions on many practical issues, such as should a news release be sent out or should a press conference be organized. Strategic managers' roles, on the other hand, involve tracking management trends, monitoring issues, and policies. The strategic manager has a long-term approach to managing issues, whereas the tactical managers or the technicians take a short-term approach to managing problems. Furthermore, strategic planning involves decision-making based on concrete and informed reasoning and tactical planners make decisions based on common wisdom.

Increasingly, it has been observed that businesses and non-profit organizations seek to employ public relations practitioners who can solve problems creatively and effectively, and exploit opportunities. It is no longer enough to know *how to do* things but *what to do* and *why* and *how to* evaluate the effectiveness of the chosen approach. Public relations professionals are now expected to have competency in conducting research, making decisions, and solving problems. A thorough knowledge and understanding of the process of strategic decision-making on the part of public relations professionals will position them better in their roles of advisors and counselors to the top management. Strategy is one of the senior management's top tools to

cope with changes and to formulate organizational goals and objectives, allocate discretionary

resources, and forecast future performances of the organization (Hofer & Schendel, 1978). It

seems appropriate therefore that public relations professionals become acquainted with strategy

process. However, no scholarship exists within public relations literature that examines the

strategy formation during an organizational crisis. This study is aimed at filling this gap.

This dissertation study will draw on the strategy literature within the management

discipline and extend it to crisis communication literature to examine how it can explain strategy

formation and selection in organizations during a crisis. Specifically, this study will test three

regression models of decision-making—Determination of the nature of the crisis (decision-

problem), strategy formation, and strategy selection-- to investigate the factors that affect

managerial decision-making during a crisis. The factors influencing decision-makers have been

drawn from an extensive review of the different approaches to strategy within the management

literature.

Brief Overview of Strategy within Strategic Management

Broadly, strategy scholarship within the discipline of management has been approached

in four ways. These approaches are based primarily on the outcomes of strategy. Whittington

(2001) succinctly delineates these four basic approaches to "doing" strategy – Classical

(Rational); Evolutionary (Fatalistic); Processual (Pragmatic); and Systemic (Relativist) – all of

which have radically different implications for strategy formation.

> The rational approach or the classical approach, the oldest and the most influential, relies
> on rational planning method. The evolutionary approach rests on the fatalistic metaphor of
> biological evolution as an adaptation to the environment. Processualists rely on the
> practical accommodation to both the market and the organization. Finally, the systemic
> approach is relativistic regarding the ends and means as linked to the cultures and powers
> of the local social systems (Whittington, 2001, p. 2).

Classical and evolutionary approaches see profit maximization as the natural outcome of

the strategy formation, whereas systemic and processual approaches are pluralistic and envision

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other goals besides profit maximization. However, while classical and systemic approaches view

strategy as a deliberate process, evolutionary and processual approaches view strategy formation

as an emergent process (Whittington, 2001).

Yet other scholars have identified additional ways to organize the development in the

strategy literature. This dichotomy in delineation of the strategy literature stems from the fact

that scholars are divided on whether the strategy should focus on the outcomes of the strategy or

the process of strategy formation.

Mintzberg (1990) used the fable of blind men and the elephant to outline ten schools of

strategy formation. According to this fable, each blind man described some part of the elephant

(the strategy formation process) but failed to visualize the whole animal. Mintzberg (1990)

arranged these schools into three groups – *prescriptive schools* concerned with how strategies

should be formed; *descriptive schools* that described strategy formation as a formal systematic

process; and the *positioning school* that focuses on the selection of the most strategic position.

The ten schools Mintzberg (1990) identified are a) The Design School; b) The Planning School;

c) The Positioning School; d) The Entrepreneurial School; e) The Cognitive School; f) The

Learning School; g) The Political School; h) The Cultural School; i) The Environment School;

and j) The Configuration School.

The *design school* is premised on the fact that strategy formation should be a conscious

process, which is developed neither intuitively nor in an emergent fashion but based on formal

training. The *planning school* recommends that strategy formation should be a formal process

decomposed into distinct steps each delineated by checklists and supported by techniques. The

positioning school proposes that strategies are strategic positions in the marketplace. These three

schools represent the prescriptive group of strategy formation schools (Mintzberg, 1990).

The next six groups of schools typify the descriptive schools of strategy formation. The *entrepreneurial school* views strategy formation as the vision of a single leader rooted that is rooted in his or her experience and intuition. The *cognitive school* views strategy formation as a cognitive process that takes place in the mind of the strategist and as a result, varies significantly depending upon the cognitive abilities of the strategist. The *learning school* posits that the complex and dynamic nature of the organization's environment, in combination with variable diffusion of knowledge through the organization, precludes the formation of deliberate planned strategies. Strategies therefore, emerge as a result of learning over a period of time. The *political school* states that strategy formation is fundamentally a political process where legitimate and illegitimate means are used to arrive at strategies, which often generates conflicts. The *cultural school* states that strategy formation is fundamentally a process of collective behavior based on the shared beliefs of the members of an organization. The *environmental school* views strategy formation as a passive process where strategies emerged passively. The environmental factors force organizations into niches, and those organizations that do not adapt are eventually selected out (Mintzberg, 1990).

The last school, the *configurational* school, views strategy formation as an episodic process. Proponents integrate strategy-making processes, the content of strategies, and structure and contexts at distinct stages or episodes in an organization's history and sequence them over time in its life cycle (Mintzberg, 1990).

The different approaches to strategy formation are in part driven by different characterization of the concept of strategy itself. Each approach has its own view of strategy and it reflects in how managers might form strategy within an organization. Following are some leading explanation of strategy within the strategic management literature.

In his seminal work *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*, Alfred Chandler (1962) defined strategy as "the determination of long-term goals and objectives of an enterprise and the adoption of a course of action and the allocation of resources necessary for carrying out these goals" (p. 13). However, Chandler (1962) did not differentiate between the processes used to formulate a strategy and the content of the strategy itself.

Ansoff (1965) was chief among the leading strategy scholars to focus primarily on strategy. He conceptualized strategy as "a common thread" among an organization's products/markets scope (the products or markets the firm was in); growth vector (the changes the firm planned to make in its product/market scope); competitive advantage (properties of individual market/product that gave it a competitive position); and synergy (a measure of joint effects, i.e., where 2+2=5) that is the rule for making decisions determined by product/market scope, growth vector, competitive advantage, and synergy.

Hofer and Schendel (1978) viewed strategy as "the match between an organization's resources and skills and the environmental opportunities and risks it faces, and the purposes it wishes to accomplish" (p. 11). In other words, strategy is the link between the goals and objectives an organization wants to achieve and the various functional-area policies and operating plans it uses to guide its day-to-day activities. Hofer and Schendel (1978) also identified a hierarchy of strategies: corporate and business strategies. Corporate strategies focus on determining in which businesses to compete, and business strategies focus on how to compete within a business. According to this view, strategy formulation is an unstructured problem solving process that follows a sequential path of goal formulation, issue identification, alternative generation, alternative evaluation, selection, and implementation.

Synthesis Strategy scholars have expressed their growing dissatisfaction with the conventional strategy research (Whittington, et al., 2002; Jarzabkowski & Spee, 2009). Until recently, conventional strategy research was dominated by the theories of microeconomics. In a shift toward humanizing the strategy research area, scholars have focused their attention on bringing the individual or the manager into the equation. The argument is that humans and not organizations make the strategic decisions; therefore, individuals should be the focus of strategy research (Johnson et al., 2003, 2007). Even theoretical concepts such as the resource based view of the firm that examine the role of managers in strategic decision making do so in a limited way (Johnson et al., 2003, 2007) because they focus primarily on the top management. Moreover, these findings frequently investigate the influence of demographic characteristics, such as age, tenure, and functional background with respect to firm performance (Jarzabkowski & Spee, 2009). In doing so, mainstream strategy research has overlooked the motivations and actions that shape strategy.

An offshoot of this discontent or dissatisfaction with conventional or mainstream strategy research has been the development of strategy-as-practice research field. "Strategy-as-practice as a research is concerned with the doing of the strategy; i.e., who does it, how do they do it, what do they use, and with what implications" (Jarzabkowski & Spee, 2009, p. 69). Under this perspective, researchers focus on macro-social structures or actors (such as business schools, business media, and business consultants) which bring forth different strategic practices that influence strategizing within firms (Johnson et al. 2003; Jarzabkowski 2004, 2005; Wilson & Jarzabkowski 2004). The broad parameters of strategy-as- practice field includes the study of practitioners (people who do the work of strategy); practices (the social symbolic and material tools through which strategy work is done); and praxis (the flow of activity through which

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strategy work is accomplished (Whittington, 2006a; Johnson et al., 2007; Jarzabkowski & Spee, 2009).

This emphasis given to strategy-as-practice has advanced a praxiological perspective of strategy research that recognizes, on the one hand, "organizational field of strategy" (Whittington et al., 2003) or the macro level that holds different management practices, and on the other hand, concrete situated praxis at the micro level such as SWOT Analyses, Portfolio Matrices, Porter's Five Forces Framework (Rigby, 2003). Specifically, the practitioners select their strategies from the organizational field of practices and applies them to his/her concrete situation. In its application, however, the practice changes (Jarzabkowski & Spee, 2009) since it is a context specific interpretation of the abstract practice (Orlikowski, 2000; Ortmann & Salzmann, 2002). In this sense, micro and macro perspectives are mutually constitutive, i.e., as practitioners synthesize or interpret these practices, they reproduce and occasionally amend the stock of practices on which they will draw upon in the next round of strategizing praxis (Whittington, 2002a).

Although this strain of research has gained currency, another distinctive type of research examines a network of actors and the diffusion of strategies among them. This research does not recognize the macro and the micro perspectives forwarded by the proponents of strategy–as –practice. Instead, it proposes that management concepts are actively translated from practitioner to practitioner and not selected from a stock of given management repertoire of strategies (Czarniawska & Sevón 1996). A number of strategy scholars have explained the rationale behind organizations drawing on such general strategy concepts or labels based on several theoretical perspectives such as internal and external legitimation (Meyer & Rowan, 1977), complexity reduction (Kieser, 2002) and 'deparadoxization' of the paradox of strategic decision-making

(Ortmann & Salzman, 2002). Consequently, all strategy concepts ultimately need to be explained on the basis of the processes within the particular organizational context.

Other strategy scholars (Kieser, 2002; Nicolai, 2004; Kieser & Nicolai, 2005), however, challenge the notion of translation of strategies from one context to another. It is premised on the fact that different contexts make it impossible to translate strategies. This line of research within strategy emphasizes the self-referential logic of discourse that makes direct communication across different contexts impossible (Jarzabkowski & Spee, 2009). It draws on the concept of "language games" (Wittgenstein, 2001) and Luhmann's concept of self-referentially closed communications systems (Luhmann's 2003, 2005b). The underlying principle of this line of research into strategy is that social events are conceptualized as communications that are fundamentally bound with the social context in which they are embedded, i.e., strategies as social events are context specific and are therefore, not readily transferrable. The advocates of this area of research argue that the limitations in the transferability of concepts across different domains cannot be overcome with better communications over time, and therefore, different meanings of strategies in different contexts as an area of inquiry should be explored further (Jarzabkowski & Spee, 2009).

The implications of this area of research into strategy suggest that concept used within a particular organization has to be understood as the organization's own construct. Strategy concepts developed and propagated in other discourses (e.g. in a consulting discourse or in a business school) can stimulate organizations to develop their own strategy concepts in response, but they never enter the organization as such (Luhmann 2000; 2005a). In other words, different organizations might use the same labels for their strategy concepts, but the concrete practices behind the labels could be different. It has been shown, for example, that the label 'lean

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management' has been used in different companies for very different practices (Benders & Bijsterveld, 2000).

The field of strategy research is a rich tapestry of multitude strands of research areas that while informing one another retain their distinctiveness that researchers have yet to combine into a single hue. Given the diversity in the research approaches to strategy and the complexity of the modern organizations, it is neither desirable nor feasible to combine the different approaches to doing strategy to create one unified mass of strategy research literature. This would mean sacrificing the richness and the granularity of research for cohesion, which in the end would not serve any organizational need for strategy development resource.

Brief Overview of Strategy within Public Relations

Scholars within public relations have scarcely addressed the concept of strategy directly. Oliver (2007) is one public relations scholar who has specifically addressed the issue of strategy formation. Oliver (2007) borrowed from the strategic management literature to describe the four generic models of strategy formation as delineated by the four approaches: Classical, Evolutionary, Processual, and Systemic. These four approaches have shadowed the history of public relations. Additionally, Oliver (2007) also pointed out that it is common practice for strategy formation to take place at three levels: the macro level (corporate level); micro level (business/unit level); and the individual/team or operational level. Irrespective of the structure, strategy formation process at different levels must be consistent. There is often a lack of recognition of strategic decisions being made at different levels, and so the role of the public relations specialist is to ensure that consistency in decision-making (Oliver, 2009).

Strategy within public relations has been examined primarily through the development and execution of a public communications campaign. According to this view, strategic communication is a planned communication that is purposive. It has goals and objectives, and a

plan in which alternatives are considered and decisions are based on the selection of the best

alternative within a particular environment that involves both the organization and the groups of

people who affect it in some way. Strategic communication is either informational or persuasive.

Its common purpose is either to build understanding or support for ideas, causes, products, or

services.

Researchers within strategic public relations recognize or advocate some form of the

four phases of research. John Marston (1963) uses the acronym RACE (Research, Action,

Communication, and Evaluation). Jerry Hendrix (2006) used the acronym ROPE (Research,

Objectives, Program, and Evaluation); Robert Kendall (1997) offered another variation, calling it

RAISE (Research, Adaptation, Implementation, Strategy, and Evaluation). Kathleen Kelly

(2001) proposed ROPES (Research, Objectives, Program, Evaluation, and Stewardship), and

Sheila Crifasi (2000) coined ROSIE (Research, Objectives, Strategies, Implementation, and

Evaluation).

Smith (2009) argued that while mnemonics can be useful, they should not be restricting.

The four stages of communication planning are more complex than the acronyms suggest. He

proposed *Nine Steps of Strategic Public Relations*, which he grouped into four phases: Formative

Research; Strategy; Tactics; and Evaluative Research. The *Formative Research* phase includes

analyzing the situation; analyzing the public; and analyzing the organization. The *Strategy* phase

involves establishing goals and objectives; formulating action and response strategies; and

developing the message strategy. The *Tactics* phase involves selecting communication strategies

and implementing the strategic plan, and *Evaluative Research* involves evaluating the strategic

plan.

Strategy, in this case, is seen as the heart of planning, which includes making decisions

about the expected impact of the communication, as well as the nature of the communication

itself. Goals and objectives focus on the ultimate position that the organization seeks for its products, services, or cause. This step leads to the development of measureable objectives for awareness, acceptance of the message, or success of the actions taken. Formulation of action and response strategies is the range of actions available to the organization and includes typologies of public relations initiatives and responses. Message strategy involves making decisions about the content of the message, the sources of the message, the key publics, and the presenter of the message.

Strategy, thus, has a dual focus: deciding both where to go and how to get there. According to this view, each program should have a single strategy. Based on the formative research in the first phase, the program is anchored in the mission or vision of the organization, while simultaneously integrating the interests of key publics.

Admittedly, different approaches to strategic planning and different practitioners may use different terminology. Some practitioners set goals before they identify and analyze the publics (Smith 2009). In the classical case, however, public relations practitioners build their strategic plans based on the understanding of the relationships between the organization and its various publics and of how these goals potentially affect the interests of the publics.

It is evident from the above discussion that the conceptualization of strategy encompasses both broad and narrow definitions. The broader version includes both the goals and objectives an organization wishes to achieve and the means to achieve them, whereas the narrow version of strategy focuses only on the means to achieve the goals and the objectives. For this study, the narrow concept of strategy formation will be used that distinguishes between goal setting and strategy formulation as two separate but inter-related processes. Research on structured problem-solving and decision-making processes suggests that individuals perform better if they

separate the processes into distinct components, address them separately, and then combine the results at the end (Hofer & Schendel, 1978).

Although the quality of the strategy formed is more important than the processes by which it is formed, research indicates that formalized strategy formation is associated with superior organizational performance (Hofer & Schendel, 1978). It is important, therefore, to examine whether organizations use a planned formal process or develop strategies as the situation unfolds.

Most organizations are no stranger to crisis, and the media are a constant reminder of how crisis-prone organizations can be (King, 2007). It is not uncommon to hear or read about organizations faced with layoffs, bankruptcies, lawsuits, violence, and so forth. Unfortunately, in spite of the growing frequency of crises in organizations, crisis planning and preparation has not received the due attention it deserves from either the management in organizations or management scholars. According to the Center for Crisis Management at the University of Southern California, only 5–25% of the Fortune 500 companies are prepared to face crises while the remaining 75% are unprepared (Mitroff & Alpaslan, 2003). Managers, even in well-managed organizations, work under the assumption that they can successfully manage a crisis without having a prior plan (Mitroff & Alpaslan, 2003). Consequently, they treat crisis preparation as a less-than useful exercise in planning.

Brief Overview of the Chemical Industry

The chemical industry, due to the hazardous nature of its products that can be highly inflammable, toxic, corrosive, and environmentally harmful, provides a unique setting to examine strategy formulation and selection process during a crisis. It seemed likely there would be a greater consciousness and heightened awareness of the pitfalls of not planning for a crisis. It seemed reasonable to assume that organizations within the chemical industry would focus

relatively more on developing a crisis management plan. In addition, the rationale for focusing

on chemical industries was also motivated by their physical proximity and ease of accessibility to

management professionals in that industry. Additionally, focusing on one particular industry

would aid in generalizing the results since they operate in similar conditions and face the same

threats and opportunities.

According to the website of the American Chemistry Council (ACC), the United States

(U.S.) chemical industry accounts for 25% of the total world chemical production. The industry

contributes 12% of the total value of U.S. manufacturing output and is the largest U.S. exporter,

with estimated exports valued at $109 billion in 2004. The three largest chemical producers in

the U.S. in terms of sales are Dow Chemical, DuPont, and ExxonMobil. The chemical industry

is capital intensive, technology intensive, energy intensive, heavily dependent on transportation

infrastructure, and is highly regulated.

The U.S. chemical industry is the largest in the world, with 170 chemical companies that

have more than 2,800 facilities abroad and 1,700 foreign subsidiaries or affiliates operating in the

U.S. The chemical industry spends more than $5 billion on pollution abatement. Texas, New

Jersey, Louisiana, North Carolina, and Illinois are the nation's tops chemical producers

(www.eia.doe.gov). The chemical industry is a very diverse industry and the chemical industry

can be broken down into the following subcategories. The following classification was retrieved

from (www.gpc.com/grc/pdf/chemical/3_overview.pdf)

- **Industries that Produce Basic Chemicals** These industries produce organic and
  inorganic chemicals, chlor-alkalis, and industrial gases. Basic chemicals are used
  primarily in industrial and agricultural applications. Sulfur, titanium dioxide, chlorine,
  caustic soda, soda ash, and industrial gases fall within the basic chemicals classification.
  Other products in this category include olefins, ethylene, propylene, butadiene, benzene,

xylene, and methanol. These substances are used in producing plastics and agrichemicals, as well as synthetic rubbers and fibers, detergents, pharmaceuticals, adhesives, inks, dyes, and explosives.

- **Industries that Produce Resin, Synthetic Rubber and Artificial Synthetic Fibers and Filaments (plastics)** This group includes polyethylene, polypropylene, polyvinyl chloride, polystyrene, polyester plastics, and thermostats. A large portion of plastics produced is used in the packaging and consumer markets, construction materials, and automotive parts industry.

- **Industries that Produce Fertilizers** Phosphates, nitrogen, and potash are primary products within this category.

- **Industries that Manufacture Paints, Coatings, and Adhesives** This group of industry produces paints and coatings that may be further classified based on their use.

- **Industries that Produce Soaps and Detergents.** This group includes soaps, detergents, toothpaste, and natural glycerin products.

- **Industries that Produce Other Chemicals** This group includes printer ink, explosives, active carbon, and any other products not included in the above classification.

Chemical industries in Louisiana employ more than 24,000 employees (www.lca.org) and produce more than 25% of the nation's petrochemicals valued at more than $14 billion (http://doa.louisiana.gov/about_industry.htm). Due to the hazardous nature of their products and their high susceptibility to accidents, it seemed reasonable to focus on the chemical industry. In addition, the chemical plants proximity and accessibility also made it a suitable choice.

According to data compiled by the National Response Center[1] on the American Chemistry Council (ACC), the main lobbying organization that advocates on behalf of chemical companies, from 1990–2003:

- At least 25,188 accidents have occurred at current ACC member companies' facilities since 1990

- On average, 1,800 accidents occurred at ACC facilities each year, or five chemical accidents a day

- The top three states experiencing at least 500 accidents at ACC member facilities since 1990 are Texas, Louisiana, and Alaska

- Many of these accidents have occurred at ACC companies' facilities that are currently or have been under investigation by the U.S. Chemical Safety and Hazard Investigation Board

- At the Honeywell Baton Rouge plant in Louisiana, multiple chemical releases in July and August 2003 caused hundreds of evacuations, multiple hospitalizations, and a fatality. Four plant workers were hospitalized and residents within a half-mile radius evacuated when chlorine gas was released from the chemical plant on July 20, 2003. Just nine days later, an accidental release of antimony pentachloride killed a worker. Finally, in early August, at this same plant in Baton Rouge, two plant workers were hospitalized after they were exposed to hydrofluoric acid

Brief Overview of Organizational Crisis

Scholars have defined organizational crisis in a number of different ways. Pearson and Clair (1998) described an organizational crisis as a "low probability, high impact event that threatens the viability of an organization and is characterized by ambiguity of cause, effect, and

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[1] The sole national entity for reporting oil and chemical discharges in the environment in the U.S.

means of resolution, as well as by a belief that decisions must be made swiftly" (p. 60). Snyder et al. (2006) defined an organizational crisis as an extraordinary condition, disruptive and damaging to the existing operating state of an organization. Fearn-Banks (2007) defined crisis as a "major occurrence with a potentially negative outcome that affects an organization and its publics, products, services, or its good name and interrupts the organization's normal flow of business" (p. 6). Fink (1986) defined an organizational crisis more broadly as a situation that can potentially escalate in intensity, fall under close government or media scrutiny, jeopardize the current positive public image of an organization, or interfere with normal business operations, including hurting the bottom line.

Regardless of the specific attributes of a crisis, the most significant and unifying characteristic of all crises is its potential for causing incalculable damage to an organization and its reputation. In addition, organizational crises, if ignored or mismanaged, threaten the competitiveness and sustainability of an organization and deserve greater attention. Although crises have been characterized in different ways, most organizational crises share a number of common elements: a) are highly ambiguous in nature, causes, and effects (Dutton, 1986; Quarantelli, 1988); b) have a low probability of occurring but pose a major threat to the survival of an organization (Jackson & Dutton, 1987; Srivastava et al., 1988); c) provide little time to respond (Quarantelli, 1988); and d) present a quandary in strategic decision-making or judgments that may affect the survival of an organization.

On the other hand, even though crises have common characteristics and may appear similar in type, they vary in magnitude and duration (Synder et al. 2006). Crises can be overwhelmingly intense and relatively brief or gradual and persistent. They can also be widespread, affecting an organization and beyond it, or they can be self-contained. Crises may also differ with respect to frequency and probability of reoccurrence. As crisis management

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increases in importance as a management function, it is only reasonable that crisis management

research rise to a higher level of rigor (Coombs, 2007). Although crisis research is growing as a

field of inquiry, it remains in its initial stages of development. It is largely prescriptive and lacks

sound theoretical constructs. Most of the extant research on crisis communication is based on

accepted wisdom from direct experience with crises and/or case analyses. Therefore, it becomes

imperative to examine how organizations manage crises through effective development and

selection of strategies.

Significance of the Study

This dissertation helps to explain the process of strategy formulation and selection in

organizations during a crisis. Previous research in this area (Allen & Caillouet, 1994; Benoit &

Brinson, 1994; Hearit, 1996; Coombs, 1998; Coombs, 2002; Vlad, Sallot, & Reber, 2006)

suggests that strategy is a given and organizations need to select strategies based on the type of

crisis. Although helpful and widely accepted, it is primarily based on post-hoc analyses of case

studies. This dissertation identifies the factors that influence organizational decision-making

during a crisis. The significance of this study lies in its identification of important factors that

affect strategy formation and selection process, such as top management characteristics,

rationality in the decision-making, politicization, formalization of the decision-making processes,

organization performance, which have hitherto not been identified as being crucial in the strategy

formulation and selection process. Additionally, it will also add to the strategic management

literature, where strategy has been examined in the context of investment or diversification

decisions.

CHAPTER 2. THEORETICAL FRAMEWORKS

This chapter describes the theoretical frameworks used to examine strategy development and selection processes in organizations during a crisis. Within the traditional public relations literature, it draws on the Situational Crisis Communication Theory (SCCT) as articulated by Coombs (2007), and within the strategic management literature, it draws on stakeholder theory and strategic decision–making perspectives. The following sections discuss the theoretical underpinnings of each perspective, as well as the most important and relevant research efforts under each perspective.

Situational Crisis Communication Theory (SCCT)

SCCT provides crisis communication managers within an organization an understanding of the different crisis situations and recommends post-crisis communication response strategies based on the level of crisis responsibility, crisis history, and reputation (Coombs, 2007).

Broadly, SCCT is a prescriptive system for matching crisis response strategies to crises based on attribution theory (Coombs, 2007). SCCT is premised on the fact that during a crisis, stakeholders assign responsibility for the crisis. Different crisis situations result in different levels of attributions for crisis responsibility. The SCCT articulates a system for evaluating the level of attribution for crisis responsibility and subsequently matching the crisis response strategy to the crisis situation. In SCCT, the level of stakeholder attribution for the crisis is evaluated using a two-step process.

The first step in this process is to identify the crisis type. SCCT identifies 10 types of crises: natural disasters; rumors; product tampering; workplace violence; technical errors (product recall and accidents); human-error (product recall and accident); and organizational misdeeds (Coombs, 2005). This list was initially based on

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an accommodative-defensive continuum developed by Marcus and Goodman (1991).

The accommodative-defensive continuum proved problematic since the distinction

between protecting the victims versus protecting the organization was not clear. Coombs

(2007) later re-grouped the crises into three categories based on the strength of the

stakeholders' attribution of the crisis responsibility: Strong Attributions; Moderate

Attributions; and Weak Attributions (Table 2.1) (Coombs, 2007, p. 168).

Table 2.1

SCCT Crisis Types by Crisis Clusters

Victim cluster: In these crisis types, the organization is also a victim of the crisis.
(Weak attributions of crisis responsibility = Mild reputational threat)

- *Natural disaster:* Acts of nature damage an organization, such as an earthquake

- *Rumor:* False and damaging information about an organization is being circulated

- *Workplace Violence:* Current or former employee attacks current employees onsite

- *Product Tampering/Malevolence:* External agent causes damage to an organization

Accidental cluster: In these crisis types, the organizational actions leading to the crisis
were unintentional.
(Moderate attributions of crisis responsibility = Moderate reputational threat)

- *Challenges:* Stakeholders claim an organization is operating in an inappropriate manner

- *Technical-error Accidents*: A technology or equipment failure causes an industrial
  accident

- *Technical-error Product Harm:* A technology or equipment failure causes a product to be
  recalled

Preventable cluster: In these crisis types, the organization knowingly placed people at
risk, took inappropriate actions, or violated a law/regulation.
(Strong attributions of crisis responsibility = Severe reputational threat)

- *Human-error Accidents:* Human error causes an industrial accident

- *Human-error Product Harm:* Human error causes a product to be recalled

- *Organizational Misdeed with no Injuries:* Stakeholders are deceived without injury

- *Organizational Misdeed, Management Misconduct*: Management violates laws or
  regulations

- *Organizational Misdeed with Injuries:* Management places stakeholders at risk and
  injuries occur

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The second step is the evaluation of the modifiers, variables that can alter the initial

attributions of crisis responsibility. The SCCT considers two types of modifier variables:

Crisis History and **Prior Relationship Reputation** *(Coombs, 2007).* Crisis history

refers to whether or not an organization has had a similar crisis in the past. According to

Attribution Theory, a history of crises suggests an organization has an ongoing problem

that needs to be addressed (Kelley & Michela, 1980; Martinko et al., 2004). Prior

relational reputation refers to how well or poorly an organization is perceived to have

treated stakeholders in the past in other contexts.

These two modifier variables determine if the stakeholders are required to make

adjustments to the initial levels of attributions of crisis responsibility. After the crisis

communications manager has determined the overall strength of the stakeholder

attribution for the responsibility of the crisis based on the modifiers, the crisis type is

matched with the crisis response strategy. Table 2.2 (Coombs, 1997, p. 170) lists all the

available crises response strategies.

Table 2.2

SCCT Crisis Response Strategies

Primary crisis response strategies:
    Deny crisis response strategies
- Attack the Accuser: Crisis manager confronts the person or group claiming something is wrong with the organization
- Denial: Crisis manager asserts that there is no crisis
- Scapegoat: Crisis manager blames some person or group outside of the organization for the crisis

    Diminish crisis response strategies
- Excuse: Crisis manager minimizes organizational responsibility by denying intent to do harm and/or claiming inability to control the events that triggered the crisis
- Justification: Crisis manager minimizes the perceived damage caused by the crisis

    Rebuild crisis response strategies
- Compensation: Crisis manager offers money or other gifts to victims
- Apology: Crisis manager indicates the organization takes full responsibility for the crisis and asks stakeholders for forgiveness

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Table 2.2. Contd.

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Secondary crisis response strategies:
  Bolstering crisis response strategies
  • Reminder: Tell stakeholders about the past good works of the organization
  • Ingratiation: Crisis manager praises stakeholders and/or reminds them of past good works by the organization
  • Victimization: Crisis managers remind stakeholders that the organization is a victim of the crisis too

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Stakeholder Theory of the Firm

Several researchers have explained the concepts of stakeholder, stakeholder model, stakeholder management, and stakeholder theory using different approaches, with the result that diverse and often contradictory arguments have been forwarded in the explanation for each (Donaldson & Preston, 1995; Evan & Freeman, 1988; Barton, Hill, & Sundaram, 1989). Although stakeholder theorists disagree about the scope, the precise purpose, and implication of the different characterizations of these ostensibly different but arguably related concepts, the diversity and its implications are rarely recognized and discussed. The diversity observed in the conceptualization of stakeholder theory is in part due to the different justifications of its epistemological roots as a theory of the firm.

The multiplicity in approach to explaining the nature and purpose of the stakeholders of an organization has resulted in three distinct perspectives of stakeholder theory: descriptive, instrumental, and normative (Donaldson & Preston, 1995). The descriptive approach describes stakeholders in terms of competing and co-operative group of interests integral to the organization. The instrumental approach presents a framework for examining the linkages, if any, between stakeholder management and attainment of corporate performance goals. The normative approach describes stakeholders as groups of persons who have a legitimate interest in the functioning of the organization, irrespective of the organization's corresponding interest in them (Donaldson & Preston, 1995).

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In an attempt to integrate the three distinct lines of research to stakeholder theory,

Donaldson and Preston (1995) argued that the three aspects of the stakeholder theory are

nested within each other. The external shell of the theory is its *descriptive* aspect; the

theory presents and explains relationships present or observed in the external world. The

theory's descriptive attribute is supported at the second level by its *instrumental* and

predictive value; that is, if certain practices are carried out, then certain results will be

obtained. The central core of the theory, however, is normative. The descriptive attribute

assumes that all managers and agents behave as if all stakeholders have an intrinsic value.

In turn, recognition of these ultimate moral values and obligation gives stakeholder

theory its normative core (Donaldson & Preston, 1995).

Descriptive approaches to stakeholder theory describe and explain specific

corporate characteristics and behavior of the stakeholders. Brenner and Cochran's (1991)

description of the stakeholder theory of the firm explains how organizations operate, and

helps to predict organizational behavior. Wang and Dewhirst (1982) described how

board members think about the interests of the corporate constituents; whereas others,

such as Clarkson (1991) and Kreiner and Bhambri (1991) described how corporations are

actually managed. Instrumental approaches to stakeholder theory describe stakeholder

relationships and establish a connection between stakeholder management and the

achievement of corporate objectives (Barton, Hill, & Sundaram, 1989; Caroll & Hatfield,

1985). Researchers taking a normative approach to stakeholder theory propose moral or

philosophical guidelines for the operation and management of the organization.

All three descriptions are found in the work of Freeman (1984), whom many

regard as the biggest contributor to the stakeholder theory. Initially, Freeman (1984)

argued that the effective management of the numerous stakeholder groups was important

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for the success of the corporation in the current and future business environment. In his later works, Evan and Freeman (1988), however, emphasized a normative approach to stakeholder theory, arguing that the theory of the firm should be reconceptualized along Kantian lines to recognize the importance of each stakeholder group as an end in itself and not as a means to an end.

Broad and Narrow Conceptualizations of Stakeholders Stakeholder theorists have defined stakeholders in myriad of ways that encompass both broad and narrow definitions. Freeman's (1984) classic definition, "A stakeholder in an organization is any group or individual who can affect or is affected by the achievement of an organization's objectives" (p. 46) is perhaps the broadest definition of stakeholder, for it leaves the interpretation of a stake and a stakeholder to include virtually anyone.

In contrast, Clarkson (1994) offered one of the narrower definitions of stakeholders as voluntary or involuntary risk-bearers. Voluntary stakeholders bear some form of risk as a result of having invested something of value, in the form of capital, human or financial, in a firm. Involuntary stakeholders are placed at risk as a result of a firm's activities; however, without the element of risk there is no stake. (p. 5).

According to this view, a stake is only something that can be lost. The use of risk to denote stake appears to be a way to narrow the stakeholder field to include those with legitimate claims, regardless of their power to influence the firm. The narrow definitions of stakeholders take into consideration the practical realities of attending to all or the potential needs of stakeholders. In general, narrow views of stakeholders attempt to define relevant groups based on their direct relevance to the firm's core economic interests (Mitchell et al., 1994).

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Mitchell, Agle, and Wood (1997) delineated a list of attributes that help in determining the salience of the stakeholders and the need to address their claims. Mitchell et al. (1997) proposed that classes of stakeholders could be identified by their possession of one, two, or all three of the following attributes: a) the stakeholder's **power** to influence the firm; b) the **legitimacy** of the stakeholder's relationship with the firm; and c) the **urgency** of the stakeholder's claim on the firm. Mitchell et al., (1997) based this typology of stakeholders on the normative assumption that these variables define the universe of stakeholders to whose claims managers should pay attention.

Using arguments from Agency, Resource Dependence, and Transaction Cost theories, Mitchell et al., (1997) justified the role of power in the identification of the salience of the stakeholder claims. The agency theory explicates how principals can control the behavior of their agents to achieve their interests rather than the agents' interests. Incentives or monitoring may limit the power of agents to act in ways divergent from the interests of principals (Jensen & Meckling, 1976). Managers, therefore, should attend to those stakeholders who have the power to reward and/or punish them. Resource Dependence theory suggests that power accrues to those who control the resources needed by the organization, thus creating power differentials among parties (Pfeffer, 1981). Therefore, the possession of resource power should make a stakeholder important to managers. Transaction cost theory proposes that power accrues to those economic actors with bargaining advantages and affects the nature of governance and structure of the firm (Williamson, 1985). Not all stakeholders have power but nevertheless, they affect the functioning of a firm.

Mitchell et al., (1997) introduced **urgency** as an organizational attribute in addition to power and legitimacy in determining the salience of stakeholder claims when

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faced with multiple competing claims. They defined urgency as the degree to which

stakeholder claims call for immediate action. They argued that urgency is based on two

attributes: Time Sensitivity – the degree to which managerial delay in attending to the

claim or relationship is unacceptable to the stakeholder; and Criticality– the importance

of the claim or the relationship to the stakeholder.   Although not discussed in

organizational theory literature, urgency has been the focus of attention of scholars within

issues management and crisis management literature.

Strategy

Historically, an organization's strategy has been thought of as an overall

integrated "plan" (Andrews, 1971; Chandler, 1962). An organization's strategy

represents the extent of the match between its external environment and its internal

structure and processes (Hofer & Schendel, 1978; Miles & Snow, 1978; Mintzberg,

1978). Often, the degree of alignment is the result of an integrated plan produced as a

result of a formal planning system, but more likely, it reflects the impact of countless

strategic decisions made one at a time during a number of years (Mintzberg, 1978; Quinn,

1980; Uyterhoeven, Ackerman, & Rosenblum, 1977). According to this perspective,

strategy formulation is an organizational-level phenomenon, independent of the personnel

characteristics of the organization. Although the pattern of decision-making may change

as organizations evolve, research indicates that organization decision-making patterns

persist in the face of new leadership (Berkowitz, 1956) and are consistent across

decisions that are clearly considered strategic (Fredrickson, 1984). This decision-based

perspective of strategy formation makes it possible to study the most critical strategic

process without having to consider an endless number of decisions at any given point in

time (Fredrickson, 1984).

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Strategic Decision-Making Perspectives

Also of importance to this study is the strategic decision-making literature. The strategic decision-making literature has emerged as one of the most prolific areas of management research (Papadakis, Lioukas, & Chambers, 1998). However, despite a substantial body of literature, it is still widely recognized that the knowledge of strategic decision-making processes is limited and is based on normative studies or on unsubstantiated assumptions (Rajagopalan, Rasheed, & Datta, 1993; Rajagopalan et al., 1997). Although useful in explaining the unique organizational decision problems, the current state of development in the field of strategic decision-making literature needs further empirical and integrative research. The strategic–decision-making literature has evolved over time but the lack of focus and direction has regrettably mitigated its development into a full-fledged theory. Therefore, the strategic decision-making literature continues to remain a collection of somewhat partially developed perspectives.

Admittedly, different approaches to strategy research have led to the development of a plethora of strategic decision-making models. For instance, the planning school of strategy was largely based on the rational and boundedly-rational models of decision-making (Ansoff, 1965; Simon, 1958). In later years, scholars started to challenge these models, suggesting the use of incremental (Quinn, 1981), garbage can (Cohen, March & Olsen, (1972), and random choice models (Mintzberg, 1978).

Two models of strategic decision-making processes that are dominant in the literature are the synoptic model and the incremental model of the strategic decision-making process (Fredrickson & Mitchell, 1984). Table 2.2 summarizes the salient differences between the two types of decision-making processes. The synoptic model is characterized by a highly rational process that involves phases, such as establishing

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goals; monitoring the environment; assessing internal capabilities; searching for and

evaluating alternative actions; and developing an integrated plan (Andrews, 1971; Ansoff,

1965; Hofer & Schendel, 1978). On the other hand, the incremental process of strategic

decision-making, which some researchers state is more representative of how strategy is

formed, is characterized by changes that take place only in small steps or increments

(Lindblom, 1979).

Table 2.3

Differences between the Synoptic and Incremental Strategic Decision Processes

(Source: Fredrickson & Mitchell, 1984, p. 402)

Characteristics	Synoptic Processes	Incremental Processes
1. Motive for initiation	The process is initiated in response to problems or opportunities that appear during constant surveillance.	The process is initiated in response to a problem or dissatisfaction with the current state.
2. Concept of goals	It is directed at achieving a specified goal or future intended state	It is directed at achieving a modification of the current state. The process is "remedial."
3. Relationship between means (alternatives) and ends (goals)	The goal is identified before and independent of the analysis of alternatives. Decision making is an "ends-means" process.	The remedial change outcome is considered at the same time as the means for achieving it is analyzed. The processes are intertwined and simultaneous.
4. Concept of choice	The final choice of an alternative is dependent on how it contributes to the achievement of the goal. Decision quality is known only when it is shown that this decision provides the best means to the specified goal.	The final choice of an alternative is made by combining the considered alternatives (means) and their possible consequences (ends) and simultaneously selecting the one that yields the most desired outcome. Decision quality is judged by the agreement achieved in choosing an alternative (the means to the end).
5. Analytic comprehensiveness	When making individual decisions it attempts to be exhaustive in the identification and selection of goals and the generation and evaluation of alternatives. All factors are considered.	When making individual decisions it considers only a few alternatives to the status quo as alternative actions and only a restricted range of consequences in their evaluation. All possible factors are not considered.

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Table 2.3 Contd.

Characteristics	Synoptic Processes	Incremental Processes
6. Integrative comprehensiveness	Conscious attempts are made to integrate the decisions that the overall strategy to ensure that they reinforce one another. The strategy is viewed as a consciously developed integrated whole.	Little attempt is made to integrate consciously the individual decisions that could possibly affect one another. The strategy is viewed as a loosely linked group of decisions that are handled individually.

This study uses Beach and Mitchell's (1977) strategic decision-making process based on contingency theory to explain how strategy formulation and selection takes place during a crisis. Within this framework, strategy selection is based on the assumption that the selection of the strategy is contingent upon both the nature of the decision problem and the characteristics of the decision-maker. The nature of the decision or problem is defined as the decision maker's interpretations of the demands and constraints of the problem at hand. Beach and Mitchell (1977) divided the characteristics of the decision problem into unfamiliarity, ambiguity, complexity, instability, the decision environment, irreversibility, significance, accountability, and the time and money constraints. In addition, the characteristics of the decision-maker that influence the selection of strategy have been divided into knowledge, ability, and motivation.

A typical model of individual decision-making consists of six stages (Beach & Mitchell, 1977). The first stage involves problem recognition. A problem is defined as the discrepancy between the desired state and the current state. The second stage involves the evaluation of the nature of the decision problem and its demands. The third stage involves assessing the parameters of the problem. Based on the parameters of the decision-problem, the decision-maker formulates a strategy. In stage four, the decision-maker uses heuristics for processing information where processing for information means

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searching for information and evaluating it. Stage five and stage six consist of choosing

among the alternatives and the actual implementation of the strategy (Beach & Mitchell,

1977).

 Comprehensiveness Theories of strategic management draw heavily upon

theories of economic analysis to explain the behavior of the firm and the managers.

Although these theories have been helpful in explaining organizational behavior, they

have also received their fair share of criticism for assuming that managers make optimal

decisions (Bromiley & Papenhuasen, 2003). American political scientist Herbert Simon

(1957) introduced the concept of bounded rationality to explain how individuals faced

with immense complexities and limited cognitive abilities deal with decision-making.

The basic premise of his theory can be summarized in this following statement: "The

capacity of the human mind for formulating and solving complex problems is very small

compared to the size of the problem whose solution is required for objectively rational

behavior in the real world" (Simon, 1957, p. 198).

 Bounded rationality, as explicated by Simon (1957), assumes people possess a

level of information and information processing ability consistent with what people

actually have. He argued that a number of factors limit the ability of humans to retrieve

and comprehend information: first, their environments are exceedingly complex; second,

their mental abilities are extremely limited; and third, they are constrained by time and

money from fully attempting to understand environmental complexities. Due to these

limitations, decision-makers make decisions under conditions of extreme uncertainty

most of the time, and therefore, they make decisions only in an intended rational manner

(Ibrahim, 2008). Instead of becoming frustrated or overwhelmed by these seemingly

complex problems, humans develop ways of coping with them. Comprehensiveness, a

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measure of rationality and defined as the extent to which organizations attempt to be

exhaustive or inclusive in making and integrating strategic decisions (Fredrickson &

Mitchell, 1984), is a direct result of the decision-maker's ability to adapt to a complex

and uncertain environment (Ibrahim, 2008). Behavioral theorists (Fredrickson &

Mitchell, 1984) take bounded rationality to mean human cognition has limitations,

whereas economists take bounded rationality to assume perfect rationality but introduce a

lack of some information to account for human limitations.

> Proponents of synoptic models argue that strategic decision making at the
> organization level should approximate the rational economic model by attempting
> to be exhaustive in a variety of decision activities, including the conscious
> integration of individual decisions to ensure that they form a consistent whole.
> Although the comprehensiveness construct is just *one measure* of the extent to
> which an organization's strategic process approximates a rational model, its
> multifaceted nature makes it particularly valuable in understanding strategic
> decision-making. (Fredrickson & Mitchell, 1984, p. 401).

A comprehensive process of decision-making involves both analytic and

integrative comprehensive analysis (Hough & White, 2003), which emphasizes

systematic scanning and analysis of the environment (Miller, 1987) in the process of

making an individual decision. Integrative comprehensiveness refers to overall decision-

making process and recommends integration of all decisions that make up the strategy.

Derived from the synoptic (Lindblom, 1959), planning (Mintzberg, 1973), and rational

(Miller and Friesen, 1984) schools of strategy making, decision rationality emphasizes

the importance of analysis (Ansoff, 1965), the need for systematic scanning (Aguilar,

1967), and methodical planning and unification of strategies (Ansoff, 1965).

Janis and Mann (1977) provided an in-depth account of the comprehensive

decision-making process. They stated a comprehensive decision-making process is

characterized by a) A thorough investigation of a wide range of alternatives; b) A review

of full range of objectives; c) A careful consideration of the costs and risks of various

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alternatives; d) An intensive search for information to evaluate alternative actions; e)

Objective evaluation of the information and expert judgment/opinion; and f) Creation of

detailed plans, including the explicit consideration of contingencies, for implementing the

chosen plan of action.

Cognitive limits of humans have been forwarded to argue why managers in

organizations cannot be comprehensive in their decision-making and only make

"satisficing" choices (Cyert & March, 1963). In addition to problems of cognitive

capacity, the comprehensiveness requirements of synoptic decision processes may tax

other resources. For example, it has been argued that rational models assume that

information will be available when needed but ignore the costs of obtaining it

(Braybrooke & Lindblom, 1970). However, even if an organization has significant

resources, it has been suggested that attempting to be comprehensive may result in

"achieving tomorrow's solution to yesterday's problem" (Braybrooke & Lindblom, 1970,

p. 121).

Environment is a major source of uncertainty for organizations and it can be a

major threat to comprehensiveness (Thompson, 1967). Uncertainty has been defined as

the difference between the information needed to perform a task and the information

available (Galbraith, 1973). The environment and the strategic decision process are

concepts that are closely linked (Bourgeois, 1980). The environment, therefore, can

increase or decrease uncertainty and the possibility of achieving a high level of

comprehensiveness by withholding or providing the required information.

Environmental uncertainty, therefore, is a critical factor in the manager's effort to achieve

comprehensiveness in decision-making.

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Top Management Characteristics This perspective recognizes that strategic decisions may involve endogenous behavioral components that partially reflect the "idiosyncrasies" of the decision-makers (Child, 1972; Cyert & March, 1963). Research indicates that "upper echelons," or "top managers" or "strategic leadership" determine strategy process and content (Child, 1972; Hambrick & Mason, 1984; Miller & Toulouse, 1986). Since Hambrick and Mason's (1984) seminal paper on "upper echelons," much emphasis has been placed on the characteristics and the role of Chief Executive Officers (CEOs) and the top management team on strategy, innovation, performance, organizational structure, and planning formality (Papadakis & Barwise, 2002).

The most widely researched top management characteristics are the risk propensity, need for achievement, tenure, and education. Miller and Toulouse (1986) found that CEOs with high need for achievement follow rational, analytic processes and systems. Risk propensity has been found to be associated with faster decision-making (Taylor & Dunnette, 1974). On the other hand, risk averse CEOs reduce uncertainty by following centralized design characterized by high control intensity and supervision (Stephens, 1994). Tenure has been shown to lead to reliance on tried and tested (standardized) communication and decision-making processes (Smith et al., 1994). Overtime, CEOs also tend to form a top management team of their own choosing to minimize political interference (Haleblian & Finkelstein, 1993). Hitt and Tyler (1991) found that the demographic characteristics of CEOs, such as their education, influenced the type of strategic decision-making process they followed.

External Corporate Environment The external corporate environment is a key determinant of the strategic decision processes and its content. According to the environmental determinism perspective, strategic decisions are adaptations of

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organization to opportunities, threats, and other characteristics of the environment (Papadakis, Lioukas, & Chambers 1999). The role of top managers within this perspective is minimized to that of a facilitator. Some researchers within the population ecology tradition of organizational research (Aldrich 1979; Hannan & Freeman, 1977) suggest that a process of natural selection takes place, which selects out the organizations not adapted to their environment, while top managers act as passive agents with minimal impact on corporate strategic decision-making processes. This view of organizational behavior is more representative of the research on content of the strategies or the outcomes of the strategic decision processes rather than the strategic processes itself by which the strategic decision are made. Within the context of strategic decision-making processes, external variables, such as environmental dynamism or uncertainty, hostility-munificence, and heterogeneity or complexity, play a significant role in understanding the strategic-decision processes and their outcomes during an organizational crisis.

Environmental dynamism, also referred to as uncertainty, represents the rate of change and innovation in the industry, as well as the uncertainty or unpredictability of the actions of competitors and customers (Lawrence & Lorsch, 1967; Thompson, 1967). Environmental hostility represents the degree of threat posed by the dynamism and intensity of the competition and the downswings and upswings of the firm's principal industry (Khandwalla, 1973a; Miller & Friesen, 1978). Munificence refers to an environment's ability to support sustained growth of an organization (Aldrich, 1979; Dess & Beard, 1984). Castrogiovanni (1991) distinguished among three different kinds of munificence: capacity, growth or decline, and opportunity or threat. Although empirical research investigating the impact of environmental munificence on organizational strategies, structures, and processes is limited, past research clearly points

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to its importance (Castrogiovanni, 1991). Environmental heterogeneity or complexity reflects the changes in the firm's markets and marketing orientations (Chandler, 1962; Khandwalla, 1972; Porter. 1979).

Research indicates that organizations operating in stable environments follow rational-comprehensive strategic decision-making processes (Fredrickson & Iaquinto, 1989), whereas organizations operating in highly dynamic environments may employ a less comprehensive and rational analysis of alternatives (Stein, 1980). Yet, evidence suggests that in a highly dynamic environment, firms follow more rational decision-making processes (Bourgeois & Eisenhardt, 1988). Sharfman and Dean (1991) found that organizations operating in a complex environment follow the standardization process in the making of strategic decisions. In a similar vein, Priem, Rasheed, and Kotulic (1995) found that comprehensive processes led to better performance in rapidly changing environments. Researchers are divided in their opinion about the influence of environmental complexity on strategic decision-making processes (Sharfman & Dean, 1991). Most research on the effects of environmental factors has focused primarily on one important environmental characteristic: environmental uncertainty or dynamism.

Thompson (1967) posited that environmental uncertainty is a fundamental problem that top management must deal with. Although there has been extensive research on environmental uncertainty, differences persist in its interpretation. Some researchers take environmental uncertainty to mean uncertainty about the state of the organization's environment, whereas others take it to mean uncertainty on the part of the decision-makers about the actions and their outcomes. "Environmental uncertainty," therefore, has been used both to describe the state of an organization's environment, as well as the state of the decision-maker who perceives himself or herself to be lacking

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critical information about the environment (Castrogiovanni, 1991). These two perspectives have yielded different operationalizations. The most commonly cited definitions by organizational theorists include a) An inability to assign probabilities as to the likelihood of future events (Pfeffer & Salancik, 1978); b) A lack of information about cause-effect relationships (Duncan, 1972); and c) An inability to predict accurately what the outcomes of a decision might be (Downey & Slocum, 1975; Schmidt & Cummings, 1976).

Milliken (1987) delineated three different types of uncertainties: State Uncertainty, Effect Uncertainty, and Response Uncertainty. Each type has its own peculiar antecedents and implications for the behavior of the organization. *State uncertainty* exists when the organizational environment or a particular component of the environment is unpredictable. For instance, managers might be uncertain about the actions key organizational stakeholders might take, or general changes in the relevant environment, such as socio-economic trends, major new developments in technology, and so on (Milliken, 1987). *Effect uncertainty* refers to a manager's inability to predict the impact of environmental changes on his or her organization. Effect uncertainty is an inability to predict the nature of the impact not the event itself. There is no uncertainty about the occurrence of the event, only its impact. For example, knowing that a hurricane is headed in the general direction of a plant does not mean the manager will know how it will affect the physical plant, that is, will it still be left standing, or will it suffer severe damages (Milliken, 1987). *Response uncertainty* refers to a lack of knowledge of response options or an inability to predict the likely consequences of a response choice (Taylor, 1984). Response uncertainty is likely to be salient when there is a perceived need to act or make immediate decisions (Conrath, 1967).

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Researchers believe that when there is high degree of uncertainty in the environment, it is very likely that strategic decision-making modes, such as "muddling through" (Lindblom, 1959) and the garbage-can model of decision-making (Cohen, March, & Olsen, 1972) would be more prevalent. It would be very difficult for managers to follow the steps outlined in the linear model of decision-making (Hofer & Schendel, 1978) when plant managers have to deal with a great deal of state uncertainty (Milliken, 1987).

Politicization Researchers argue that strategic decision-making processes within organizations are inherently political in nature. Allison (1971) stated that most strategic decision processes are ultimately political in nature in that they involve decisions with uncertain outcomes, actors with conflicting views, and resolution through the exercise of power. Individuals and groups within organization exercise their power through actions, such as behind the scenes coalition formation, lobbying, co-optation attempts, withholding information, and controlling agendas (Pettigrew, 1973; Pfeffer, 1981).

Narayan and Fahey (1982) viewed organizations as loose structures of interests competing for organizational attention and resources that result in conflicts that are never completely resolved. According to this perspective, the content of strategic decision-making is the result of the transaction of power and influence. A central feature of this form of decision-making is the formation of coalitions. Narayan and Fahey (1982) identified five stages/phases of decision-making based on the conception of an organization as a coalition of interests: **Activation; Mobilization; Coalescence; Encounter;** and **Decision**. **Activation** occurs when individuals become cognizant of issues salient to them. Different triggers may activate different individuals within an organization, such as performance gaps (Zaltman & Duncan, 1976), environmental

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opportunities (Wrapp, 1967), and individual political ambitions (Lyies & Mitroff, 1980).

The activation phase is complete when individuals develop a sufficient level of clarity

and a "language" about their concerns to be able to articulate the issues in an intelligible

way to other organizational members (Narayan & Fahey, 1982).

Mobilization begins when the issue is elevated from the level of individual

awareness to the organization level. During this stage, a network of interrelationships

forms around issues depending upon the number of individuals activated, their political

credibility, commitment to the issue, and the extent of competing issues. The

Coalescence Phase begins when coalitions start emerging in the process of decision-

making as individuals pool their resources to obtain a desired outcome or to sponsor a set

of alternatives. The strategic content of the alternative is determined by the internal

structures and processes of the coalition; the environment that it enacts; and the

complexity of the issue at hand. Coalition members typically do not possess equal power

or influence. These inequalities result in the emergence of a political structure within the

coalition (MacMillan, 1978). Asymmetry of relationships among coalition members is

an important structural determinant of its processes (Hickson, et al., 1971).

The **Encounter Phase** involves bilateral negotiations between groups to prevail

upon the organization to accept its preferences and proposed alternatives. These

negotiations are conducted using gambits. Narayan and Fahey (1982) identified two

types of gambits – substantive and temporal – that they define as any stratagem or means

a coalition employs to achieve its goals. The substantive gambit involves efforts to alter

the organization's goal structure, resource allocation, and social reality, and temporal

gambits refer to the timing and the sequence of the arguments.

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During the **Decision Phase**, zones of consensus and dissent become clear. Zones of dissent typically lead to compromise and accommodation. Resource availability, organization slack, and power distribution significantly influence the actual decision, as does the duration and intensity of this stage (Mannus & March, 1978). The decision may be in the form of commitment to some action; postponement; non-decision or dropping of the issue; or transformation or portrayal of the issue as a symptom of a larger issue yet to be resolved. Such outcomes generally lead to a quasi-resolution of conflicts. Residues, however, remain that may trigger other issues and lead to different coalitions in the future (Narayan & Fahey, 1982).

Although the need has been recognized for integrative (Bryson and Bromiley, 1993; Schwenk, 1995; Rajagopalan et al., 1993, 1997) research, little or no effort has been made to integrate the diverse constructs. The other possible reason may be the frequent conflicting and contradictory results that researchers obtain, adds to the difficulty in integrating the diverse constructs. The consequence is that the research within strategic decision-making literature has proliferated into a huge mass of undifferentiated literature without a distinct form and focus.

Even though the purpose of this research project is not to integrate the diverse strains of research within strategic decision-making literature, the goal is to develop a model that captures the complexity of a modern organization and predicts factors that might affect decision-making, specifically during a crisis. Although the strategic decision-making model has been empirically tested in the chemical industry, the hope is that this model might apply to other industries in general. The scope of the model is broad for it to be applicable to other industries. The chemical industry is a highly complex and regulated industry. The complexity of the industry, not only in terms of the

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vastly diverse array of chemical substances it manufactures but the ownership and the structure of the chemical organization serves as a suitable industry to investigate decision-making and apply the results to other industries that share similar diversity.

Discussion of crisis management both within management and communication literature has invariably resulted in development of crisis typologies. One of the drawbacks of such a classification of crises as I see it is that it assumes that all organizations view a crisis similarly, have similar resources, and work in homogenous and stable environment whereas research within the strategic management literature suggests otherwise. Each organization views and interprets a crisis situation differently. The mere fact that a similar crisis may be interpreted differently by different organizations makes crisis classification somewhat unhelpful.

Hypothetically, if two organizations experiencing similar crises interpret it differently based on its organizational characteristics, external environment or management characteristics, it is highly likely that the two organizations may select different crisis management strategies. In addition, there has been scant research to suggest that organizations select crisis response strategies based on crisis types. Furthermore, most of the extant research on crisis management is based on post-hoc analysis of crisis management case studies and few, if any, have tried to investigate empirically whether managers use crisis response strategies based on the type of crisis.

 Additionally, one of the underlying assumptions of the crisis classification is that organizations operate in simple and stable environment wherein organizations typically have to deal with a single factor. A review of the strategic management literature indicates that most of the organizations operate in complex and dynamic environments and a multiplicity of factors acting independently or in interaction with one another may

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affect the organization. The typologies in essence are therefore, an over simplification of the organizational dynamics and its environment that overlook key organizational, environmental, and management factors and their interactions. This study addresses this gap and focuses attention on these key variables in strategy formulation and selection process during organizational crisis.

This study, in effect, suggests a paradigm shift in crisis management research by recognizing the presence of multiple factors that affect strategy formulation and selection. It departs from the current line of post-crisis communication research by eschewing from developing crisis response strategies based on crisis types. Instead, it focuses on the management of crisis based on a careful consideration of multiple factors and proposes a model that will explain the complex interaction of the multiple factors involved in the decision-making process during a crisis. Individual models may be best able to explain the strategy formulation and selection processes undertaken during an organizational crisis. Drawing conclusions about the selection of the variables has not been an easy task. They have been included because of their explanatory power in other management decisions such as investment decisions, diversification decisions, and the researchers' assumption of their explanatory powers in explaining the choices that decision-makers make in managing crises.

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CHAPTER 3. LITERATURE REVIEW

This chapter will begin with a review of the crisis communication research and this will be followed by an examination of the strategy literature. Hypotheses are proposed based on the review of the relevant literature.

The crisis communication literature can be broadly classified into three broad categories: Corporate Apologia, Impression Management, and Image Restoration theory (Coombs, 2007). All three approaches suggest typologies of strategies for use in post-crisis response communications. In addition, Coombs (2007) divided the crisis communication literature based on their emphasis: form or content. The 'form' literature emphasizes what action should be taken, for instance, the response should be quick, consistent, and open. Conversely, the 'content' stresses the substance of the messages, for example, managers must express sympathy for the victims (Coombs, 2007). The following is a brief overview of the development and progress of research within crisis communication that will provide the context for this study.

Form Crisis Communication

Crisis communication researchers and practitioners within the 'form' framework routinely recommend being quick, consistent, and open. Crisis creates a demand for immediate and reliable information, and quick responses help to fill the gaps created by the crisis (Fearn-Bank, 1996; Hearit, 1994; Heath, 1994). Failure to do so may result in rumors, speculation, and misinformation that may prove detrimental to the organization and its image. Research further demonstrates that it is important to maintain consistency in all outgoing messages from the organization during a crisis (Barton, 2001). Consistency in messages implies that all the spokespersons for the organization, regardless of their geographic location and organizational hierarchy, communicate the

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same message to all stakeholders. Research indicates that failure to maintain consistency in outgoing messages erodes the credibility of the organization and causes unnecessary obstruction in the handling of the crisis (Garvin, 1996).

Openness in organizational communication is another area that researchers have investigated to assess its impact on crisis communications (Kaufmann, Kesner & Hazen, 1994; Fitzpatrick & Rubin, 1995; Martinelli & Briggs, 1998). Openness in organizational communication is defined as disclosing all information pertaining to the crisis. Research indicates that organizations that have been open in their communications with their stakeholders have fared better than those organizations that chose to withhold information (Kaufmann, Kesner, & Hazen, 1994). In addition, organizations that have failed to disclose complete information have been accused of stonewalling (Barton, 2001). However, some researchers have argued that complete disclosure may not be the most optimal solution in most situations due to the likelihood of litigation (Fitzpatrick & Rubin, 1995; Martinelli & Briggs, 1998). Scant research has investigated when an organization should opt for full disclosure and when to submit to partial disclosure (Ulmer & Sellnow, 1997).

Additionally, few researchers (Fitzpatrick & Rubin, 1995; Martinelli & Briggs, 1998) have examined whether litigations are always a result of disclosure, non-disclosure, or even partial disclosure. Litigations could result from organizations not honoring its policies. Further research is necessary to determine what drives stakeholders to file lawsuits against organizations and of how to avoid these litigations. Research within the form tradition has been less rigorous compared with the content research, which has attracted substantially more attention (Coombs, 2007).

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Content Crisis Communication

Research within the content crisis communication tradition can trace its roots to corporate apologia. Corporate apologia focuses on strategies for self-defense. Researchers within this tradition were the first to identify crisis response strategies systematically (Coombs, 2007). In his study of the Union Carbide tragedy in Bhopal, Ice (1991) first utilized corporate apologia. He studied the organization's different responses to the various stakeholders. He found that Union Carbide used (a) denial (claiming no responsibility for the action); (b) bolstering (accepting responsibility but linking the organization to something positive); (c) differentiation (separating the crisis from a larger context); and d) transcendence (placing the crisis in a new higher context). Although results from this study suggest that an organization should have different strategies for managing different stakeholder groups, this line of research has not received much attention.

Schultz and Seeger (1991) extended the rhetoric of corporate apologia to individuals. Individual apologia seekers blame the corporation, in an attempt to absolve themselves of the responsibility. In the case of corporate apologia matters of authorship, attribution and responsibility for messages from organizations are difficult to ascertain (Cheney, 1991). Corporate messages tend to "decenter" the individual by the use of passive voice, personification, and "synecdoche" (attributing messages to the organization) (Cheney, 1991, p. 5).

Hobbs' (1995) exploratory research suggested that corporate apologia might be used as a strategy to rebuild relationships with the stakeholders damaged during a crisis. In his examination of the case of Toshiba's submarine technology sale to the Soviets in 1987, Hobbs found that apologia served as the only means for Toshiba to defend their

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actions to the U.S. government. Ice's (1991) and Hobbs' (1995) studies constitute the

first exploratory work in the use of corporate apology as a crisis response strategy.

Hearit (1994) posited that corporate apologia is a response to criticism that seeks

to present a competing account of an organization's actions. Therefore, an apologia is

not an apology, although the terms have the same etymological root. Hearit (1995)

developed a new line of research on corporate apologia by integrating ideas from social

legitimacy theory and rhetoric theory. Hearit (1995b) proposed that the role of the

situation be reconceptualized as a legitimation crisis. Social legitimation theory proposes

that organizations are legitimate to the extent their values are reflective of the larger

societal values (Dowling & Pfeffer, 1975). Consequently, when the public views an

organization to have violated their normative public value, the organization is faced with

a legitimacy crisis:

> A clear indicator of the social legitimacy crisis is the emergence of public
> animosity toward the corporation. This hostility is in the form of social sanction
> by which the supra-systems (e.g. media, opinion leaders, consumers) in effect
> says, 'We don't approve of what you have done.' (Hearit, 1995b, p. 3).

Hearit (1995) identified five crisis response strategies when an organization takes

responsibility for its action, including: (a) presentation of an organization's account of the

crisis by offering its frame for the crisis event; (b) issuing a statement of regret; and (c)

the use of one of the three dissociation strategies in order to distance itself from the crisis.

The **opinion/knowledge** dissociation argues that the complaint against the organization is

based on opinions and not on facts of the situation. The **individual/group** dissociation is

a form of scapegoating, where an employee or a part of the organization is declared

responsible for the crisis. The **act/essence** dissociation argues that the crisis is not

representative of the "real" organization; that the crisis is a deviation from the normal.

The last two crisis response strategies are that an organization takes action to identify and

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to resolve the problem, which caused the crisis, and that the organization explains how it has acted to restore the values violated by the crisis.

In a similar vein, Benoit (1995) explored several crisis communication strategies to create a detailed typology of image restoration. The strategy of corrective action is particularly relevant to post-crisis communication. Hearit (1995b) suggested that corrective actions demonstrate an organization's sincere intention to revert to the values it stood for before the crisis. Corrective actions may assist in the re-legitimating process. Sellnow, Ulmer, and Snider (1998) stated that corrective actions need not imply guilt on the part of the organization necessarily if the organization was viewed legitimate before the crisis. An organization's corrective actions would be simply viewed as a social legitimacy process (Sellnow et al., 1998). Hearit (1996), building on Benoit's (1995) work, suggested "kategoria" or counter charge as another post-crisis communication strategy for the organization. This strategy depicts the organization as the victim that would force the accuser to apologize. If successful in the use of kategoria, the organization has the advantage in shaping the communicative agenda. Hearit (1996) noted that organizations that use kategoria successfully share a positive relation with the media.

Corporate Impression Management

Allen and Caillouet's (1994) work pioneered the focus on impression management as a theoretical framework in the development of crisis response strategies. Although significant and instrumental in the development of later crisis response strategies, it did not gain much popularity with later crisis researchers. Allen and Caillouet (1996) suggested seven strategies that organizations may employ to respond to criticism: Excuse; Justification; Ingratiation; Intimidation; Apology; Denouncement; and

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Factual distortion. Their empirical findings support Ice's (1991) findings that an organization may use different response strategies for different stakeholders.

Image Restoration Theory

Image restoration theory has produced the most voluminous research (Coombs, 2007). Building on the works of Benoit et al. (1991), and Brinson and Benoit's (1994) works, Benoit (1995a) identified five general image restoration strategies: denial; evasion of responsibility; minimization; mortification; and corrective action. Coombs (1999) developed more comprehensive lists of image restoration strategies in which he included "separation" strategies. The image restoration strategies as articulated by Coombs (1999) are explained in the following paragraphs.

Organizations use *denial* to claim there is no crisis. Denial may involve stating the organization did not perform the act or shift the blame to another person in the organization. *Evasion of responsibility* involves reducing the responsibility for the crisis by using tactics, such as defeasibility, wherein the organization claims it lacked the information or the ability to prevent the crisis; maintains it was an accident and accepts it made a mistake; or claims that organization had good intentions and meant the action to be positive.

Organizations try to *reduce the offensiveness* of the crisis by using bolstering strategies that reinforce the organization's good qualities; minimization strategies that suggest that the crisis is not serious; transcendence strategies, where the organization explains that the crisis was related to achieving a larger goal; or attacks the accuser to discredit the accuser. The organization may also offer some form of *compensation* to reduce the offensiveness of the crisis. *Corrective action* involves taking steps to solve the problem and/or prevent a repeat. *Mortification* strategies involve accepting the

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responsibility for the crisis and apologizing. Lastly, the organization may use *separation*

strategy to identify a separate scapegoat within the organization and to initiate corrective

action against the entity.

In any given crisis, an organization may not use all the image restoration

strategies. It may use a combination of strategies that best suits the nature of the crisis

and the type of the organization. This crisis communication model emphasizes the

selection of best combination of strategies for handling the crisis. Related research

within the strategic management field has also resulted in the development of similar

crisis typologies, and two of them are discussed.

Crisis Typologies within Strategic Management

Mitroff and Alpaslan (2003) developed a typology of three types of crises –

natural accidents, normal accidents, and abnormal accidents – based on their review of

the disasters faced and the plans drawn up by more than 150 businesses all over the world.

They also conducted crisis management audits in more than 60 multinational

corporations, government agencies, and nongovernmental organizations. Natural

accidents include fires or earthquakes. They suggest that for the most part, organizations

know how to prepare for these crises and can defend against them using risk management

techniques, such as safety planning and insurance (Mitroff & Alpaslan, 2003).

Normal accidents was a term coined by the sociologist Charles Perrow, in his

1984 book, *Normal Accidents: Living with High-Risk Technologies.* Perrow pointed out

that technologies have become so complex that the potential for breakdowns is literally

built into them. In fact, industrial disasters, such as Three Mile Island, Chernobyl,

Bhopal, and Exxon Valdez, were not random aberrations but normal system-overload and

malfunction problems (Mitroff & Alpsalan, 2003). Mitroff and Alpsalan (2003) argued

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that proactive organizations cope with such disasters by getting designers, operators, and maintenance managers of complex systems together for meetings. If the operators experience unusual conditions then they suggest a normal accident is in the offing.

Most importantly, the third categories of crises – abnormal accidents – are the result of deliberate or intentional evil actions, such as bombings, kidnappings, and cyber attacks. Mitroff and Alpsalan (2003) stated that organizations that operate in developing countries live with a high possibility of sabotage. However, the danger has never been greater due to of global terrorism, which has landed workplaces all over the world in the middle of a war zone. In fact, the number of abnormal accidents has risen sharply in the past 10 years (Mitroff & Alpsalan, 2003) (See Appendix 1).

Building on Mitroff and Alpsalan's (2003) work, Snyder et al. (2006) advanced a new typology of organizational crises that integrates ethical considerations with rationality and strategy formation. Their crisis classification groups all crises affecting organizations in terms of the relationship of the crisis to the organization. They developed two dimensions of crisis typology. The first dimension is based on the organizational distance to the crisis' original center of gravity (internal/ external), and the second refers to the frequency of occurrence (normal/abnormal). Snyder et al.'s (2006) classification creates a parsimonious 2×2 framework that explains environmental, organizational, and personal crises. Their model builds upon rationality in strategic decision-making processes and ethics in strategy within the stakeholder theory of organizations (see Appendix 2). Snyder et al. (2006) suggested that although there should be sufficient latitude in the classification of crises, they acknowledge the possibility of reclassifying the crises from normal to abnormal if they become frequent.

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Hypotheses

A review of the crisis communication literature above indicates that the examination of crisis communication within the discipline of public relations focuses primarily on the impact of the crisis on the image or reputation of the organization. Similarly from a review of the decision-making literature within the management discipline it is evident that solving a decision-problem clearly involves the influence of several factors and is definitely more nuanced than the crisis communication literature suggests. Often the impact of the crisis extends beyond the reputation of the organization and may cause significant financial loss, loss of human lives, and environmental damage. It is therefore, argued that the decision-makers will make decisons that consider the impact of the crisis not only on the reputation but more importantly its negative impact on the organziations's financial position, the severeity of damage to the environemnt, the loss of human lives, process interruptions, loss to plant and machinery during a crisis within a chemical organization. The following hypothesis is proposed:

H1*: Decision-makers consider the impact of the crisis on "Damage to the Environment, Financial Loss, Impact on Market Share, Loss of Human Lives, Process Interruptions" besides damage to the reputation when formulating strategies during a crisis within a chemical organization.

A crisis may affect the stakeholders of an organization differentially. This may drastically change the salience of affected stakeholder groups. Stakeholder salience has been defined as the "degree to which managers give priority to competing stakeholder claims" (Mitchell et al., 1997, p. 869–870). According to Mitchell et al., (1997), stakeholder salience is influenced by three attributes: power, legitimacy, and urgency. For instance, a stakeholder group is said to have "power" if they can force the

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organization to do something it would not have done otherwise. A stakeholder group is

said to have "legitimacy" if its claims on the organization are perceived appropriate

within a socially constructed social system. "Urgency" exists when stakeholder needs

become time sensitive and critical to the survival of the organization (Mitchell et al.,

1997). Since decision-making during a crisis is often done under severe time constraints,

a crisis situation increases the urgency or the degree to which stakeholders' claims call

for immediate action. This makes it incumbent on the decision-makers to identify and

prioritize the needs and interests of the different stakeholder groups in managing the

crisis. Although it is clear from the review of the crisis communication literature above

that the interests of the stakeholders are important to decision-makers during a crisis, few

if any, studies have examined how decision-makers address the interests of the different

stakeholder groups during a crisis when it has been repeatedly pointed out in crisis

communication literature that decisons have to be made quickly and within severe time

constraints. Nowhere in the crisis communication literature have scholars raised the

question how decision-makers should manage the multiple interests of different

stakeholders during a crisis. The fact that managing multiple stakeholder interests

simultaneously during a crisis may pose a challenging situation for the decision-makers

has not been examined within the crisis communication literature. Although, as noted

earlier, public relations practitioners categorize stakeholders into primary and secondary

stakeholders or even tertiary stakeholders when planning and executing a

communications campaign, no such categorization or prioritization is reommnended

when attending to the interests of the multiple stakeholders during a crisis. The following

hypothesis is therefore, proposed:

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H2: Decision-makers will prioritize the interests of the stakeholders based on the urgency, power, and legitimacy during a crisis since it is not possible to attend to the needs of all the stakeholders simultaneously because of the constraints of time.

During a crisis, the stakeholders of an organization assign responsibility to the organization to interpret the crisis. The objective is to evaluate the organization's ability to control the crisis and to estimate the level of organization's responsibility for the crisis. Coombs and Schmidt (2000) argued that the locus of control and crisis responsibility is so closely related that they should be treated as isomorphic. Research indicates that based on the level of attribution of crisis responsibility, decision-makers within an organization choose accommodative or defensive crisis response strategies (Coombs & Holladay, 1996). Although previous research supports the finding that decision-makers within an organization choose crisis response strategies based on the level of crisis attribution by the organizational stakeholders, few, if any have done so empirically. It is therefore, important to validate those findings empirically. The following hypothesis is proposed:

H3: The organization's responsibility for the crisis in the eye of the public will affect the strategy selection process during a crisis.

Strategic decision-making has yielded some of the most prolific research in the area of management research (Papadakis, Lioukas, & Chambers 1999). Some of the dominant paradigms within the field of strategic decision-making processes include rationality and bounded rationality, politics, and power (Eisenhardt & Zbaracki, 1992); external control versus strategic choice (Papadakis, Lioukas, & Chambers 1999); procedural rationality, generation of alternatives, politicization, timing, and lateral and horizontal communication (Papadakis, Kaloghirou, & Latrelli, 1999a); the role and impact of contexts (Beach & Mitchell, 1978); and the nature of the decision problem

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(Pettigrew, 1990). Management scholars have identified several dimensions of a strategic-decision making process; however, the following dimensions have been chosen based on their applicability and implications for crisis management:

- Nature of the decision problem

- Comprehensiveness

- Formalization and standardization of the decision-making process

- Top management characteristics

- External corporate environment

- Organizational financial performance

Nature of the Decision-Problem Research into decision-making, cognition, and labeling indicates that managers in different organizations or even within the same organization may interpret the same internal or external stimulus quite differently (Dean & Sharfman, 1993a; Dutton, 1993; Haley & Stumph, 1989). It has been found that the manner in which managers categorize and label a decision in the initial stages of the decision-making processes strongly influences the organization's subsequent responses (Dutton, 1993; Fredrickson, 1985; Mintzberg et al., 1976). There is evidence to suggest that if a decision is perceived as a crisis instead of an opportunity, different actions will be taken (Jackson & Dutton, 1988; Milburn, Schuler, & Watman, 1983).

Empirical evidence indicates that when decisions are interpreted as threats as opposed to opportunities, the decision-making processes are characterized by greater comprehensiveness (Fredrickson, 1985). Research on the impact of decision-specific characteristics on organizational decision-making processes is limited (Papadakis & Lioukas, 1996; Rajagopalan et al., 1993), as most of the empirical work focuses on a single decision-specific characteristics (crisis or opportunity) and their influence on

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aspects of the decision making processes; or on the early stages of issue identification (Billings et al., 1980; Dutton, 1986; Jackson & Dutton, 1988).

Although comprehensiveness has been considered one of the most salient and enduring influences on the decision-making process within an organization (Miller, 2008; Rajgopalan et al., 1993), few, if any studies have examined how uncertainty in the environment affects the comprehensiveness of the decision-making process during a crisis. Uncertainty has been a central concept in the organization theory literature, specifically, in its relationship with its external environment (Milliken, 1987). Environmental uncertainty within the organizational literature has been used to refer to both the state of the external environment of an organization, as well as the state of the decision-makers who perceive themselves lacking in critical information about the environment (Milliken, 1987). These two perspectives have yielded different definitions of the term "environmental uncertainty." The three most commonly cited definitions are: (a) An inability to assign probabilities as to the likelihood of future events (Pennings, 1981; Pfeffer & Salancik, 1978); (b) A lack of information about cause-effect relationships (Duncan, 1972; Lawrence & Lorsch, 1967); and/or (c) An inability to predict accurately the outcomes of a decision (Downey & Slocum, 1975; Schmidt & Cummings, 1976).

For the purpose of this dissertation, uncertainty will mean a decision-maker's inability to predict something accurately because of lack of sufficient information. The term environmental uncertainty in this context would mean that the source of the uncertainty is the organization's external environment. Some researchers (Miles & Snow, 1978; Tosi & Slocum, 1984) suggested that environmental uncertainty should be studied in relation to specific components of the environment, for instance, suppliers, competitors,

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government, distributors, and consumers. During a crisis, decision-makers may face hostility from stakeholder groups whose interests have been hurt. It is evident from the review of the strategic-decision making perspective literature that relationship between strategy formation and the external environment has primarily been examined in the context of decision problems besides a crisis, it is therefore important to investigate how external environment variables such as uncertainty in the environment influences the decision-making process during a crisis situation. More importantly, from the review of the crisis communication literature it is evident that scholars have not examined previously whether decison-makers face uncertainties in decision-making during a crisis. Since crisis communication as a field of inquiry is still a relatively new and evolving field, researchers have just begun investigating the factors that influence the selection of strategy during a crisis.

As noted earlier elsewhere (in the introduction), the objective of this dissertation is to extend the theoretical perspectives from the strategic decision-making literature to the crisis communication field and examine whether these theoretical constructs explain decision-making processes duirng a crisis. It would be fallacious to assume that uncertainty in the decison-making environment or uncertainty on the part of the decison-makers affect different decison-problems in different environnmental and organziational settings in a similar manner. In this dissertation study, uncertainty has been operationalized to mean, "decison-makers acting in ways that might have uncertain outcomes," or "being unsure about what information to collect" (Beach & Mitchell, 1978). It therefore, becomes imperative to examine how uncertainty influences decision-making during a crisis. The following hypothesis therefore, is proposed:

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H4. **Decision-makers will face uncertainties in decision-making during a crisis due to either lack of critical information about the external environment or their inability to predict the outcome of their actions within a chemical organization.**

Rationality in decision-making has been defined as an organization's ability to make decisions based on comprehensive information and analysis (Synder et al., 2006). The key criteria researchers have used in identifying the extent of rationality in an organization's strategic decision-making process are the comprehensiveness of scanning the environment (Miller, 1992; Priem et al., 1995); the simultaneous generation of a number of alternatives (Eisenhardt, 1989; Judge & Miller, 1991); the range or level of the analysis of the information (Eisenhardt, 1989; Goll & Rasheed, 1997; Priem et al., 1995); and the degree of planning (Miller, 1992; Priem et al., 1995). Because of their unpredictable and often immediate nature, crises require that organizations take swift, yet informed action in order to survive.

Organizations proactively involved in scanning the environment have an advantage in decision-making during a crisis. Environmental scanning activities accelerate the process of cognition of decision-makers in organizations, which helps in making faster decisions with greater success. Crisis literature has amply underscored the need for speed in responding to crisis-situations. Based on the above discussion, the following hypothesis is proposed:

H5: Comprehensiveness will characterize strategy formation during an organizational crisis.

The management communication literature has presented the relevance of effective leadership during a crisis. For example, an early study conducted by Hamblin (1958) noted that organizational members are prone to replacing an ineffective leader in

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the event of a crisis. In the event of a crisis, effective leadership by senior officials plays

a significant role in an organization's attempt to return to a state of normalcy (King,

2002). The crisis leader must be able to communicate accurate and prompt information

to numerous constituencies both internal and external to the organization (Pearson &

Mitroff, 1993). In that sense, the crisis leader becomes the organization's public face,

explaining the crisis, responding to accusations of wrongdoing, justifying and explaining

choices, and offering assurances that the problem is being resolved. An effective leader

also establishes an overall tone for the crisis by remaining calm, personifying authority

and control, and reinforcing the organization's core values (Seeger, Sellnow, & Ulmer,

2003).

Seeger et al. (2003) also suggested that because quick decisions must be made

during a crisis, an authoritarian style of leadership may be more appropriate. Closely

related, Weiss (2002) noted the importance of effective leadership during a crisis by

providing step-by-step recommendations for senior officials. Some scholars (e.g.,

Roberts & Bradley, 1988) have suggested that the situation or context may be significant

for perceptions of leadership during a crisis. The role of leadership has been consistently

identified as being crucial to the management of a crisis.

Pillai (1996) found that leaders often displayed a charismatic style of leadership

during a crisis within an organization. Initial research by House (1977) found that

emotional, charismatic leadership inspired followers to give enthusiastically

unquestioned obedience, loyalty, commitment, and devotion to the leader and to the

cause that the leader represents. In a similar vein, Conger and Kanungo (1987, 1988,

1994) also found that "charismatic leaders differ from other leaders by [virtue of] their

ability, behavior and actions to formulate and articulate an inspirational vision that fosters

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an impression that they and the mission are extraordinary (p. 442)." Similarly, Nadler

and Tushman (1990) perceived charismatic leaders as people with vision (who are

capable of articulating a compelling vision, setting high expectations, and modeling

consistent behavior); the ability to energize (demonstrate personal excitement, express

personal confidence, and seek and achieve success); and finally, as supporters (who

express personal support, empathize, and express confidence in people). In the event of a

crisis, a charismatic style of leadership may increase an organization's efforts to return to

normalcy.

Research within traditional public relations suggests that the CEO is the face of

the organization during a crisis (Grunig, 1993). CEOs have publicly apologized to the

stakeholders for their organization's misdeeds. Most recently, Bob Eckert, the CEO of

Mattel, apologized for three successive toy recalls. In the past, Richard Allen, CEO of

AT&T delivered the apology (Benoit & Brinson, 1994). Iacocca delivered it for Chrysler,

as did the CEO for Toshiba Corp (Hearit, 1994). Similarly, Rawl apologized for Exxon

(Tyler, 1997) and Ed Brennan defended Sears from allegations of fraud (Benoit, 1995b).

The rationale behind using a CEO to apologize is that it helps the public to assess

the sincerity of the organization. Second, if apology does not work, then the

organizations can scapegoat the CEO who has publicly taken the responsibility for the

situation (Hearit, 2001). It is evident that the CEO plays a vital role in the strategic-

decision making processes during crises. Based on this, the following hypothesis is

proposed:

H6: The behavioral characteristic of the top management will determine the

selection of strategies during a crisis.

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Academics and professional consultants alike have questioned whether formalized and standardized process of strategy formation result in better strategies. Formalization of the decision-making process exerts a significant influence on the flow of information between the different levels of hierarchy. In addition, formalization and standardization of the decision-making process determines the nature and context of managerial interactions and influences strategic decisions (Armstrong, 1982; Miller, 1987). Past research demonstrated that formalized approaches to strategy formulation do indeed result in better performance in terms of sales and profits (Herold, 1972; Karger & Mallik, 1975; Thune & House, 1970).

Thune and House (1970) compared the performances of 18 matched pairs of medium-to-large sized companies in the food, drug, steel, chemical and machinery industries over a period of 7 years. Each pair consisted of one firm that used formal planning and the other that did not. Research revealed that the formal planners significantly outperformed the non-planners with respect to ROI (Return on Investments), ROE (Return on Equity), and EPS (Earnings per Share), while equaling or surpassing the performance of the non-planners with regard to sales growth (Thune and House, 1970). In addition, the results also indicated that the formal planners significantly out did their own performance prior to adopting formal planning with respect to dollar sales growth, EPS growth, and stock appreciation (Hofer & Schendel, 1978). Herold (1972) extended the Thune and House (1970) study for an additional four years for firms in the drug and chemical industries and found that formal planners not only continued to outperform the non-planners but that they also increased their lead over the non-planners.

Eastblack and McDonald (1970) studied the leadership characteristics of the CEOs of 211 companies, 105 of which were in the 1969 *Fortune* 500 list of companies.

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The results suggested that CEOs engaged in formal planning headed the fastest growing companies. Although this does not conclusively prove that strategic planning produces faster growth, it does at the very least indicate that the CEOs of high growth companies felt that formal strategic process produced enough benefits for their firms to devote a substantial amount of their most valuable and limited resource, that is, top management's time, to do it. However, studies prove otherwise (Rue & Falmer, 1973a, 1973b; Sheehan, 1975). Hofer and Schendel (1978) explained that this was probably the case only in service industries. They cautioned against generalizing the circumstances in which formal planning is most useful since it is really the quality of the strategy that determines its performance and not the process by which that strategy is formulated.

Since formalization and standardization are essential tools for the improvement of managerial decision-making, researchers argue that these structural frameworks influence strategy formation processes (Duncan, 1990; Langley, 1988). The results however, are inconclusive. In some instances, researchers have found that formal rules for decision-making processes are overlooked or bypassed when making strategic decisions (King, 1983; Sinha, 1990). Few researchers have also argued that much of the actual decision-making may take place outside of the formal decision making processes. It is likely that a crisis may very well be the situation when decision-making does not follow the formal process because of pressures of time. On the other hand, formalization of decision-making processes delineates the roles and the responsibilities of the decision-makers, which may enable quicker decision-making. It is, therefore, important to investigate whether formalization of the decision-making process affects strategy formation during a crisis. The following hypothesis is proposed:

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H7: Formalization and standardization in the decision-making process will affect the strategy formulation process.

The organizational environment is a major source of contingencies faced by an organization (Tosi & Slocum, 1984). Several arguments have stated that environment is a key determinant of the appropriateness of rational strategic decision processes. For example, Fredrickson and Mitchell (1984), Fredrickson (1984), and Fredrickson and Iaquinto (1989) advocated adoption of rational comprehensive processes in stable environments; however, in uncertain and dynamic environments, they dissuaded against the use of comprehensiveness. They argued that comprehensive processes are time-consuming, and in a fast changing environment, a slow decision-making process would be clearly inappropriate. Fredrickson (1984) and Fredrickson and Mitchell (1984) empirically demonstrated that rationality, represented by the comprehensiveness of the planning process, is positively related to performance in an industry within a stable environment and negatively related to performance in a dynamic environment.

In subsequent studies of the same two organizations, Fredrickson and Iaquinto (1989) found that these relationships persevered over time. They saw that comprehensiveness resulted in considerable inertia. On the other hand, researchers have found the opposite to be true. For example, as cited in Miller and Friesen (1983) "a dynamic environment must be examined more thoroughly for executives to have a greater degree of control over their environment (p. 223)" Similarly, Eisenhardt (1989) found that successful decision-makers in high-velocity environments use more information, consider more alternatives, and seek a greater amount of advice. Instead of creating inertia, the comprehensiveness of decision-making accelerated their cognitive processes. The decisions resulting from comprehensive decision processes lead to better outcomes.

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Judge and Miller (1991), and Priem et al. (1995) provided further empirical support for this position.

Goll and Rasheed (1997) explained the conflicting findings on the interaction effect of environmental complexity and environmental munificence. For example, environmental complexity may require the firm to employ greater rationality in its analysis in order to understand the numerous environmental elements and their interconnectedness. Research on cognitive processes suggests that high environmental complexity may lead to greater use of cognitive simplification processes, such as selective perception and heuristics (Rajagopalan, Rasheed, & Datta, 1993), which in turn may affect strategic decision processes by potentially restricting the range of alternatives considered and the information used to evaluate them. Similarly, in munificent environments, "organizations may have the resources needed to engage in comprehensive decision-making processes, but the decision-makers themselves may perceive less need to do so" (Goll & Rasheed, 1997, p. 584). Evidently, the external environment influences the decision-making processes both in a stable and in a dynamic environment, and therefore, there is a strong possibility that it will affect the decision-making process during a crisis, which a dynamic environment characterizes. The following hypothesis is proposed:

H8: External corporate environment will affect the strategy selection process during a crisis.

Financial performance metrics of an organization, operationalized as return on assets (Burgeois, 1980) and growth in profits (Fredrickson, 1984), are arguably some of the most important factors that decision-makers consider when making decisions. Since a crisis may threaten these important performance goals of an organization, it is argued

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that decision-makers within an organization are likely to evaluate their impact on the strategy selection process. Research investigating the impact of an organization's past performance on the strategic decision-making process is limited (Rajagopalan et al., 1993). A study conducted by Fredrickson (1985) found that past performance had a negative effect on the comprehensiveness of the strategic decision-making processes.

More than four decades ago, Cyert and March (1963) reached the same conclusion, that is, that superior performance is expected to lower the intensity with which organizations will engage in rational or comprehensive search for information during decision-making. Rajagopalan et al. (1993) argued that this contradiction might arise due to the moderating effects of intervening variables or variables excluded from the analysis. Bourgeois (1981) and March and Simon (1985) supported their findings. Empirical evidence indicates that regardless of the size of the organization, those that were comprehensive in their decision-making outperformed those that employed less comprehensive decision-making processes (Smith et al., 1988). Since the results of the research on the influence of organization size on decision-making are inconclusive, it becomes imperative to examine whether organization size influences decision-making during a crisis. Based on the above review, the following hypotheses are proposed:

H9: Organizational financial performance will affect the strategy selection processes during a crisis.

H10: The size of the organization will affect the strategy selection process during a crisis.

Some researchers view most decision-making within organizations as being political in nature because it involves individuals with conflicting interests, decisions with uncertain outcomes, and resolution through exercise of power (Allison, 1971).

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Politics in organizations may also manifest in the form of agenda control, withholding of information, and behind-the-scenes coalition formation (Pettigrew, 1973). On the other hand, conflicts in decision-making within organizations have also been described as being open and forthright discussion based on all the available information without the covert use of power to enhance influence (Eisenhardt & Burgeois, 1988). Different scholars have conceptualized politicization to encompass diverse but closely related concepts, such as conflict and power. Some definitions are narrower than others are but all of them refer to the presence of strong disagreements among members of an organization. Whereas some definitions might focus on the cause of politics, such as personal ambition, efforts to gain personal advantage, and centralization of power (Bachrach & Lawler, 1980; Hage, 1980), others have focused on the shape of the politics, such as the nature of coalition formation, whether they are stable or fluid associations (Butcher, 1988; Stevenson, Pearce & Porter, 1985).

In a study that examined politicization in a high velocity environment, Eisenhardt and Bourgeois (1988) found that politics in organization emerge as a result of a centralization of power that leads to stable coalition formation based on demographic characteristics, which obstructed communications within an organization and hurt the growth of the organization. Since a dynamic environment, where resources are limited and a group of people is involved in the decision-making, characterizes a crisis, it is hypothesized that:

H11: Politicization will affect the strategy formation process during a crisis.

Researchers have typically examined financial reporting within organizations as a dimension of comprehensiveness, especially, in the case of investment decisions (Papadakis, Lioukas, & Chambers, 1998). Research suggests that financial reporting

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within organizations is influenced by the magnitude of the impact or the consequence of

the decision. Since a crisis may invariably affect the financial performance of an

organization, it is reasonable to assume that decision-makers might consider financial

reporting when formulating strategies. Financial reporting within organizations has also

been associated with the education of the CEOs. Highly educated CEOs demand greater

comprehensiveness in financial reporting (Papadakis, Lioukas, & Chambers, 1998).

Dutton (1986) found that during a crisis, organizations are more likely to use financial

reporting as a means to explain and justify the financial liabilities of the situation. Since

a crisis may entail significant financial liabilities, it is argued that organizations may

consider financial reporting. Yet other researchers have found that financial reporting in

organizations is inversely related to the frequency of the events. Since a crisis is a low

probability and a high impact event, it is argued that decision-makers will consider

financial reporting during a crisis. The following hypothesis is proposed:

H12. Financial reporting will affect strategy formation during a crisis.

Most of the cases involving organizational crisis, legal strategy trumps public

relations strategies (Fitzpatrick & Rubin, 1995). The fact that decision-makers often have

to reconcile contradictory counsel of public relations with legal advice complicates

decision-making during a crisis. The legal team within an organization counsel the

decision-makers to (a) say nothing; (b) say as little as possible and as quietly as possible;

(c) say as little as possible, citing privacy laws, company policy or sensitivity; (d) deny

guilt and/or act indignant that such charges could possibly have been made; or (e) shift or,

if necessary, share the blame with the plaintiff (Fizpatrick and Rubin, 1993–94). On the

other hand, public relations practitioners advise the decision-makers to be open and

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honest in their communication, admit guilt when appropriate, apologize, and take

corrective actions (Lukaszewski, 1993).

        The public relations counsel endeavors to protect the credibility and the reputation

of the organization by communicating with its public, whereas the legal department tries

to mitigate the threat of a legal lawsuit and potential significant financial losses

(Lerbinger, 1997). This poses a challenging situation for the decision-makers within an

organization who have to balance the diverse interest of its stakeholders with the

financial interest of the organization. Based on the limited organization research on

decision-making during a crisis and the dominance of legal strategies, it is hypothesized

that:

H13. **Decision-makers will consider legal opinion when managing a crisis.**

        Irreversibility of decisions implies that it potentially limits the number of options

or alternatives available to the decision-makers to change the decision in the future

(Henry, 1974). Research indicates that decision-makers consider the irreversibility of

their decisions when making investment decisions (Henry, 1974). Under conditions of

uncertainty, the decision-makers try to anticipate and minimize the potentially serious or

irreversible risks of their decisions (Som, Hilty, & Kohler, 2009). Anticipating the future

risks associated with their decisions preserves the option for making modifications later.

Since it has been hypothesized (**H1**) that during a crisis, decision-makers have to

formulate strategies under conditions of environmental uncertainty and dynamism, it is

likely that they will try to take precautions to anticipate and minimize any irreversible

risk associated with their decisions or programs or policies that they propose. This

pattern has been observed in the formulation of international treatises and national

legislation for environmental protection and sustainable development (Som et al., 2009).

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An analysis of the irreversibility of decisions during a crisis also becomes imperative because decisions have to be made quickly and there is a greater risk involved with making a sub-optimal decision. Therefore, it is reasonable that decision-makers will evaluate irreversibility during a crisis. The following hypothesis is proposed:

H14 Decision-makers will evaluate permanent changes to policies when making decisions during a crisis.

CHAPTER 4. METHODOLOGY

This chapter describes in detail the research methodology used in this study. This study uses both quantitative and qualitative research methods. Although it uses both research methods, this study may be viewed primarily as a quantitative study supported by qualitative research. Since this research utilizes both quantitative and qualitative research methods, this chapter has been divided into two sections. The first section will elucidate the quantitative research method, and the second section will explain the qualitative research method used in this study.

There are advantages and disadvantages of using two types of research One of the most notable advantages of using two research methods is that it adds richness to the data and provides depth to the results, which would not have been possible using a single research method (Tashakkori & Creswell, 2007). In genuinely integrated studies, the quantitative and the qualitative findings are mutually informative. Such research, thus, provides an opportunity to construct a negotiated account of what they mean together. The metaphor of triangulation, however, has sometimes hindered this process by concentrating on the degree to which findings are mutually reinforcing or irreconcilable (Tashakkori & Creswell, 2007).

On the other hand, there are difficulties in integrating data from both the methods and drawing inferences. One key issue with a project that uses both quantitative and qualitative research is whether the result is more than the sum of the individual quantitative and qualitative parts (Bryman, 2007). In other words, do the results of the qualitative and the quantitative components of the research support one another in such a way that they are mutually illuminating? (Morgan, 2010)

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Researchers using two types of methods may experience serious barriers to integration in the course of their investigation (Bryman, 2007). Bryman (2007) delineated a list of factors that impedes the integration of the quantitative and the qualitative research components of a study. The following paragraphs enumerate some of those barriers to integration.

Sometimes a research project may be designed in such a way to make it difficult for integration to take place. For instance, if a project is designed to conduct a survey, the structured nature of the survey will drive the data collection and analysis of the qualitative data obtained through in-depth interviews or focus groups. This implies that the structured nature of the quantitative research dictates the contours of the qualitative component (Bryman, 2007).

Other barriers to the integration of quantitative and qualitative research may be due to the separate timelines of the qualitative and the quantitative components (Bryman, 2007). Yet, other researchers may face obstacles in integrating the results because of their individual specialization or preference for the quantitative or qualitative research methods (Bryman, 2007). It has also been observed that at times, researchers might feel that one set of data might be more significant or interesting – regardless of whether they are qualitative or quantitative – and that method would be given priority in reporting the results (Bryman, 2007). Another phenomenon that might hinder the integration of the two methods may be the tendency of the editors of journals to emphasize one over the other (Bryman, 2007).

Bryman (2007) recommended designing studies in such a way that they recognize in advance the implications of the different timelines and the stipulations of quantitative and qualitative investigations to aid in integrating the results. In this way, it might be

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possible to build in greater opportunity to bring the two sets of findings together. Finally,

one consideration that might aid the linking of analyses is not to loose sight of the

rationale for conducting research that involves the use of two types of research in the first

place (Bryman, 2007).

The rationale for using both quantitative and qualitative research methods in this

dissertation study was motivated by two reasons. First, the result from the qualitative

study could be used to test the model developed through the analysis of the results of the

quantitative study. Second, researchers investigating organizational communications have

pointed to the difficulties in gaining access to employees in organizations for reasons of

confidentiality or lack of time (Huang, 2002; Li, 2009). Hence, a combination of

personal in-depth interviews and survey research was used to collect data about decision-

making during a crisis. In-depth interviewing was used for this study because of its

strengths in answering the research questions. Qualitative research involves "an

interpretive, naturalistic approach to its subject matter" (Denzin & Lincoln, 1998, p. 3).

Survey research was chosen because it allows the researcher to make inferences from a

smaller group of people, which would be prohibitively expensive to study using other

research methods (Holton & Burnet, 1997). Additionally, standardized questions make

the measurements more precise by enforcing uniformity and eliminating observer bias.

Moreover, surveys can be administered remotely using mails, e-mails, or the telephone.

Sampling

This study used purposive sampling to collect data. Purposive sampling was used

because of the nature of the study, which examines decision-making by senior

management during a crisis within the chemical industry. The decision to use purposive

sampling was driven by the fact that no single list was available that listed all the

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chemical organizations within the U.S. The researcher compiled a list of chemical

organizations by combining companies listed in separate directories of trade associations,

such as the Louisiana Chemical Association, Society for Chemical Manufacturers and

Affiliates, East Harris County Manufacturer's Association, Lake Area Industry Alliance,

and member companies of the American Chemistry Council. The sampling frame

included chemical organizations and not individual chemical plant sites.

The chemical organizations were chosen as the sampling frame because the

available directory listed the chemical organizations and not the locations of their

individual chemical plants. Therefore, it seemed reasonable and appropriate to choose

the main organization as the sampling frame. Although the chemical organization was

chosen as the sampling frame, the plant or the site managers, as they are called, were the

ones who were closely involved with the decision-making during a crisis. Therefore, they

were also included in the list of people who were mailed the surveys.

This created quite a challenging situation for the researcher. The physical address

of the corporate headquarters was easy to obtain from the company Web sites; however,

the Web sites seldom listed the location or address of the chemical plants and the

managers. The researcher then ran a Google or Bing search to find the contact person.

Sometimes the information that was available online was dated and this impeded the

search. This frequently also resulted in mail being returned as undeliverable.

The researcher also had to make judgments based on the organization structure of

the chemical firms to determine the list of people to be contacted for completing the

surveys. Smaller firms were structured differently from larger firms. In the case of

multinational organizations, the headquarters were located in major cities, mostly in the

New York area and their plants were concentrated in the Gulf Coast. Therefore, when

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mailing surveys to large multinational organizations, the researcher selected top

management officials located at the plant site and mailed them the surveys. In the case of

small firms, the top management was stationed at the site. The researcher mailed the

surveys to the CEOs and the other members of the top management. The researcher had

to constantly make these judgments to reach the right respondents.

     To jumpstart the survey, the researcher also attended a conference on

"Responsible Care" of the American Chemistry Council in Miami, Fl. Though the

researcher was able to get several people to answer the surveys, the number of completed

surveys were nowhere near the sample size. In addition, the researcher also had help from

the president of Louisiana Chemical Association, Dan Borne'. The public relations

representative of LCA sent out an e-mail invitation to all plant managers on behalf of

Borne' requesting them to complete the survey. Although effective in getting some

responses, it did not generate enough responses to help the researcher reach her sample

size.

     Additionally, the researcher also included a gift certificate from *Best Buy* worth

$15 as an incentive for the survey participants to complete and mail the survey. In all, the

researcher spent $3000 ($1200 [80x15] on gift cards and $1200 on registration alone for

the Responsible Care conference) of her personal money to collect data.

     In summary, the researcher explored all the avenues available to her to reach the

desired sample size. The researcher initially sent e-mail invitations to the participants.

The response rate was lower than 10 %. The researcher than mailed the survey

instruments. In all 425 surveys were mailed, e-mailed, or personally handed to the

participants. The researcher received 81 responses from the survey participants. The

response rate for this survey was 19%. Of the 81 responses received, 11 were incomplete,

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therefore there were only 70 usable survey responses. The data were collected from February to July 2010.

Limitations of Purposive Sampling

The drawback with purposive sampling is that it uses non-probability sampling. This makes it difficult to calculate the sampling error, which affects the conclusions drawn from the sample. In effect, it is difficult to make inferences that are generalizable to a larger population. However, "under some conditions purposive sampling may be appropriate" (Riffe, 2005, p. 84). "And despite the limitations of non-probability sampling in generating estimates of sampling error, they are used often because an adequate sampling frame is not available." (Riffe, 2005, p. 84). The use of purposive sampling therefore, can be justified based on research design. Since this study focuses primarily on the chemical industry, and the researcher has made serious attempts to get the widest cross-section of the sample, the use of purposive sampling is justified and even desirable. Additionally, since the researcher has defined the sampling frame very narrowly, i.e., the study aims to investigate how top management within the chemical industry make decision during a crisis, purposive sampling works better than just simple random sampling. The top management within the chemical organization was defined as the "Plant Manager," "General Manager," or Divisional Vice President or the person with the highest level of responsibility at the plant site. This included the "Vice President for Plant Operations" or the "President" if it was a smaller organization. Furthermore, as the results will be generalized to this narrowly defined population, a purposive sample might generate results that can be interpreted with caution within the limitations of this study. Finally, this is an exploratory study and being able to generate results that are

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based on robust theoretical and practical considerations will add to the knowledge of

decision-making during a crisis within the chemical industry.

Sample Size

Selection of the correct sample size is critical for the investigation of any research

problem because it gives the confidence that the results obtained are reliable and

significant. The sample size is also critical in minimizing Type I and Type II errors

(Peers, 1996). The selection of the appropriate sample size is dependent on several

factors, such as the purpose of the study, the population size, and the risk the researcher is

willing to accept (Israel, 1992). In addition, the confidence level, the confidence interval,

and the variability in the given population are important in determining the sample size.

Though sseveral formulae and published tables are available for calculating the sample

size, the published tables provide sample size for a known population size with a given

combination of confidence interval, confidence level, and variability. Formulae, however,

may prove more useful in the calculation of sample size as the researcher can calculate

the sample size for any population size with any combination of confidence level,

confidence interval, and variability.

Situations, however, may exist where the use of sample size tables and formulae

may not provide the intended results (Bartlett, Kotrlik, & Higgins, 2001). Multiple

regression analysis is one such case. In the case of multiple regression analysis, the ratio

of observation to the independent (predictor) variables should not fall below five (Hair et

al. 1995). Some researchers, however, recommend a more conservative estimate of 10

observations for each independent (predictor) variable (Halinski & Feldt, 1970). Due to

the difficulty encountered in reaching the decision-makers in the chemical industry, the

minimum number of observations was chosen to arrive at the sample size. This study

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examined 14 predictor variables; using the minimum ratio required for each predictor variable, the sample size equals 70, that is, $14 \times 5 = 70$.

Reliability and Validity Measures

Even though the sample size is smaller than 100, the results obtained in this study can be deemed reliable because it still meets the minimum sample size requirements for conducting regression analyses.

To test the reliability and the validity of the items in a scale, the researcher calculated the Cronbach's alpha using SPSS. Cronbach's alpha helps in assessing the internal validity of the items in a scale. The Cronbach's alpha score for the scale **Financial Reporting** $\alpha = 0.927$; **Formalization and Standardization** $\alpha = 0.514$; **Politicization** $\alpha = 0.592$; **Uncertainty** $\alpha = 0.809$; **Organizational Financial Performance** $\alpha = 0.840$; **External Corporate Environment** $\alpha = 0.809$; **Stakeholder Interests** $\alpha = 0.666$; **Impact of the Crisis** $\alpha = 0.774$; **Top Management Characteristics** $\alpha = 0.530$; **Comprehensiveness** $\alpha = 0.670$. Unfortunately, one of the major drawbacks of this study has been that three scales in the questionnaire **Complexity**, **Crisis Responsibility**, and **Irreversibility** had only one item in the scale. Therefore, the Cronbach's alpha could not be calculated for these three individual items in the above three scales. The results of this study should therefore be interpreted with caution when drawing a conclusion. Since this is an exploratory study, the results still have a significant implication for future research in this area.

Additionally, the researcher met with the president of Louisiana Chemical Association, Mr. Dan Borne' to confirm that all the theoretical constructs used in the survey questionnaire measured what they purported to measure. In fact, many of the constructs used in the survey questionnaire were operationalized using inputs and

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suggestions from Mr. Borne'. Additionally, the other constructs used in this study were validated from previous studies. The theoretical constructs therefore, used in this study can be deemed to have construct and face validity.

Survey Instrument

The researcher created a 69-item survey questionnaire using a 5-point Likert scale to explore the nature of the decision-problem (crisis), strategy formation, and selection during a crisis. The response categories in the survey ranged from "Very Unlikely" to "Very Likely." In addition, the respondents had the opportunity to rate the importance of an item on a 5-point Likert scale, with "1" being the least important and "5" being the most important. Following constructs were based on previously validated scales developed by Papadakis, Lioukas, & Chambers et al., (1998). **Comprehensiveness** was based on Fredrickson's (1984) rationality/comprehensiveness dimension. The scale contained three items. **Financial Reporting** was based on King (1975); Stein (1980); Marsh et al., (1988). This construct measured the degree of financial reporting activities and consisted of two measures. The measurement scale ranged from 1 to 5 from Very Unlikely to Vey Likely. The construct **Formalization and Standardization** measured the degree of rule formalization/standardization during the making of a strategic decision It consisted of two items. It was based on the scale developed by King (1975) and Stein (1980). **Politicization** measured the extent of coalition formation; the degree of negotiation among major participants and the degree of external resistance encountered. Scale ranged from 1 to 5 Very Unlikely to Very Likely. This scale was based on Pettigrew (1973); Mintzberg *et al.,* (1976); and Hickson et al., (1986). **Impact of the Crisis** measured the effect on profitability, process interruptions, sales, market share, damage to plant and machinery, threat to information technology. threat to financial

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position, threat to reputation, and loss of human lives. It was based on a scale developed

by Beach & Mitchell, 1978; and Schneider & DeMeyer, 1991. It consisted of nine items.

Uncertainty/Ambiguity measured general uncertainty about the decision environment;

uncertainty about the outcome of the decision and uncertainty about the information to be

collected. This variable consisted of three 5-Likert scale items. It was based on a scale

developed by Beach and Mitchell, 1978.

The construct **Top Management Characteristics** measured the senior

management's socio-psychological and demographic characteristics. It consisted of six

items.; risk propensity (Eysenck & Wilson, 1975), length of service (Hambrick & Mason,

1984; Fredrickson & Iaquinto, 1989), level of education (Hambrick & Mason, 1984).

External Environment Heterogeneity measured the variability in the external

environment of the organization. It was based on a scale developed by Miller and Friesen

(1983). It consisted of four items from 1 to 5, with 1 being Least Important and 5 being

Most Important.

The remaining four constructs were operationalized based on theoretical concepts

from the crisis communication literature; specifically, the construct **Complexity**

measured the dilemma the decision-makers faced in decision-making when weighing

legal implications for the organization. **Crisis Responsibility** was based on Coombs'

(2007) SCCT. It measured the stakeholders' perceptions of the management's

responsibility for the crisis. The construct **Stakeholder Interests** measured the influence

of the consideration for the well being of the stakeholders during a crisis. This construct

was derived from the stakeholder theory of the firm as articulated by Donaldson and

Preston (1995). It consisted of nine items. The construct **Organizational Financial**

Performance measured how an organization's financial metrics influenced the decision-

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making process. This scale was based on (Burgeois, 1980; Fedrickson, 1984). It consisted

of three items.

Since no existing instrument relates specifically to crisis communication in

organizations, the researcher designed a survey instrument that provided the information

necessary for this study. Scales used to measure the specific constructs were selected on

their appropriateness as measures of the constructs. The president of the Louisiana

Chemical Association, Mr. Dan Borne' reviewed the appropriateness of the survey

instrument to make sure that the constructs measured what they purported to measure;

thus, verifying it.

E-mail invitations were sent to the plant managers, the public relations managers,

and the corporate communications managers of the organizations. They were requested

to forward the link to the top management in their organizations. A second e-mail was

sent 3 weeks later to remind them to complete the online survey questionnaire. An

informed consent was obtained before administering the online survey, consistent with

the Internal Review Board regulations. The data was analyzed using regression analyses.

For the operationalization of constructs, please see Appendix A and for the survey

questionnaire, see Appendix B

Multiple Regression Analyses

Multiple linear regression helps to explain the relationships between independent

(predictor) variables and the dependent (criterion) variable. It aids in modeling the

relationship between the predictor variables and the criterion variable by fitting a linear

equation. Multiple linear regression analysis is based on the following assumptions:

- The dependent variable is normally distributed for each combination of levels of
  the predictor variables

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- The variances of the dependent variable are the same for all combinations of levels of the predictor variables

- The cases represent a random sample from the population

- The scores are independent from one participant to the next (Green & Salkind, 2005)

One limitation of the regression technique is it can only ascertain relationships between a predictor and a criterion variable but it cannot predict the causal mechanism. A visual inspection of the graphics (histograms, as well as the normal probability plots) produced in the SPSS output indicated normality and did not show that the assumptions of the regression procedure were violated. In addition, the statistical output from SPSS did not indicate any violations of the assumptions of the regression test.

Based on the hypotheses, three regression models were tested as part of this study: The evaluation of the nature of the decision-problem (crisis), strategy formation, and strategy selection. For the first model (**Nature of the decision-problem, i.e., crisis**), the dependent variable was "**Uncertain about the Cause.**" In the survey questionnaire, the question was phrased as, "**Be uncertain about the Cause.**" For the second model (**Strategy Formation**), the dependent variable was "**Schedule Meeting.**" In the survey questionnaire, the question was phrased as, "**Schedule formal or informal meetings to analyze the situation and come up with possible solutions or alternatives or plans.**" And for the third model (**Strategy Selection**), the dependent variable was "**Perform Analysis**" in the survey questionnaire, the question is phrased as, "**Perform some type of either formal or informal analysis to select the most appropriate alternative or solution.**"

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The independent variables used in Model 1 are:

- **Uncertainty/ambiguity** (Act in ways that might have uncertain outcomes; Be unsure or uncertain about what information to collect)

- **Complexity** (Consider legal advice)

- **Irreversibility** (Consider possible permanent changes in existing programs and policies when making decisions)

The independent variables used in Model 2 are:

- **Comprehensiveness** (Have detailed action plans, assign responsibility to a group of people or committee; seek outside assistance)

- **Formalization and standardization** (Have formal goals and objectives; Consider formal policies or guidelines)

- **Politicization** (Negotiate between different departments or groups; Consider external resistance or pressure from outside groups)

- **Financial reporting** (Consider pro-forma financial statements; Consider historical financial data such as operating margin, net profit margin, return on equity etc.)

- **Impact of the crisis** (Process interruptions; Damage to plant and machinery; Loss of life; Damage to the environment; Harmful to human health; Damage to the reputation; Financial loss; Impact on market share; Threat to information technology/other secure business systems and information)

The independent variables used in Model 3 are:

- **Top Management Characteristics** (Implement actions that might seem risky in normal circumstances; Accept responsibility for the crisis when appropriate; Make decisions that are familiar to the organization i.e., make decisions that have

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been made in the past during similar situations; Age; Level of education; Number of years with the organization)

- **External Corporate Environment** (The nature of competition; Customer's buying behavior; Media scrutiny; external pressures, such as, government, activists groups, consumer organizations, accreditation councils etc.; Market dynamism)

- **Stakeholder Interests** (Opinion of investors; Approval of government agencies; Interests of employees; Interests of the customers; Interests of the community; Interests of the suppliers; Interests of the distributors)

- **Organizational Financial Performance** (A concern for return on equity; A concern for return on asset; A concern for earning per share)

- **Organization Size** (Number of employees in the organization)

- **Crisis Responsibility** (Consider organization's responsibility for the crisis in the eyes of the public

An outline of the three individual models would thus look like the following:

Model 1

- Dependent Variable*:* Nature of the Decision-problem, i.e., crisis

- Independent Variables: Uncertainty/ambiguity, complexity, and irreversibility

Model 2

- Dependent variable*:* Strategy Formation

- Independent variables*:* Comprehensiveness, formalization and standardization, politicization, financial reporting, and impact of the crisis

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Model 3

- Dependent Variables*:* Strategy Selection

- Independent Variables*:* Top management characteristics, external

  corporate environment, stakeholder interests, organizational performance,

  and organization size

In-depth Interviews

Intensive or in-depth interviewing is considered a useful data gathering method in

various types of qualitative research. Essentially, an interview is a directed conversation

that permits in-depth exploration of a particular topic, issue, or situation (Lofland &

Lofland, 1995). The in-depth nature of an interview allows each interview participant to

express his or her interpretation of his or her experience. The structure of an intensive

interview may vary in range from a loosely guided exploration of topics to semi-

structured focused questions. Although an intensive interview may be conversational, it

follows a unique etiquette. "What might be rude to ask or be glossed over in friendly

agreements in ordinary conversations become the grist for further exploration" (Charmaz,

2006, p. 26). An interview goes beyond the surface of ordinary conversation and

examines earlier events, views, and feelings afresh.

In-depth interviews allow an **interviewer** to:

- Go beneath the surface of the described experience(s)

- Stop to explore a statement or topic

- Request more detail or explanation

- Ask about the participants thoughts, feelings, or actions

- Restate the participant's point to check for accuracy

- Come back to an earlier point

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- Use observational and social skills to further the discussion (Charmaz, 2006, p. 26)

On the other hand, **interviewees** shape the interview by

- Expressing their views and opinions

- Telling their stories and give them a context

- Conveying their expert judgments

- Choosing what to tell and how to tell

- Sharing significant experiences and suggest ways to interpret the information (Charmaz, 2006, p. 27).

Qualitative interviewing provides an in-depth exploration of a topic or issue about which the interviewee has substantial experience and considerable insight. "Interviewing is a flexible, emergent technique that allows ideas, opinions, and views to emerge and the researcher can pursue these leads in greater depth or detail" (Charmaz, 2006, p. 28). In-depth interviews complements other research methods, such as observations, surveys, and textual analysis (Charmaz, 2006) and therefore it appeared a logical choice

Qualitative Data Analysis

Coding was the first analytic step in synthesizing the information collected from the interview. Coding is the process of naming segments of data with a label that simultaneously summarizes and categorizes each piece of data (Charmaz, 2006). The initial coding fractured the data into distinct pieces of information or codes. Following is an example of codes developed for this study.

Politicization – use of power, conflicting views, resolution of issues through exercise of power, behind the scenes coalition formation, lobbying, co-optation attempts, withholding information, controlling agendas, negotiation, bargaining, problem solving, personal ambition, efforts to gain personal advantage, centralization of power.

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Comprehensiveness – Looking for /scanning for different options, Consideration of multiple options, high level of planning, high level of analysis, presence of goals.

This study used an organizing scheme developed by Strauss & Corbin (1998), which includes (a) **Conditions**: the circumstances or situations that form the structure of the studied phenomena; (b) **Actions/interactions**: participants' routines or strategic responses to issues, events, or problems; and (c) **Consequences:** outcomes of actions and interactions. Strauss and Corbin (1998) used conditions to answer questions, such as why, when, where, and how questions; actions/interactions to answer questions by whom; and consequences to answer question, such as 'what happens' because of these actions and interactions. This helped to identify patterns or themes. A theme is a pattern found in the information that at the minimum describes and organzies possible observations and at the maximum interpets aspects of the phenomenon (Boyatzis, 1998). "A theme may be identified at the manifest level (directly observable in the information) or at the latent level (underlying the phenomenon)" (Boyatzis, 1998, p. vii), The themes for this study were generated deductively from theory and prior research. Once the researcher had identified the themes, the results of the qualitative analyses were then interpreted for their significance to the chemical industry.

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CHAPTER 5. RESULTS

This chapter summarizes the results of the quantitative and qualitative research. It has been divided into two sections. The first section includes an explanation of the results of the regression analyses, and the second section presents the results of the qualitative analyses of the in-depth interviews using grounded theory methodology

Results of Regression Analyses

This study investigated factors that predicted the nature of the crisis, strategy formation, and strategy selection during a crisis using the three regression models. Since there were too many regressors, the variables were combined using the means. The first regression model investigated whether factors, such as uncertainty, complexity, and irreversibility could explain the nature of the crisis. The second regression model examined whether factors, such as comprehensiveness, formalization, politicization, financial reporting, and impact of the crisis predicted strategy formation during an organizational crisis. The third regression model examined whether top management characteristics, external corporate environment, stakeholder interests, organizational performance, organization size, and crisis responsibility predicted strategy selection during an organizational crisis. Full model entry was used to regress all the predictor variables onto the dependent variable simultaneously.

Table 4.1 summarizes the descriptive analysis of the variables that predict strategy formation and selection during a crisis. In the strategy formulation process, the decision-makers are likely to be comprehensive. They will have a detailed action plan [5-point scale] (mean (M)=4.46, Standard Deviation (SD)=0.755), and are very likely to assign the responsibility for developing strategies to a group of people or a committee

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Table 4.1

Descriptive Analysis of Variables Predicting Strategic Decision-Making

	Mean	Std. Deviation	N
Has Detailed Action Plans	4.46	0.755	70
Assigns Responsibility to a Group of People	4.49	0.847	70
Conducts Some Type of Analysis	4.09	0.989	70
Seeks Outside Assistance	3.77	1.09	70
Considers Financial Statements	2.92	1.20	70
Considers Historical Financial Data	2.87	1.23	70
Have Formal Goals and Objectives	4.37	0.543	70
Considers Formal Company Policies and Guidelines	4.40	0.824	70
Takes Risks	2.27	1.02	70
Takes Responsibility	4.46	0.530	70
Plays Safe	4.30	0.688	70
Negotiates	3.29	1.105	70
Considers External Resistance	3.6.3	0.935	70
Unsure About Outcomes	2.37	0.951	70
Unsure about Information to Collect	2.10	0.854	70
Considers Legal Advice	4.44	0.581	70
Considers Organization's Responsibility for the Crisis in the Eyes of the Public	4.59	0.648	70
Considers Possible Permanent Changes in Existing Programs and Policies	4.09	0.812	70
Concerned about Return on Equity	2.61	1.397	70
Concerned about Return on Asset	2.68	1.334	70
Concerned about the EPS	2.33	1.280	70
Considers the Nature of Competition	2.78	1.327	70
Considers Consumer Behavior	2.99	1.289	70
Considers Media Scrutiny	3.68	0.947	70
Considers External Pressure	3.68	0.947	70

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Table 4.1 Contd.

Considers Market Dynamism	2.84	1.146	70
Considers Investor Interests	3.26	1.411	70
Considers Government Interests	4.12	0.883	70
Considers Employees Interests	4.17	0.747	70
Considers Community Interests	4.26	0.779	70
Considers Customer Interests	4.10	0.884	70
Considers Suppliers Interests	3.00	1.163	70
Considers Distributors Interests	2.78	1.223	70
Considers Process Interruptions	3.74	1.010	70
Considers Damage to Plant and Machinery	3.91	0.836	70
Considers Loss of Life	4.94	0.482	70
Considers Damage to the Environment	4.67	0.586	70
Considers Impact on Human Health	4.75	0.553	70
Considers Damage to Reputation	4.12	0.832	70
Considers Financial Loss	3.61	0.943	70
Considers Impact on Market Share	3.36	1.03	70
Considers Threat to Information Technology	3.13	1.16	70
Denies that a crisis exists	1.29	0.621	70
Accepts responsibility when appropriate	4.48	0.503	70
Apologizes when appropriate	4.09	0.800	70
Takes corrective action	4.74	0.474	70
Offers some sort of compensation	3.51	0.779	70
Shifts the responsibility for the crisis	1.90	1.100	70
Presents the organization's position	4.20	0.608	70
Displays genuine concern	4.48	0.503	70
Seeks assistance from outside agencies	3.97	0.822	70
Takes the public into confidence	3.87	0.906	70

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Table 4.1Contd.

Co-operates with the media	3.90	0.825	70
Makes sure that all the information conveyed is consistent	4.46	0.502	70
Depicts itself as a victim	1.59	0.828	70
Waits to communicate until forced to do so	1.93	0.960	70
Discredits the person or the organization that exposed the crisis	1.41	0.792	70
Negotiates with the affected parties	3.49	0.851	70

(M=4.49, SD=0.847). In addition, the decision-makers are likely to seek outside

assistance to manage the crisis (M=3.77, SD=1.09). Results also suggest that the

decision-makers will follow formal organizational procedures. They will have formal

goals and objectives when developing strategies (M=4.37, SD=0.543). They are also

very likely to consider formal company policies and guidelines (M=4.40, SD=0.824).

During a crisis, decision-makers are also very likely to consider the advice of the

legal counsel (M=4.44, SD=0.581). Results also indicate that the impact of the crisis is

an important factor in the strategy formation process. Loss of human lives (M=4.94,

SD=0.482) and impact on human health (M=4.75, SD=0.533) were considered extremely

important, whereas damage to the environment (M=4.67, SD=0.586), damage to the

reputation (M=4.12, SD=0.832), and financial loss were considered important factors in

the strategy formation process. Additionally, process interruptions (M=3.74, SD=1.010)

and damage to the plant and machinery (M=3.91, SD=0.836) are also important in the

strategy selection process during a crisis.

During the strategy selection process, it is very likely that decision-makers will

conduct some type of analysis to select the best strategy to manage the crisis ((M=4.09,

SD=0.989). When selecting strategies to manage the crisis, decision-makers are very

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likely to implement decisions that have been taken in the past in similar situations

(M=4.30, SD=0.688). It is also very likely that the managers will accept responsibility

for the crisis, if applicable (M=4.49, SD=0.847). Interests of the stakeholders are very

important to the decision-makers when selecting strategies, especially of the government

(M=4.12, SD=0.883), employees (M=4.17, SD=0.747), community (M=4.26, SD=0.779),

and the customers (M=4.10, SD=0.884).

An analysis of the descriptive statistics of the communication strategies

undertaken by the decision-makers revealed that managers are very likely to accept

responsibility for the crisis whenever it is pertinent (M=4.48, SD=0.503) and to take

corrective measures (M=4.74, SD=0.474). They are also likely to demonstrate genuine

concern for those affected by the crisis and present the organization's position to the

public (M=4.20, SD=0.608). When appropriate, they are likely to apologize for their

responsibility for the crisis (M=4.09, SD=0.800). When interacting with the media, the

managers are also likely to convey messages that are consistent (M=4.46, SD=0.502) and

cooperate with the media (M=3.90, SD=0.825). In their interactions with the public, the

crisis communication managers are likely to engage in honest and transparent

communications (M=3.87, SD=0.906). Managers are also likely to seek outside

assistance in managing the crisis (M=3.97, SD=0.822). Results also indicate that most

organizations rely on a formal crisis communication plan. In some organizations,

however, the plan may not be detailed enough.

Table 4. 2 summarizes the results of linear regression analyses examining the

predictors of the nature of crisis within an organization. In the first regression model,

three predictor variables – **uncertainty, complexity,** and **irreversibility** – were regressed

onto the dependent variable. The results of the regression analysis for the first model,

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F(1393.22) =0.4941, p<0 .0001, indicate that the model significantly predicts the

variance in the dependent variables.

Table 4.2

Summary of Regression Analysis of Factors that Predict Nature of the Decision-Problem

Variables	Beta[†] (β)	Beta[‡] (β)	Std. Error	F	p-values
Uncertainty	0.721	0.710	0.124	81.70	0.0001***
Complexity	0.079	0.053	0.145	0.01	0.9301
Irreversibility	0.010	0.009	0.098	2.08	0.1116
R^2	0.4941				
Model F(1393.22) =	0.0001				

*p<.05 (two-tailed test)
**p<.01 (two-tailed test)
***p<.001 (two-tailed test)

Independent variable **Uncertainty** was found to be a significant predictor of the

nature of the crisis (p<0.0001). However, **Complexity** (p<0.9301) and **Irreversibility**

(p<0.1116) were not found to be the predictors of the nature of the crisis. The overall

model was able to explain 49.4% of the variance (R^2 =0.494). An analysis of the

standardized beta (β) values indicates that strongest predictor of the nature of the crisis

was uncertainty (β =0.710, p<0.000).

   H4, Decision-making during a crisis is characterized by uncertainty and

ambiguity, was supported. In other words, uncertainty and ambiguity characterize crises.

During a crisis, decision-makers may have insufficient information on which to form

decisions or make assessments. The decision-makers may be forced to make decisions

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[†] Unstandardized coefficients from linear regression
[‡] Standardized coefficients from linear regression

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based on analogous situations in the past, and they may lack complete information on

equivalent situations to make strategic decisions during a crisis. **H13** Decision-makers

will consider legal opinion when managing the crisis, and **H14** Decision-makers will

evaluate permanent changes to policies when making decisions during a crisi*s* were not

supported. Interestingly, this study did not support the dominant view that legal advice

takes precedence over public relations counsel in managing crisis within organizations.

This can be probably be explained on the basis that organizations are slowly adopting a

more open and honest communication with their public. Legal departments within

organizations have been commonly known to advise top management to adopt a limited

or no communication strategy, whereas the public relations practitioners have been

known to argue for more open, honest, and transparent communication.

The rationale behind a more cautious and restrained communication strategy with

the media or the public seems to be that it protects the organization and its stakeholders

from litigation threats or at the very least, minimizes the risk of legal liability during a

crisis. Although restricting or limiting the amount of information disseminated might

ostensibly have its merits, it has been observed that the strategy of stonewalling does not

necessarily mitigate the risk of litigations. The advancement in communication

technologies has made it increasingly difficult to conceal information, and most likely,

the communication managers and crisis management team recognize the perils of

curtailing information. Legal counsel is also considered vital in decision-making during

a crisis, since acceptance of guilt might expose the organization to legal penalties. Crisis

communication scholars have unfortunately failed to make a distinction explicitly

between sharing information and admitting guilt publicly. It is important to recognize

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that sharing information does not indicate that the organization or the individual is culpable or is admitting guilt.

Irreversibility in strategic decision-making implies that it significantly reduces the number of options or alternatives available to the decision-makers indefinitely. It has been observed that decision-makers consider irreversible changes when making investment decisions (Henry, 1974). Irreversibility was not found to be a predictor of strategy formation during a crisis. A possible explanation could be that crises, by their nature, do not allow the decision-makers ample time to evaluate the long-term implications of the decisions that they make. In addition, since a crisis is viewed as an aberrant situation that occurs rarely, decision- makers do not feel the need to consider the long-term effects of those decisions. In other words, since these decisions are likely to be rarely made, it does not merit consideration of irreversibility in programs and policies. Another possible reason for not considering permanent changes in programs and policies during crisis management may be explained on the basis that modifications might have been made to these programs or policies with relative ease in the past in similar situations.

Table 4.3 summarizes the results of linear regression analyses examining the predictors of the strategy formation during a crisis. In the second regression model, five predictors – **comprehensiveness, formalization/standardization, politicization, financial reporting,** and **impact of the crisis** – were regressed on the dependent variable. The results of regression analysis for the second model, $F_{(24.57)} = 0.8404$, $p < 0.0001$, significantly predicts the variance in the dependent variable strategy formation. The overall model was able to explain 84.04% of the variance ($R^2 = 0.8404$). Predictor variables **formalization/standardization** ($p < 0.000$), **politicization** ($p < 0.000$), **financial**

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reporting, (p<0.000), and **impact of the crisis** ((p<0.000) were found to be significant

predictors of the strategy formation process during a crisis.

Table 4.3

Summary of Regression Analysis of Factors that Predict Strategy Formation during a Crisis

	Beta[†] (β)	Beta[‡] (β)	Std. Error	F value	p-values
Comprehensiveness	0.294	0.392	0.119	2.471	0.232
Formalization & Standardization	0.030	0.040	0.121	8.91	0.0001***
Politicization	0.062	0.109	0.075	3.95	0.0011***
Financial Reporting	0.026	0.050	0.113	6.46	0.0001***
Impact of the crisis	0.280	0.443	0.108	6.72	0.0001***
R^2	0.8404				
Model F(24.57) =	0.0001				

*p<.05 (two-tailed test)
**p<.01 (two-tailed test)
***p<.001 (two-tailed test)

Thus, **H1** The impact of the crisis will affect the strategy formation process during

a crisis; **H7** Formalization and standardization of the decision-making process will affect

the strategy formation process during a crisis; **H11** Politicization will affect the strategy

formation process during a crisis; and H12 Financial reporting will affect the strategy

formation process during a crisis were all supported.

Comprehensiveness was not found to be a predictor of the strategy formation

process during a crisis. Thus, **H5** comprehensiveness will characterize strategy formation

during organizational crisis was not supported. Since a crisis can seldom be anticipated,

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[†] Unstandardized coefficients from linear regression
[‡] Standardized coefficients from linear regression

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decision-makers have limited time to make decisions. In addition, decisions have to be

made quickly. Therefore, it is not surprising that **H5** was not supported. Rationality in

decision-making emphasizes systematic scanning of the environment and the analysis of

the information (Ansoff, 1965) to select the best alternative. Time constraints may

compel the decision-makers to choose the most satisfactory option.

Decision-makers are likely to be comprehensive in stable environments than in

dynamic environments. Stable environments allow decision-makers to be more

exhaustive in their search for options. In a dynamic environment, decision makers are

faced with uncertainties due to the lack of complete information. This explains why

comprehensiveness was not found to be a predictor of decision-making during a crisis.

The findings of this study support **HI**, that is, the impact of the crisis affects

strategy formation during a crisis. No other previous study has examined the impact of a

crisis in regards to strategy formation. Combs (2007) examined how previous crises

affect crisis response strategies. Lee (2005) applied the concept of hedonic relevance to

organizational crises to evaluate the seriousness of the crisis in the eyes of the consumers.

Lee (2005) articulated three effects of crisis severity: (a) evokes strong emotion

responses; (b) has long-term effects; and (c) constitutes a warning signal to the

consumers, and concluded that the more serious a crisis is, the more involved the

consumers will be. Studies by Coombs (2005) and Holladay (1996, 2001, 2002)

provided empirical support for the effects of crisis seriousness on the perception of crisis

responsibility but they did not provide any evidence that the seriousness of a crisis results

in the formation of different strategies. In addition, few researchers (Marcus & Goodman,

1991) have explicated theoretical constructs that explain or describe the severity of the

crisis

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The results of this study suggest that process interruptions, loss of human lives, financial loss, and damage to the environment are some impacts of the crisis that decision-makers consider when forming strategies during a crisis. It is reasonable to conclude that different impacts result in different response strategies. Decision-makers are likely to approach a crisis that causes process interruptions and damage to the plant and machinery differently from a crisis that results in loss of human lives or significant damage to the environment. This implies that the severity of a crisis will affect the content of the strategy. Based on the results of this study, one can argue that a crisis that has irreversible effects (loss of human life, irreparable damage to the environment), is long-term, and hurts the viability of an organization will affect the decision-making process during a crisis. Put another way, less severe crisis (process interruptions, damage to plant, and machinery) will also affect the decision-making process but the content of the strategy will be different, signifying that different impacts will result in different strategy formation.

The findings of this study support **H7**. The result indicates that decision-making during a crisis takes place within the formal planning system of the organizations. Most organizations are likely to have formal goals and objectives when managing the crisis. These goals and objectives may either reflect the overall goal of the organizations or goals and objectives set primarily for managing the crisis. In the first case, the goals and objectives might refer to the overall goals associated with production, sales, or inventory; and in the second case, organizations might set up goals and objectives to recover from the crisis, such as a timeline and means to limit the impact. Additionally, most organizations have formal systems for lateral and hierarchical communication. These formal policies delineate the roles and responsibilities of the decision-makers, which

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makes the decision-making process during a crisis more efficient and effective. It saves time and decisions can be made quicker. Formalization and standardization in decision-making processes therefore, affect the decision-making processes. In the case of crisis management, the decision-making processes takes place within the formal planning system of the organization.

The findings of this study support **H11**. The results suggest that decision-makers have to negotiate with others when making decisions during a crisis. Some organizations also have to face pressures from outside groups during the decision-making process. This can be explained on the basis that during a crisis, a crisis management team is assigned the responsibility for managing the crisis. This team searches for ready-made solutions or designs custom solutions (Hale, Hale, & Dulek, 2006). Sometimes, the solutions under consideration maybe selected based on group bargaining, when individual solutions may not be acceptable to the group. In some cases, a higher authority may accept or reject the choice. This may explain why decision-makers have to negotiate during a crisis. In addition, when a crisis comes under the scrutiny of the public, or the media, or the government, it is very likely that the attention from the media and the public concern or outrage may put the decision-maker under pressure to take certain decisions. At times, decision-makers may face resistance from activist public, whose interests may have been affected by the crisis. The decision-makers under such situations are forced to interact with these groups to resolve the issue. This explains why decision-makers may need to resort to politicization during decision-making.

The findings of this study indicate that decision-makers consider financial reporting when making decisions during a crisis. This supports **H12**. A crisis generally requires commitment of financial resources. Financial resources may be required to take

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corrective actions, pay financial compensation, or to manage contingencies like litigation expenses. Since the pro-forma financial statements of an organization are projected final statements, in which certain amounts are estimated for sales, expenses, profits, and other financial needs for a future accounting period are based on a set of assumptions, it is not unusual for decision-makers to consider financial pro-forma statements during decision-making. The **pro forma** accounting excludes "unusual and non-recurring transactions" when companies report its earnings (Rolins, 2011). Expenses often excluded from pro forma financial statements may include company's restructuring costs, a decline in the value of the company's investments, or adjustments to the current balance sheet to fix faulty accounting practices in the previous years. A crisis may very well represent the unexpected expense, which managers may be able to account for by excluding from their pro-forma financial statements. Since crises are low probability events, the use of pro-forma statements justifies their consideration in the strategic decision-making process during a crisis.

Table 4.4 summarizes the results of linear regression analyses examining the predictors of the strategy selection during a crisis. In the third regression model, six predictors – **top management characteristics, external corporate environment, stakeholder interests, organizational performance, organization size,** and **crisis responsibility** – were regressed onto the dependent variable. The results of the regression analysis for the third model, $F(1544.64) = 0.6790$, $p < 0.0001$, significantly predicts the variance in the dependent variable. More specifically, the results indicate that the regression model accounts for 67.9% of the variance observed in dependent variable strategy selection. Predictor variables **external environment** ($p < 0.000$), **stakeholder interests** ($p < 0.000$), **organizational performance** ($p < 0.000$) and **crisis**

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responsibility (p<.000) were found to be significant predictors of the strategy selection

process during a crisis.

Table 4.4

Summary of Regression Analysis of Factors that Predict Strategy Selection during a Crisis

	Beta[†] (β)	Beta[‡] (β)	Std. Error	F value	p-values
Top Management Characteristics	0.88	0.091	0.135	2.393	0.8733
External Corporate Environment	0.143	0.185	0.153	8.70	0.0001***
Stakeholder Interests	0.435	0.534	0.253	5.28	0.0001***
Organizational Performance	0.393	0.549	0.211	3.11	0.0035***
Organization Size	-0.092	-0.161	0.086	0.85	0.3586
Crisis Responsibility	0.772	0.503	0.198	3.903	0.000***
R^2	0.6228				
Model F(154.464) =	0.0001				

*p<.05 (two-tailed test)
**p<.01 (two-tailed test)
***p<.001 (two-tailed test)

Thus, hypotheses **H2** The interests of the stakeholders will affect the strategy

selection process during a crisis; **H3** The organization's responsibility for the crisis in the

eye of the public will affect the strategy selection process during a crisi*s*; **H8** The external

corporate environment will affect the strategy selection process during a crisis; and **H9**

Organizational performance metrics will affect the strategy selection process during a

crisis as they are measures of the long-term sustainability were supported.

[†] Unstandardized coefficients from linear regression
[‡] Standardized coefficients from linear regression

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Top management characteristics (p<0.8733) and organization size (p<0.3586) were not found to be the predictors of the strategy selection process during a crisis. Thus, hypotheses **H6** The behavioral characteristics of the top management will determine the selection of strategies during a crisis and **H10** The size of the organization will affect the strategy selection process were not supported.

The results of this study support **H2**. The findings of this study indicate that decision-makers consider the interests of the stakeholders in the strategy selection process. Both organizational researchers and crisis communication scholars have underscored the importance of maintaining good relationships with the stakeholders. Organizational theorists emphasize the importance of involving the stakeholders because of the organization's moral commitment to the stakeholders and a desire to obtain the support of the stakeholder groups to gain economic benefits (Greenwood, 2007). Involving stakeholders in corporate decisions and strategies is also viewed as a valuable strategic resource, which provides companies with competitive advantages (Berman et al., 1999; Walsh, 2005). Yet others have argued that involving stakeholders in the management process is critical to minimize their eventual concerns and to enhance the organization's corporate social responsibility perspective (Miles et al., 2006). On the other hand, crisis communication scholars (Pompper, 2006; Leeper & Leeper, 2006) also encourage building mutually beneficial relationships with the stakeholders. This builds goodwill for the organization during a crisis and these stakeholders are more likely to be sympathetic and considerate toward the organization. This clearly explains why decision-makers consider stakeholder interests in the strategy selection process.

The results of this study support **H3**. The findings indicate that decision-makers consider crisis responsibility in selecting strategies to manage the crisis. Researchers

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within the crisis communication field posit that a crisis has the potential to affect the reputation of an organization negatively and such changes can affect how stakeholders interact with the organization (Barton, 2001; Dowling, 2002). Reputation has been widely recognized as a valuable intangible asset that attracts customers, generates investment, attracts talented employees, increases the return on assets, and creates a competitive advantage for the organization (Carmeli and Tishler, 2005; Davies et al., 2003; Fombrum & Gardberg, 2000; Fombrun & Van Riel, 2004). During a crisis, people search for the cause and attribute responsibility for the crisis. If the organization is perceived to be at fault, then it will suffer reputational damage. It is, therefore, in the interest of the decision-makers to evaluate the crisis responsibility in the selection of the strategy. This may explain why crisis responsibility is a predictor of the strategy selection process.

The results of this study support **H8**. External environment was found to be a strong predictor the strategy selection process. The results suggest that a link exists between the external environment and strategy selection during a crisis. In a sense, environment is "everything else" outside of a particular organization (Boulding, 1978). It is impossible to examine everything; however, some environmental elements and issues are more relevant to an organization than others are (Osborn & Hunt, 1974) during a crisis.

In the case of a crisis, it is easy to see how environmental hostility and dynamism may affect strategy selection during a crisis. Since a crisis represents a threat to the organization, an organization may be viewed as functioning in a hostile environment. In the case of a crisis, hostile environments are likely to manifest in the form of negative media publicity, or external pressures from consumers, accreditation councils, or

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government bodies. In addition, during a crisis, a high degree of dynamism characterizes

the external environment. Environmental dynamism is defined as the high degree of

change, uncertainty, and unpredictability observed in the actions of the competitors,

customers, or the market (Lawrence & Lorsch, 1967; Thompson, 1967). Since a crisis

may influence any of the actions of the customers, competitors, and the market in an

unknown or unpredictable manner, it is understandable why decision-makers may

consider the external environment an important factor in the strategy selection process.

The findings of this study support **H9**. Organizational performance was found to

be a strong predictor of strategy selection during a crisis. Since a crisis invariably

negatively affects the performance of an organization, it is understandable why decision-

makers consider organizational performance during strategy selection. Additionally,

since performance metrics are a strong indicator of the long-term sustainability of an

organization, it seems imperative to examine how the crisis might affect the performance

of an organization. The more severe a crisis, the more likely it is to affect the long-term

prospects of an organization. Therefore, it is understandable why decision-makers

consider organizational performance during strategy selection.

The results of this study do not support **H6**. Top management characteristics were

not found to be a predictor of the strategy selection process during a crisis. Within the

crisis communication literature, effective leadership is seen as the cornerstone of the

effective management of a crisis. A crisis leader is expected to be able to communicate

accurate and prompt information to all its internal and external stakeholders (Perason &

Mitroff, 1993). In that sense, the crisis leader becomes the public face of the

organization: explaining the crisis, presenting the organization's position, responding to

accusations, and offering assurances of the speedy resolution of the issue. The crisis

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leader also establishes an overall tone for the crisis – he/she personifies authority and

control, and reinforces the organization's core values (Seeger et al., 2003). How the

leaders of an organization respond to a crisis may affect not only the company's bottom

line but also its overall image and reputation (Coombs, 1999; King, 2004). Therefore, it

is surprising that top management characteristics were not found to be a significant

predictor of strategy selection during a crisis.

The management communication literature has also presented the relevance of

effective leadership during a crisis. However, some scholars (Roberts & Bradley, 1988)

have suggested that the situation or context may be significant for perceptions of

leadership during a crisis. The contradictory results may be explained on the basis that

the respondents in this study focused on a less severe crisis, which did not require the

direct involvement of the top leadership. Therefore, the role of the top management was

not seen as a significant predictor of strategy selection process. In addition, the

responsibility of strategy formation and selection is assigned to a group of people or

committees within an organization, and therefore, the top management team is not

directly involved in the selection of the strategy. It is very likely that the top

management is involved only when there are strong disagreements, and the authority of

the top management leaders may be required to solve the problem.

Another important consideration may be that the top management team are

closely involved in the strategy formation process and therefore, their role in the selection

process might not be significant. This may explain why top management characteristics

were not found to be significant predictor of the strategy selection process.

Organization size was not found to a significant predictor of the strategy selection

process during a crisis. Organization size is usually considered to be of importance in the

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context of strategic decision-making. The evidence is inconclusive. Larger sized organizations are associated with greater comprehensiveness (Fredrickson & Iaquinto, 1989), whereas smaller organizations are relatively less comprehensive in their decision-making process. Since these studies were conducted in the context of strategic decisions not involving crisis, it was not clear how organization size might affect strategy selection process. Research indicates that larger and successful organizations might be less comprehensive in strategy selection because they might be beset by complacency and organizational inertia. In the case of a crisis, organization size was not found to be a predictor of the selection of the strategy might be explained on the basis that the responsibility of resolving the crisis rests with a crisis management team and so the strategy selection process may be independent of organization size. The Table 4.5 presents the result of the quantitative portion of the study. It summarizes the support received for the hypotheses proposed in this study.

Results of Qualitative Analyses

The following section tests the model developed from the quantitative analyses. The researcher conducted an in-depth face-to-face interview with Dan Borne', president of Louisiana Chemical Association to examine the conceptual model proposed in this dissertation study. The interview was 54 minutes long. The interview was tape recorded and later transcribed. Borne' as the president of the local trade organization LCA, is closely associated with all the issues of the chemical industry in Louisiana; therefore, he seemed to be the perfect person to interview. This first part will provide brief background information on LCA, the crisis, hurricanes Katrina and Rita, and Borne'. The second part will be an in-depth analysis of the themes that emerge from the qualitative analysis.

Table 4.5

Complete List of Hypotheses and the Support they Received

Number	Hypotheses	Supported
1.	The impact of the crisis will affect the strategy formation process during a crisis	Yes
2.	The interests of the stakeholders will affect the strategy selection process during a crisis	Yes
3.	The organization's responsibility for the crisis in the eye of the public will affect the strategy selection process during a crisis	Yes
4.	Uncertainties in the external environment will characterize decision-making	Yes
5.	Strategy formation during an organizational crisis will be characterized by comprehensiveness	No
6.	The behavioral characteristic of the top management will determine the selection of strategies during a crisis	No
7.	Formalization and standardization in the decision-making process will affect the strategy formulation process	Yes
8.	External corporate environment will affect the strategy selection process during a crisis	Yes
9.	Organizational financial performance will affect the strategy selection processes during a crisis	Yes
10.	The size of the organization will affect the strategy selection process during a crisis	No
11.	Politicization will affect the strategy formation process during a crisis	Yes
12.	Financial reporting will affect strategy formation during a crisis	Yes
13.	Decision-makers will consider legal opinion when managing a crisis	No

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Brief Background about the Louisiana Chemical Association (LCA) The
LCA is a trade association founded in 1959 to promote a favorable environment for
chemical plants operating in Louisiana. It represents 61 petrochemical organizations that
operate 96 chemical plants in Louisiana. Most of the chemical plants are divisions of
multinational corporations with production facilities in Louisiana. Most of them
manufacture basic chemicals but some manufacture secondary and advanced chemicals.
A board of directors governs the association, which comprises of 17 members, most of
whom are either plant managers or divisional vice-presidents in the chemical plants. The
association addresses issues relating to government, environment, legal, health and safety,
security, and workforce development. Individual committees are responsible for each of
these issues. Dan Borne' is the president of the association. Eight staff members assist
him in managing the association. Their office is located in Baton Rouge.

Hurricanes Katrina and Rita ("Katrita") Hurricane Katrina hit the Louisiana-
Mississippi Gulf Coast in late August (2005), and dealt a sharp blow to the chemical
industry, knocking out power and supplies to several chemical plants, as well as flooding
many of them. On 24 September, Hurricane Rita slammed into the Louisiana-Texas Gulf
Coast, knocking out several chemical facilities in western Louisiana. The LCA had to
deal with a series of crises because of the two successive hurricanes hitting the Louisiana-
Mississippi Gulf Coast. These crises involved dealing with loss of electrical power,
shutting pipelines due to inaccessibility of natural gas, and flooding of the chemical
plants. Chemical plants depend heavily on the supply of natural gas to function normally
on a daily basis.

These series of serious situations uncharacteristically delayed the chemical plants
from returning to normal operations. Logistics and communications were the two major

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issues that the chemical plants had to deal with because of the two hurricanes. The storm

caused shutdown of the bridges, the barge transportation on the Mississippi River, and

limited the access of workers to the plants who had evacuated for the storm. The result

was many plants were shutdown.

About Dan Borne   Dan Borne' is also the President of the Louisiana Chemical

Industry Alliance (LCIA), a partnership of Louisiana's chemical plants and hundreds of

their suppliers, contractors, and vendors. The LCIA has more than 600 members. Before

joining the LCA 15 years ago, Borne' was the Vice-President of Kaiser Aluminum and

Chemical Corporation. He has also worked for a state senator, a congressional

representative, three U.S. senators, and a governor.

The following themes emerged from the analysis of the data obtained from the interview:

Comprehensiveness A measure of rationality is the comprehensiveness and

detail orientation of the planning process. All chemical plants in Louisiana have a

detailed action plan to deal with hurricanes. Borne' stated that when plant managers

suspect that a hurricane-force storm might hit their plant, these action plans start taking

effect. Based on the conversation with him, it is clear that these action plans are fairly

detailed that they provide systematic guidance. The following excerpt from the interview

provides an insight into the degree of specification in the action plans.

> Every one of them has a hurricane management plan. They all have certain
> procedures that kick in four days before the storm is scheduled to hit or about
> five days it depends on how big the plant is, how complicated the plant is, it
> depends on where the best guess of the storm hit is. But at any given time, that
> storm is in the Gulf, those plans begin a countdown. And if they hit a certain
> day, like day three before landfall and if it looks like if it's coming their way,
> then they start executing certain elements of the plan. The plant managers, the
> general managers, or the divisional vice-presidents are very thorough in their
> preparation for the storm. They hire their own private weather services in
> addition to the information available through the national weather services and
> other publicly available sources. They already know about it anyway because
> they have their own private weather services. Most companies of course depend

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on the national weather services but they also hire their own private weather
services to give them as second look at the storms and where these storms might
go. What they do is, they take the national weather service forecast, and they
layer it over the private weather forecast and try to determine the probabilities
where the storm is going to land.

The plant managers use this information to make production decisions ahead of

the approaching storm. The advantage of the private weather services is that they provide

updates that are more frequent and the storm information forecast is tailored to their

specific plant site. The private weather services also have the ability to provide

customized web pages, satellite photos, forecasts, and a daily video. In addition, some of

the private weather services can forecast rainfall, wind speed, and the storm surge.

It can be concluded from the collection of the detailed weather information that

the plant managers are conducting detailed analysis to make a decision about shutting

down the plant. As Borne' notes, shutting down a plant involves a series of decisions to

be made and is not as simple as turning-off a light switch.

Because every time you shutdown a plant here or every time you restart a plant
you have environmental issues to deal with. You can't just turn the light switch
off and expect the plant to shut down. It has to be done in a phased graduated
way and when you bring it back up, it also has to be brought up in a phased
graduated way…

It is evident from the above information, the level of analysis and planning that

plant managers undertake to make decisions, whether it is to shut down a plant or to alter

the production plan. It is equally clear that they rely on more than one source of

information to have access to accurate and to-the-minute information to make decisions.

It also suggests that the plant managers and the small group of people involved in the

decision-making process are not averse to seeking outside assistance in making critical

decisions about the plant operations. Since shutting down the plant entails making

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several mission-critical decisions and involves scores of people in different departments, it seems natural that these decisions are based on an analysis of good information.

Formalization and Standardization Formal planning systems improve managerial decision-making. Formalization within organizations delineates how information flows between the different layers of the hierarchy. Most chemical organizations have a group of people who are involved with the decision-making processes and all of them follow a detailed hurricane management plan or document that outlines the procedures to follow when a hurricane makes a landfall. Borne' confirmed that when the chemical plants start preparing to shut down the facilities, they have to deal with a whole range of people.

> Now, we dealt with a whole range of people at those plants. We dealt with the plant managers. We dealt with environmental managers at these plants… and so the process of bringing the plant up brings a large team of people into play. It brings the plant manager, the environmental manager, the health and safety manager, also has to play a role because of environmental considerations outside the plant but you also have health and safety situations within the plant. That represents another person in the plant hierarchy that was a part of the communications tree. Yet other people are involved as well. The logistic people, the transportation people, people who are involved with bringing in raw materials, shipping out products were part of the process as well. Human resources people were involved as well because some plants could not get their employees back on site because there were so many travel restrictions between parishes.

This indicates the existence of groups of people within the chemical plant who are responsible for planning the shutdown and start-up. The existence of planning groups within an organization is an example of the level of formalization within an organization. Even though Borne' did not expressly talk in terms of organizational goals, it can be deduced from the following statement that the chemical plants had a goal when they expected the chemical plant to be operational again: "So, we had a series of serious situations that prevented our plants from coming back as quickly as they should have."

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The existence of goals and objectives is another indicator of the level of

formalization and standardization present within an organization. Deliberations

regarding when the plants should be operational and planning for the supply and storage

of raw materials indicate that the plant managers and the group of people responsible for

the plant shut down had definite quantifiable goals and objectives. Additionally, the

hurricane management plan that guides the plant managers to perform the shut down in a

phased manner amply makes clear the existence of these goals and objectives. The

following excerpt from the interview also indicates the clear presence of formal plans that

an organization may have in regards to production and procurement of raw materials.

> But at any given time, that storm is in the Gulf, those plans begin a countdown.
> And if they hit a certain day, like day three before landfall and if it looks like if
> it coming their way, then they start executing certain elements of the plan. It
> may be that they would no longer take raw material from another plant. They
> would no longer deal with inventory if they know a storm is coming. It may be
> that they will ship their inventory out to make sure that their inventory is not
> adversely affected by the storm.

The existence of formal plans for production, procurement of raw materials,

inventory management, sales, and long-term business plans are a measure of the

formalization within an organization. It can be construed that most of the chemical plants

have formal plans regarding production, inventory, raw materials, and so on. These

formal plans may just be a set of rules guiding the process or they may be formal rules for

co-ordination between the different departments or outside agencies.

Top Management Characteristics Crisis situations often require that the

managers make quick decisions. Research suggests that managers who make decisions

faster have a greater tendency for risk taking (Sullivan, 1997). Managers who are averse

to taking risks tend to follow the formal process for decision-making. During a crisis, it

is more likely that managers may take risks.

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Well, I know one plant manager who spent $25 million before the plant manager even told his boss he was spending it. Because it had to be spent. And that was purchasing several hundred trailers to bring in the employees who had lost their homes. So he brought the employees and their families to his plant and set up a city. So every plant has an authority how much he can spend in an emergency. It depends upon the company… You spend the money first, and let the corporate guys know about it later... .And I know of no case where any manager has gotten into any type of trouble for spending the money that he felt needed to be spent at that time.

Even though plant managers are authorized to spend a preset amount of money to deal with contingencies, the plant manager in this case decided to risk spending above his authorized limit. The plant manager was taking the risk of being penalized for his actions. The consequences could have ranged from being reprimanded, being passed over for a promotion, or even losing his or her job. A risk-averse plant manager, on the other hand, would have made the decision to spend the excess money after going through a formal process of seeking approval from his superiors. This would have most likely taken a longer time. The probability that the plant manager's suggestion would have been rejected or amended was also likely. The plant manager was working under uncertain circumstances. Although it was evident that employees would not be returning to their homes soon, it was uncertain how long the process of rebuilding and returning home would take. This would hurt the performance of the chemical plants. Additionally, other chemical plants in the area were facing similar situations. This necessitated that the plant manager order the trailers quickly. If the plant manager had waited for approval from the corporate office, it was possible that the trailers would not have been available. This necessitated that the plant manager is aggressive and take risks to make strategic decisions during a crisis.

The other option would have been that the plant manager sought the approval of the corporate offices and then ordered the trailers. In this case, even if the trailers were

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unavailable, the plant manager could not be held responsible. The plant manager would

be following the formal decision-making process and he would not have risked anything.

It is evident from Borne's comment that plant managers are more likely to take

risks in strategic decision-making during a crisis. Actions, such as independent decisions

that might seem risky during normal functioning of the organization are more likely to be

common during times of crises. It might even be worthwhile to take some calculated

risks during a crisis in the interest of time and competition for scarce in-demand

resources.

Politicization Executives often use politics, the observable but covert actions, to

influence the decision-making process (Eisenhardt & Bourgeois, 1988; Schwenk, 1995).

Politicization involves the transaction of power to influence a strategic decision.

Managers often use negotiation and bargaining techniques as a means to exercise their

power to reach agreements or to solve problems. The managers at the chemical plants

had to deal with several roadblocks in their efforts to restart their plants. Because of the

two storms, the local government had issued many travel restrictions for people travelling

between the parishes in Louisiana. This severely restricted the transportation of

employees, who had evacuated for the storm, back to the plant site. The LCA had to

work on behalf of the chemical plants that needed to move their employees back to the

plant site.

> Human resources people were involved as well because some plants could not
> get their employees back on site because there were so many travel restrictions
> between parishes. And so, we had to work on behalf of the plants to get some of
> the restrictions lifted so that these men and women could get back to the plants
> start them up and run them again.

This implies that the LCA had to negotiate with the local county, state and federal

officials to make some concessions for the employees working in those counties affected

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by the storm. The travel restrictions were applicable equally for all the residents or inhabitants living in those affected parishes. It can be clearly inferred that the LCA had to negotiate with the county officials to lift those restrictions. Such negotiations are contextual and are often exercises in problem solving. A problem-solving approach focuses on common interests, where neither party is worse-off because of the deal (Lax & Sebenius, 1986). It is often associated with creativity and a search for new inventive solutions (Gillespie & Bozerman, 1997).

When people work together for long in a highly institutionalized environment, shared norms may be created, where both institutional actors may have incentives to promote joint action. Both the LCA and the local county and/or state officials may see benefits in working jointly or in a co-operative fashion. A distribution and a redistribution of the incentives may be necessary to achieve co-operation. The incentive for the chemical plants may be in the form of business development incentives, tax credits, or job creation credits. The incentives for the local government may come from the taxes that these chemical plants paid, and the financial support in the form of donations or sponsorships of the various government-run programs. In this case, the chemical plants needed the restrictions to be lifted for the employees of the chemical plants so that they could travel unrestricted to the plant sites. This would help in restarting the plants. The local county and state government would benefit from the functioning of the plants, as they would be able to continue to pay the taxes. If the plants remained closed, the state government would lose the tax revenues. Additionally, and more immediately, the chemical plants had the resources, such as pumps, generators, trailers, and tents that the local parish government could utilize for easing parish emergencies.

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For example, with respect to some plants providing emergency services to federal government. For example, during Hurricane Katrina, ExxonMobil Refinery in Chalmette actually became the home of the parish government. Parish government was flooded but the refinery was not because it had the pumps to pump the water out. And so, the whole parish government of the St. Bernard Parish moved into the ExxonMobil refinery. And we were getting continual updates from the public affairs people who were letting us know what was going on with the parish government in Chalmette, La.

When participants know that they will meet in the future, co-operation is possible. Not only are their past dealings important, but also their future interactions. If the participants realize that their future is sufficiently important as their past, they are more willing to cooperate.

Complexity Logistics was one major issue that many plant managers had to deal with immediately after hurricanes Katrina and Rita. The plant managers had to come up with alternative methods to bring back the employees who had evacuated for the storm but also had to consider innovative means to transport heavy equipments that provided power to the plants to run. This created a significant problem for the plant managers. The legal department had to be involved in the decision-making process.

…The legal department got involved as well. Because obviously, there are always legal implications, especially, when you need variances from certain regulations in order to restore or even to bring equipments in. Sometimes, the equipments that they needed, the huge generators that they needed, could not be brought in regular trucks. They had to be brought in super size tractor-trailers. And for those types of trailers, you need special permits and so we had to expedite the permitting process so that the trucks can come in and provide the generators to the plants…

The transportation of the heavy equipments such as the generators, from outside the parish meant that plant managers had to make special arrangements. It can be concluded from the preceeding passage that this process required the plant managers to obtain special permits, which necessitated plant managers to follow procedures that were atypical. The urgency of the situation further dictated that the special permits be obtained

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in an expedited manner. The fact that the local government had imposed restrictions not only on travel but also on the transportation of materials beyond a certain weight made the acquisition of the special permits in an expedited manner twice as challenging. Transporting those generators in the super size trailers also created a safety issue. In addition, the local government was diverting all the sources of power to priority situations, such as hospitals.

The help of the legal department, therefore, had to be sought to navigate through the complexities of obtaining the special permits in an expedited manner. The legal department has the knowledge and the expertise to anticipate the issues that could arise from seeking the special permits and any other related safety issues with the transportation of the huge generators. In addition, the legal department would be able to deal with any legal or governmental hoops that the chemical plant would have to clear to get the special permits. As the plant manager has to divide his attention on other pressing tasks in getting the plants running again, it would seem advisable that he or she seek the opinion of the legal department before obtaining the special permits. The legal department would be in a position to deal with any risks, penalties, or uncertainties associated with obtaining the special permits through means different from the standard procedures.

Super loads are loads that exceed the dimensions and/or weights normally issued on routine permits. The definition of a super load varies from state to state. For example, Texas defines a super load as one which, when loaded, exceeds 20' wide, 11–18' high, or 125' long. A permit of this description requires advance application and physical route inspection. Time for this process to be completed can be several days, a week, or even more depending on the distance to be traveled, and whether or not utility companies have to be involved. When the load exceeds 254,000 pounds gross weight, the application must also go through a structural evaluation by the Texas Department of Transportation, and possibly and additional evaluation by the Pavements Division. Time for these evaluations to be completed may require as much as one to two months (http://www.palletized-trucking.com/FAQ.aspx)

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Uncertainty and Ambiguity Situations where the decision-makers do not know the probabilities of occurrence of an event or an activity are known as uncertain or unambiguous situations. Environment is a major source of uncertainty in decision-making during a crisis. There is a gap between the information available and the information needed to perform a task. After Hurricane Katrina, the chemical plants were faced with severe shortage of natural gas supplies.

> So, there are certain situations that you are not necessarily not prepared for, but there are situations that are hard to fix. For example, if natural gas pumping plants are shut down because of electrical failures and then you just simply don't have natural gas. Even the storage zones where you store the natural gas you need electrical pumps in order to pump gas to the pipelines and sometimes those things break. Okay, so then you have to deal with alternate sources of natural gas. And so, instead of trying to get South Louisiana natural gas which might all might be shut in because of the storm, you assess plans of accessing gas from other parts of the country to send down here in Louisiana. So it is not so much a question of not being prepared. You don't really know what the next problem is going to be.

Most chemical plants need natural gas on a daily basis for their plants to function normally. The storms created uncertainty about the availability of natural gas. The natural gas is transported through pipelines, and these were damaged because of Katrina and Rita. Getting access to natural gases from other sources also posed a problem because the plant managers did not know if the suppliers of the natural gas had power. How much supply of natural gas should they requisition? How will long would it take to repair the pipelines? What effect will their decision have on the restarting of the plant? (Since the plants are started in a phased and graduated manner, the non-availability of an important raw material could have a negative cascading impact on the process that follows it.) When will the supply of natural gas arrive? (The disruptions caused by the damage to the railroads and the railroad re-routings would affect the transportation time of the raw material.) Would the chemical plants have power? Would the employees be

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back by then? How many of them would return? How many of them would have

relocated?

Any possible combination of situations could create conditions of uncertainty a nd

complexity for the plant managers to make decisions. Although the plant managers

would have been able to anticipate some of the problems that could possibly happen, they

could not assign probabilities to the occurrence of these future events. Plant managers,

therefore, faced uncertainties about how the external environment of the organization

might perform and what effect their decisions might have. The inability to predict

accurately what the outcome of their decision might be harks back to the state and the

effect uncertainty that Milliken (1987) outlined.

Impact of the Crisis Hurricanes Katrina and Rita caused many chemical plants

to be shutdown for months. The plant managers were facing several obstacles in trying to

get their plants running again. Some of the chemical and petrochemical plants were

shutdown due to the unavailability of raw materials and key utilities. Others were

shutdown because water from the storms had flooded the chemical plant sites. The

unavailability of key resources, like natural gas supplies and key utilities like power,

were causing process interruptions, which were responsible for the shutdown of plants.

The unavailability of key resources required for the normal functioning of the plants was

caused by severe logistics problem of securing and transporting these key resources. The

plant managers were also facing the daunting task of getting key personnel and

employees back who had evacuated for Hurricane Katrina. Hurricanes Katrina and Rita

had left severe destruction in their path. This had caused, as cited earlier, railroad

rerouting, destruction of river or barge transportation, and even travel restrictions

between parishes. The foremost concern of the plant managers was trying to assess the

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damage caused to the plant and machinery and to get their plants running again. This

could only be done by removing the impediments that were causing the process

interruption.

> And then, in the end everybody leaves except something called a ride-out crew.
> The ride-out crew they stay with the ship. No one abandons the ship, as long as
> something is running on that ship. And now if you have the ability to totally
> shut- off the plants, shut-off every process, shut-off the lights, walk away and
> lock the fence, you can do that. Fine... but most plants are not quite like that.
> And these plants have what we call the ride-out crews and these guys just ride it
> out. They are just there. And then, they began the process of assessing the
> damage letting their corporate people know how bad it was. And then they
> begin the process of bringing it back up.

The forced shutdown caused significant financial losses for the affected chemical

plants. The loss in production led to a loss in sales revenues. In the wake of Hurricanes

Katrina and Rita, the energy cost escalated, which resulted in a severe squeeze in the

profit margin. Natural gas that cost around $6 per MMBtu prior to Katrina, cost around

$15 per MMBtu in December 2005. In addition, most of the chemical plants were

saddled with the cost of repair and cleanup after Hurricanes Katrina and Rita. According

to information obtained from the Insurance Information Institute, property damage

totaled $150 billion (http://www.eia.doe.gov/oog/special/eia1_katrina.html).

The financial losses were so severe that even the U.S economy was affected,

causing the Gross Domestic Product (GDP) to lose one-half percentage points. All the

efforts of the chemical plant managers, therefore, were concentrated in removing the

hurdles causing process interruptions and delaying the restarting of the chemical plants.

It is reasonable to assume that the hurricane management plan that most chemical plant

managers consult in shutting the plants in a phased manner and restarting them in

graduated manner were not designed to prepare plant managers to deal with the situations

that arose after Hurricanes Katrina and Rita struck the Gulf Coast. Although the plant

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managers knew that the hurricanes would affect their chemical plants, it was uncertain the degree or extent of damage the hurricanes would cause. This effect uncertainty left the plant managers unprepared to deal with the extensive devastation that Hurricanes Katrina and Rita caused. It is reasonable to infer that the contingency plans outlined in the hurricane management documents were inadequate to deal with plant closures of several weeks. In addition, the hurricane management plans did not take into consideration the impact Hurricanes Katrina and Rita would have on their suppliers of key raw materials, government and private enterprises on whose businesses their chemical plants were dependent for their normal functioning, the infrastructure, and their competitors who could and would be vying for the same scare resources.

It is evident that the plant managers had to consider the impact of Hurricanes Katrina and Rita on the external environment in addition to its direct impact on their chemical plants. The impact of Katrina and Rita clearly influenced the strategic decision-making process.

Stakeholder Interests Successful organizations know the importance of maintaining good relationships with their stakeholders. Good relationships are vital in achieving organizational goals and objectives. Crises are times when these relationships might become strained. Hurricanes Katrina and Rita created a situation where the petrochemical plant managers were forced to weigh the importance of each of their stakeholder groups and to strike a balance in attending to the interest of each group. The following comments from Borne' indicates that the chemical plant managers ranked the interest of the employees and the employers/owners the highest: "You got to protect people first and assets second."

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Most of the employees working in chemical plants in the path of the hurricanes had evacuated for the storm. The hurricanes caused many employees to lose their homes and others suffered severe damage to their homes. The chemical plant managers ordered trailers from Federal Emergency Management Agency (FEMA) so that the employees could have temporary accommodation to stay with their families while reconstruction and repair work on their houses was completed. The chemicals plants also gained by this arrangement as the employees could resume working.

> We had one very good ally. The Louisiana Economic Development, (LED). They had assigned a division but it was really one person working 24 hours a day working on this with FEMA to get a whole bunch of trailers…
> The plant managers also made sure that the employees worked in a safe environment.

> I can say we have never … We had not one instance during those times of any injury of any of our plant people of any member company that we know of in all of those terrible storms. And, I think it is credit to the work that they do to protect their people. Of course there has been injuries, but no serious ones. They managed with nip and tuck.

Some of the chemical plant managers were involved in helping the local community deal with the crisis, at times involuntarily: "In a number of cases, law enforcers and national guardsman diverted emergency fuel, food supplies, and generators from industrial facilities to serve more pressing needs such as hospitals."

During times of crisis, even competitors are willing to share their resources with other chemical plants.

> Those plants that are in the unaffected areas they have capabilities that they can share with plants that are in the affected areas. For example, some plant in the Lake Charles might have temporary housing that it is not using and that it would be willing to lend a plant in southeast Louisiana to get the full force back and what happens is, when you have these types of emergencies, these plants share among each other.

Some of the chemical plant managers also provided assistance to the local, state, and federal governments. These chemical plant managers realized the benefits of

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maintaining good relationships with the governmental authorities. These relationships are not a one time business liaison but an association as the result of connections in the past and the possibility of future interactions. The assistance provided by the managers of these chemical plants is a way to strengthen past relationships or build new relationships. By taking care of the interests of the government during times of crisis, the business corporations can expect help or benefits in the future for the services provided during their times of crisis.

> For example, with respect to some plants providing emergency services to federal government. For example, during Hurricane Katrina, ExxonMobil Refinery in Chalmette, La., actually became the home of the parish government. Parish government was flooded but the refinery was not because it had the pumps to pump the water out. And so, the whole parish government of the St. Bernard Parish moved into the ExxonMobil refinery.

Many chemical and petrochemical plants had to be shut for an indefinite period of time. The phased shutdown and restart of the chemical plants indicate that the chemical plant managers worked with a formal plan for production, supply chain management, inventory control, and so on. The unscheduled shutdowns caused process interruptions, and therefore, stopped the production of the chemical plants. This caused a problem for the end users of the chemical products produced in the plants. The customers had to suffer when the affected chemical plants could not deliver the products on time.

The fact that these chemical plants were situated in a storm prone area made them vulnerable to the vagaries of nature and hence affected their reliability. The management at the affected chemical plants had to work with their customers to reassure them and rebuild their trust.

Corrective Actions The LCA published a set of lessons learned from "KatRita" (the combination of Katrina and Rita) after asking five of its member companies that took the brunt of the storms to share what they learned. The LCA then asked member

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companies to provide what actions they have taken, if any, in response to the KatRita lessons. Some of the measures that the chemical companies took are outlined in the following paragraphs.

Chemical plants have now switched to satellite phones. In addition, chemical plants have purchased a cell phone system with area codes outside their region to avoid clogged services. Some plants have even installed the old analog phones to serve as a backup when the modern system fails. Additionally, plant management has been equipped with BlackBerry communication devices.

Chemical plants have more equipment available to them, such as generators, tents to house employees.

Chemical plants have recognized the need to develop a better co-ordination with local emergency officials. Previously, when the local Offices of Emergency Preparedness (OEP) issued a mandatory evacuation, the plants were not prepared for it. It created raw material feed challenges for the plant. Additionally, when the plants started shutting down, the roads would be closing.

Some chemical plants have examined the feasibility of piping in natural gas from more than one supplier as a contingency. Natural gas is very crucial for the normal running of the chemical plants.

Many chemical plants have since improved their employee support plans. The employee support plans take into consideration that communities often have a slower recovery time than industrial facilities.

Chemical plants recognize the need to maintain ongoing relationships with Department of Homeland Security (DHS), state government emergency operations centers, and other local first-responders. These relationships are particularly important

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when state or local authorities issue mandatory evacuation orders. Key utility supplies, such as air, oxygen, nitrogen, steam, natural gas, and other raw material feeds could be shutdown earlier than anticipated and this could affect the shutdown timetable.

Alternative housing options should be identified early, if necessary, contracting in advance for trailers. It may be prudent to include personnel from elsewhere around the country in the recovery team company. Whether local or not, employees trying to reach an affected site should have proper identification to increase their chances of getting past police or military cordons.

Chemical plants should stockpile supplies of food and water. In the wake of Hurricane Rita, one Louisiana refinery had to provide 2,500 meals per day.

Chemical plants should stock up on diesel and other fuels. They should have additional generators positioned and protected before they are needed or delivered as soon as possible after the impact.

Consider leasing helicopters and boat services (where applicable) in advance to bring in recovery crews when land routes are blocked.

Chemical plant managers and recovery teams must make decisions quickly and be ready to commit company resources.

Based on the qualitative analysis of in-depth, the researcher was able to develop a set of best practices that communications professionals might find useful in managing a crisis within the chemical industry.

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Set of Best Practices

(i)   Establish a crisis management team.

(ii)   The size of the crisis management team should be neither too small nor too large. In smaller teams, members are under greater pressure while making decisions because of the burden of increased responsibility. Similarly, the team should not be too big because it will slow the decision –making process. For guidance on determining the size of the crisis management team, consider the size and the structure of your organization.

(iii)   The crisis management team should include, as far as feasible, people from different functional areas, specifically, people from the communication department . This should include one or two representatives from the public relations department within the organization.

(iv)   The team members should be rotated every two-year. This allows people to gain an understanding of the duties and responsibilities involved in managing a crisis. In addition, the rotation of the members familiarizes a larger cross-section of the people within the organization and may significantly improve the pool of knowledge developed over time. This will also help in making better quality decision. Additionally, it might reduce the time in decision-making because most of the information will be readily available. Furthermore, during the time of a crisis, if a larger number of people need to be involved, the assistance of these former team members will be available with no downtime involved.

(v)   Establish dual structure for crisis and for routine operations. This means that protocols established for routine needs to be modified for crisis situations. This could involve shortening the chain of command or "line of communication." It

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could also entail the top management delegating more responsibilities to the person closest to the crisis. Alternatively, give greater latitude to the crisis management team in decision-making during a crisis.

(vi)   The crisis management team should be mentally prepared to take risks in decision-making, Many decisions during a crisis have to be made under conditions of uncertainty. This entails that the decision-makers weigh their options and be prepared to take calculated risks.

(vii)   During a crisis, there is a greater need for flexibility and creativity in decision-making. Decision-makers should be willing to consider and take help from external parties Additionally, the available readymade solutions may need to be modified to be adapted to your organization.

(viii)   When selecting members of the crisis management team, attempt should be made to select individuals who are trusted and respected. It will reduce strong disagreements and improve the chances of arriving at consensus in decision-making during a crisis.

(ix)   When dealing with the media it would be advisable to maintain a cautiously optimistic stance. It gives the media liaison or the official spokesperson the breadth to manage both positive and negative news. (This does not go against the established principles of public relations of dialogic relationship or two-way mutually beneficial relationships. What this does is, it gives the public relations professional the latitude to manage equally well both bad and good news. He /She can prime the publics to expect bad or negative news but at the same time, if things go uphill instead of downhill, then the public relations practitioner would have created a situation for himself or herself where it does not appear as

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though he/she had been lying or was unaware of the real demands of the situation. The pr practitioner is still communicating with his/her publics and maintaining the dialogic relationship but is doing so in such a manner that accommodates for the uncertainty in the rapidly evolving situation.

(x)   During a crisis, people not only make negative attributions, they also look to make positive causal attributions as a way to deal with negative situations. Put differently, people are looking for heroes. This could work to the advantage of the organization if the decision-makers or the strategists can find heroes within their organizations. This will not only soften the blow caused by the crisis situation but also help in successfully managing the negative emotions that the affected public might experience.

(xi)   In a similar vein, it is very important to empathize with the affected publics.

(xii)   It is beneficial to have contingency or alternate plans when selecting strategies. If the selected strategy does not meet its objective, then other alternatives would be available to rely on.

(xiii) The members of the crisis management teams should meet at regular intervals during normal operation of the organization, preferably every 3 months and more frequently, if anticipating a crisis situation (such as natural disasters like tornados, hurricanes, floods). The meeting should be utilized to brainstorm or engage in scenario planning or explore all and **improbable** situations too, since crisis is, more often than not, sudden and unexpected.

(xiv)   It is recommended, that the workload of the members of the crisis management team be reduced while they serve on the crisis management team. This would allow them to focus greater attention on the task.

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(xv)   Finally, the issues that emerge through these meeting should be attended to, so

           that they do not escalate into a full blown crisis.

Based on the results of the quantitative regression analyses and previous research

in the area of strategic decision-making, the researcher was able to develop a model that

summarizes the findings of this study. Please see Figure 5.1. Research within strategic

decision-making literature suggests that managerial decision-making progresses in stages

or phases that include problem recognition, diagnosis, direction setting, alternative

finding, alternative evaluation, and choice implementation (Mintzberg et al, 1976; Nutt,

1993, 2000). Furthermore, descriptive process models of organizational decision-making

recognize that some phases may be skipped, others occur sequentially or in parallel, and

yet others may involve iteration or looping (Eisenhardt & Zbaracki, 1992).

The model that I propose in this study builds upon the work of these researchers,

specifically; the model developed by Mintzberg, Raisinghani, and Theoret (1976) and

includes factors that find support in this study. Essentially, this model identifies factors

that affect decision-making during a crisis. It recognizes that the decision-making process

is initiated when the decision-makers recognize there is a crisis, and it progresses in

phases that include problem recognition, searching or scoping for information, generating

alternatives, selecting alternatives and execution.

Results from this study indicate that decision-making during a crisis is invariably

done under conditions of uncertainty. The uncertainty may be either due to lack of

complete information or uncertainty about the probability of the outcome of a decision.

During this phase, the decision-makers define the issues facing the organization through

existing channels of communication. At this point, most chemical organizations either

identify a crisis management team or mobilize a pre-determined team that is responsible

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for making the decisions. In the case of the chemical organizations, it appears that the plant manager, general manager, or the vice-president for plant operations in conjunction with the crisis management team is the key decision-maker. The decision-makers then search for solutions or alternatives, which may involve both readymade solutions, (i.e., solutions that are already available or have been used in the past in similar situation) or develop solutions that are specific to the situation. These solutions are selected or rejected either on the judgment of the plant manager in conjunction with his team or in rare cases on the authority of an individual occupying a senior position in the corporate office.

This study found evidence that the strategy development phase, which includes scoping for information and generating alternatives is affected by a combination of factors that include formalization and standardization, politicization, financial reporting, and impact of the crisis.

In addition, the results of this study indicate that the strategy selection process or selection of the alternatives or solution is dependent on the external corporate environment, organizational performance, crisis responsibility, and the stakeholder interests.

Decision-making during a crisis follows an iterative process wherein the decision-makers select a strategy and execute it. When the selected solution does not produce the expected outcome the decision-makers select other alternatives generated during the strategy generation process and implement it.

This study clearly demonstrates the different factors affect that decision-making during a crisis within the chemical industry. One of the significant contributions of this study has been its ability to identify and isolate the factors that affect crisis decision-making at different stages. Although the organizational decision-making literature

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provides a firm foundation for the current study, few studies examine crisis decision-making in creating models of organizational decision-making. Additionally, the literature to date presents no crisis decision-process models. Situational contingencies strongly influence the decision- making process (Nntt, 2002); and therefore, this model provides significant insights into this process during a crisis.

Inconsistencies Some inconsistencies emerged in the analysis of the results obtained from the qualitative data and the quantitative study. For instance, factors such as politicization that received support in the quantitative study received only partial support in the qualitative study. In addition, factor such as top management characteristics that received support in the qualitative study did not bear out in the quantitative study. The reason for this discrepancy in the support for the same factor may be explained on the basis that politicization in the quantitative analysis was operationalized as "negotiations between different departmental groups," and "consideration of external resistance from outside groups," captures the politicization process within an organizational setting. Moreover, the quantitative survey examined different types of crisis, which may explains why it appeared to be a significant factor whereas the qualitative study examined only one type of crisis, a natural disaster. Depending on the type of the crisis, it may be argued that a construct may influence the strategy making process. During a natural crisis, politicization might not play a very strong role in the development of strategy because the decision-makers maybe more willing to forego certain advantages or benefits in the interest of greater good. Furthermore, crises, such as natural disasters, have a propensity of arousing feelings of compassion among the people who escaped its negative impact.
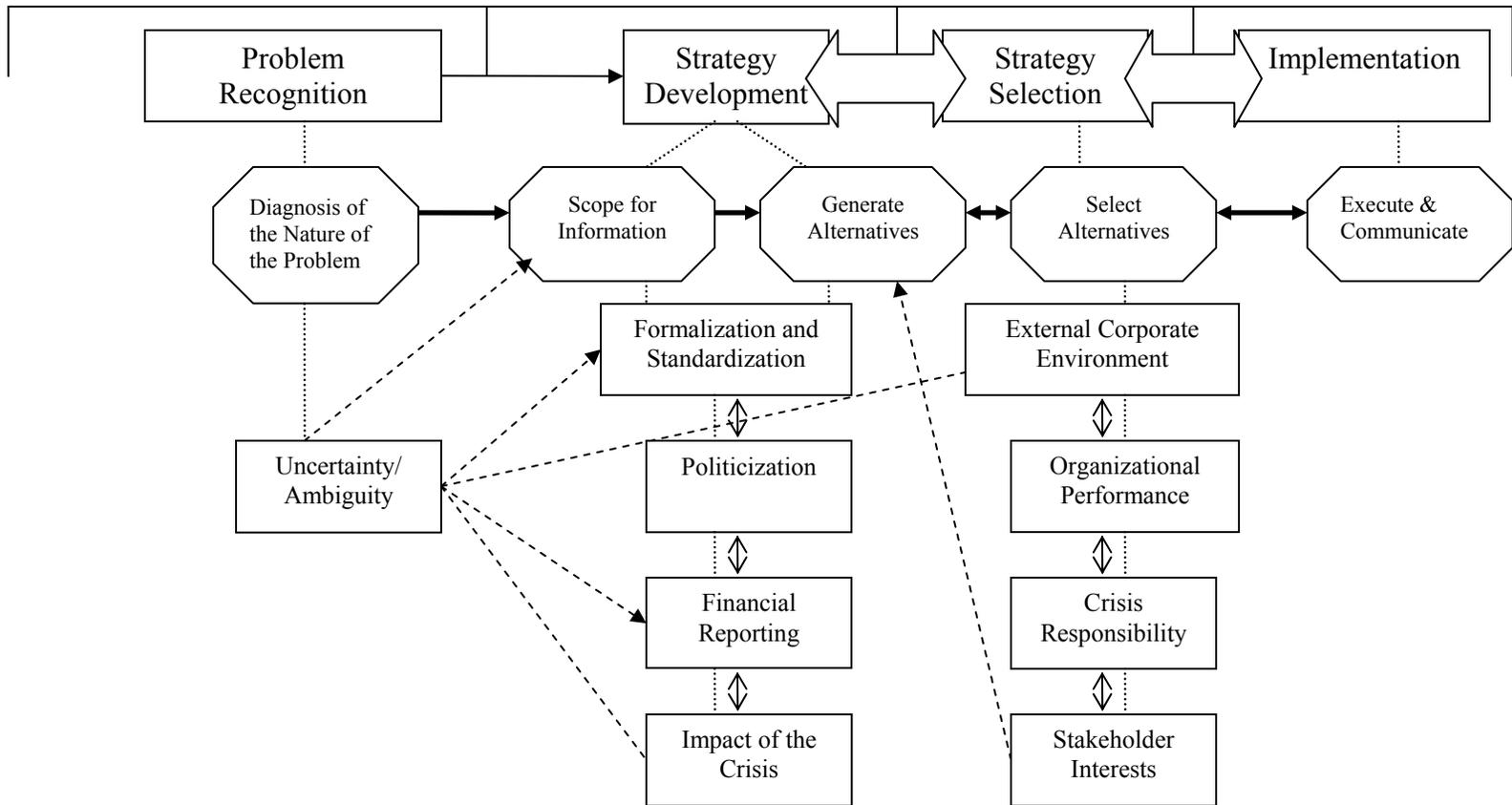
Figure 5.1 Organizational Crisis Decision-Making Model

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Additionally, decision-makers involved in the negotiation process may be overcome by a guilt complex, which might explain their uncharacteristic benevolence in the negotiation process. Since the construct was narrowly defined to capture the politicization process within an organizational context it was significant factor in the decision-making process within the limitations of the quantitative study and not within the qualitative study. Even during natural disasters like hurricanes Katrina and Rita, however, politicization played an important part. For example, when site managers had to get permits to bring in raw materials and employees to the plant site, politicization reared its head. The limited number of permits available to the plant managers, created situations of negotiations to gain access to the limited resources. Therefore, although the data from the qualitative and the quantitative study may conflict, the results from the quantitative study should be interpreted within the organizational, environmental, and managerial contexts to better understand the implications of the factors affecting crisis communications.

The construct, 'top management characteristics,' was not found to be a significant factor in the decision-making process in the quantitative study but the interview with Dan Borne' revealed that personal traits such as aggressiveness and risk taking propensity play an important role in managing a crisis. The construct 'top management characteristics' was designed to capture three endogenous behavioral components such as aggressiveness/risk taking propensity, risk aversion, and forthrightness. The only explanation for this variance in result between the quantitative and qualitative results may be that a very small percentage of the top management may be actually taking risks during a crisis. A crisis as such is marked by uncertainties and the top management may want to minimize the threat to an organization by avoiding risks that might further

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exacerbate the situation. Furthermore, since only one interview was conducted and the

example cited by the interviewee appeared more like an isolated case than a norm within

the industry, it is suggested further research is conducted to arrive at a valid conclusion. It

is not uncommon within the strategic decision-making literature to obtain conflicting

results about factors influencing the decision –making processes. Further research with a

larger sample size may provide better insights into the role of top management

characteristics in the strategy process.

Excellence Theory of Communications and the Crisis Communication Model The

model proposed in this dissertation also fits with the principles of Excellence Theory of

Communication within Public Relations. The Excellence Theory of Communication outlines

the characteristics that public relations departments must have to make organizations more

effective and to explain how and why communication makes organizations more effective.

One of the recommendations of this theory is that "public relations departments should be

characterized by participation in strategic management, symmetrical communication

combined judiciously with two-way asymmetrical communication and leadership by

communication managers rather than technicians" (Grunig, 1991). In this respect, this model

supports the tenets of excellence theory by exhorting communication managers to be

cognizant of the strategic decision-making processes within organizations. An understanding

of this process will in fact make produce **excellent** communication managers thus

contributing to the goals of excellence theory of building effective organizations.

Excellent communication departments can be differentiated from average communication

departments within an organization by the presence of communication managers as

compared to technicians in the average departments (Grunig, 1991). The prevalence of more

average communication departments within organizations may be explained by the fact that

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there is shortage of knowledgeable, strategic public relations managers and an oversupply of public relations technicians (Grunig, 1991). The crisis communication model proposed will demystify the process of decision-making during a crisis within a chemical organization. It will therefore prove useful to the technicians in gaining an insight into the complex process of decision-making during a crisis.

Although the excellence theory proposes that communication managers be skilled in environmental scanning and boundary spanning activities as a means to improve the effectiveness of an organization, it does not grant communication managers access to the boardroom very often. The communication managers are still not accepted as a part of the dominant coalition. The idea is that a fuller understanding of the strategic decision-making processes within an organization may make these doors more accessible to the communication managers and ultimately their indisputable acceptance as a member of the dominant coalition.

The model proposed in this dissertation study will add to the excellence theory of communication by helping public relations practitioners participate actively in the strategic decision-making processes. Further research in this area will broaden the excellence theory in a similar manner such as research on environmental scanning and publics, scenario building, the return-on-investment of public relations, evaluation, relationship cultivation strategies, conflict resolution, and global strategy have done (J. E. Grunig 2006; Toth 2007).

Paradigm Shift First, the results of this study indicate that decision-making within the chemical industry during a crisis involves several people. Therefore, strategy formation and selection during a crisis is affected by the characteristics of this group of people who often are part of the dominant coalition. It is consequently important that group dynamics be considered in understanding decision-making during a crisis. Although the crisis

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communication literature recognizes the importance of the role of the dominant coalition in the strategic decision-making processes, specifically the strategy selections process, the crisis communication models do not explain adequately how it does so. The present crisis communication models dominant in the literature such as SCCT appear to be based on the premise that a public relations manager merely have to identify the crisis type and select the crisis response strategies based on modifier variables that best addresses the situation in minimizing primarily reputational damages. A single individual is making the decisions where he or she does not have to confer or discuss or deliberate his or her decision with other members of the dominant coalition, merely select the strategies, and execute it. Specifically, the current post-crisis communication models do not do what it purports to do. The link between dominant coalition and strategy selection during a crisis is yet to be explored and explained. The model proposed in this study is a first step in this direction. It aims to understand and explain the role of dominant coalition in the strategic decision-making processes during a crisis.

Second, substantive amount of research within the field of crisis communication focuses on mitigating negative affects from reputational damage to an organization. Though most crises may invariably result in tarnishing the image or reputation of an organization, this may not necessarily be the case in all situations. For example, natural disasters like hurricanes, floods, fires, tornados, etc. while causing incalculable damages may not inflict any harm to the reputation of the organization itself. A case in point is the damage caused to the chemical industry by hurricanes Katrina and Rita. The extant crisis communication literature overlooks other damages to the organization from crises besides reputational damage. Although the present crisis communication literature proposes selecting post-crisis response strategies based on crisis types, it is doing so only in limited fashion. A broader

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framework of post-crisis communication response strategies needs to be developed that recognizes the multi-pronged effects of crises on organizations. The model proposed in this dissertation study draws attention to this shortcoming and recommends that the dominant coalition consider other equally damaging effects from a crisis such as long-term (months) plant shutdown due to severe damage to the plant and machinery, severe financial constraints, inestimable damage to the environment. Strategy development and selection in such cases may require the consideration of additional factors outlined in the crisis communication literature so far. The model proposed in this dissertation study identifies these additional impacts from a crisis.

Third, strategy is emergent and dynamic. It is not static as is implicit in the crisis communication literature. It is not a given. It is developed as the crisis situation evolves. Although some readymade strategies might be available, most strategies need to be tailored to the organizational context and its environment. Strategy formation is an iterative process where the decision-makers might have to go back and forth to choose the optimal alternatives.

Fourth, strategy formation and development during a crisis does not follow a linear sequential path as implied in the crisis communication literature. Strategy development and selection within an organization during a crisis is more representative of the process of muddling through a complex situation.

Fifth, paradoxically, within the crisis communication field there is woeful dearth of research that examines strategy development. This may be explained by the fact that most of the research has been based on post-hoc analyses of case studies, where strategies have been deduced predominantly from the post-crisis communications of the public relations personnel. This study suggests that strategy development as an area of inquiry needs

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attention from crisis communication scholars to better explicate the selection of strategies during a crisis. As noted earlier, though some readymade strategies may be available, new strategies need to be developed to counter the negative effects of a crisis, which take into account the distinctive organizational, managerial, and environmental factors. This study underscores the importance of examining the strategy development process within organizations to gain insights into how strategies are developed and selected actually during a crisis. This would also shift the focus from post-crisis communications to decision-making processes that take place during a crisis. This study in effect suggests a more holistic understanding of the decision-making processes during a crisis by laying emphasis on organizational, environmental, and managerial characteristics.

Sixth, although the crisis communication literature emphasizes the importance of the top management/CEO and the dominant coalition in the post crisis communication response, it does not explicate how they affect. It does not recognize characteristics like aggressiveness or risk taking propensity that may be influential in the development and the selection of the strategy.

Therefore, for all of the above reasons, this study may be viewed as advocating for a paradigm shift in crisis communication research within the discipline of public relations.

A Step Forward Even though this study advocates for the development of more general strategies, based on the impact of the crisis rather than the type of crisis, it does so within the context of the organizational and external environmental factors. This study recommends that organizations develop strategies based on their organizational, managerial, and environmental contexts. Unlike the crisis communication literature, which recommends that organizations select crisis response strategies based on the crisis types, but there is only a limited repertoire of strategies from which to choose. Therefore, it is paradoxical that crisis

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communication scholars advocate the selection of strategies based on crisis type when there

are only a limited number of strategies from which to choose. Finally,

> By definition, theory must have four basic criteria: conceptual definitions, domain limitations, relationship-building, and predictions. Theory-building is important because it provides a framework for analysis, facilitates the efficient development of the field, and is needed for the applicability to practical real world problems. To be good theory, a theory must follow the virtues (criteria) for 'good' theory, including uniqueness, parsimony, conservation, generalizability, fecundity, internal consistency, empirical riskiness, and abstraction, which apply to all research methods. Theory-building research seeks to find similarities across many different domains to increase its abstraction level and its importance. The procedure for good theory-building research follows the definition of theory: it defines the variables, specifies the domain, builds internally consistent relationships, and makes specific predictions. (Wacker, 1998, p. 361).

Therefore, the argument that proposing more generalizable, abstract, and parsimonious

theoretical constructs that are specific to a domain is a step backward would be inconsistent

with the basic premise of theory building. This model, which is proposed in this dissertation

study, has explanatory powers, is generalizable to a domain, is parsimonious, and has

predictive powers, is in fact a step forward in theory building in crisis communications.

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CHAPTER 6. DISCUSSION AND CONCLUSION

This chapter summarizes the major findings of this study and discusses the implications of these findings. It concludes by addressing the limitations of this study and providing directions for further research.

The goal of this study was to develop and test models that explain the nature of the crisis, strategy formation and selection in organizations during a crisis. The organizational decision-making literature served as the foundation for the current study. To date, the literature on crisis communication or strategic management presents no crisis decision-making models. The extant literature on strategic decision-making has scarcely addressed crisis in the explication of strategic decision-making process. Within the discipline of crisis communication, researchers have just begun to explore factors that affect strategy selection during a crisis. Though preliminary work in crisis decision-making has begun, there is a gap in the understanding of how decision-makers make decisions during a crisis. To aid in filling this gap, this study conducted an empirical analysis of the decisions that decision-makers make during a crisis.

Key Findings

The key findings of this study from both the qualitative and the quantitative research are:

Crisis is Accompanied by Uncertainty and Ambiguity in Decision-Making This study indicates that during a crisis, decision-makers are faced with uncertainties. The source of this uncertainty is the environment. Organizations are viewed as information processing entities. When the decision-makers do not have the information to make a decision, they are faced with uncertainties. The uncertainties may result from one of the following situations: not being able to predict the outcomes of a decision, being uncertain about the occurrence of an event, or lack the knowledge of response options. In the case of Hurricanes Katrina and

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Rita, which battered the Gulf Coast in 2005, an instance from the interview with Borne'

exemplifies the uncertainties that a decision-maker may face. In this case, the storms

created an uncertainty about the availability of natural gas, one raw material required in the

production of chemicals. The decision-makers were unsure from where to source natural

gas supplies since all the natural gas supplies were located in the hurricane affected areas

and it was uncertain that they would be able to supply the natural gas. In addition, the

communication systems were also affected and the decision-makers were unsure whether the

natural gas suppliers had the supplies, and if they had the supplies, did the natural gas plants

have power to pump the gas.

It can be concluded that during a crisis, decision-makers face uncertainties in the

decision-making environment. Put another way, uncertainty is a common issue that decision

makers may face, regardless of whether they are making decisions during a crisis or any

other strategic management decision such as investments.

Decision-Making During a Crisis Takes Place Through Formal Processes This study

reveals that strategic decision-making during a crisis takes place within the formal planning

system of the organization. Although there is no evidence of how decisions are made during

a crisis within the crisis communication literature, research within the management literature

suggests some decisions may be made outside of the formal planning system of the

organization. However, this study suggests that decision-making during a crisis is done

within the formal planning system of the organization. Formalization in the decision-

making process within organizations is achieved through the creation of crisis management

teams assigned the responsibility of decision-making. Formation of crisis management

teams helps in contracting the decision-making process (Coombs, 1999; Laye, 2002), which

helps in increasing the speed with which decisions are made. The results of this study find

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support in the strategic management literature. Pearson and Clair (1998) and Witt and Morgan (2002) argued that organizations experience greater success when crisis management rests with a crisis management team rather than with an individual. It also helps in minimization of loss (Billings et al., 1980; Blythe, 2002).

Politics Form a Part of the Strategy Formation Process This study, for the first time, explicitly identifies that decision-making during a crisis takes place through a group or committee of people. When a group of people is involved in a decision-making process, politics may surface as a result of the disagreements among the members of the groups and transaction of power. Members of the groups may attempt to control the agenda or to gain personal advantage through co-optation attempts or by withholding information. It is also possible that politics will rear its head with the formation of coalitions based on pay-offs and preferences. This might adversely affect the climate and the quality of the decision-making process. Sometimes, the crisis management team might have to deal with politics from outside the organization. Problem solving in such cases may involve negotiation and bargaining strategies. Since the crisis communication literature does not recognize the fact that decision-making involves a set of people, there is no reference of negotiation or bargaining techniques. However, Grunig and Hunt (1984) alluded to negotiation and compromise through their two-way symmetrical model to resolve conflicts that arise between an organization and its external publics. This study introduces for the first time the notion of politics in the decision making process during a crisis.

The Impact of the Crisis Affects the Strategy Formation Process Coombs (2007) examined the severity of the crisis in his SCCT model. Although Coombs (2007) examined the severity of the crisis as one moderating factor in the selection of the crisis communication strategies, he does so within the framework of crisis responsibility

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attribution and damage to reputational assets. It is, therefore, subjective. For instance, if the external publics of an organization wrongly attribute the financial downfall of an organization to the unfavorable external economic conditions, when in fact the organization suffered financial losses due to poor management decisions, then they are likely to assign lesser responsibility to the organization *per se*. In such an instance, this would result in lower reputational damage and in the formulation of strategies that might be sub-optimal. Should this imply that the public relations practitioner views the crisis as less severe, since it is less threatening to its reputation and not take adequate steps?

This study examines the impact of the crisis not only on reputation of the organization, but also on a wider range of factors that include internal firm measures, such as process interruptions (damage to plants and machinery, financial loss), or external environmental factors (impact on market share, damage to the environment, damage to the reputation). In addition, it suggests that severity of the crisis should be measured in terms of its long-term effects, the irreversibility of the effects, and finally, whether it affects the viability of the organization itself. This study demonstrates that the impact of a crisis is more widespread and affects the strategy formulation process. It can be inferred that the impact of the crisis is more far- reaching than research within crisis communication literature suggests.

Decision-Makers Consider Financial Reporting when Formulating Strategies

Financial reporting practices influence decision-making during a crisis. Since a crisis generally requires a significant commitment of financial resources, it appears logical that decision-makers consider financial reporting. The findings of this study support Dutton's (1986) results, which suggested that during a crisis, decision-makers employ increased levels of resources, enhance control over issue resolution, and increase the level of issue related explanation. The financial reporting may apparently help decision-makers in

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explaining the financial results to the stockholders and others affected by the success of the organization. This finding is also in line with Papadakis, Lioukas, and Chambers' (1998) study, which found that situations perceived as crises are associated with more financial reporting activities. This may be explained on the basis that since organizations seek to exercise greater control during a crisis, financial reporting may serve as a means to do so.

In addition, since a crisis involves significant investment of resources, incurring significant financial losses is a strong possibility. Financial reporting may provide decision-makers an avenue to account for that. Additionally, since financial reporting is used for accounting for events or issues that occur infrequently, it is reasonable to understand their use during a crisis. Financial reporting has also been observed when the CEO is highly educated and expects/demands details (Bantel, 1993). Moreover, since a crisis may negatively affect the performance of an organization, it is easy to see why financial reporting is an essential consideration during a crisis.

External Environmental Characteristics Affect Strategy Selection The external environment in the case of a crisis is characterized by dynamism and hostility. Hostile environments intensify challenges for the organization, and therefore, necessitate greater analytical effort to understand and overcome them (Khandwalla, 1973a). In general, hostile environments provide less maneuverability or flexibility in decision-making. During a crisis, it becomes imperative to pay greater attention to the selection of competitive and economical strategies. If the decision-makers do not consider these factors when selecting strategies, not only will the reputation of the organization suffer, it may also affect the viability of the organization itself. In a dynamic environment, decision-makers have to make decisions very quickly to cope with an environment that is experiencing rapid changes. For instance, the decision-makers have to cope with several external influences

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simultaneously, such as pressure from the government and the media, and changes in the

market conditions and in the competitive landscape. If the decision-makers do not attend to

these changes in a timely manner, their organization is likely to suffer reputational damage.

Extensive risk taking and a strong emphasis on innovation may prove to be hazardous when

the external competitive or economic conditions are becoming increasingly unpredictable.

In some cases, it may affect the viability of the organization too. This study underscores the

importance of the consideration of the external environment characteristics in the selection

of crisis response strategies.

Stakeholder Interests Affect Strategy Selection Findings of this study confirm that

stakeholder interests are an important consideration in the selection of crisis strategies. Both

organizational and crisis communication (Donaldson & Preston, 1995; Freeman, 1984;

Leeper & Leeper, 2006; Pompper, 2006) theorists emphasize the importance of stakeholders

in the successful management of an organization. The crisis communication theorists see

stakeholder interests as being important in building and maintaining mutually beneficial

relationships. The benefit of a good relationship is that it protects the reputational asset of

an organization during a crisis (Coombs, 2007). Organizational theorists, on the other hand,

value good stakeholder relationships because they positively affect the organizational

performance (Donaldson & Preston, 1995). Consequently, whereas the organizational

theorists take an instrumental approach to explain stakeholder importance in terms of

organizational performance, the crisis communication theorists presume an instrumental

approach to explain organizational reputation.

Reputation is an important tangible asset, which can secure several advantages for

the organization. As stated earlier, a good reputation attracts customers; generates

investment interest; attracts talented employees; creates a competitive advantage; and

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garners positive comments from financial analysts (Carmeli & Tishler, 2005; Davies et al.,

2003; Fomrun & Gardberg, 2000; Fombrun & van Riel, 2004). Since an unfavorable

reputation can have serious implications for the organization, it is easy to see why decision-

makers consider stakeholder interests in selecting crisis response strategies.

Organization's Financial Performance Affects Strategy Selection A crisis requires

commitment of significant financial resources. It is, therefore, reasonable that decision-

makers consider financial performance of the organization when they select strategies. In

addition, since decision-makers have to make faster decisions during a crisis, it entails a

greater risk of selecting a wrong option. Selection of a wrong option invariably could cause

substantial loss to the organization. Decision-makers, therefore, consider the influence of

the strategy selection on the financial well-being of the organization. The selection of the

most suitable strategy may be driven by a concern for the return on equity or earnings per

share, measures of the financial performance of an organization. Scholars examining the

relationship between faster decisions-making and firm performance found that organizations

that perform poorly are more likely to take risks (Singh, 1986). Hence, organizations that

perform well are less likely to take risks and consider how their strategic-decision-making

during a crisis will affect the financial performance.

Crisis Responsibility Affects How Decision-Makers Select Strategies Research within

the strategic management literature indicates that during non-crisis situations, decision-

makers anticipate the criteria by which they will be judged and select strategies

correspondingly. Scholarship within crisis communication literature recognizes the role of

crisis responsibility in selecting the appropriate strategy (Coombs, 2007). The findings of

this study confirm that crisis responsibility is an important influence in the selection of the

crisis response strategies. Interestingly, the results from the qualitative analysis reveal that

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during a crisis, when people make causal inferences to interpret the situation, they are also likely to make positive attributions.

Decision-Making during a Crisis Follows a Logical Incrementalism Path The findings of this study indicate that decision-making during a crisis does not follow a linear sequential path. The fact that strategic decision-making takes place in an uncertain environment characterized by dynamism and hostility, where groups of people are involved in the decision-making process involving managing strong disagreements among key members, a consideration of the internal firm characteristics and the interests of several key stakeholders makes it untenable that decision-making during a crisis follows a linear sequential path. Crisis communication researchers implicitly suggest that the decision-makers are rational human beings who follow a sequential analytical path and choose among competing alternatives to select the crisis response strategy that best fits the situation. However, the results of this study suggest that logical incrementalism would be a more appropriate/accurate description of the process of strategic decision-making during a crisis. Even though some ready-made solutions might be available, decision-makers have to consider the organizational context as much as the content of the strategy to manage the crisis. Development and refinement of the alternatives have to be done to reach the most satisfactory solution to the problem.

Quin's (1980) logical incrementalism, which combines the element of both rational planning and Lindblom's (1979) incrementalism (muddling through) model of decision-making (Papadakis & Barwise, 1997), is most representative of the strategic decision-making process during a crisis. The results from the qualitative study indicate that decision-making during a crisis follows the elements of rational planning. However, to cope with the complexities and the uncertainties of the crisis situation, decision-making maybe limited to

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the analysis of few familiar alternatives or an analysis that explores only some, but not all,

possible consequences of an alternatives. Decision-making during a crisis, therefore, is

characterized by small incremental changes that are slightly better than the status-quo

(Linblom, 1979).

Top Management Characteristics Do Not Affect Strategy Selection Interestingly, this

study did not support the view that top management influences the strategic decision-making

processes during a crisis. This may be explained on the basis that during a crisis, the person

closest to the problem is more closely involved in the decision-making process. This was

evident from the analysis of the in-depth interview done with Borne'. In the case of the

chemical industry, the plant managers, plant supervisors, or the vice-president for plant

operations stationed at the site may need to take decisions quickly, which may not permit or

allow constant input from the top management in the corporate offices. It is reasonable to

assume that the plant managers may confer with the top management in the corporate offices

only in exceptional or special situations. It can also be inferred that during a crisis, top

management is dependent on the information supplied by upper middle management at the

plant sites to make decisions. This, therefore, may explain why the influence of top

management was not significant.

Additionally, since the majority of the chemical plants surveyed were divisions of

multinational corporations, divisional heads may be responsible for the decision-making

during a crisis, which may leave top management free to focus on strategic decisions of

greater importance. Moreover, as a construct, top management characteristics were

operationalized to evaluate personal traits, such as risk taking and aggressiveness, which

most managers may not be comfortable taking during a crisis, but it did not appear to be

significant influence in the decision-making process during a crisis. The results of this study

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support earlier findings (Hannan & Freeman, 1977, Lyle & Mitroff, 1980; Stein, 1980) that leadership roles have little influence on actual decision-making. This may also indicate that the context variable may have greater influence in strategic decision-making during a crisis than top management characteristics. Further research needs to be done to investigate this finding.

The crisis management and organizational decision-making research has progressed independently of each other and this exploratory study integrated both the research strands to increase the understanding of crisis decision processes through the lens of organizational decision-making framework. Overall, the results of this dissertation support the view that for understanding strategic decision-making process during a crisis, an in-depth integrative model that includes management, environmental, and organizational factors is needed. The interaction of all these factors shape decision-making during a crisis and none of them individually can explain how decision-makers formulate and select crisis response strategies. The results of this dissertation corroborate earlier observations that the nature of the decision (crisis) is a dominant influence in the decision-making process.

Limitations and Directions for Future Research

As with all the research studies, this study has its limitations. One major limitation of this study has been its sample size. An ideal sample size would have been 100 or more respondents. However, given the nature of the study and the difficulty in gaining access to decision-makers within a highly diverse industry, achieving a sample size of 100 was extremely challenging. Supplementing the results of the quantitative analysis with in-depth qualitative research helped to address some of the shortcomings. In fact, the results of the in-depth qualitative analysis have added depth to the interpretation of the results obtained through regression analysis. It may be noted that it is not always easy to integrate the results

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of a quantitative study with a qualitative analysis but this study was able to merge the findings from both lines of research to reach more substantive conclusions.

This study is an exploratory study that examined several factors that influence decision-making during a crisis. Several extensions, both methodological and substantive, are suggested to comprehend fully the decision-making process within organizations during a crisis. First, factors, such as organizational structure, should be examined to see how they affect the decision-making process during a crisis. Second, researchers might want to examine how communications within organizations, such as lateral versus hierarchical, affect the strategic decision-making process during a crisis. Finally, how does ownership of an organization, whether it is a government owned, or privately owned affect the strategic decision-making process during a crisis.

Further research needs to be done to test the generalizability of the present crisis communication framework. Since this study was done in an industry highly vulnerable to accidents, it is possible that they are probably more comprehensive in their decision-making process during a crisis than other industries that are less risk prone, such as service industries. It may be fruitful to analyze whether contextual factors differ with different industries. Furthermore, this study did not differentiate between the types of crisis examined.

An important extension of this study would be to examine whether crisis types affect the strategic decision-making process. This study was based on the rationale that most organizations have a crisis management plan that familiarizes the decision-makers with their role and responsibilities. Once the decision-makers are familiar with their roles and responsibilities and with how to interact during a crisis, the type of crisis has little impact (Clark & Harman, 2004; Laye, 2002). Moreover, it is not practically possible to be prepared for all the types of crisis, therefore, it seemed reasonable to assume that broad guidelines on

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managing crisis would equip the crisis management team to cope with most situations.

Hence, it would be worthwhile to investigate whether crisis types influence the nature of

decision-making in organizations during a crisis.

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APPENDIX A

SURVEY QUESTIONNAIRE

</div>

Your position/rank in the organization _____

Department _____

Education _____

Age _____

Number of years with your present/current organization _____

A. Comprehensiveness

1. In your organization how likely is it that the primary responsibility for determining the cause of the problem would be assigned to no one in particular (No specific individuals or groups)

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

2. In your organization how likely is it that the primary responsibility for determining the cause of the problem would be assigned to one specific individual

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

.

3. In your organization how likely is it that the primary responsibility for determining the cause of the problem would be assigned to an existing committee of two or more people

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

4. In your organization how likely is it that the primary responsibility for determining the cause of the problem would be assigned to a specially formed group of two or more people

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

5. In attempting to determine the cause of the problem your organization would not be willing to consider outside help/assistance

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

.

6. In attempting to determine the cause of the problem your organization would be willing to consider outside help/assistance

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

7. In attempting to determine the cause of the problem your organization would be willing to consider some outside help/assistance

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

8. In attempting to determine the cause of the problem your organization would be willing to consider substantial outside help/assistance

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

9. In attempting to determine the cause of the problem your organization would be willing to rely solely on outside help if necessary

(i) Very Unlikely

.

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

10. In your organization the cause of the problem would be identified primarily through informal discussions among managers

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

11. In your organization the cause of the problem would be identified primarily through scheduled meeting among managers

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

12. In your organization the cause of the problem would be identified primarily through scheduled meeting among managers and some analysis

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

.

(v) Very Likely

13. In your organization the cause of the problem would be identified primarily through scheduled meeting among managers and detailed/extensive analysis

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

14. Approximately how much time your organization would be willing to spend each day to address the issue

(i) Less than 2 hours

(ii) More than 2 hours but less than 4 hours

(iii) More than 4 hours but less than 6 hours

(iv) More than 6 hours but less than 8 hours

(v) More than 8 hours or however many hours it takes

15. How likely is it that your organization will develop a timeline or a schedule to address the issue?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

16. How likely is it that your organization will allocate a budget or have a financial plan or some fixed amount or some contingency funds available to address the issue?

.

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

17. How likely is it that your organization would be willing to alter or adjust the budget

or the contingency fund to address the issue?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

18. How likely is it that a specific functional area (for instance the finance department)

will determine the allocation of the budget?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

19. How likely is it that the top management (CEO/COO/ President/Vice President) will

decide the budget in consultation with the department heads or the functional area heads?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

.

(iv) Likely

(v) Very Likely

20. How likely is your organization to use NPV-IRR to evaluate the impact/effect of the crisis in making decisions?

 (i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

21. How likely is your organization to involve the public relations team in reaching decisions about communicating about the crisis?

 (i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

22. How likely is your organization to consider/factor in beating the competitors or competition when making decisions about crisis?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

.

23. Would your CEO/COO be willing to take risks in dealing with the crisis (for instance taking steps or measures that he or she would not ordinarily take in normal circumstances)?

(i) Strongly agree

(ii) Agree

(iii) Not sure/don't know

(iv) Disagree

(v) Strongly disagree

24. How likely is that decisions will be made with financial reporting in mind?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

25. How likely is it that your organization will include detailed cost studies in making decisions about crisis?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

26. How likely is it that the strategic decisions made during crisis will be incorporated in companywide financial plans?

(i) Very Unlikely

.

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

27. How likely is it for your organization to include Proforma financial statement to handle crises?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

28. How likely is it for your organization to consider historical financial statements in making strategic decisions about the crisis?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

29. How likely is it for your organization to have a written procedure for guiding a process (for instance a crisis plan?)

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

.

(v) Very Likely

30. How likely is it for your organization to have formal procedures to identify alternate ways of action?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

31. How likely is it for your organization to have formal documents guiding the final decision? For instance, formal company policies or guidelines)

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

32. How important is your organization's mission statement in making decisions about the crisis?

 (i) Very important

(ii) Somewhat important

(iii) Important

(iv) Don't know/Not sure

(v) Not important

(vi) Not so important

(vii) Not all important

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33. How important is your organization's vision statement in making decisions about the crisis?

(i) Very important

(ii) Somewhat important

(iii) Important

(iv) Don't know/Not sure

(v) Not important

(vi) Not so important

(vii) Not all important

34. How likely is your organization to consider its social responsibility when making strategic decisions about crisis?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

35. How likely is it for your organization to have pre-determined criteria to evaluate the outcome of the strategic decision-making during crises?

(i) Very Unlikely

(ii) Unlikely

(iii) Don't know/Not sure

(iv) Likely

(v) Very Likely

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OPERATIONALIZATION OF CONSTRUCTS

Construct	Operationalizaton	Variables derived from	Items in scale
2. Financial Reporting	This factor variable measured the degree of financial reporting activities and consisted of two measures (i) Inclusion of pro-forma financial statements (ii) detailed cost studies (The measurement scale ranged from 1 to 5 from Very Unlikely to Vey Likely	King (1975); Stein (1980); Marsh *et al.* (1988);	2
3. Rule Formalization	This factor/construct measures the degree of rule formalization/standardization during the making of a strategic decision (SD). It consists of 2 items (i) Have formal goals and objectives (ii) Consider formal company policies and guidelines	King (1975); Stein (1980)	2
4. Degree of Politicization	This construct measures the extent of coalition formation, the degree of negotiation among major participants, and the degree of external resistance encountered, Scale ranged from 1 (very unlikely) to 5 very likely)	Pettigrew (1973); Mintzberg *et al* (1976); Hickson et al (1986)	1
5. Magnitude of Impact	This factor measured the impact of crisis on (i) profitability (ii) process interruptions (iii) Sales (iv) Market Share (v) Damage to plant and machinery (vi)Threat to information technology.(vii) threat to financial loss (viii) threat to reputation (ix) loss of human lives	Beach & Mitchell (1978); Schneider & DeMeyer (1991)	9
6. Decision uncertainty	This factor measured (i) General uncertainty about the actions to be taken (ii) general uncertainty about the outcome of the decision (iii) uncertainty about the information to be collected. This variable consisted of three 5-Likert scale items	Beach & Mitchell (1978)	3
7. CEO's risk propensity	This variable measures the psychological disposition of the CEO toward risk	Eysenck & Wilson's risk propensity scale (1975)	1
8. CEO's number of years with the company	Continuous variable measuring number of years with the company	Hambrick & Mason (1984); Fredrickson & Iaquinto	1

.

		(1989)	
9. CEO's level of education	One 5- point scale measuring CEO's level of education	Hambrick and Mason (1984)	1
10. Environmental Heterogeneity	A factor measuring the (i) the nature of competition, (ii) market dynamism (iii) market uncertainty (iv) customers' buying habits. The scale consisted of four 5-point Likert Scale	Miller & Friesen (1983)	4
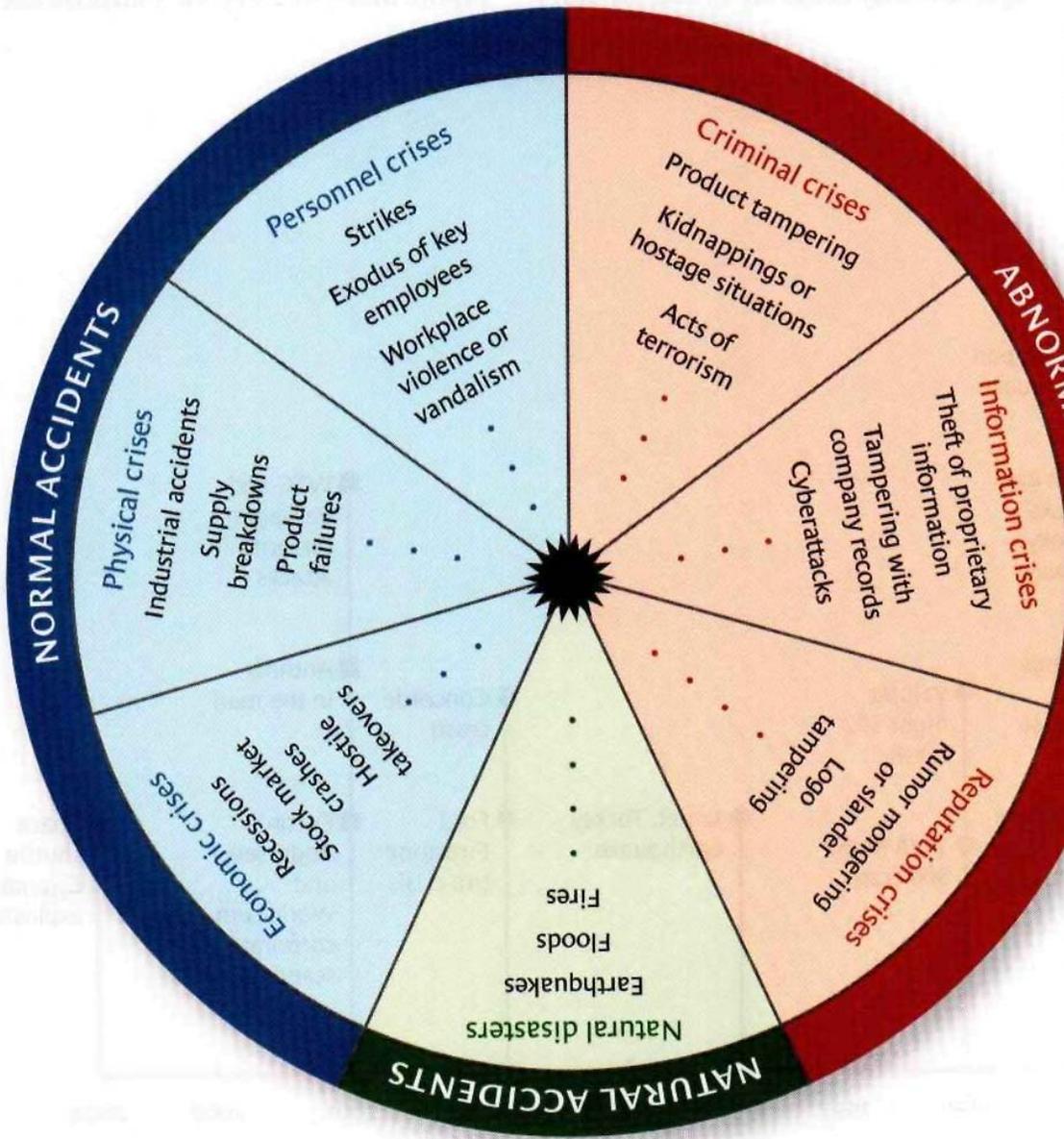
Mitroff & Alpaslan, 2003, Harvard Business Review, p. 114

APPENDIX D

TYPOLOGY OF CRISIS

Internal-normal

- Crisis originates within the organization
- Crisis is relatively predictable with respect to timing and magnitude of consequences and the frequency is not uncommon
- Crisis can be anticipated and prepared for
- Crisis is organization-specific
- One organization suffers

Examples:
1. Physical crises (industrial accident, product failure/recall)
2. Personnel crises (strike, exodus of key employees, workplace violence, vandalism, sexual harassment)
3. Other (internal supply chain breakdown) Internal-abnormal

Internal Abnormal

- Crisis originates within the organization
- Crisis is rare and not predictable with respect to magnitude of consequences and/or timing
- Crisis should be loosely expected and flexible resources allocation
- Crisis is organization-specific

Examples:
1. Criminal crises (executive kidnapping, hostage situation, corporate scandal)
2. Information crises (information theft, copyright infringement, records tampering,)
3. Other (product/brand boycott, firm-specific cyber attacks)

External normal

- Crisis originates outside the organization
- Crisis is relatively predictable with respect to timing and magnitude of consequences and the frequency is not uncommon
- Crisis should be loosely expected and flexible resources
- Crisis can affect multiple firms

All relevant organizations suffer
Examples:
1. Economic crises (depression, hostile takeovers, currency markets collapse)
2. Industry crises (supplier failure, technology, obsolescence, industrial espionage, product category failures)
3. Other (industry-wide cyber attacks/viruses)

External Abnormal

- All relevant organizations suffer
- Crisis originates outside the organization
- Crisis is relatively predictable with respect to timing and magnitude of consequences and the frequency is not uncommon
- Crisis is virtually impractical and/or impossible to anticipate

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- Flexibility enables adequate response
- Crisis must advance to clarify environment
- No finalized response until crisis ceases

Examples:
1. Political crises (terrorism, war, expropriation)
2. Industry deregulation (legal changes, privatization)
3. Reputation crises (malicious rumor, slander, logo tampering)
4. Natural disasters (earthquake, tsunami)
5. Other (major supplier bankruptcy)
(Snyder et al., 2006, p.374)

Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.

Institutional Review Board
Dr. Robert Mathews, Chair
203 B-1 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.6792
irb@lsu.edu | lsu.edu/irb

➢ Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at http://appl003.lsu.edu/osp/osp.nsf/$Content/Humans+Subject+Committee?OpenDocument

➢ A Complete Application Includes All of the Following:
(A) Two copies of this completed form and two copies of parts B thru E.
(B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
(C) Copies of all instruments to be used.
    •If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
(D) The consent form that you will use in the study (see part 3 for more information.)
(E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB.
    Training link: (http://cme.cancer.gov/clinicaltrials/learning/humanparticipant-protections.asp.)

1) Principal Investigator: Tulika M. Varma _____ Rank: Doctoral Student _____ Student*? Y/N Y

Dept.: Mass Communication _ Ph: 740-274-9995 E-mail: tvarma1@lsu.edu _____

2) Co Investigator(s): please include department, rank and e-mail for each
    • If student, please identify and name supervising professor in this space

3) Project Title: An integrated model of strategy formation and selection during a crisis: A 360 degree approach to crisis management

4) LSU Proposal?(yes or no) No _ If Yes, LSU Proposal Number N/A _____

Also, if YES, either ◯ This application completely matches the scope of work in the grant
    OR
    ◯ More IRB Applications will be filed later

5) Subject pool (e.g. Psychology Students) Top management in Chemical Industry _____
    •Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature _Tulika Varma_ ** Date 12-10 09 (no per signatures)
    **I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

    Effective August 1, 2007, all Exemptions will expire three years from date of approval, unless a continuation report, found on our website, is filed prior to expiration date

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Exemption Expires: 12-9-2012

IRB# E4883 LSU Proposal#
☒ Complete Application
☒ Human Subjects Training

Screening Committee Action: Exempted _✓_ Not Exempted _____ Category/Paragraph 2a
Reviewer _Anne Osborne_ Signature _____ Date 12-10-09

INTERVIEW TRANSCRIPT –DAN BORNE'

OK. Tulika, this is Monday, July 12, 2010 and we are in Highland Coffees, and this is Dan Borne, President of Louisiana Chemical Association, suite 2040, Baton Rouge, LA 70808, Dan at lca.org.

OK. First, tell me a little bit about your organization?

We represent the… we are a trade association. We represent around 60 petrochemical companies that operate in Louisiana at about 90 locations. These are mostly these are multinational corporations that have production facilities in Louisiana. They make chemicals. They produce...most of them basic chemicals. Some of them ah ...secondary and advanced chemicals. They are… they are in the business of making chemicals.

OK. What was the crisis that you have faced most recently?

The most recent crisis was a series of hurricanes that we had to deal with in Louisiana.

OK

Hurricane Katrina and Rita followed a couple of years later by hurricane Gustav and Ike. All four of these storms created crisis situations for our plants. Some of these crises dealt with losing the electrical power. Some of them dealt with their plants being flooded. Some of them dealt with ah pipelines being shut-off because of inaccessibility of natural gas. So, we had a series of serious situations that prevented our plants from coming back as quickly as they should have and that is the major crisis that we had to deal with over the last five years.

OK. What was your role in managing the crisis? Like you have mentioned several types of crises, if you could just focus on one and tell me about ir.

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On a typical hurricane …just let's take Hurricane Katrina. Ah…ah…that hurricane ah…ah… shutdown bridges; ah it shutdown ah…rail transportation, ah… it shutdown barge transportation on the Mississippi river. It also limited access ah…of our workers to go back to our plants because many of them evacuated for the storm itself. The specific crisis was that we had lots of plants that were not operating. Ah…and we had to set up a communication, ah communications process that let all of the plants know at the same time what was going on at the other plants, so that they could exchange information and access the resources that were necessary in order to restart their plants, bring their employees back so that the plants could begin operating again in a safe manner.

OK, you are a trade organization, what was the role of the CEO? Did you have any communication with the CEO?

There was… there was virtually no communication between us and the home offices of the corporations that own all of our plants. 99% of the communication was between us and the local representatives of those plants. We call them plant managers, we call them general managers, we call them ah executive vice-presidents in-charge of operations. These are the men and women who operate the plants here in Louisiana. They were the closest to the problem. And so, they were the ones we got to communicate with because they were best equipped to respond to issues that needed to be addressed. And so from time to time, we had questions posed by corporate in NJ, or even in Germany because are plants are from all over the world and we would respond to a question. But, most of our activity was strictly with Louisiana men and women who run the plants here in the state.

Now, we dealt with a whole range of people at those plants. We dealt with the plant managers. We dealt with environmental managers at these plants. Because every time you shutdown a plant here or every time you restart a plant you have environmental

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issues to deal with. You can't just turn the light switch off and expect the plant to shut

down. It has to be done in a phased graduated way and when you bring it back up it also

has to brought up in a phased graduated way and so the process of bring the plant up

brings a large team of people into play? It brings the plant manager, the environmental

manager, the health and safety manager, also has to play a role because of environmental

considerations outside the plant but you also have health and safety situations within the

plant. That represents another person in the plant hierarchy that was a part of the

communications tree. Yet other people are involved as well. The logistic people, the

transportation people, people who are involved with bringing in raw materials, shipping

out products were part of the process as well. Human resources people were involved as

well because some plants could not get their employees back on site because there were

so many travel restrictions between parishes. And so, we had to work on behalf of the

plants to get some of the restrictions lifted so that these men and women could get back

to the plants start them up and run them again. And finally, the legal department got

involved as well. Because obviously, there are always legal implications especially when

you need variances from certain regulations in order to restore or even to bring

equipments in. Sometimes, the equipments that they needed, the huge generators that

they needed could not be brought in regular trucks. They had to be brought in super size

tractor-trailers. And for those types of trailers, you need special permits and so we had to

expedite the permitting process so that the trucks can come in and provide the generators

to the plants. And so while are basic contact was the plant manager. You can easily

construct the case where virtually every major component of the plant's operation was

involved intimately involved in the shutdown of the plant, the period of storm itself, and

then the restart of the plant.

.

Questions-You are outside the organization. Why like, …you just didn't jump into action. Did someone or the plant manager ask you for you help, your assistance in managing the situations you just mentioned. Because, I would understand that it would be the plant manager's responsibility to take actions and start the process.

And, one more question. Did you have a plan? It was a hurricane and you were already aware of it.

We began making sure that our plants know about it. Now, they already know about it anyway because they have their own private weather services. Most companies of course depend on the national weather services but they also hire their own private weather services to give them as second look at the storms and where these storms might go. What they do is, they take the national weather service forecast, and they layer it over the private weather forecast and try to determine the probabilities where the storm is going to land. We began communicating as soon as it looked like the storm is going to be in the Gulf Coast. We set up a simple communications tree. And we tell them we will begin communicating and coordinating between them and among them. There is no formal plan there.

We meaning?

The LCA

OK suppose if you have a plant in Geismer, do you call them or the plant manger calls you to set up the communication?

We send them an e-mail and whosoever the plant manager determines is the appropriate person that person responds. Generally, it is the plant manager who will say, please keep me posted and also let the following people in my staff know what is going on.

OK

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Because, there are some plants in one part of the state that are not affected as much as the plants in other parts of the state.

OK

Those plants that are in the unaffected areas they have capabilities that they can share with plants that are in the affected areas. For example, some plant in the Lake Charles might have temporary housing that it is not using and that it would be willing to lend a plant in southeast Louisiana to get the full force back and what happens is, when you have these types of emergencies, these plants share among each other.

Who makes these decisions? Is it understood?

It is between and among the plant managers. We may get a call from a manager saying that he needs temporary housing in Luling, La. We put a call to everyone in the organization. These calls go to everyone in the organization. Does anyone have temporary housing available? Does anyone know where it might be available? If so, let us know. And, that will come back to us. And we won't just don't send it back to the guy that asked the question but to everyone so that anyone who has a potential need for it has that type of information available.

OK

Were there any situation where you didn't know what to do, you were not prepared for it where to go for the information or didn't know what to do about it?

So, there are certain situations that you are not necessarily not prepared for, but there are situations that are hard to fix. For example, if natural gas pumping plants are shut down because of electrical failures and then you just simply don't have natural gas. Even the storage zones where you store the natural gas you need electrical pumps in order to pump gas to the pipelines and sometimes those things break. Ok So then you have to deal with

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alternate sources of natural gas. And so, instead of trying to get South Louisiana natural gas which might all might be shut in because of the storm. You assess plans of accessing gas from other parts of the country to send down here in Louisiana. So it is not so much a question of not being prepared. You don't really know what the next problem is going to be. But you know to approach it in a way that you have enough brain power to come up with the solution. Hurricane Katrina, was followed by hurricane Rita. It was just few weeks apart. I call it hurricane "Katrita." I call it one name because it was one big hurricane. We put together a document. And we send it out to all our members and put it on our Web site. It is basically a list of best practices; what we did, how we did and how are plants responded. And I will send you that because it is going to be very helpful to you. And it is the result of hurricane Katrina and years of experience. But we recycle that every year and say listen, you might not have thought of some of the problems you faced. In other words, you might not have asbestos abatement contractor contract ok… You should get one for the storm season. See, those are things that we send to our plants so that they can be better prepared to respond to problems. And, I will send you a copy of that.

During this process when you were interacting with the plants, did you involve the pr department?

Yes, yes, their role was to be made aware of what we were doing. We then take information from them. For example, with respect to some plants providing emergency services to federal government. For example, during Hurricane Katrina, ExxonMobil Refinery in Chalmette actually became the home of the parish government. Parish government was flooded but the refinery was not because it had the pumps to pump the water out. And so, the whole parish government of the St. Bernard Parish moved into the

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ExxonMobil refinery. And, we were getting continual updates from the public Affairs people who were letting us know what was going on with the parish government in Chalmette, La. So yes, public affairs indeed does play a role.

You have the best practices. Do these plants also have best practices?

Our plants have a … everyone of them has a hurricane management plan. They all have certain procedures that kick in four days before the storm is scheduled to hit or about five days it depends on how big the plant is, how complicated the plant is, it depends on where the best guess of the storm hit is. But at any given time, that storm is in the Gulf, those plans begin a countdown. And if they hit a certain day, like day three before landfall and if it looks like if it coming their way, then they start executing certain elements of the plan. It may be that they would no longer take raw material from another plant. They would no longer deal with inventory if they know a storm is coming. It may be that they will ship their inventory out to make sure that their inventory is not adversely affected by the storm. Every plant is different and every plant has a series of action that it takes based on how far out the storm is. And when you whittle it down to the last day you are gonna have plants basically shutting everything down except what is absolutely necessary to keep certain types of things circulating within the plant. Certain plants needs to circulate certain types of things. No matter what. And what they have is , they have their own generator sets. They power the electricity. And then, in the end everybody leaves except something called a ride-out crew. The ride-out crew they stay with the ship. No one abandons the ship. As long as something is running on that ship. And now if you have the ability to totally shut off the plants, shut-off every process, shut-off the lights, walk away and lock the fence, you can do that. Fine, but most plants are not quite like that. And these plants have what we call the ride-out crews and these guys just ride it out.

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They are just there. And then they began the process of assessing the damage letting their corporate people know how bad it was. And then they begin the process of bringing it back up.

During hurricane Katrina, the communication was so bad; the cell phone towers were overloaded. How did people communicate?

Through text messages. People could text message

OK

Some of them had wireless internet and they had ways they could charge their batteries because they had generators. Some of them had satellite phones. Like the military has. Here's an interesting trick though. The satellite phones, the sat phones, they ah..

Do all plants have satellite phones?

Not every plant has satellite phones.

So how did they communicate?

But in the last five or six years that type of communications has gotten a whole lot better, especially with ours. With all that being said, ah… the satellite phones in around the world they got jammed by the military helicopters, because military helicopters jam satellite phones. Because they don't want the enemy calling in their military positions. It's not the enemy but it didn't matter because there is a jamming device in these helicopters. I was talking with a plant manager down in New Orleans. He was just cut-off in mid sentence because a helicopter flew over his plant. Jammed his phone. So that happens. In the paper that I am going to give you, there is going to be some comments about the communications.

Is the CEO involved in any way?

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The CEO is aware of every thing going on when the plant is in the line of fire of a hurricane. Because the plant managers report up the line to their Vice-presidents and their Vice-presidents report up the line to their CEOs (?). I know the story of one plant manager about a CEO who was on the ground at his plant, I think two days after Katrina. He actually flew in here himself to see what was going on and that does a lot to give ah.. morale to the troops. But most CEOs will be in their headquarters in constant contact with their guys on the ground.

Is money ever a concern?

Money, I will tell you about money. Generally, here's how it works. Generally, the plant manager spend whatever it takes to protect their people, to protect their community around them, and then they ask for permission after.

But they may not have unlimited resources. What they might have may be limited.

Well, I know one plant manager who spent $25 million before the plant manager even told his boss he was spending it. Because it had to be spent. And that was purchasing several hundred trailers to bring in the employees who had lost their homes. So he brought the employees and their families to his plant and set up a city. So every plant has an authority how much he can spend in an emergency. It depends upon the company. But I have never heard of a plant in the four hurricanes that we have had in this century, big ones, I have never heard of a plant not having enough money to deal with a situation. You got to protect people first and assets second. You spend the money first, and let the corporate guys know about it later. And I know of no case where any manager has gotten into any type of trouble for spending the money that he felt needed to be spent at that time.

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My concern is that do they always have enough money to spend. Because a catastrophe like Katrina requires resources

I can say we have never …. We had not one instance during those times of any injury of any of our plant people of any member company that we know of in all of those terrible storms. And, I think it is credit to the work that they do to protect their people. Of there has been injuries, but no serious ones. They managed with nip and tuck.

Did you have to deal with FEMA?

We did not directly. They had to deal with FEMA. Because, again FEMA was on the ground much closer to the disaster then we were. We had one very good ally. The Louisiana Economic Development, (LED). They had assigned a division but it was really one person working 24 hours a day working on this with FEMA to get a whole bunch of trailers…

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VITA

Tulika Sinha is a native of India. She has a bachelor's degree in zoology with honors from Delhi University. After her graduation in 1995, she decided to change her field to mass communication. She was very keen on becoming an advertising copywriter. She liked to express her creativity through writing. Fueled by her passion for writing and an interest in advertising, she pursued post-graduate diploma in journalism and mass communication, and a diploma in creative writing from Indira Gandhi National Open University in Delhi, India. This helped her to build a foundation for a stimulating and challenging career in advertising.

Her insatiable desire to improve her skills and knowledge brought her to the United States of America in 2003 to pursue a master's degree in advertising. She enrolled in Ohio University and graduated in 2005 with a specialization in corporate branding. After graduation, she moved to New Orleans to work with Ochsner Clinic Foundation, southeast Louisiana's largest non-profit, academic, multi-specialty, healthcare delivery system with 8 hospitals and more than 38 health centers in Louisiana. The experience of hurricane Katrina made her change her focus to crisis communications within public relations.

Tulika then enrolled at Louisiana State University to pursue a doctoral degree in mass communication and public affairs. During that period, Tulika got an opportunity to work as a public relations specialist for Xavier University in New Orleans. Here she advised the department of University Relations on the use of social media such as Twitter, Facebook in student recruitment efforts. Upon completion of her coursework, she accepted a job at Georgia College and State University as an assistant professor of public relations.