Volume 1, Number 1 *Journal of International Business Disciplines* Fall 2006

WHO SAYS DECISION-MAKING IS RATIONAL: IMPLICATIONS FOR RESPONDING TO A FORESEEABLE DISASTER

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ABSTRACT

This paper focuses on the concept of rational decision-making and how it collapses during an imminent natural disaster. The authors have devised a model that incorporates the main decision-making processes and illustrates how they become intertwined with a "black box" that suspends rational decision-making. Further, when rational processes are not utilized, arational decisions may result. Hurricane Katrina and the Federal, State, and Local government response exemplifies this process. Recommendations are offered to minimize the Black Box effect.

INTRODUCTION

Decision-making is a process that is commonly defined as choosing among alternatives. Most decision making does not have the luxury of following the classic, rational model, because the assumptions behind such a process are too demanding: the problem is clear and unambiguous, a single well-defined goal is to be achieved, all alternatives and consequences are known, preferences are clear, preferences are constant and stable, no time or cost constraints exist, and the final choice will maximize economic payoff (Robbins & DeCenzo, 2005). Instead real world constraints intrude—a lack of time and resources, ability, imperfect information, as well as competing priorities, tend to undermine the scope of the search for alternatives, their evaluation and selection. This results in decision makers neglecting optimal decisions in favor of expediency. These "satisficing" decisions settle for sub-optimal, but "good enough" choices (Simon, 1957).

DeYoung (2002) postulated that managers who make consistent, value-maximizing choices are utilizing the rational model. Thus, a decision maker who was perfectly rational would be fully objective and logical. While the length of this process varies from minutes to years, it rationally proceeds along an eight-step process, although most decision makers routinely abbreviate or skip certain steps. These steps include: identifying the problem, identification of decision criteria, allocation of weights to criteria, development of alternatives, analysis of alternatives, selection of an alternative, implementation of the alternative, and evaluation of decision effectiveness (Miller & Star, 1967).

Conversely, a decision that is made arationally is based on beliefs, superstition, emotions, and ideology. The intentional actions are done because the agent has a certain desire or belief that corresponds to their perception of reality. Thus, their action is rationalized by their beliefs (Hursthouse, 1991).

Impending natural disasters, as their name implies, frustrate rational decision models because they are neither initiated by nor governed by man. Some disasters strike with minimal or no notice at all. They are categorized as unforeseeable, and regardless of the preparation, there is negligible protection against lighting, tornadoes, tsunami, and earthquakes. Conversely, other natural disasters, while equally destructive, have foreseeable windows for proactive decision making ranging from hours to weeks. These foreseeable natural disasters include hurricanes, flooding from heavy rains, forest fires, blizzards, ice storms, and volcanic eruptions. Given the importance of disasters, decision making processes escape many common constraints. Politicians recognize the public relations importance of successfully handling mass media exposure disasters, so their motivation to engage is high. The public is willing to invest enormous sums of public resources to allay their fears. Science provides proven contingency plans and interventions to meet the foreseeable threat. There is some evidence that, as predicted in the absence of common constraints, the experience of crisis gave rise to a more rational, planned approach to the strategy-making process (McCarthy, 2003). However, even in disaster contexts, "black box" processes replace rational decisions. The decision making during and after Hurricane Katrina is analyzed and recommendations for improvement are offered.

DECISION MAKING UNDER CONDITIONS OF UNCERTAINTY

Organizational crisis are events characterized by high consequence, low probability, ambiguity and decision-making time pressure (Pearson & Clair, 1998; Rosenthall, 1998). In addition, despite the training, simulations, and foreseeability of an impending natural disaster, some people succumb to decidophobia, the fear of making decisions because deciding is the acceptance of responsibility (Kauffman, 1973; Quarantelli, 1988). Thus, decision-making paralysis can be costly in terms of life, property, and commerce.

To combat inaction, the World Health Organization (2002) recommended that any program of disaster prevention and preparedness should promote optimum coordination between the various governmental, nongovernmental, and private organizations involved. While planning is integral to preparedness, Rosenthal (1998) contends that industrial society is especially susceptible to natural disasters and has become acerbated by policy makers who have not prepared themselves or the public for appropriate responses once tragedy strikes. Risk, uncertainty, crisis, collective stress, and "normal accidents" now need to be incorporated into a broader understanding of how governments and decision- makers respond to crises and their concomitants: unpleasantness in unexpected circumstances, representing unscheduled events, unprecedented in their implications and, by normal routine standards, almost unmanageable.

Prior research by Quarantelli (1988) concluded that an honest assessment of the situation would mollify the populace. However, the public often endows the responders with a level of scientific credence for judgment that may be misconstrued as fact (Denis, 1995). In addition, the perceived need to make such preparations is mitigated by the natural settings, socio-economic, political and environment context (Luna, 2001). For example, a country such as the Philippines, which is extremely susceptible to natural disasters, has established a comprehensive institutional and legal

framework for disaster management, including built-in mechanisms for participation of the people in decision–making and program implementation.

Denis (1995) highlights six major types of activities on which disaster managers should focus: (1) obtaining information about the situation; (2) getting advice on the best course of action; (3) choosing: the decision to do something; (4) authorizing the action; (5) having the action executed; and (6) explaining and communicating the action. These steps attempt to logically frame the action in the midst of a potentially emotional crisis. However, McCarthy (2003) found that the experience of crisis gave rise to a more rational, planned approach to the strategy-making process. In the aftermath of a crisis, entrepreneurs had to spend more time communicating with, explaining, and justifying their actions to key stakeholders.

Eisenhardt and Bourgeous (1989) identified five factors which impacted fast decision-making: Real-time information, multiple simultaneous alternatives, two-tiered advice processes, consensus with qualification, and decision integration. Often, critical actions occur in the time prior to the disaster. This is the incubation period or the prodromic stage (Turner, 1978).

Since people are not mindless automatons, the human behavior components must be included in the rational decision-making process**.** French (2005) argued that while emergency modeling incorporates technology, it does not accurately take into account the social aspects and behavior of people. Previously, Walls (2002) cited the methods of slowing down, listening, learning and feeling to augment rational decision-making.

Significant benefits can be achieved by establishing a team who will be empowered to make decisions during the crisis and will communicate these decisions throughout the supply chain (Hart, 2005). However, various stakeholders view the impeding crisis differently, which will consequently affect their decision making (Rutkowski, Van de Walle, Groenendaal, & Pol, 2005). Further, disasters pose unique challenges for which there are few precedents. Simon (1957) noted non-programmed decisions replace programmed decisions in ambiguous situations.

Decision makers themselves are hardly uniform, featuring a wide variety of decision making styles, propensities and skill levels. The decision-makers' tolerance for ambiguity coupled with their way of thinking yields four discrete decision-making styles: Analytical, Behavioral, Conceptual or Directive (Simon, 1957). Conventional wisdom holds that men are generally perceived to be "cool as a cucumber" in a crisis. However, Mano-Negrin & Sheaffer (2004) found in a study of 112 Israeli executives, that women were more likely to employ a holistic approach that facilitates crisis preparedness.

Further, Heracleous (1994) contends rationality becomes inapplicable when confronted with complex problems, fast moving markets, unpredictability and uncertainty as social, political, and cognitive forces influence the decision making process. Rosenthal and Kouzmin (1997) delineated a five step heuristic that incorporates some of these dynamics. They suggest decision makers explore: (1) The seriousness of the threat exist to the social-political system, (2) the necessity to respond to the threat, (3) the necessity for government decisions, (4) promptness of decisions, and (5) the government authorities involved in crisis decision making.

DECISION MODELS AND ANALYSIS

Decisions are at the heart of leader accomplishment and their consequences span the gambit from trivial and incidental to life saving. Complex decisions, particularly when high degrees of uncertainty, conflict, or paradox are involved, become as much an art as a science (Quarantelli, 1988). To analyze the decision-making process in responding to an impending foreseeable disaster, the authors present the following conceptual decision-making model shown in Table I. This model is developed through an extensive literature review and models of other authors mentioned by Arsham, 2005, and use systems theories to frame the process:

TABLE I. A COMPREHENSIVE CRISIS DECISION MAKING MODEL

	Inputs	**Throughputs**	**Outputs**
Rational	Information Resources Staff	Decision Premises Collaboration Problem-solving	Relief Efforts
Arational	History Misinformation Fear	Personal Opportunism Political Agendas Siege Silos	Reputation/ P.R.

This model will be explored in the context of the Hurricane Katrina disaster. This is the 6-day timeframe of events:

- Tuesday, August 23, 2005 5:00 p.m. Tropical Depression
- Wednesday, August 24, 2005 11:00 a.m. Tropical Storm Katrina
- Thursday, August 25, 2005 5:00 p.m. Hurricane Katrina
- Friday, August 26, 2005 11:30 a.m. Upgraded to Category 2
- Friday, August 26, 2005 5:00 p.m. Upgraded to Category 3
- Sunday, August 28, 2005 1:00 a.m. Upgraded to Category 4
- Sunday, August 28, 2005 8:00 a.m. Upgraded to Category 5
- Sunday, August 28, 2005 10:00 a.m. Mayor orders mandatory evacuation
- Monday, August 29, 2005 6:10 a.m. Category 3 landfall, 125 mph winds
- Monday, August 29, 2005 9:00 a.m. Eye passes 40 miles east of New Orleans
- Monday, August 29, 2005 Late Morning - levees breached

In terms of disaster decision making for such a catastrophe, Level II Activation occurs “if a storm continues on a track that threatens the state” and “normally occurs two to three days prior to predicted storm landfall” (Wolshon, Urbina, & Levitan, 2001). This limited timeframe is a critical decision constraint, shaping how events unfolded on several different levels. The Federal government sent the Department of Homeland Security (DHS). The DHS sent the Federal Emergency Management Agency (FEMA) to direct relief efforts, including those launched by the Navy and the Coast Guard. Louisiana and surrounding states contributed state agency personnel, and their National Guard troops. The City of New Orleans had emergency response units, law enforcement, and city workers. Unfortunately, the implementation did not go according to plan.

INFORMATION

Forecasting the intensity of a natural disaster is a multivariate phenomenon. The intensity of a natural disaster can alter by the minute due to variations in ambient conditions. Therefore, the continuous search for new information relevant to further evaluation of the alternatives is critical. Information can be classified as explicit or tacit forms. The explicit information can be explained in structured form, while tacit information is inconsistent and fuzzy to explain (Harrison, 1999). The process becomes particularly difficult if information sources contradict (Quarantelli, 1988).

In Congressional testimony, FEMA officials blamed their inadequate response on flawed coordination due to poor communication, particularly conflicting reports concerning what was happening in the field, the extent of the disaster, and where aid was being rendered (Marek, 2006a; Singer, 2006). Communications equipment was obsolete, networks collapsed due to a chronic lack of redundant capacity, and backup contingency planning was either missing or ineffective. In some cases, communications were so delayed and flawed decision makers relied on media reports. For example, the convention center crisis surfaced through the media, because DHS leaders confused reports of the Superdome with the convention center until media documented the deplorable conditions there (Brinkley, 2006). Perhaps the nature of big government with its Byzantine bureaucratic structure did not allow prompt adjustments to the changing conditions and situations.

Proposition 1: As the amount of accurate information and adequate communication networks decrease, "black box" decision making increases, based on misinformation, suspicion, and supposition.

RESOURCES

While the resources available to address the disaster were enormous – significant assets from federal departments, the Coast Guard, the Navy, and a variety of state and local emergency capabilities—the process is only as effective as its weakest links (Quarantelli, 1988). As Congressional investigations unfolded, the chronic underfunding of both the protective levee system in New Orleans and of FEMA became woefully apparent.

Once FEMA became part of Homeland Security (DHS), funding had been siphoned towards anti-terrorism efforts and Iraq. Similarly, one fifth of its staff positions had been left vacant to conserve funds (Marek, 2006a; Singer, 2006). Communications equipment was obsolete, and regional stockpiles of emergency supplies were at an all time low (Brinkley, 2006). FEMA Director Brown also testified that FEMA focused preparations on routine, run-of-the-mill disasters, not catastrophic disasters such as a Category 5 hurricane. Requests for funding for preparation for catastrophes had been requested and turned down for years (Marek, 2006b; Singer, 2006). Understaffed and under-funded, FEMA was simply not up to the challenging task of coordinating relief efforts for a disaster of this magnitude.

Similarly, the levy system was poorly constructed, and was never designed to withstand anything more than a relatively weaker hurricane (Category 3 or less). The Army Corps of Engineers filed report after report documenting these problems and the threat they posed, but both Congress and numerous past administrations failed to allocate the funds necessary to address these problems (Brinkley, 2006; Gelbspan, 2005). Inadequate planning and coordination also compromised the

levies and was epitomized in the Senate hearings when the Army Corps and the Orleans Levee District were not clear as to who was in charge of levee maintenance (Marek, 2006a).

Proposition 2: As resource support and preparation diminishes, so do rational decision options, allowing "black box" decision making to thrive, as resource acquisition and dispersion becomes chaotic.

STAFF

Much of the decision process depends upon the quality of the decision maker. Expertise and experience allow for more objective assessments of your own and others' capability, evaluating alternatives, handling resource limitations, making wise decisions, and understanding how to effectively implement them. Likewise, the individual style the decision maker utilizes can profoundly affect the available alternatives available to them. The four decision making styles are analytic, conceptual, directive and behavior. These styles vary according to the individual's tolerance for ambiguity and if their way of thinking is rational or intuitive (Robins & DeCenzo, 1998). These skills are particularly important in crises and other high uncertainty decision making contexts.

Unfortunately, key decision makers were relatively unqualified and inexperienced. DHS was only recently created, and had never managed a major catastrophe before, putting its personnel at the bottom of the experience curve. FEMA had managed disasters in the past, but not with most of its current employees, since many of its experienced managers had left. When Katrina occurred, 8 of 10 regional directors were temporary placeholders (Marek, 2006a; Singer, 2006). FEMA Head Michael D. Brown was conspicuously unqualified for the job. Before joining the DHS/FEMA, Brown was the Judges and Stewards Commissioner for the International Arabian Horse Association, where he was forced to resign after expensive lawsuits were filed against the organization over his disciplinary actions (Stearns & Borenstein, 2005). FEMA was in way over its head and foundered in confusion.

Proposition 3: As the experience and expertise of key decision makers decreases, so does the capacity of the system to handle uncertainty. "Black box" decision making will increase proportionally with the magnitude of the disaster, and the uncertainties it creates.

DECISION PREMISES

Simon (1957) noted that the foundation of decision making is decision premises—the paradigms and values used to sort through information, prioritize alternative courses of action, and ultimately select a response. In essence, decision premises serve as filters to handle otherwise overwhelming and often-contradictory information sources—some you pay attention to, some you neglect or ignore (Bazerman, 2006; Harrison, 1999; Weick, 1979). Multi-perspective analysis should be used to look at decisions from a number of important perspectives, to ensure that the interests and needs of important constituencies are both recognized and addressed. While there are infinite alternatives from which the decision maker can choose, only a limited range of alternatives address the needs and goals of all of the important organizations and constituencies involved. If a participating organization feels neglected or ignored, negative attributions can generate resistance and negatively, resulting in implementation problems, or in uncoordinated, rogue actions and relief efforts.

The power of decision premises was evident after Hurricane Katrina was identified as an imminent threat over a week before landfall. Some decision makers did not take this threat seriously. New Orleans Mayor, Ray Nagin's pre-landfall comments suggested a cowboy mentality of "whatever the storm, we can ride it out." Some residents minimized the potential impact of a storm to the point of having hurricane parties to welcome the hurricane ashore (Brinkley, 2006).

Decision premises are supposed to be laid out in organizational mission statements, and in contingency plans created to anticipate mission challenges and improve chances of success (Quarantelli, 1988). DHS had developed a "National Response Plan" outlining roles and expectations for different federal agencies in providing post-disaster relief. Unfortunately, Senate Hearings concluded that the wording of the plan was so obtuse, confusing, and complex, that many DHS decision makers did not understand it (Marek, 2006a). FEMA had specifically targeted Louisiana and New Orleans in a "Southern Louisiana Catastrophic Hurricane Plan," but its contingencies focused on routine disasters, and could not be easily ramped up to handle catastrophes. State and local plans existed, but they were not comprehensive. For example, the state plan had detailed contingencies for those who could evacuate in their vehicles, but not for those without vehicles, such as the poor and infirm, particularly those institutionalized for age, health, or mental problems (Marek 2006b). While the City of New Orleans did have a detailed disaster plan, the mayor's office had not widely shared it, so it did not matter (Brinkley, 2006).

Proposition 4: The degree to which official decision premises are based on faulty assumptions, poorly communicated plans, unclear and overly complex policies, or incomplete contingencies, corresponds to the degree "black box" decision premises will be used instead.

COLLABORATION

Usually the scope of a disaster, much less a catastrophe such as Hurricane Katrina, creates destruction that dwarfs the resources and remediation capabilities of any one organization (Quarantelli, 1988; Rosenthal, 1998). Collaboration between organizations and government agencies is critical, and, in this case, FEMA was given the responsibility by DHS to coordinate all relief efforts. However, Congressional investigations concluded that while FEMA decision makers understood internal FEMA roles and responsibilities, they did not know how to effectively collaborate with other agencies, even when organizations were formally written into the plan (Brinkley, 2006). Consequently, alternatives involving other agencies and the military were neglected, and only gradually integrated. In the day before the storm, Amtrak reportedly offered free passage out of New Orleans, but its trains left nearly empty. The most notorious example of overlooked alternatives involved the Department of the Interior, who offered considerable resources when the disaster hit, including:

- Hundreds of its personnel, including hundreds of law enforcement officers
- More than 300 boats, 11 aircraft, 119 pieces of heavy equipment, 300 dump trucks and other vehicles for clearing debris
- Interior-owned campgrounds and other lands that could be used as staging areas or emergency shelters (Brinkley, 2006; Marek, 2006a)

These resources went largely unutilized. FEMA was geared towards alternatives involving FEMA personnel using FEMA vehicles following FEMA procedures, and had difficulty understanding how to effectively integrate alternatives outside of that scope of operations.

This meant that coordination of the efforts by the military, the Coast Guard, and other federal, state, and local agencies often broke down. Consequently, some areas received extensive search and rescue to the point of duplication, while others were neglected entirely. The Congressional report concludes that officials requested for troops via so many channels that neither the military nor the National Guard knew what each other were doing Marek (2006a). This makes for an inefficient, incoherent response. In summary, communication is essential for state, federal and local partnerships to occur. Unfortunately, elements of nonaligned goals and mistrust may inhibit cooperation (Kelly, 1995)

Proposition 5: As formal coordination becomes inadequate and ineffective, coordination will be neglected in favor of independent "black box" efforts.

PROBLEM SOLVING

Given the complexities, uncertainties and difficulties presented by a disaster, effective response requires effective problem solving, both within organizations and between organizations. Unless the actors in this drama are willing to exercise flexibility, take initiative, and foster productivity, and get the mission accomplished, coordinated efforts can become bogged down in a quagmire of conflict and bureaucracy (Quarantelli, 1988).

For example, believing exaggerated media accounts of violence, looting, and destruction, FEMA decision makers began to fear for the safety of their rescuers and suspended rescue efforts until armed law enforcement officers provided protection. However, instead of jumping in with needed protection, the DHS and the Department of Justice began infighting over who was in charge of sending backup to the New Orleans Police Department since the federal plan gave both agencies authority. The dispute prevented the influx of large numbers of federal law enforcement officers for four days (Marek, 2006b).

Proposition 6: As problem solving becomes slow and ineffective, independent "black box" decision making and deals will increase.

RELIEF OUTCOMES

In case of impending disaster, the most fundamental goal is to protect human life. The second goal is to protect public properties, including government infrastructure, hospitals, and schools. The third priority will be to safeguard business infrastructure and properties. The final objective is the protection of non-business property.

Homeland security and disaster management have become professions, with a variety of universities offering both masters and doctoral programs. Scientific analysis of previous disasters and disaster mitigation strategies has determined a repertoire of effective alternatives available to the knowledgeable disaster management professional. Handling disasters effectively, using the latest and greatest mitigation techniques, are either explicitly or implicitly included in the mission statements of emergency responders.

For example: On March 1, 2003, the Federal Emergency Management Agency (FEMA) became part of the U.S. Department of Homeland Security (DHS). FEMA's continuing mission within the new department is to lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program. (Federal Emergency Management Agency, 2006)

MISINFORMATION

Proposition 1 states that as the amount of accurate information and adequate communication networks decrease, "black box" decision making increases, based on misinformation, suspicion and supposition. Proposition 1 was supported by Hurricane Katrina. As obsolete communication networks and equipment collapsed under the strain of the disaster, so did the rational decision making processes of some key decision makers.

The media distortion had tragic consequences. The Senate Homeland Security and Governmental Affairs Committee condemned DHS reliance on media reports since reporters gravitated towards news of the spectacle. Ostensibly, to boost ratings, accounts of violence, looting, and other anarchy were often exaggerated. Without any further investigation or verification, FEMA suspended rescue efforts for days until they could find enough armed law enforcement agents to provide often unneeded protection (Brinkley, 2006; Marek 2006b).

HISTORY

Proposition 6 states that, as problem solving becomes slow and ineffective, independent "black box" decision making and deals will increase. Proposition 6 was supported by the aftermath of Hurricane Katrina. Homeland Security Secretary Chertoff began a series of miscommunications and delayed decisions that undermined any working relationship between DHS and FEMA (Marek, 2006a). This conflict culminated with Brown ignoring Chertoff and communicating directly with the White House for direction and decision approval instead (Singer, 2006).

There was also bad blood between Mayor Nagin and Governor Blanco. In this case, mistrust and miscommunication contributed to a slow and indecisive decision making process in the Governor's suite. Governor Blanco delayed sending the Louisiana National Guard to maintain order. Instead, she chose to spend the days after Hurricane Katrina engaged in partisan bickering and finger pointing (Brinkley, 2006).

FEAR

Proposition 4 states that the degree to which official decision premises are based on faulty assumptions, poorly communicated plans, unclear and overly complex policies, or incomplete contingencies corresponds to the degree "black box" decision premises will be used instead. Proposition 4 was supported by Hurricane Katrina, where contingency plans often were either useless or ignored, and decision makers improvised as the disaster unfolded (Brinkley, 2006).
The absence of adequate preparation before the disaster, and adequate relief after the disaster, was cited by some popular figures as evidence of hidden political agendas. Such accusations inflamed fears and attacked the professionalism of key decision makers.

Proposition 2 states that as resource support and preparation diminish so do rational decision options. In turn, this allows "black box" decision making to thrive, as resource acquisition and dispersion becomes chaotic. Proposition 2 was supported. In the Katrina disaster, there was a relatively dearth of resources before the disaster, when preparations would have saved both lives and billions of dollars in damages, followed by government officials falling over themselves to send resources immediately after the disaster, when they often were not used effectively (Brinkley, 2006).

Three areas of preparation would have opened many more effective decision options post-disaster: (1) a levy system designed to prevent flooding, (2) adequate FEMA equipment, supplies and resources stockpiled for relief efforts, and (3) quality disaster planning to coordinate relief efforts following the disaster. None of these were in place. The levee system was poorly constructed to withstand relatively weak hurricanes (category 3 or less), and requests for upgrades were never funded (Gelbspan, 2005). FEMA's sad performance is not surprising, given the chronic under-funding and understaffing of that agency by DHS (Marek, 2006a; Singer, 2006).

Since plans, equipment, communications networks, and stockpiles were in disarray; a coordination and logistical nightmare was virtually guaranteed. In chaos, arational decision criteria are all that is left and are open to abuse as the floodgates of resources opened. For example, FEMA used sweetheart deals with contractors to build and deliver more premium-priced temporary trailers and mobile homes than it could use and put many of them on flood plains that were uninhabitable and sinking into the mud (Marek, 2006b). The abuses of FEMA aid recipients were so legendary that the Department of Justice established a special taskforce to investigate and punish abusers:

> *Welcome to the Hurricane Katrina Fraud Task Force homepage. On September 8, 2005, Attorney General Alberto Gonzales established the Task Force to deter, detect, and prosecute instances of fraud related to the Hurricane Katrina disaster. The Task Force will combat all types of fraud relating to Hurricane Katrina and its aftermath, with an initial emphasis on charity fraud, identity theft, insurance fraud, and procurement and government-benefit fraud. (Department of Justice, 2006)*

POLITICAL AGENDAS

Proposition 5 states that as formal coordination become inadequate and ineffective, coordination will be neglected in favor of independent "black box" efforts. Proposition 5 was supported by Hurricane Katrina. As the extent of the catastrophe became clear, so did the implications of the disaster. Some of the incredible damage and loss of life would not be attributed to the hurricane, but to the pitiful execution of the relief effort. Inadequate preparations would be exposed, ineffective relief efforts would be probed, decisions would be investigated, and officials would pay a political price for the poor performance.

Faced with such an eventuality, there are two logical options. The professional option is to make the best of a bad situation, to continue to fight the good fight, to do the best one can, and trust that, in the end, commitment, dedication and hard work will be recognized and rewarded. FEMA Director Brown states that he followed this philosophy, and ended up publicly crucified and

dismissed from his position (Singer, 2006). In contrast, the political, black box option is to shift attention from effectively managing the disaster towards effectively managing personal image and diverting blame. DHS Secretary Chertoff seemed primarily concerned with media exposure for any relief effort successes. Governor Blanco's slow decision making stemmed, in part, from a flurry of activity attempting to divert blame for under-preparation and poor execution away from the state toward federal and local levels (Brinkley, 2006; Singer, 2006).

SIEGE SILOS

Proposition 3 states that as the experience and expertise of key decision makers decreases, so does the capacity of the system to handle uncertainty. "Black box" decision making will increase proportionally with the magnitude of the disaster and the uncertainties it creates. Proposition 3 is supported by Hurricane Katrina. The Congressional report on the response to Hurricane Katrine is entitled "A Failure of Initiative"; it captures the key dynamic of under-prepared, largely untrained, inexperienced decision-makers handling a catastrophe way out of their league. Instead of rising to the occasion, they bunkered down, developed a silo and chimney mentality that undermined effective collaboration across agencies. FEMA followed the rules to the letter, seldom demonstrating flexibility and initiative. For example, despite a dearth of rescue boats, they rejected rubber rafts from the Department of the Interior because FEMA regulations required hard-bottomed rescue craft (Marek, 2006b).

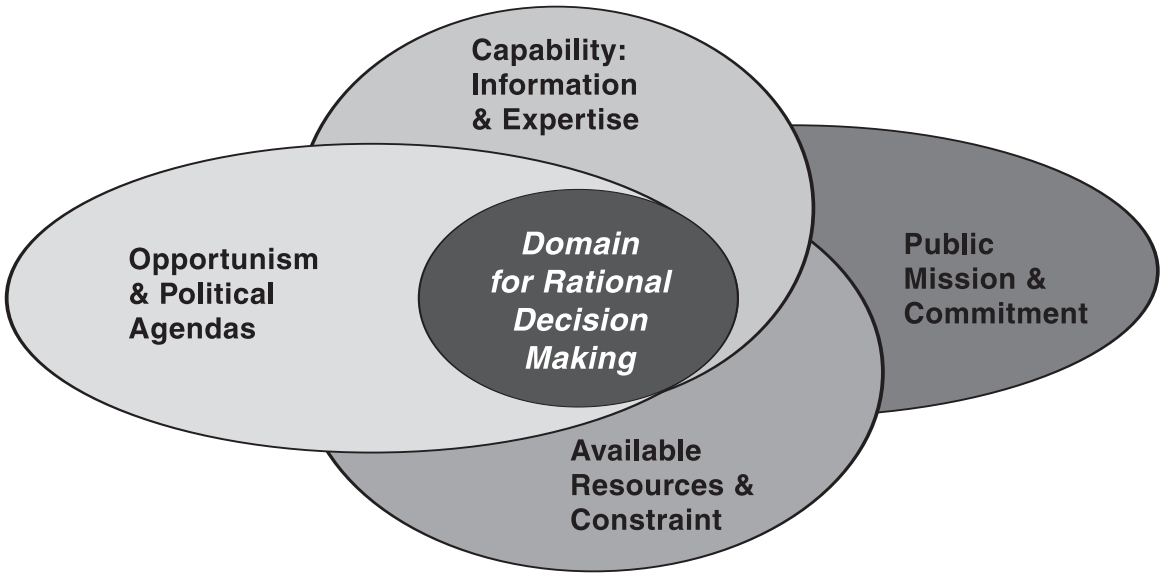
REPUTATION AND PUBLIC RELATIONS

From a black box perspective, disaster management is not primarily about effective relief for victims; it is about public exposure and image management. Critics charge that overflow of resources from Members of Congress and the Administration did not reflect a rational analysis of needs, it was a political gesture to prove responsiveness and compassion (Brinkley, 2006). Furthermore, the black box works. Notice that the two primary actors who dedicated themselves to bolstering their public image or to self-protection—DHS Secretary Chertoff and Governor Blanco remained at their posts.

INSIDE THE BLACK BOX

A rational black box decision making can be examined on two levels: decision makers within an organization, and the coordination and integration of decisions between organizations. Brown (2005) posits that there are three considerations that embody any decision: goals, options, and outcome. These cannot be assumed to remain uniform across organizations or their members especially when dealing with political appointees. First, the personal preferences of decision makers depend, in part, on their personal abilities and cognitive style and, in part, on their personal ambitions and the opportunities the decision creates. Second, different organizations have different missions and "decision premises" that shape both their decision making processes and their outcomes. These vary widely across organizations (Simon, 1957). Finally, organizational resources and capabilities are seldom uniform across organizations. The relationship between these factors is illustrated in Figure I:

FIGURE I: THE DOMAIN OF RATIONAL DECISION MAKING.



Rational decision making works best where available capability is empowered by adequate resources addressing decisions where opportunism and professionalism are complementary. Decisions that fall outside of this domain fall into the black box. The smaller the domain, the more noticeable the black box becomes.

CONCLUSION AND RECOMMENDATIONS

Decision-making is an integral component of modern existence. People make literally thousands of decisions a day, and while most decisions are minor and have little effect on anyone but their makers, they must be cognizant that some decisions have life and death consequences. Some elected and appointed officials have the primary responsibility of safeguarding the public safety. Planning, simulations, contingency, and evacuation protocols are all worthwhile measures and we naively assume that government paternalism will protect us from any dangers. As a result, we place our trust in the government's competency, and we expect officials to make clear, rational decisions. Here are key recommendations to avoid falling into the black box:

- Decision makers must either have the expertise and experience to handle crises and ambiguity, or have easy access to experts and consultants who do. There is no substitute for wisdom and competence of key actors in a decision system operating under pressure.
- Contingency planning must be comprehensive and realistic, not superficial and ceremonial. Well-publicized plans bring consistency to decision making. Inadequate planning breeds creative, if not opportunistic, black box interpretations.
- As time pressures increase, so do the limitations on rational decision making, thus intensifying the pressure to make arational decisions. Therefore, it is essential to follow established protocols to counteract the time pressures.
- In the absence of reliable information, unreliable information will be gathered and used in the black box. Effective information systems with redundant channels can reduce uncertainty about the uncontrollable inputs. Thus, the gathering of reliable and timely information can greatly mitigate hysteria and rumor.

- Speed and flexibility will be injected into the system. If bureaucratic policies, procedures, approval processes, etc. are enabling, they will be utilized. If they are inertial and stifling, they will be ignored and subverted by black box standard operating procedure.

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JOURNAL OF INTERNATIONAL BUSINESS DISCIPLINES

Volume 1, Number 1, November 2006

Published By:
International Academy of Business Disciplines and Frostburg State University

ISBN 1-889754-99-4

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