

# Chapter 9

## Decision Support for Crisis Incidents

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### ABSTRACT

*Crisis incidents occur in both business and public domains. This article focuses on non-routine incidents and explores uses of technologies for supporting crisis management tasks. A Crisis Incident Spiral of Decision Support helps identify useful decision support and information technologies. Additionally, a Crisis Incident Process/Decision Support Matrix categorizes processes of crisis planning, response and management with decision support technologies. Ideally, the matrix helps organize and stimulate thinking about novel DSS applications. Not all crises are of equal magnitude and different computerized decision support is needed in different types of crisis incidents.*

### INTRODUCTION

Both business and public domains continue to experience crisis incidents, and the magnitude of these incidents is sometimes much larger than any previously encountered. The recent Toyota vehicle recall, the Haiti earthquake, and the BP Gulf oil spill come immediately to mind. On a positive note, managers and politicians seem to desire more

computerized decision support to help in both crisis incident planning and response. Checklists, vague contingency plans, and informal, ad hoc coordination are no longer considered adequate.

Unfortunately, there are many unanswered questions about the “what?” and “how?” of disaster readiness and crisis and emergency decision support that need to be investigated and resolved.

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Recent events have brought new urgency to the topic of crisis and emergency decision support.

Creating integrated decision support environments for command and control and emergency response is increasingly recognized as an important topic. The goal of this article is to discuss and explore some of the more creative and practical things we can use from the decision support systems (DSS) area to improve the capability for supporting all phases of crisis incident preparedness and management. The next section defines crisis incidents; then we explore a model for decision support and the possibilities for support in incident categories; finally, we conclude with relevant guidelines.

## **DEFINING CRISIS INCIDENTS**

Not surprisingly, there are a variety of definitions and points of view on the term “crisis.” While these definitions vary in emphasis and detail, all agree that a crisis incident is *an event or occurrence that creates difficulty or danger requiring a response and active management.*

For example, the World Health Organization (WHO) perspective emphasizes human health and safety concerns accompanying a crisis incident. According to the WHO website, crisis occurs when local and national systems are overwhelmed and are unable to meet basic needs. This may result from a sudden increase in demand (when food and water are in short supply), or because government and local services collapse because of staff shortage or lack of funds. Crisis triggers include sudden catastrophic events; complex, ongoing emergencies; or slow-onset events (World Health Organization, n.d.)

The Munich Research Group identifies ten characteristics that are commonly associated with the term “crisis”: 1) an unusual volume and intensity of events, 2) ‘change of state’ in the flow of international political actions, 3) disruptive interactions between two or more adversaries,

4) abrupt or sudden change in one or more basic system variables, 5) change in the external or internal environment, 6) threat to basic values, 7) high probability of involvement in military hostilities, 8) awareness of finite time for response, 9) surprise, and 10) uncertainty (Power, 2005b).

The Carnelian International Risks website focuses on business risk management. The site notes “The term Crisis is a complex proposition; since the word crisis will truly have different implications for different individuals and organisations. In reality the definition of crisis will vary depending on the constructs, limitations and perceptions of the crisis situation. What is important to recognise is that crisis events are not limited to, or defined by executive kidnappings, hijackings or product tampering, but by salient environmental variables that shape the situation into a crisis event for an organisation” (Power, 2005b). Carnelian consultants state the definition of crisis is dependent on perceptions of the value of possible losses, the probability of loss and the time pressure involved. Here, we see a business and private sector view of crises (Power, 2005b).

Reh differentiates a crisis from a disaster. He argues a crisis and a disaster are very different. “A disaster is an event that results in great damage, difficulty, or death. A crisis is a situation that has reached an extremely difficult or dangerous point... Sometimes it is hard to know whether you are really in a crisis, but failure to handle a disaster properly can lead to a crisis” (Reh, 2010, p. 1).

The Institute for Crisis Management notes “The most effective crisis management occurs when potential crises are detected and dealt with quickly--before they can impact the organization’s business. In those instances they never come to the attention of the organization’s key stakeholders or the general public via the news media” (Institute for Crisis Management, 2008).

Tortella (2005) expanded on the business/private sector crisis perspective by identifying eight characteristics of corporate crises. Characteristics included are surprise that is always driven by me-

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