

Preparation for Crisis Management: A Proposed Model and Empirical Evidence

S. Elsubbaugh, R. Fildes* and Mary B. Rose**

This article explores the forces restricting effective crisis management in a crisis ridden industry. Models of crisis preparedness have typically been developed based upon research in US or Western business. This study is based upon the Egyptian industry which, until the 1990s was state owned and heavily state supported. Changes in government policy, combined with external forces, not in the least the loss of markets in the previous Soviet bloc, had plunged the industry into serious crisis. Crisis is a cultural embarrassment to most Egyptian managers and this, combined with the depth of economic difficulties faced by the industry, makes it extraordinarily difficult for any level of crisis preparedness to be achieved. Based on interview and questionnaire data, this article extends existing models of crisis preparedness to better accommodate conditions in crisis prone industries outside the West. New dimensions in the proposed model are the stress on national culture and how this limits the range of managerial responses. This in turn requires the active development of an organisational culture to counteract these limitations.

Introduction

Crisis is an inevitable part of business today and cannot be separated from regular business activity (Quarantelli, 1988; Dumaine, 1993: 123–7; Barton, 1993; Mitroff, 2000; Smits and Ezzat, 2003). Corporate crises tend to be precipitated by people, organisational structures, economics, technology or by natural disasters, and may cause extensive losses of both resources and human life. They inevitably damage both the financial structure and often the reputation of the organisations involved. The last few years have seen a significant increase in the number of devastating crises experienced by organisations throughout the world. The potential for crises to develop and escalate in business today is greater than ever because of the inter-connectedness of organisations within and between economies (Casson, 1992; Dunning, 1993; Morrison, 2002), the events of 11 September 2001 illustrating this in dramatic fashion (Earwan, 2003: 132–142).

The inevitability of a crisis developing, at some point, shows that crisis preparation may be a critical determinant of survival for any organisation. Thus strategic crisis preparation is becoming an increasingly important issue as organisations seek to cope effectively with potential crises (Mitroff et al., 1989; Pearson and Mitroff, 1993:

48–59; Smits and Ezzat, 2003). Evidence suggests that many of the dramatic crises of the last 20 years, such as Three Mile Island (1979) or the Chernobyl Nuclear Accident (1986) or indeed the intensity of the 2001 British Foot and Mouth Disease outbreak, might have been prevented or their effects minimised if human operators and their managers had been crisis-prepared (Pearson and Mitroff, 1993). Therefore, the central purpose of this paper is to characterise crisis preparedness activities as a basis for promoting practice-based theory and theory-based practice.

The model for crisis preparedness developed in this paper is derived from an empirical study of perceptions and attitudes amongst managers in the Egyptian cotton textile industry, an industry which, although crisis-ridden, is largely innocent of any systematic preparation for crisis. Based on a combination of questionnaires and interviews, the analysis is focused on experience in a developing country and therefore provides insights lacking in much current US-centric crisis-management literature (Attiya, 1993). By considering crisis management in a different cultural context it has proved possible to identify additional factors that must be considered in order to fully understand an organisation's response to the threat of crises. This shift away from exploring crisis preparedness in a non-western context is

*Management Science Dept. Management School, Lancaster University, LA1 4YX, UK. E-mail: r.fildes@lancaster.ac.uk

**Institute for Entrepreneurship, Management School, Lancaster University, LA1 4YX, UK. E-mail: m.rose@lancaster.ac.uk

especially timely, given the recent crises such as the 2003 SARS outbreak and that of bird flu in 2004 – both of which had their origins and prime impact in an Asian, rather than a Western context. The paper is divided into five main sections which start by positioning the analysis within the context of the literature on crisis preparation. The second section outlines the methodology and later sections analyse the empirical findings, showing how they naturally lead to modification of the established model of crisis preparedness to take account of the particular conditions when preparing for crises in developing countries. In the light of existing knowledge, the fifth section of this article proposes a new model and identifies the various phases of crisis preparation. In turn, this expanded model helps to provide a general understanding of the strategic preparation necessary for effective crisis response in a non Western context.

Crisis Preparation: The State of the Debate

Crisis preparation has been at the core of several recent studies of crisis management, the most important of which was by Pearson and Mitroff (1993) where five phases of crisis management were outlined: (i) signal detection, (ii) preparation/prevention, (iii) containment/damage limitation, (iv) recovery, and (v) learning. 'Signal Detection' and 'Preparation/Prevention' constitute proactive types of crisis management. If done properly and if successful, these activities can prevent many crises from occurring in the first place. 'Containment/Damage limitation' and 'Recovery' are reactive activities carried out after a crisis has happened and together they are called 'Crash Management'. 'The learning phase' points to the interactive aspect of crisis management. It can arise either as part of a crisis management plan in the absence of crisis or as a result of the experience of the crisis.

Reilly (1993) has offered further refinements on preparedness when she suggested crisis readiness activities should incorporate both crisis prevention and crisis management components. The prevention component involves technology and people focussed activities to reduce vulnerability to crisis, while the crisis management component involves responding to a crisis. Reilly suggested that the crisis management phase requires the capability for decision response, information flow both internal and external, and resource mobilisation and implementation. More recently attention has been drawn to behavioural readiness as a crucial element of crisis management. Smits and Ezzat (2003) showed that leadership and team building were crucial elements of effective handling of crisis and point to the importance of

meaningful human infrastructure development. In focusing on preparation for unforeseen events Andersen showed how it becomes possible to derive a picture of future risks (Andersen, 2003) and how the organisation can best prepare. However, as we will argue, each of these models offer only partial explanations of the empirical data.

Methodology and Data Collection

This study is both descriptive and prescriptive in nature. In order to provide in-depth perspectives about the crisis preparation process in a crisis ridden sector, it has used two fundamental and complementary research tools (the questionnaire and structured interview). The questionnaire data underpins testable generalisations across the sector; the interviews provide insights into the culture and attitudes of business managers which are vital to building a suitable crisis preparation model. Questionnaire data have been collected from 58 senior managers and interview data from 19 top managers across 30 Egyptian textile firms. The data from different sources were integrated to provide substantial evidences on the various phases of the extended model. Data were collected during a fieldwork trip during the winter of 1999 and initially there was considerable difficulty in gaining access. This was only overcome by a direct appeal from the President of Menoufia University. Even when access was agreed, the willingness of managers to be interviewed on an issue as sensitive as organisational crises, which could be linked to management failings was sometimes limited. Trust was built slowly and much care had to be given to the phrasing of questions and in maintaining anonymity although some still continued to refuse. Nevertheless, it was impossible to gain agreement for interviews to be taped and so it was necessary to take detailed notes. Interviewees were selected on the basis of their position within the company with a concentration on both senior managers who were involved in strategic management and middle and senior managers in functional departments.

Data Analysis and Empirical Findings

The Egyptian Textile Industry

Before turning to the detailed data analysis it is necessary to place the managers interviewed in the context of their industry. The cotton industry is an especially apposite choice for crisis management research for the 1990s, which saw the Egyptian cotton industry emerging as an industry in perpetual crisis. Significant to the Egyptian economy since the Second World War, the cotton industry was strongly supported by successive governments from 1952 until 1991. This support

took various forms including price fixing, subsidies and, from the early 1960s, nationalisation when all firms came under state control (Habib, 1985). The level of control increased further after 1984 when the government transferred control from the Ministry of Industry to the newly formed holding company named the Textile Industry Corporation (TIC) which embraced 31 textile corporations. These were primarily spinning and weaving firms, though some had finishing and garment making facilities. The TIC monopolised all cotton procurement for domestic use and had a virtual monopoly over yarn and cloth production. However, the private sector accounted for the bulk of knitting, garment and ready-made goods industries, with hundreds of small units. From 1984–91 there was significant expansion of spinning capacity, though little development of weaving and finishing.

In a strongly regulated environment, companies had little incentive to innovate or increase efficiency. Although ready made Egyptian clothing and knitwear clothing entered Western markets from the 1960s, it was an industry which was heavily dependent on the secure and relatively unsophisticated markets of the old Eastern bloc and the Arab world. Prior to the collapse of the Soviet Union 60%–70% of Egyptian textile and clothing exports went to Eastern Europe and its Arab neighbours (Hansen and Nashashibi, 1975).

During the 1990s a number of factors all contributed to making the Egyptian cotton industry especially crisis ridden, including changing government policy, changes in international trade agreements (especially the GATT transitional agreement on Textiles and Clothes, 1995), the collapse of the Eastern European market, combined with expectations of privatisation. At the micro level these factors exacerbated firms' difficulties and potentially made it hard to respond to specific crises within such a volatile environment.

Government control undoubtedly made decision making more difficult in Egyptian textile firms. Firstly, many policies were determined by higher authorities without reference to company managers. Moreover, decision making was normally heavily centralised with top-down planning. Such an organisational structure, with its inherent bureaucratic procedures, was a major obstacle to the development of responsive systems within firms. Lack of competitiveness has also been a problem, with technological inertia undermining international competitive advantage and inhibiting efforts to penetrate more sophisticated markets in the 1990s (World Bank, 1993). Other problems have included growing indebtedness and raw material shortages.

Egypt's initial competitive advantage, in having a vertically integrated textile and clothing industry rapidly became a disadvantage and by 1997 a

combination of these problems meant that 70% of Egyptian textile firms were making a loss (Al aham, 1997). Even the small private sector had serious difficulties in this period with over 400 mill closures during the 1990s. Quite apart from a business culture and organisational system, both of which hampered efforts to manage the various crises, the Egyptian textile sector remained an industry facing great uncertainty – an industry in crisis – a state of affairs likely to have made it especially hard for executives to anticipate, manage and prepare for particular crises. Indeed, analysis of the evidence demonstrates that even though managers recognised that crisis preparation was vital, their efforts were hampered by both the depth of the crises and by a range of cultural factors.

Analysis and Findings

The individual manager was used as the unit of analysis, with qualitative content analysis leading to a total of 103 comments on crisis preparation activities. The researcher was then able to re-group them in 9 different categories (Table 1). A structured questionnaire was also prepared based on the established literature and pilot interviews. The quantitative data from the questionnaires regarding the importance of crisis preparation activities was then analyzed (Table 2). The aim of this analysis was to see to what extent the questionnaire results, together with the qualitative results, contributed to the development of a crisis preparation model suitable for a non-Western economy and society such as Egypt.

The content analysis of the interview data (Table 1) demonstrates a high level of awareness among Egyptian textile managers of the need for crisis preparation. In addition, the need for significant organisational changes including day-to-day operations, delegation of authority, and co-ordination, emerged from the interviews and these factors need incorporating in any revised model of crisis preparedness. Based on both the established literature and the semi-structured interviews, six important activities, which we discuss below, were identified as being crucial to any effective crisis preparedness model applicable in the Egyptian context.

Crisis Preparation Activities – The Detailed Model

The results summarise the comments from textile managers and show their perceptions of how crisis management should be carried out in an ideal world. Interestingly these are in sharp contrast with the experiences they described of their own organisations and these have provided the

Table 1: Crisis Preparation Activities deemed important from the Content Analysis

Crisis preparation activities	No. of comments	%	No. of Managers
1. Creating a favorable culture (getting the importance of crisis management acknowledged, fostering commitment in top management, helping people to accept constructive criticism willingly, teaching people about crisis management, . etc).	26	25.2	18
2. Doing strategic planning, developing teams, training people for crisis management.	16	25.5	14
3. Ensuring an effective information flow, good internal and external communications, establishing information technology such as the Internet, etc).	14	13.5	14
4. Monitoring or identifying potential problems in the firm's internal and external environment, following up new changes, studying weaknesses in their organization, etc.	13	12.6	13
5. Understanding the need to make fast decisions and taking action.	10	9.7	10
6. Providing different resources for coping with crises (technology, expertise, equipment, etc).	8	7.8	8
7. Ensuring the efficiency of day-to-day activities of managers and employees (daily operations, and careful control).	7	6.8	7
8. Delegating authority or decentralizing power.	5	4.9	5
9. Coordinating the managers involved in crisis management	4	3.9	4
	103	100%	

Table 2: Crisis Preparation Activities in ranked order (questionnaire results)

Activities of crisis preparation model	(%)
1. Dissemination of a favorable culture to aid crisis management (values and beliefs)	96.5
2. Detection of early warning signal	94.8
3. Creation of an efficient information flow	94.7
4. Mobilization and implementation of resources	81.0
5. Strategic adoption to aid crisis management	67.2
6. Speeding up of decisions	41.4

basis for the extensions we make to the established crisis preparedness models in order to accommodate the conditions to be found both in the developed and the developing world.

Disseminating a Healthy Culture for Crisis Management

The first phase in effective preparation for crisis management is a general preparation phase engendering a favorable culture of values and beliefs with respect to crisis management. A healthy culture for crisis management has been shown to be vital in Western countries (Reilly, 1987). This facilitates strategic planning for and

support of crisis management activities. However, the evidence collected for this research revealed that in Egypt no textile firm had a crisis management unit in place or displayed a systematic interest in the sphere. In Middle Eastern cultures, shame and failure were often attached to the very notion of crisis, making change to business culture crucial for progress in crisis management. In this regard, the qualitative data in Table 1 shows that 26 comments out of 103 (25. 2%) referred to the need for a sympathetic culture, including acknowledgement that a crisis was happening, teaching people about crisis management ... etc. In addition, Table 2 of the questionnaire data shows that 96. 5% of the

respondents pointed to the dissemination of a healthy culture as the most important activity when preparing for crisis management. Mitroff et al. (1989) and Pearson and Clair (1998) also found that culture is one of the most important variables, perhaps, the most important in making organizations better prepared for crisis. Further confirmation of this view comes from managers in the Egyptian textile firms interviewed, some of whose comments emphasized the importance of organizational culture to support the crisis preparation process. For example, one manager said:

"Preparation for crisis can be supported if you have people who have open-minded attitudes, are willing to exchange new ideas and accept constructive criticism . . . if you do not have an organizational culture which can support crisis preparation, you cannot get people involved."

Thus, it becomes clear that the culture of an organization is one of the most important factors in actively encouraging the process of learning in the area of crisis preparation. This is echoed by one manager interviewed who said, "We should create a supportive organizational culture for thinking about potential crises and crisis management which involves all the organizational levels . . . we can do nothing without a favorable culture that supports the crisis preparation process." Table 3 lists the cultural components considered favorable, and their relative importance for the respondents.

These responses include the importance of reducing mistaken beliefs such as 'It cannot happen to us', 'Fatalism' and the 'illusion of control'. It also includes the importance of the textile managers' commitment to crisis management subject.

Employee commitment was also highly regarded by the interviewees. According to one manager,

"The best protection from some kind of crisis in the workplace is to have employees who have a high regard for the values of CM, and who cooperate but are not afraid to discuss organizational problems frankly with their bosses rather than turn a blind eye on problems . . . They may also take correctional action in some situations to avoid a crisis."

The Integration of Crisis Management and Strategic Management

The second crucial crisis preparedness activity is to integrate crisis management with strategic management (Perrow, 1984; Fink, 1986; Pearson et al., 1997). The textile managers interviewed provided 16 prescriptive comments out of 103 (15.5%) which referred to the need for strategic

Table 3: *The Constituents of Favorable Culture*

Statement	(5) Extremely Important		(4)		(3) Neutral		(2)		(1) Extremely unimportant		N
	No.	%	No.	%	No.	%	No.	%	No.	%	
1. Remove the ideas that it can't happen to us, fatalism and illusion of control	41	70.7	16	27.6	0	0.0	0	0.0	1	1.7	58
2. Top management commitment to crisis management.	41	70.7	15	25.9	2	3.4	0	0.0	0	0.0	58
3. Increased acceptance of the importance of crisis management among employees	25	43.1	29	50.0	3	5.2	1	1.70	0	0.0	58

N = number of valid observations.

planning, teamwork and CM training as a strategic necessity for CP (Table 1). This was also confirmed by 76. 2% of the questionnaire results in Table 2.

The importance of the different components of strategic preparation, such as adopting CM training and the integration of crisis management are also ranked by the questionnaire respondents as is shown in Table 4.

Adopting CM in training and workshops programs was considered either extremely or somewhat important by 96. 6% of the respondents for crisis preparation (Table 4). One manager remarked that "firms should have a training program regarding crisis management . . . the use of case studies, role simulation, and exercises are practical ways to train top managers for crisis management." Another manager indicated the significance of crisis management training for decision-making particularly in stressful situations. He said, "We need specific training in decision-making not only during normal work but also in threatening situations."

Making crisis management a dimension of total quality management within the whole organization was mentioned by 46.5 of the respondents (Table 4). This was also accepted by Mitroff et al. (1992), who found that crisis prepared organizations considered crisis management as a strategic necessity for insuring the reliability of their products and production systems and for providing competitive advantage. It thus becomes an integral element of a more wide-ranging approach to total quality.

The establishment of a team for crisis management was ranked as important if textile firms are to prepare for crises (reported by 37. 9%). In this context, one manager suggested that "it is very important to establish a formal crisis management team. Every selected person in the team should be willing to take a duty and use his initiative, be able to cope with stress situation, be honest, and be self-confident." In this sense, many managers agreed that "CMT should consist of the major functional managers in the firm such as production, financial, marketing, safety, managerial, maintenance . . . together with the head of the firm. The head of the firm should give each team member a list of specific duties or provide an agenda for the whole team." These results provide additional support to earlier evidence described, for example, by Shrivastava and Mitroff (1987), Preble (1997) and Smits and Ezzat (2003).

Top management working as a team was considered important by many managers for preparing a firm to manage crises. For example, the head of a private sector company said, "leadership effectiveness as a team is one of the essential factors to prepare for both internal and external crises." He added, "the failure of top management to work, as a team is often the

Table 4: Strategic Aspects aiding Crisis Management

Statement	(5) Extremely Important		(4)		(3) Neutral		(2)		(1)Extremely unimportant		N
	No.	%	No	%	No	%	No	%	No	%	
1. Adopting CM in training and workshops programs	40	69.0	16	27.6	1	1.7	1	1.7	0	0.0	58
2. Integrating CM into strategic planning process	39	67.2	16	27.6	2	3.4	1	1.7	0	0.0	58
3. Integrating CM into organization as part of TQM	10	17.2	17	29.3	31	53.4	0	0.0	0	0.0	58
4. Including CM, plan, and team etc. in the firm	9	15.5	13	22.4	24	41.4	12	20.7	0	0.0	58

N = number of valid observations.

major reason for internal crises. Consequently any attempt to overcome crises which does not focus on improving top management will be incomplete." This result confirms Littlejohn's earlier work (Littlejohn, 1983). He indicated that the success or failure of any crisis management operation rests on the leadership style in the organisation with "team management" as the most important characteristic of a crisis manager.

Adopting the normative model to crisis management we have proposed raises the question of what contrasts arise when examining the specific strategic actions taken by Egyptian textile firms to handle current and future crises. Since dealing with crises ought to be part of a total process of strategic thinking in the organization, it cannot be separated from patterns of strategic thought or from the totality of ongoing organizational activities. As a result the majority of the strategic actions taken by Egyptian firms to handle crises were intended to improve their normal operations. The questionnaire respondents provided seven actions they considered fell into this category. These actions are shown in the following table.

The majority of textile firms have improved equipment and product quality (reported by 90%), or modified their production system by adopting a quality control system, put much effort into development and research activity and employee training (73%, 71% respectively). However, 67% of the respondents mentioned that their firms had attempted to improve customer satisfaction as a means of handling the current crises and to prepare for potential crises. For example, one firm had made essential changes to its production methods, buying a new production line.

As part of the improvements in R and D activity, which helped with crisis management, one interviewee, a financial manager, considered that establishing a centre for computerised-designs was also vital if it was to prepare for problems of competitiveness in the market. The financial manager commented:

"Our firm recognised that the product's price and quality are the only way to be competitive

in the market, but this is not as important as customer satisfaction. Thus, we established a separate centre which is now able to provide the designs and samples that customers require in a very short time (perhaps a few days) and to create custom-made designs."

The aim was to protect the company against dramatic fluctuations in the cheaper, poor quality segment of the market.

The 1990s saw additional developments in the adoption of information technology (IT) and the provision of Internet access. This was also seen as contributing to crisis management by transforming customer services. For instance, one firm had been paying particular attention to improving customer services by speeding up its production. They had adopted computerised machines, the aim being to eradicate human errors.

Drastically changing market conditions and government policies brought the linkage between the potential for crises and strategic management to the forefront of the issues facing an increasingly crisis prone industry. Strategic measures were introduced in response to foreign competition and loss of overseas markets although it is interesting to note that awareness of the problems by no means guaranteed an appropriate response. The vice-president of the same firm pointed out that, "After the privatisation programme and the GATT agreement were adopted, our[new] business strategies were developed." He referred to one inappropriate policy the company had followed in the past. This was the production of 100% pure cotton products (which uses expensive raw cotton) to be sold to the local market although this market required cheap products. He said, "although adopting this policy was wrong, our firm had to follow it because of the socialist policy all firms were required to respect. Currently, our firm's policy is to produce blended cotton products."

Such efforts to respond to radically changed conditions were found in other firms, though with different emphases and results. Indeed, in some circumstances, market research could be

Table 5: Strategic Actions for Managing Textile Crises

Actions	%
1. Improving equipment, product quality, operations and adopting quality control system	90
2. Giving attention to research and development activity	73
3. Training employees in emergency preparedness	71
4. Emphasising customer's satisfaction	67
5. Decreasing over-manning by encouraging early retirement	57
6. Applying financial reforms (i. e. cancelling debts and rescheduling repayments)	52
7. Establishing specific committees at the industry level to study internal and external problems.	41

seen as a form of crisis management or certainly a response to impending crisis. In one private sector firm the head of this firm indicated that he had been involved in developing its activities to compete in the local and foreign markets through an intensive marketing research study to identify the changing needs of its customers. This had led to an increased focus on women's clothes.

Improving product quality and decreasing costs were other crucial actions adopted to solve one of the most dangerous and potentially damaging of textile firms' crises. One production manager pointed out that decreasing the cost of production as well as increasing product quality was vital for managing and preparing the Egyptian textile industry for crises. He said:

"In order to decrease costs as well as to improve quality, much attention has been paid to improving the quality of the raw materials and decreasing wastage. Moreover, other efforts have been exerted to upgrade and renew the machines, to train the workers, and to link productivity and quality through a workers' incentive program."

The economic reform program at the end of the 1990s, of which privatization was the main element, was considered a key strategy in response to the various crises, particularly financial crises, facing Egyptian textile firms. As many textile managers indicated, the government encouraged a retirement program to reduce over-manning, with the aim of reducing the costs of production (reported by 57% of the respondents). The other governmental action was to drop the accumulated interest that was burdening most textile firms (reported by 52%). Finally 41% of the respondents considered that another effective strategic action to overcome the endemic crises was to support industry wide investigations of both their internal and external problems such as dumping and over-manning.

Detection of Early Warning Signals

Beyond the dissemination of a healthy culture and the strategic adoption of CM, it is important that there should be an early warning signal detection activity to detect and interpret the dimensions of the developing crisis.

Both the interview data and questionnaire responses showed the importance of the early warning signal detection activity (Tables 1 and 2). Thirteen of the textile managers interviewed indicated the importance of the early warning signal detection activity, including prescriptive comments such as: "Planning for crisis management requires top managers to be aware about potential problems through studying and assessing potential risks and scrutinizing internal and

external weak areas of the organization." Another manager added, "monitoring and studying each functional area's vulnerability to crisis is essential for identifying the type of potential crisis and then preparing for it." The questionnaire responses highlighted four components of early warning signal detection as important in preparing for potential crises, see Table 6.

In detecting potential organisational crises, the most important and fundamental issue was thought to be the assessment of the weaknesses of the organisation and anticipation of potential crises that might result (reported by 98.3%, 94.9% respectively in Table 6).

Internal and external environmental scanning was also considered important by 93.2% of the respondents. This scanning requires experienced people supported by an information system which should enable an organisation to detect warning signals early. In this context, the head of one company said,

"It is essential for our company to have a good IT system, enhanced by crisis management experts with the ability to study the national and international challenges that might affect the organisation. But we should start first to look at our organisational operations problems in order to detect internal crises before turning to the outside problems."

Since many crises were internally generated it is not surprising that most Egyptian managers looked inside their firms' operations to detect warning signals before turning to the external environment. As a result, data sources such as meetings, contact with key personnel, interviews with the holding company's experts, documentation and reports . . . etc could warn top managers. Other managers provided a wide range of sources to capture warning signals. These signals included for example customers' complaints, returned products, high production costs compared to equivalent foreign products and the like.

However, external environmental scanning is also needed. The financial sector head of one firm, provided examples of external scanning of variables that should be considered as important sources of data for warning signals:

"Since company activities are very sensitive to economic, political, legal, competitive, technology and global factors, therefore, monitoring any changes in the environment, such as international agreements, competitors' positions, fluctuating markets, borrowed interest rate changes, new laws, changing prices for raw materials, fashion, technology, are important."

It is a standard list of signals, and supports Mitroff et al. (1987), who argued that one of the managerial

Table 6: *The Components of Early Warning Signal Detection*

Statement	(5) Extremely Important		(4)		(3) Neutral		(2)		(1) Extremely unimportant	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. Assessing the weaknesses in the organization	44	75.9	13	22.4	1	1.7	0	0.0	0	0.0
2. Anticipating potential crises	32	55.2	23	39.7	2	3.4	1	1.7	0	0.0
3. Environmental scanning	27	46.6	27	46.6	3	5.2	1	1.7	0	0.0
4. Auditing important functional indicators such as the financial indicators	27	46.6	24	41.4	3	5.2	3	5.2	1	1.7

N = number of valid observation.

actions that can be taken to make organisations safer is the improvement of the organisation's early warning signal system, built on the systemic and rational scanning of environments.

Auditing indicators such as those identified above in the functional areas of finance, production, etc. were considered important by 88% of the respondents. The result of the auditing process, if available, could then be compared to the known internal and external industrial standard criteria to discover any discrepancies.

Comparing the managers' normative views with the firm's actual practice we found that most textile firms in Egypt have taken only small steps to install such early warning systems. Examples include specific diagnostic tools to detect the pollution from textile operations on the surrounding environment, (65%) to audit financial liabilities (62%) and to detect fire (52%). Although early warning detection systems can be considered a critical feature in crisis management, they did not appear to have been widely adopted by these textile firms. 52% of the respondents said that their only form of early warning signal was for fires, one of the greatest hazards for cotton factories. Clearly, industrial safety units are structures that deal only with physical crises such as fires and industrial accidents, but represent an important element of physical planning for crises.

A very different type of early warning system involves scanning for the potentially negative effects of events, such as the signing of the 1991 GATT agreement on unrestricted importation of textiles into Egypt. One manager pointed out that their principal scanning activities included studying the effects of the GATT agreement, their competitor's moves, market fluctuation and technological innovations. He said for example:

"The collapse of the former Soviet Union and Egypt's signing of the GATT agreement were just such early signals for the marketing crises that Egyptian textile firms will face. Thus, if our firm does not change its strategy, which was to focus on both quantity targets and limited markets, many problems will develop."

The Efficiency of Information Flows

The efficiency of information flows is reported as highly important by 94.7% of the respondents. Previous research on crisis management has confirmed the importance of information flow and communication during a crisis situation (Turner, 1976; Barton, 1992) both internal and external (Reilly, 1993). Turner (1976) argued that effective communication is critical among employees and managers responsible for coping with the crisis. Equally, key people, who may be remote from the crisis site, must be kept

informed. The efficiency of internal information flow is not enough to be effective in crisis preparation. External information flow is also required (D'Aveni and MacMillan, 1990). Table 1 showed that 14 comments out of 103 (13.6%) referred to the need for efficient information flows. The interviewees commented: "crisis management is essentially by information management" ... "using an efficient system to pass information up and down the organisation before and during a crisis is very important for anticipating and dealing with crises." Others said:

"Before a crisis, you need information about all the firm's stakeholders ... they can be customers, suppliers, markets trends. Also any changes in the organisational environment. During a crisis you have to tell your employees what is going on and hear from them what is going on there ... the most important thing during a crisis situation is to be clear and concise."

A key issue in this context is the relative importance of the various components which contribute to the efficiency of information given by the managers. The most frequent response was to be proactive rather than reactive with respect to information in a crisis and this information needed to be specific and concise (both reported by 98.3% of the respondents). Also highly rated at 96.5% was the importance of admitting that an organization was truly experiencing a crisis. Previous research suggests that playing ostrich by denying the crisis only harms the organization's image (Reilly, 1993). Finally, identifying all the facts and telling the truth about the crisis was considered important by 96.5% of the respondents. Barton (1993) and Pearson and Mitroff (1993) also supported this result, suggesting that if an organisation has not established channels of open communications, the risk from a developing crisis would be much greater.

Internal and external information flows also need to be planned in the organisation. The head of finance in one firm mentioned that "effective crisis management requires effective communication in the firm." He added that "all managers who are involved in a crisis situation should perform in a very special way in order to be effective communicators ... which means that managers should listen, observe, and deliver information, both verbal and non-verbal, to explore the crisis situation accurately." Further, a general manager of production said that "firms should establish an advanced Internet system to ease communication with different departments, employees as well as customers and suppliers ... to know the new trends in the markets in terms of technology, fashion ... etc." He believed that obtaining accurate information quickly was cru-

cial when preparing for crises. This result supports those of many earlier researchers such as Pincus and Acharya (1988) who say that at no time in an organisation's life is it more critical to communicate openly, sensitively and quickly with employees than during a crisis. Thus, we can argue that the issue of information flow as well as its content can facilitate and support crisis management efforts in organisation.

Resource Mobilization and Implementation

The importance of resource mobilization and implementation was highlighted by 81% of the respondents (see Table 2) in order to prepare for managing crises when they happen. This supports Meyer (1982) has argued that crises place extreme demands on a firm's resources, particularly in the area of managerial time and attention. Table 1 also shows that 8 comments out of 103 (7.8%) referred to the need for improved technology, expertise and equipment. This is, perhaps, particularly important in developing countries where resources such finance, human skills and technology are usually in short supply. Commenting on this issue, the interviewees identified the need for resources to be readily available (experienced people, technology, information system ... etc) as part of the necessary arrangement for both crisis preparation and for managing emerging crises as they happen. Mobilizing financial, technical and human resources are seen as highly important for preparing and managing crises (reported by 100%, 96.5% and 94.9% of the respondents respectively).

The process of implementation is no less important than mobilization. Koove-Misra (1995) has said it is important for organisations to have both the necessary resources and the capability to access and use them. One manager interviewed explained that "we have, for example, a lot of books as knowledge resources, which have been written on planning. However, these books are not valuable if their lessons are not executed within our firm." This aspect was less well recognised by respondents, with only 41% referring to the importance of implementation, rather than just having formulated a crisis management plan.

The Speed of Decision-Making in Crises

The speed with which a crisis develops means that crisis decision-making is crucial in determining success in handling a crisis (Billings et al, 1980; Milburn et al, 1983). As soon as the organization notices and interprets the developing crisis situation, it can start dealing with the crisis by taking rapid action. Table 1 of the content analysis of the interviews shows 10 prescriptive comments out of 103 (9.7%) referred to the need for fast decision-making during a crisis.

In addition, 41.3% of the questionnaire respondents (Table 2) considered the speed of crisis decision-making as either extremely or somewhat important when handling a crisis.

In this context, some textile managers suggested that crisis management is no more than decision-making in a crisis situation and should be treated as such. As one commented: "Even with only incomplete information available in a crisis situation, top managers must be able to make quick decisions to handle a crisis." Another manager said,

"In a crisis situation, we should be seen as 'leading from the front' regardless of the lack of information, and, crisis managers or in our case, top managers must make quick decisions to solve the crisis . . . where it is not necessary to wait until you have all information in order to make a 100% correct decision. Instead, top managers or the crisis team must assess the crisis situation and make the best decision quickly."

This result supports those of researchers such as Billings et al. (1980), Milburn et al. (1983), and Reilly (1993). However the ability of leaders to manage a crisis situation effectively will depend upon both the culture of the organisation and the quality of the information within it.

Three components of rapid response to a crisis are provided in Table 7. At one extreme, 91.4% of the respondents ranked the need to control the damage and limit its spread as extremely important or somewhat important. The activation of the internal crisis management team was seen as almost important. Bringing in outside help was seen as much less desirable with only 36.2 % of the questionnaire respondents identifying it as important. The different skills available from outside their firms were not valued. This low figure may well be linked to the high levels of secrecy embedded in Egyptian business practice.

When describing his firm's preparations one industrial safety manager said that "we have provided training programs for our firm's workers regarding "how to deal with fires in the work place . . . " He added:

"we believe that in the case of fire, the first few minutes are vital. So every production worker has enough instructions in advance to cope with fire. Every one also recognises that the closest person to the fire should start to handle the situation immediately without waiting for fire fighters otherwise the situation might deteriorate."

Overall, however, even where immediate contingency plans were in place, the organisational

Table 7: The components of a rapid decision-making response

Statement	(5) Extremely Important		(4)		(3) Neutral		(2)		(1) Extremely unimportant		N
	No.	%	No.	%	No.	%	No.	%	No.	%	
1. Control damage	12	20.7	41	70.7	5	8.6	0	0.0	0	0.0	58
2. Call internal crisis team	27	46.6	25	43.1	6	10.3	0	0.0	0	0.0	58
3. Call on outside help	7	12.1	14	24.1	16	27.6	15	25.9	6	10.3	58

N = number of valid observations.

and hierarchical structure of their companies could impede rapid decision making in a crisis.

Day-to-Day Activity

Day-to-day operations in the organisation can enhance its crisis preparation and crisis management abilities. Table 1 shows 7 prescriptive comments out of 103 (6.8%) generated from the content analysis, which referred to the need for efficiency of day-to-day activity as important for crisis preparation. Smart and Vertinsky (1977) have noted that some policies and procedures that contribute to successful operations in normal situations might also contribute to successful operation in a crisis. As one manager indicated "The efficient handling of normal operations contributes and supports the process of preparing and managing crises . . . if everybody (employee or manager) in the organisation does his day-to-day job very well, textile firms may not need special procedures for crisis preparation."

A second manager provided an example of the importance of objective careful control of real work done. He said that:

"careful control should be done of 'operational performance' inside factories, rather than control of 'attendance sheets' checked at the factory gate." He explained that "Public firms in Egypt (not only textile firms but also most types of state-owned firm), have very strict control over workers' attendance. Employees have to fill in an 'employees sheet' everyday at 7 am, but they ignore what is really going on inside the firm in practice."

On this same theme, one manager remarked:

"developing flexible and real procedures of control in the main functional areas such as production and marketing are significant when handling any problem before it becomes a crisis. Comparing the actual performance with a budgeted goal enables us to monitor the achievement of the organisation's activities and to take corrective actions when major deviations arise. Investigating the causes of poor results or deviations are essential for managing crises."

Such monitoring activities are carried out in most Egyptian textile firms.

One interesting issue here is the difference between crisis management and daily operations. One manager said "there is no big difference between crisis management and daily operations except for the unique circumstances of crisis situations and their impact on management duties where a crisis situation imposes its own unique context on normal management duties to become more stressful." He added, "crisis

management perhaps is more intense, requiring more actions and greater speed. However, managers in general have to plan, co-ordinate, make decisions and communicate in both normal and crisis situations."

Delegation of Authority

Some managers identified the importance of delegating authority when preparing for crises. Five prescriptive comments out of 103 (4.9%) referred to the importance of this aspect (Table 1). In this regard, one manager stated, "You have to delegate some authority before or during a crisis; if you try to make all the decisions by yourself you are going to fail. It is better to delegate authority in those areas where you do not possess the right expertise." He added that one of the greatest weaknesses of top managers is their feeling that they are bosses and so must do everything by themselves. Instead, other experts needed to contribute to the decisions.

The importance of delegating authority is relevant for all categories of firms. In this regard, one manager stated that crisis management requires the delegation of authority from the holding company down to the top managers in the affiliated firms, and then to the different organisational levels. It is important, he argued, to give the subsidiary textile firms the freedom to make their own decisions. The affiliated firms' managers are the only people who know their problems and weaknesses. These results have been confirmed in the literature by Littlejohn (1983), who has argued that delegation is essential for team management. Since the crisis team must utilise resources from various functional areas in the organisation or from outside the organisation, the crisis manager needed to delegate tasks to individuals with particular expertise and competence. In this sense, Perrow (1984) noticed that subordinates need to be able to take independent and creative action because they are closest to the system, yet centralisation prevents decentralised actions. This implies that delegating some authority in the organisation is a crucial factor for crisis preparation. However, some interviewees have pointed out certain disadvantages of delegating authority, such as the potential lack of knowledge of subordinates and the cultural differences among people at the different levels in the organisation.

Co-operation among personnel, particularly in the exchange of information was seen as a critical factor for crisis preparation. However, as one manager remarked:

"Unfortunately, very often we find internal conflict between departments of very great secrecy. Each department tries to hide information from others and maybe this information is crucial for avoiding problems. Each

department might try to compete against other parts of the organisation. Many people in different parts in the firm perceive themselves as a rivals rather than colleagues." "We operate in such organisational darkness ... where, metaphorically, the right hand does not know what the left hand is doing."

Co-ordination among people who have to deal with a crisis situation was considered in some comments to be much more important than the speed of response. For example, one safety manager spoke of a case he had experienced. "People dealing with a fire, for example, are willing to put in more than 100% effort to provide help as they can to alleviate pain, suffering, and loss of property." However, he added, "the trouble is that, since people want to respond to the situation quickly, they ignore the need to co-operate; they tend to respond to the fire by all rushing in their separate directions. Those people in fact may hamper the efforts of others if they are not co-ordinated." Thus, top managers in the different functional areas, as many of them indicated, perceived the need to eradicate the individualistic culture, common in developing countries, and encourages a co-operative culture both horizontally among managers as well as between workers. One important aspect of this is the sharing of important information.

An Extended Crisis Preparedness Model

Figure 1 outlines a new crisis preparedness model that builds on Reilly's 1993 model. This model consists of three essential phases. The first is the general preparedness phase which includes (1) strategic planning for crisis; and (2) a healthy culture of crisis management. The second phase is the early warning signal detection, which represents the third activity (3). Finally, the specific preparedness phase or crisis management phase, which includes (4) quick decision responses; (5) resource mobilisation; and (6) efficient information flow. The proposed model incorporates the six activities that are necessary to prepare and cope effectively with organisational crises. These phases and their associated activities are integrated to represent the core of the crisis preparedness model. The model extends Reilly's characterisation by taking account of the logical sequence of crisis preparedness while complementing the behavioural work of Smits and Ezzat (2003). Secondly, it recognises the cultural forces which are likely to play a critical role in crisis preparedness in a developing country like Egypt (Zoubir, 2000).

The following sections explore the various phases of crisis preparation in the model outlined

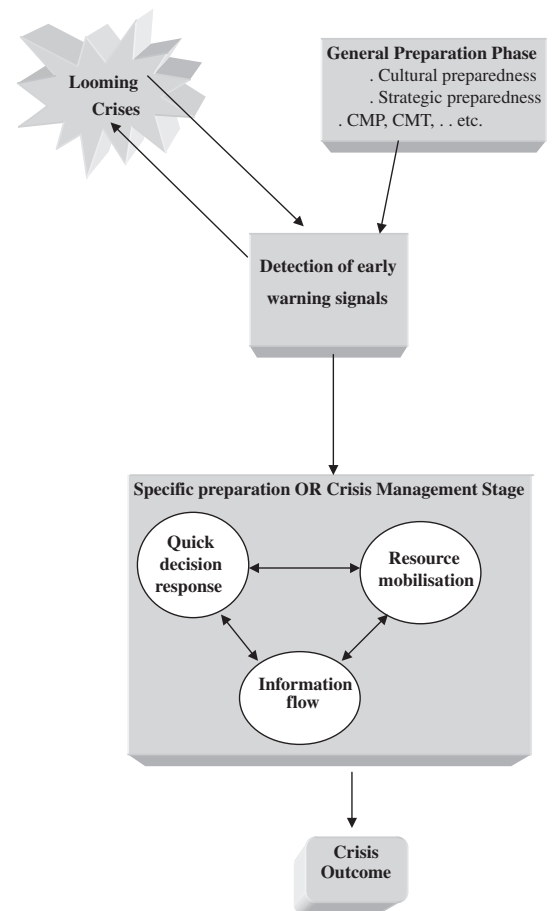


Figure 1: Crisis Preparedness Model

above, incorporating the empirical evidence presented in the last section.

General Preparation Phase

This initial phase concentrates on the development of a healthy organisational culture (comprising values and beliefs) regarding crisis management, since this pervades all its aspects. Some researchers have argued that adopting strategic crisis management can lead to a favourable culture with respect to crisis within the firm. They also indicated that the commitment to crisis management by top management is obligatory for developing a systemic strategy to crisis preparedness including plans, team training, and so on (Starbuck et al., 1978; Fink, 1986; Shrivastava et al., 1988). As we have shown this phase is particularly necessary for firms in developing countries (such as Egypt) that may not possess any understanding of the elements of crisis management.

The model starts with a general preparation phase because it represents the infrastructure of any crisis management process where, without a supportive culture and strategic preparedness, the detection of signals and the crisis management phases will not work effectively. As Mitroff

et al. (1989) have argued, culture is perhaps the most crucial factor underpinning better crisis preparedness. Also, organisations are better prepared if they adopt crisis management as part of their strategic planning process (Mitroff et al., 1989).

Early Warning Signals Detection Phase

With a healthy culture established in the organisation a second phase of preparation occurs when the notion of strategic crisis management is implemented. This is early warning signal detection, when the firm detects and interprets the crisis signals. If the signal goes undetected or unnoticed or misinterpreted, crisis management activities cannot operate effectively.

The need for an early warning signals detection system is obvious and repeatedly mentioned by researchers in the field (Fink, 1986; Reilly, 1993; Pearson and Mitroff, 1993) and supported by the empirical evidence in this survey. Long before a crisis occurs, researchers have observed a repeated and persistent trail of early warning signals. If an effective warning signal detection system is in place, the organisation can prepare itself for the expected crisis. As a result of general preparedness and the implementation of early warning signal detection, crisis management has the potential to work in an effective way to mitigate the worst results as the crisis develops.

Specific Preparedness Phase or Crisis Management Stage

The third phase concerns the specifics of managing the crisis. Three activities form this phase, and are interconnected by two-way arrows to indicate that they are non-sequential and often iterative activities. It has been noted that crisis management involves jumping back and forth between its various activities (Mitroff et al., 1987). The nature of the particular crisis, the organisation involved and the environment will all influence the sequencing of crisis management activities. This means that while one firm needs to move immediately from the early warning signal detection stage to improving the information flow, another may arrive at a decision and mobilise resources before releasing or collecting crisis information and so on. However, it should be noticed that the main activity of this stage is 'quick decision response'. Therefore, performing each of the two other crisis management activities rapidly reduces the overall response time in the crisis management stage (Billing et al., 1980). Furthermore, the factors that contribute to the specific preparedness phase are more multiplicative than additive. This means that an organisation's failure to address any one of these activities significantly reduces the firm's ability to cope

with the crisis (Reilly, 1993). As the research has shown performance in this phase of the crisis is influenced by the day-to-day procedures and issues of delegation and co-ordination within the context of 'normal' operations.

Contribution of the Model

Even though the proposed model is built upon Pearson and Mitroff's (1993) recommendations, it differs from their model in a number of important ways. The first distinctive feature it takes into account is the logical sequence of the phases determining crisis preparedness. In their model, Pearson and Mitroff placed the early warning signals detection phase before the general preparation phase. In terms of timing, it is both more proactive and plausible to begin the preparation phase before the warning signal detection phase, where more time is available. The rationalisation of this modification is that it would be prudent for the organisation's managers to prepare for the potential crises prior to the onset of any warning signals. This is justified because most of the activities performed in the preparation phase are not related to the exact nature of the emerging crisis. These activities are essential for a wide range of potential crises. They include, for example, disseminating the values and beliefs that support crisis management activities, integrating crisis management activities into the strategic planning process, setting up a crisis management team with a crisis management plan and the like. Hence, it is much more reasonable and logical to put the general preparation phase before the detection phase in a normative model such as this. Of course, whether an organisation follows these priorities is an empirical question.

The proposed model has also adopted some of the Reilly model recommendations, particularly, the crisis management components that are necessary during the crisis itself. The model, however, differs from her proposals in that it takes into account the strategic and cultural dimensions that are a necessary part of crisis preparation, in particular, in developing countries like Egypt. In such countries, the national and predominant organisational culture is often unsympathetic to the active management of crisis (Jun and Park, 2001). Thus, the proposed model has integrated all the elements of Pearson and Mitroff and Reilly but also contains additional dimensions to explain and accommodate behaviour in countries outside a North American or European management culture.

Conclusion

This article has proposed a revised model for crisis preparation which, unlike earlier models, is

applicable in both developed and developing countries. Based on the evidence of both questionnaires and interviews, various activities were identified that constitute the preparation necessary for effective management of potential crises. Furthermore, the respondents suggested a number of modifications and activities to the accepted model of crisis preparedness which they felt needed to be added; namely the efficiency of day-to-day activities, delegation of authority and coordination among people and departments. Finally, the results provided an empirically based framework for understanding the Egyptian textile firms' crisis preparation, which might, if adopted, speed up existing attempts to create a crisis management culture in the Egyptian context. Few of the companies had formally implemented any aspect of crisis management beyond that of the safety committee and increased emphasis on strategic marketing, despite living in an endemically crisis prone industry.

The empirical evidence emerging from the interviews has led the authors to conclude that neither government nor boards of directors can hope to cope with crises through legislation, changes in formal objectives, written policies, or procedures alone, but must create a dramatic shift in the culture of organisations such as those studied. This might involve transforming a firm from one that hides bad news to one that seeks out and values different viewpoints, opinions, and contradictory information. Therefore, an initial step to support improved crisis management, in these Egyptian textile firms, must be to change the unfavourable passive culture in which managers and their work force operate. The organisational culture has to encourage all members to discuss any subject whatever and state their views candidly and openly without fear, impossible as the collection of data for this research demonstrated. Only then will it become possible to integrate crisis management into a wider strategic view within the organisation.

References

- Al ahram, I. (1997), *Collapsing Egyptian Textile Industry*, Cairo: Egyptian Textile Industry.
- Andersen, E. (2003), 'Be Prepared for the Unforeseen', *Journal of Contingencies and Crisis Management*, Volume 11, Number 3, pp. 129–134.
- Attiya, H.S. (1993), 'Management Development In Arab Countries: The Challenge of the 1990s', *Journal of Management Development*, 12, (1), 3–12.
- Ansoff, I. (1976), 'Managing the Strategic Surprise by Response to Weak Signals', *California Management Review*, Volume 18, (Winter), pp. 21–33.
- Barton, T. (1993), *Crisis in Organisation: Managing and Communicating in the Heart of Chaos*, Cincinnati: South-Western Publishing Company.
- Billings, R., Milburn, T. and Schaalman, M. (1980), 'A Model of Crisis Perception', *Administrative Science Quarterly*, Volume 25, Number 3, pp. 300–316.
- Casson, M. (1992), *International Business and Global Integration*, London: Macmillan.
- Casson, M. (2000), *Economics of International Business: A New research Agenda*, Cheltenham: Elgar.
- D'Aveni, R. and MacMillan, I. (1990), 'Crisis And The Content Of Managerial Communications: A Study Of The Focus Of Attention On Managers In Surviving Failing Firms', *Administrative Science Quarterly*, Volume 25, Number 4, pp. 634–657.
- Dumaine, B. (1993), 'Times Are Good ? Create A Crisis', *Fortune*, Chicago, Volume 127, Number 13, pp. 123–7.
- Dunning, John H. (1993), *The Globalisation of Business: The Challenge of the 1990s*, London: Routledge.
- Erwan, Michel-Kerjan (2003), 'New Challenges in Critical Infrastructures', *Journal of Contingencies and Crisis Management*, Volume 11, Number 3, pp. 132–142.
- Fink, S. (1986), *Crisis Management: Planning for the Inevitable*, New York: AMACOM.
- Gomez, P. (1984), 'Early Warning in Business: A System Approach', *Journal of Applied Systems Analysis*, Volume 11, Number 1, pp. 65–77.
- Habib, H. (1985), 'Textiles In Egypt: The Public and Private Sector', *Textile Monthly : The International Textile Journal*, Volume 102, Number 5, pp. 36–41.
- Hansen, B and Nashashibi, K (1975), 'Foreign Trade Regimes and Economic Development in Egypt', *National Bureau of Economic Research*, Volume 35, pp. 334–350.
- Jun, Jong S. and Park, Myung S. (2001), 'Crisis and Organisational Paralysis: The Lingering Problem of Korean Public Administration', *Journal of Contingencies and Crisis Management*, Volume 9, Number 1, pp. 3–13.
- Koover-Misra, S. (1995), 'Multidimensional Approach to Crisis Preparation for Technical Organisations: Some Critical Factors', *Technological Forecasting and Social change*, Volume 48, Number 2, pp. 143–160.
- Littlejohn, R. (1983), *Crisis Management: A Team Approach*, New York: AMACON.
- Meyers, A. (1982), 'Adapting To Environmental Jolts', *Administrative Science Quarterly*, Volume 27, Number 4, pp. 515–537.
- Milburn, T., Schuler, R. and Watman, K. (1983), 'Organisation Crisis, Part 1: Definition and Conceptualisation', *Human Relations*, Volume 36, Number 12, pp. 1141–1160.
- Milburn, T., Schuler, R. and Watman, K. (1983), 'Organisation Crisis, Part 2: Strategies and Responses', *Human Relations*, Volume 36, Number 12, pp. 1161–1180.
- Mitroff, I. (2000), *Managing Crises Before They Happen*, New York: AMACON.
- Mitroff, I. and Pearson, C. (1993), *Crisis Management: Diagnostic Guide for Improving Your Organisation Crisis Preparedness*, New York: Jossey-Bass, Inc.
- Mitroff, I., Pauchant, T. and Shrivastava, P. (1989), 'Crisis, Disasters, Catastrophe: Are You Ready?', *Security Management*, Volume 33, Number 2, pp. 101–108.
- Mitroff, I., Pearson, C. and Harrington, L. (1996), *The Essential Guide to Managing Corporate Crises*, New York: Oxford University Press.

- Mitroff, I., Pearson, C. and Pauchant, T. (1992), 'Crisis Management and Strategic Management: Similarities, Differences and Challenges', *Advances in Strategic Management*, Volume 8, Number 2, pp. 235–260.
- Mitroff, I., et al., (1989), 'Do Some Organisations Cause Their Own Crises? The Cultural Profiles of Crisis Prone vs. Crisis –Prepared Organisations', *Industrial Crisis Quarterly*, Volume 3, pp. 269–283.
- Mitroff, I., Shrivastava, P. and Udwadia, F. (1987), 'Effective Crisis Management', *The Academy of Management Executive*, Volume 1, Number 3, pp. 283–292.
- Morrison, J. (2002), *International Business Environment: Diversity and the Global Economy*, Basingstoke: Palgrave.
- Pearson, C., Clair, J., Kovoora Misra, S. and Mitroff, I. (1997), 'Managing the Unthinkable', *Organisational Dynamics*, Volume 2, Number 26, pp. 51–64.
- Pearson, C. and Clair, J. (1998), 'Re-Framing the Crisis Management', *Academy of Management Review*, Volume 23, Number 1, pp. 59–76.
- Pearson, C. and Mitroff, I. (1993), 'From Crisis-Prone to Crisis-Prepared: A Framework for Crisis Management', *Academy of Management Executive*, Volume 7, Number 1, pp. 48–59.
- Perrow, C. (1984), *Normal Accidents: Living with High Risk Technologies*, New York: Basic Books.
- Pincus, N. and Acharya, L. (1988), 'Employee Communication Strategies for Organisational Crises', *Employee Responsibilities and Rights Journal*, Volume 1, Number 2, pp. 181–199.
- Preble, J. (1997), 'Integrating the Crisis Management Perspective into the Strategic Management Process', *Journal of Management Studies*, Volume 34, Number 5, pp. 769–791.
- Quarantelli, E. (1988), 'Disaster Crisis Management: A Summary of Research Findings', *Journal of Management Studies*, Volume 25, Number 4, pp. 373–85.
- Reilly, A.H. (1987), 'Are Organisations Ready For Crisis? A Managerial Scoreboard', *Columbia Journal of World Business*, Volume 22, Number 1, pp. 79–88.
- Reilly, A.H. (1993), 'Preparing for the Worst: the Process of Effective Crisis Management', *Industrial and Environmental Crisis Quarterly*, Volume 7, Number 2, pp. 115–143.
- Shrivastava, P., Mitroff, I., Miller, D. and Miglani, A. (1988), 'Understanding Industrial Crises', *Journal of Management Studies*, Volume 25, Number 3, pp. 285–303.
- Shrivastava, P. and Mitroff, I. (1987), 'Strategic Management of Corporate Crises', *Columbia Journal of World Business*, Volume 22, Number 1, pp. 5–11.
- Sheaffer, Z., Richardson, B. and Rosenblatt, Z. (1998), 'Early-Warning Signals: a Lesson From the Baring Crisis', *Journal of Contingencies and Crisis Management*, Volume 6, Number 1, pp. 1–22.
- Smart, C. and Vertinsky, I. (1977), 'Designs for Crisis Decision Units', *Administrative Science Quarterly*, Volume 22, Number 3, pp. 640–657.
- Smits, S.J. and Ezzat, N. (2003), 'Thinking the Unthinkable: Leadership's Role in Creating Behavioural Readiness for Crisis Management', *Competitiveness Review*, Volume 13, Number 1, pp. 1–23.
- Staw, B., Sanelands, L. and Dutton, J. (1981), 'Threat-Rigidity Effect in Organisational Behaviour: a Multi-level Analysis', *Administrative Science Quarterly*, Volume 26, Number 4, pp. 511–524.
- Starbuck, W., Greve, A. and Hedberg, J. (1978), 'Responding to Crises', in Smart, C. and Stanbury, W., *Studies in Crisis Management*, Toronto: Butterworth, pp. 11–137.
- Turner, B.A. (1976), 'The Organisational and Inter-Organisational Development of Disaster', *Administrative Science Quarterly*, Volume 21, Number 3, pp. 378–397.
- World Bank (1993), *Egyptian Cotton Textile Sector, Arab Republic of Egypt*, Washington: World Bank.
- Zoubir, Y.H. (2000), 'Doing Business in Egypt', *Thunderbird International Business Review*, Volume 42, Number 3, pp. 329–350.

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