

**THE COMPETENCIES REQUIRED FOR EXECUTIVE LEVEL BUSINESS CRISIS
AND CONTINUITY MANAGERS**

by

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ABSTRACT

The reality of business (the word business is used as a generic term in this research study to describe any organization, be it private, public or not-for-profit, that provides a product or service of value to its customers) is that increasing and dynamic natural, technological and human induced threats, business complexity, government regulation, corporate governance requirements, and media and public scrutiny demand a comprehensive and integrated approach to business crisis and continuity management (BCCM).

Organizations within all sectors (public, private and not-for-profit) continue to create and fill executive level and non-executive level positions to lead and manage their image of a sufficient BCCM program. Given the lack of a widely accepted framework for an enterprise wide BCCM program with an understanding of functional relationships and an inventory of the program specific competencies necessary for effective job performance, program success can be left to chance in spite of the noblest intentions.

The results of this research study contribute to the understanding of the organizational functions supporting the management of disruptive (crisis) events and the continuity of operations, the inter dependencies of these functions, and a prioritized inventory of competencies required by an executive level individual and/or organizational unit responsible for coordinating the functions into a comprehensive and integrated program supporting the entire organizational enterprise. The measure of success of this research study is the development, validation and presentation of:

1. A unique conceptual framework for visualizing and organizing and linking the myriad functional areas and functions inherent in an integrated enterprise wide business crisis and continuity management program; and

2. A prioritized inventory of competencies (knowledge, skills, and/or abilities) required for an executive to effectively manage an enterprise wide business crisis and continuity management program.

The resulting framework and prioritized competency inventory can assist organizations in structuring an enterprise wide business crisis and continuity management program to meet their specific objectives and provide guidelines for selection and professional development of organizational leaders with business crisis and continuity management responsibilities.

The research methodology employed an extensive review of literature and interviews with BCCM experts to develop a functional framework for enterprise wide BCCM and to identify the necessary executive level BCCM supporting competencies to implement this framework. A self selecting Web-based survey was used to prioritize these competencies by Level of Mastery and Level of Involvement and to determine the Required Level of Responsibility for the functional areas included in the framework. The low number of responses limits the generalization of the survey results. However, an expert review of the functional framework and the analysis and presentation of the survey results indicates that the research framework and competency inventory are unique; they make a significant contribution to the evolution of BCCM as a strategic program with leadership at the executive level.

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GLOSSARY

GENERAL TERMS:

Business Crisis and Continuity Management – The business management practices that provide the focus and guidance for the decisions and actions necessary for a business to prevent, mitigate, prepare for, respond to, resume, recover, restore and transition from a disruptive (crisis) event in a manner consistent with its strategic objectives. (Shaw and Harrald 2004)

Competency - A level of capability comprised of the knowledge, skills, abilities and/or attitudes required for effective performance within the context of a person's job responsibilities and in relationship to the organization and its goals (adapted from Dartmouth Research 2003). *For the purpose of this research study, effective is defined as the ability to meet an organization's strategic and tactical objectives.*

Crisis - A major event that has potentially negative results. The event and its aftermath may significantly damage a business and its employees, products, services, financial condition, and reputation. Handled properly, a crisis may provide opportunities for organizational learning, competitive advantage and strategic improvement.

Executive Level - Managerial personnel within two reporting levels of the business' Chief Executive (may involve more than two reporting levels in large organizations). Generally carry the title of Senior or Executive Vice President or higher.

FUNCTIONAL AREAS AND FUNCTIONS:

Function and Functional Area- A function is a series of related activities, involving one or more entities, performed for the direct or indirect purpose of fulfilling one or more missions or objectives of the firm, generating revenue for the firm, servicing the customers of the firm, producing the products and services of the firm, or managing, administering, monitoring, recording, or reporting on the activities, states, or conditions of the entities of the firm (Modell 1996). A functional area is a larger grouping of functions. For example, Risk-Based Decision Making, Risk Assessment, Business Area Analysis, Business Impact Analysis, and Risk Communication are functions which are combined into the Risk Management functional area.

Enterprise Management – The systemic understanding and management of business operations within the context of the organization's culture, beliefs, mission, objectives, and organizational structure. - Enterprise wide programs and structures, including Business Crisis and Continuity Management, should be aligned and integrated with overall Enterprise Management.

Crisis Management – The coordination of efforts to control a crisis event consistent with strategic goals of an organization. Although generally associated with response, recovery and resumption operations during and following a crisis event, crisis management responsibilities extend to pre-event mitigation, prevention and preparedness and post event restoration and transition.

Crisis Communication – All means of communication, both internal and external to an organization, designed and delivered to support the Crisis Management function.

Knowledge Management – The acquisition, assurance, representation, transformation, transfer and utilization of information supporting Enterprise Management. Environmental Sensing, Signal Detection and Monitoring and Organizational Learning are functions emphasized as essential components of the Knowledge Management functional area.

Environmental Sensing, Signal Detection and Monitoring – Continual monitoring of the relevant internal and external environment of the business to detect, communicate and initiate appropriate actions to prevent, prepare for, respond to, recover, resume, restore and transition from a potential or actual crisis event.

Organizational Learning – Developing a business culture and support mechanisms that allow the business and its members to gain insight and understanding (learning) from individual and shared experience with a willingness and capability to examine and analyze both successes and failures for the purpose of organizational improvement.

Risk Management – The synthesis of the risk assessment, business area analysis, business impact analysis, risk communication and risk-based decision making functions to make strategic and tactical decisions on how business risks will be treated – whether ignored, reduced, transferred, or avoided.

Risk-Based Decision Making – Drawing upon the results of the risk assessment, business area analysis, and business impact analysis, the development of strategic and tactical risk management (risk reduction, risk transfer, risk avoidance, and/or risk acceptance) goals and objectives and the allocation of resources to meet those objectives. Risk-based decision-making is a continual process that requires dialogue with stakeholders, monitoring and adjustment in light of economic, public relations, political and social impacts of the decisions made and implemented. Risk-based decision making requires the consideration of the following questions:

1. Can risk be reduced?
2. What are the interventions (controls) available to reduce risk?
3. What combination of controls make sense (economic, public relations, social and political (adapted from Haimes 1998)

Risk Assessment - The identification, analysis, and presentation of the potential hazards and vulnerabilities that can impact a business and the existing and potential controls that can reduce the risk of these hazards. Risk assessment requires consideration of the following questions:

1. What can go wrong (hazards identification)
2. What is the likelihood that it would go wrong?
3. What are the consequences (adapted from Haimes 1998)?
4. What controls are currently in place?

Business Area Analysis – The examination and understanding of the business functions, sub-functions and processes and the interdependencies amongst them. Business area analysis requires consideration of the following questions:

1. What are our business functions?
2. What are our business sub-functions and processes?
3. Which are critical to the continuity of our business?

Business Impact Analysis – Applying the results of the risk assessment to the business area analysis to analyze the potential consequences/impacts of identified risks on the business and to identify preventive, preparedness, response, recovery, continuity and restoration controls to protect the business in the event of business disruption. Business impact analysis requires consideration of the following questions:

1. How do potential hazards impact business functions, sub-functions and processes?
2. What controls are currently in place?

Risk Communication - The exchange of risk related information, concerns, perceptions, and preferences within an organization and between an organization and its external environment that ties together overall enterprise management with the risk management function. Risk communication requires consideration of the following questions:

1. To whom do we communicate about risk?
2. What do we communicate about risk?
3. How do we communicate about risk?

Planning – Based upon the results of risk management and within the overall context of enterprise management, the development of plans, policies and procedures to address the physical and/or business consequences of residual risks which are above the level of acceptance to a business, its assets and its stakeholders. Plans may be stand alone or consolidated but must be integrated. Some example plans include:

- Crisis management plan
- Incident management plan
- Communication plan
- Business continuity plan
- Business recovery plan
- Business restoration and transition plan

Program Implementation – The implementation and management of specific programs such as physical security, cyber security, environmental health, occupational health and safety, etc. that support the Business Crisis and Continuity Management (BCCM) program within the context of Enterprise Management.

Systems Monitoring – Measuring and evaluating program performance in the context of the enterprise as an overall system of interrelated parts.

Awareness/Training/Exercising – A tiered program to develop and maintain individual, team and organizational awareness and preparedness, ranging from individual and group familiarization and skill based training through full organizational exercises.

Incident Management – The management of operations, logistics, planning, finance and administration, safety and information flow associated with the operational response to the consequences/impacts (if any) of a crisis event.

Incident Response – The tactical reaction to the physical consequences/impacts (if any) of a crisis event to protect personnel and property, assess the situation, stabilize the situation and conduct response operations that support the economic viability of a business.

Business Continuity – The business specific plans and actions that enable an organization to respond to a crisis event in a manner such that business functions, sub-functions and processes are recovered and resumed according to a predetermined plan, prioritized by their criticality to the economic viability of the business. Business continuity includes the functions of business resumption and business (disaster) recovery.

Business Recovery – Plans and actions to recover essential business systems that support business resumption and eventual business restoration and transition. The alternative term of “disaster recovery” is often used interchangeably with business recovery and carries with it an information technology (IT) connotation. For the purpose of this research, business recovery applies to all business systems and not just those related to IT.

Business Resumption - Plans and actions to resume (continue) the most time sensitive (critical) business functions, sub-functions, processes and procedures essential to the economic viability of a business.

Restoration and Transition - Plans and actions to restore and transition a business to “new normal” operations following a crisis event.

CHAPTER 1

INTRODUCTION

1.1 Background

All organizations from all sectors (public, private and not-for-profit) face the possibility of disruptive events that have impacts ranging from mere inconvenience and short-lived disruption of normal operations to the very destruction of the organization. Organizational functions supporting business¹ disruption prevention, preparedness, response and recovery such as risk management, contingency planning, crisis management, emergency response, and business resumption and recovery are established and resourced based upon the organization's perception of its relevant environments and the risks within those environments. Absent top-level recognition, support, and coordination these functions may receive minimal or even no attention. *Even when recognized and supported they may be implemented and managed in a non-integrated manner with dispersed authority and responsibility.*

The reality of business is that increasing and dynamic natural, technological and human induced threats, business complexity, government regulation, corporate governance requirements, and media and public scrutiny demand a comprehensive and integrated approach to business crisis and continuity management (BCCM). Classic natural, technological and human induced events such as Hurricane Andrew (1992), the Northridge Earthquake (1994), the Exxon Valdez oil spill (1989), the Bhopal chemical release (1984), the World Trade Center attack of 1993, and the Tylenol poisoning case (1982) have provided lessons learned that emphasize each of these factors and the need for coordination and cooperation within and between organizations, and between all levels of government, the private and not-for-profit sectors. The tragic events of September 11th, 2001 and the implications for businesses directly and indirectly impacted by the physical events further reinforce the need for enterprise wide coordination of the multiple functions supporting business crisis and continuity management.

¹ For the purpose of this research study, the term business refers to any organization in any sector (public, private, or not-for-profit) that provides a product or service to its customers.

The results of this research study contribute to the understanding of the organizational functional areas and functions and the inter dependencies of these functional areas and functions supporting the management of disruptive (crisis) events and continuity of operations. The functional areas and functions were examined to develop a prioritized inventory of competencies required by an executive level individual and/or organizational unit responsible for coordinating the functional areas and functions into a comprehensive and integrated program supporting the entire organizational enterprise. The measure of success of this research study is the development, validation and presentation of: 1) A unique conceptual framework for visualizing, organizing and linking the myriad functional areas and functions inherent in an integrated enterprise wide business crisis and continuity management program; and 2) A prioritized inventory of competencies (knowledge, skills, abilities and/or attitudes) required for an executive to effectively² manage an enterprise wide business crisis and continuity management program. The resulting framework and prioritized competency inventory can assist organizations in structuring an enterprise wide business crisis and continuity management program to meet their specific requirements and provide guidelines for selection and professional development of organizational leaders with business crisis and continuity management responsibilities.

The research study is thus limited in its scope to the development of a conceptual framework and prioritized competency inventory that are necessary components of a comprehensive and integrated BCCM program. The research study does not attempt to investigate additional organizational characteristics such as culture, risk preference, past experiences, political structure and influence, economic health, etc. which obviously influence any organization's focus and commitment to a BCCM program. These additional factors, if contrary to the commitment for a comprehensive and integrated BCCM program can relegate the research study results to a necessary yet insufficient basis for BCCM program development, implementation, and success.

² For the purpose of this research study, effective is defined as the ability to meet an organization's strategic and tactical objectives.

1.2 The Term Business Crisis and Continuity Management (BCCM)

The hybrid term business crisis and continuity has been introduced as a title for an enterprise wide strategic program and process. It is necessary to include a brief discussion of the creation and choice of this term since much of the current literature and business practices use the individual terms crisis management or business continuity management separately and often interchangeably while recognizing that they work together to support overall business enterprise management. The Business Continuity Institute's *Business Continuity Management: Good Practices Guidelines* (Smith, 2002) and the Standards Australia draft *Business Continuity Handbook* (Standards Australia 2003) use the term Business Continuity Management as a unifying process and the umbrella under which multiple supporting functions, including crisis management and business continuity operate and integrate. United States based organizations such as Disaster Research Institute International (DRII 2004), ASIS International (ASIS 2004), and the Association of Contingency Planners (ACP 2004) also use the term Business Continuity Management or Business Continuity Planning as an umbrella with crisis management as an essential component. Noted experts such as Ian Mitroff (Mitroff and Pauchant 1992) and Stephen Fink (Fink 1986) use crisis management as their umbrella term with business continuity as one of many supporting functions.

Despite the difference in terminology, there is little debate in the business continuity and crisis management literature that crisis management, business continuity management, and their supporting functions need to be thoroughly integrated in support of overall business enterprise management. *Business Continuity Management: Good Practices Guidelines* explains the inconsistency in terminology by stating "Crisis Management and BCM (Business Continuity Management) are not seen as mutually exclusive albeit that they can of necessity stand alone based on the type of event. It is fully recognized that they are two elements in an overall business continuity process and frequently one is not found without the other." (Smith 2002)

Thus, in an attempt to emphasize the inter relatedness and equal importance of crisis management and business continuity management, Business Crisis and Continuity

Management has been chosen as the umbrella term for this proposed research study and is defined as:

Business Crisis and Continuity Management – “The business management practices that provide the focus and guidance for the decisions and actions necessary for a business to prevent, mitigate, prepare for, respond to, resume, recover, restore and transition from a disruptive (crisis) event in a manner consistent with its strategic objectives.” (Shaw and Harrald 2004)

For the purpose of this research, the individual functions and terms, crisis management and business continuity management, with their associated considerations and actions are treated as two of the supporting functions within the overall Business Crisis and Continuity Management umbrella. Taken as individual functions, crisis management and business continuity, along with the other framework functions, are discussed and defined in the dissertation glossary and review of literature.

1.3 The Case for an Integrated BCCM Program

With roughly 80% of America’s critical infrastructure managed by the private sector (The Conference Board 2003), The *National Strategy for the Physical Protection of Critical Infrastructures and Key Assets* recognizes that the “private sector generally remains the first line of defense for its own facilities,” and encourages private sector owners and operators to “reassess and adjust their planning, assurance and investment programs to better accommodate the increased risk presented by deliberate acts of violence (The National Strategy 2003).” The Deloitte Research Study, *Prospering in the Secure Community*, reinforces the role of the private sector in national security through their position that global security has moved from the war room to the boardroom and the statement that “National security is no longer the province of governments alone. Whether they like it or not, private companies man the front lines in the battle against global terrorism (Eggers 2004).”

The most recent versions of the *National Response Plan* (Final draft June 30, 2004) and the *National Incident Management System* (March 1, 2004) include the private sector in all phases of crisis and emergency awareness, prevention, preparedness, response and recovery planning and operations. The *National Response Plan* explicitly charges the private sector to enhance overall readiness (NRP 2004). Consistent with the National Strategy, Deloitte Research Study, National Response Plan, and National Incident Management System guidance, and the moral and legal imperatives of sound organizational governance, individual organizations have the responsibility to coordinate business crisis and continuity management functions internally and extend this coordination externally if effectiveness and efficiency are to be maximized. Someone, or some internal organizational unit, needs the charter to integrate these functions within and across organizational boundaries in the context of overall business enterprise management and the fundamental strategic objective of ensuring long-term organizational survival and economic success (Harrald 1998).

Two relatively recent authoritative sources establish Business Continuity Management (their term for Business Crisis and Continuity Management) in the context of enterprise management and overall integration supporting the requirement for intra and inter organizational coordination. The Business Continuity Institute's *Business Continuity Management: Good Practices Guidelines* (Smith 2002) and the Standards Australia, *Draft Business Continuity Handbook* (Standard Australia 2003), the products of expert consensus and extensive peer review, make the following statements supporting the necessity of a holistic program, and by extension, the requirement for high (executive) level program ownership and coordination:

Business Continuity Management: Good Practices Guidelines – “Business Continuity Management (BCM) is not just about disaster recovery, crisis management, risk management control or technology recovery. It is not just a professional specialist discipline but a business owned and driven issue that unifies a broad spectrum of business and management disciplines. In particular it provides the strategic and operational framework to review and where appropriate redesign the way an

organization provides its products and services whilst increasing its resilience to disruption, interruption or loss (Smith 2002).”

Draft Business Continuity Handbook - “In recent years our understanding of business continuity has evolved substantially from the historically narrow concepts of business continuity planning (BCP) in specialized areas such as information technology, disaster recovery and crisis management, to a more holistic approach, embracing all aspects of strategic and operational areas of an organization. A large part of current thinking on business continuity recognizes the importance of BCP and disaster recovery, but now places it firmly as an essential aspect of not only sound risk management, corporate governance and quality management (Standards Australia 2003).”

Most recently, ASIS International posted its draft *Business Continuity Guideline: A Practical Approach for Emergency Preparedness, Crisis Management, and Disaster Recovery*, on its Web Site for public review and comment. The review and comment period ended September 10, 2004 with the final guidelines scheduled for publication in early 2005. Within the purpose of the guidelines the following statements are made:

“Recent world events have challenged us to prepare to manage previously unthinkable situations that may threaten the organization’s future. The new challenge goes beyond the mere emergency response plan or disaster management activities that we previously employed. Organizations must now engage in a comprehensive process best described generically as Business Continuity. ... Today’s threats require the creation of an on-going, interactive process that serve to assure the continuation of an organization’s core activities before, during, and most importantly, after a major crisis event. Regardless of the organization – for profit, not for profit, faith-based, non-governmental—its leadership has a duty to stakeholders to plan for its survival (ASIS International 2004).”

Analogous to the emergence and evolution of the Chief Information Officer (CIO) position to integrate and manage information technology related matters across an enterprise, BCCM requires an executive level champion with the responsibility and authority to develop and maintain a comprehensive and integrated program. Building on this theme, Paul Kirvan's article *Global Assurance: Mission Critical Strategies for Business and Government* in the July/August 2003 issue of *Contingency Planning and Management Magazine* recommends the establishment of a new corporate function – operations assurance – linking Business Continuity, Security (all aspects) and Emergency Management in support of adequate corporate governance, particularly the goal of keeping a business in business. The article also promotes a new C-level position – Chief Assurance Officer, or CAO – with responsibility and accountability for continuity of operations throughout the organization (Kirvan 2003).

Other contemporary sources recommend the consolidation of responsibility for some BCCM related functions under such functional areas and executives as Risk Management and the Chief Risk Officer (Lam 2003, Machold 2002), Security and the Chief Security Officer (ASIS International 2003), and Business Continuity and the Chief Business Continuity Officer (Smith 2002). The title of the corporate functional organization and the responsible executive could be the focus of long and possibly needless debate, but is not the salient issue. ***What is important is that organizational relationships and authorities are recognized and defined and that someone is empowered to integrate the myriad functions and effort.***

Supporting this position, The Securities Industry Association, which published its *Best Practices for Business Continuity Planning* in September 2003, includes the specific recommendation that each firm have an executive and corporate group responsible for overseeing the business continuity program with no mention of who that executive should be or what her/his title should be (SIA Business Continuity Guidelines 2003). The ASIS International *Business Continuity Guideline* recommends that the creation, maintenance, testing and implementation of a comprehensive Business Continuity Plan fall under the sponsorship and responsibility of senior leadership with no title or position specified (ASIS International 2004).

The United States Business Roundtable, an association of business chief executive officers of leading corporations with the stated objective of improving public policy, explicitly recognizes the role of the Board of Directors and Management in the area of corporate governance in general, including specific business crisis and continuity management responsibilities. The Roundtable's white paper, *Principles of Corporate Governance*, charges the Board of Directors to periodically review management's plans for business resiliency and designate management level responsibility for business resiliency. Within the scope of business resiliency, various functions are specifically mentioned and include business risk assessment and management, business continuity, physical and cyber security, and emergency communications. The chief executive officer and management are assigned the responsibility of identifying and managing the risks undertaken in the course of carrying out day to day business (The Business Roundtable 2002).

The U. S. Securities and Exchange Commission, in its April 2003 *Interagency Paper on Sound Practices to Strengthen the Resilience of the U. S. Financial System*, specifies new business continuity objectives that have special importance in the post 9-11 risk environment and ties the implementation of sound practices to the roles of senior management and boards of directors. Specifically the Interagency Paper states:

“Role of Senior Management and Boards of Directors. The agencies believe, and industry participants confirm, that incorporation of the post-September 11 business continuity objectives and sound practices discussed in this paper raises numerous short- and long-term strategic issues that require continuing leadership and involvement by the most senior levels of management. These issues must be considered in light of a firm's dependencies on other market participants and the need to achieve a consistent level of resilience across firms. Boards of directors should review business continuity strategies to ensure that plans are consistent with the firm's overall business objectives, risk management strategies, and financial resources. Decisions about overall business continuity objectives should not be left to the discretion of individual business units (SEC 2003).”

From an operational business continuity perspective, John DiNuzzo, Regional Vice President for Business Continuity/Emergency Management for the Bank of America, makes a case for a comprehensive and integrated approach to business and employee protection in the post 9-11 environment. His article, *Post 9-11 Employee & Business Protection*, published in the August 2004 edition of Occupational Health and Safety applies observations and lessons learned from the 9-11 attacks to the maintenance of organizational viability and a comfort level for all employees from top executives to entry level. Mr. DiNuzzo makes the central point that business continuity, security, risk management, insurance, safety, and facilities management need to pull together, along with human resources and communications, to develop a unified approach to the challenges of the post 9-11 environment. He goes on to challenge organizations to demonstrate their support to employee and business protection by “a genuine commitment by top executives to protecting the workplace to the extent possible; and competent leadership of the safety and protection efforts (DiNuzzo 2004).” Such a commitment calls for an executive level officer to integrate and coordinate the myriad functions contributing to an enterprise wide BCCM program.

1.4 The Implications for BCCM Program Structure and Leadership Competencies

Accompanying a position of executive level enterprise wide BCCM responsibility is the attainment of certain program and function specific knowledge and abilities (competencies) that complement the general management competencies expected of any executive level manager. General management competencies including analytic ability, strategic planning effective communication, collaboration and cooperation, leadership, political astuteness, etc. have been studied and identified in numerous research efforts and authors’ works (ASIS International 2003, Hiles 2000, Saracco 1999, Takemura 2000) and are not the focus of this research.

The focus is the identification and analysis of the core program and supporting function competencies needed by an executive level leader to manage the BCCM program in an effective and efficient manner. As stated by Mr. Ellis M. Stanley, Director, Office of Emergency Management, City of Los Angeles, California, during the Designing Educational

Opportunities for the Hazards Managers of the 21st Century Workshop, October 22 to 24, 2003, Denver, Colorado: 'I'm in charge of Emergency Management for the city of Los Angeles and I need to work with 60 different agencies, from Aging to Zoos, to coordinate what we are going to do. I need to know something about each of them; the question is what do I need to know (Shaw 2003)?' Complementing the what do I need to know question (what are the competencies necessary for job performance?), is the how much do I need to know question (what is the required level of mastery for each competency?).

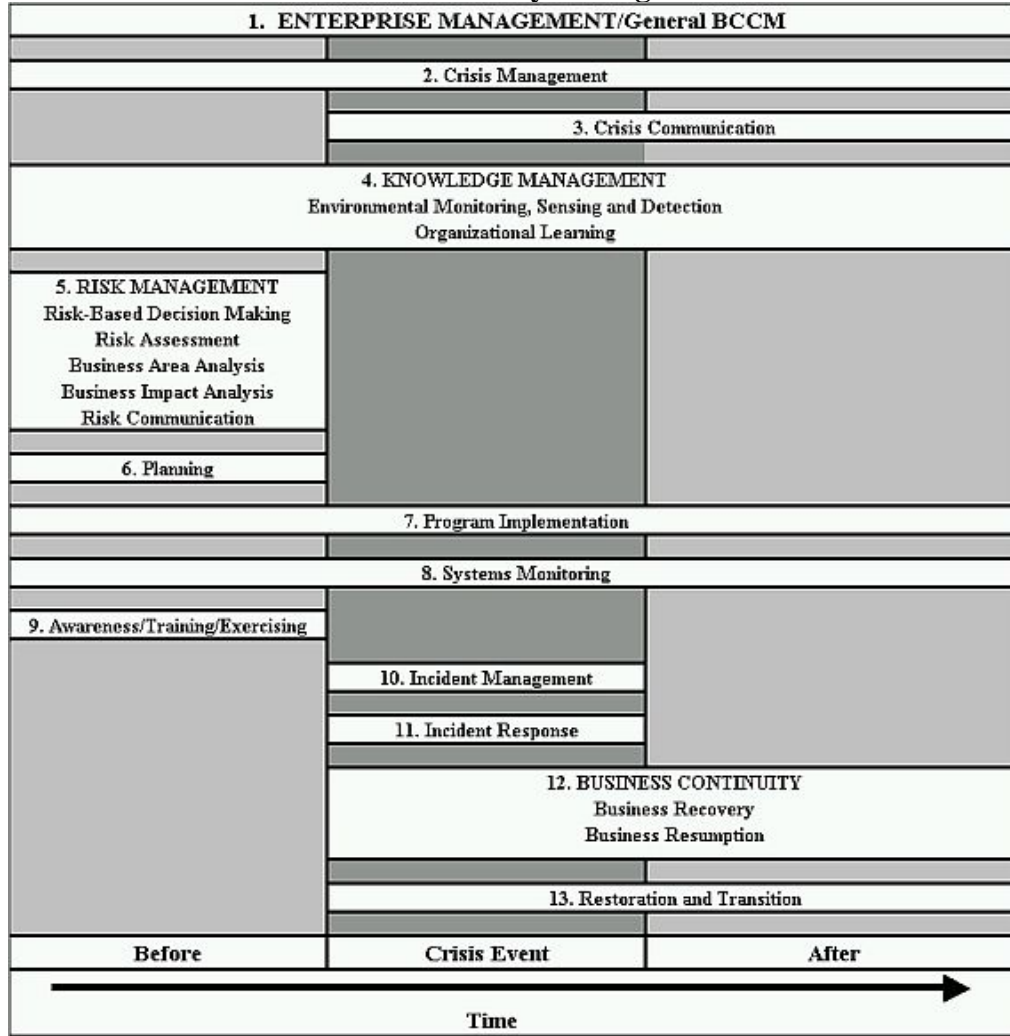
The research study answered these questions for BCCM executives by identifying candidate competencies from multiple sources as described in the research study method, and through a survey, asked BCCM practitioners to rate each competency according to an executive level manager's required level of involvement and level of mastery for each. The collected and analyzed data provides a prioritized inventory of what a BCCM executive needs to know and be able to do, and to what level, to manage a comprehensive and integrated BCCM program. Additionally, the research study asked respondents to consider the multiple functional areas within which competencies were categorized and to rate each functional area according to the BCCM executive's level of responsibility.

Past efforts to identify a core body of competencies within this field have primarily targeted the practitioner level. Disaster Recovery Institute International (U.S.) (DRII 2004) and The Business Continuity International (U.K.) (BCI 2004) list Professional Practices for Business Continuity Professionals within relatively narrow functional areas that form the basis of their certification programs. Although widely accepted at the practitioner level, these professional practices are generally written at a level of detail and responsibility that do not necessarily meet the more global requirement to manage an enterprise wide BCCM program. This research study identifies and prioritizes those BCCM program specific competencies at the level appropriate to enterprise wide leadership and management.

1.5 A Functional Framework for an Enterprise Wide BCCM Program

A logical starting point for identifying program and function specific competencies is a functional framework for an enterprise wide BCCM program. The development of such a framework facilitated the identification and logical grouping of candidate competencies for clarity of presentation and survey structure. Several candidate frameworks were identified and are described in the review of literature. The most useful to this research study was the “Crisis Management and Business Continuity” framework (Harrald 1998) which served as the unifying model for the structure of Federal Emergency Management Agency Higher Education Project University level course Business and Industry Crisis Management (Shaw 1999). For the purpose of this research study, several frameworks, primarily the framework set forth by John R. Harrald, were synthesized into a single framework under which specific functional competencies were identified and analyzed. This framework displays a hierarchy of the functions (from top to bottom) and the temporal nature of each (from left to right). It is presented as a model for a comprehensive and integrated BCCM program (Figure 1).

**Figure 1
Business Crisis and Continuity Management Framework**



CHAPTER 2

PROBLEM STATEMENT

2.1 The Problem

Organizations within all sectors (public, private and not-for-profit) continue to create and fill executive level and non-executive level positions to lead and manage their image of a sufficient BCCM program. Given the lack of a widely accepted framework for an enterprise wide BCCM program with an understanding of functional relationships and an inventory of the program specific competencies necessary for effective job performance, program success can be left to chance in spite of the noblest intentions. The development of a functional BCCM framework, inventory of competencies, and a clear and logical presentation of the framework and competency inventory, based upon sound research will assist organizations in developing and maintaining a comprehensive and integrated BCCM program supporting overall enterprise management and the selection and development of program leaders and managers at the appropriate level.

Indicative of current practices is the move toward increased security emphasis since the attacks of September 11, 2001. A 2003 Conference Board study of 331 large businesses across the United States documents an increase in spending, albeit moderate, on corporate security. Only 24% of the respondents indicated that they have centralized security responsibility under an executive level position with the remainder indicating dispersed responsibility for security related functions, processes and tasks. Most germane to the problem as stated above, the Conference Board study shows that most high-level security experts come from the law enforcement community (47%) or served in the military (33%) community (The Conference Board 2003). This finding raises the questions – Does this background carry with it the necessary competencies to manage an enterprise wide program or to integrate security into an enterprise wide BCCM program? – and -- If the security function is to be fully integrated into BCCM and not operate as a stand-alone function, what security function specific competencies does the overall BCCM coordinator require to accomplish this integration with the other BCCM function? -- These questions extend to the

other BCCM supporting functions such as Risk Management, Crisis Communication, Incident Management and others. Does a background in one function bring with it the breadth of competencies necessary to integrate enterprise wide BCCM? and, If a function is to be fully integrated into an enterprise wide BCCM program, what function specific knowledge elements and abilities does the BCCM executive require and to what level of mastery? No prior research has been identified that answers these questions.

2.2 Purpose of the Research

This research study contributes to the understanding of the inventory of competencies and required level of responsibility for the executive level individual and/or organizational unit responsible for integrating the crisis and continuity related and supporting functions into an enterprise wide program. Specifically, the research study validates a functional framework of enterprise wide Business Crisis and Continuity Management, identifies candidate executive level competencies required within each functional area and function from current literature and interviews with recognized BCCM experts. It also surveys crisis and continuity management practitioners to determine the level of involvement and level of mastery required for each competency and the required level of responsibility for the functional areas and functions within the BCCM framework. The results were analyzed and presented to BCCM experts to evaluate the functional framework, competency inventory, and levels of involvement, mastery and responsibility for appropriateness, clarity of presentation and usefulness. Based upon BCCM expert review, the research results presentation was refined to incorporate recommendations reflecting general consensus. The research data, analysis, and resulting presentation are available to assist organizations in structuring an enterprise wide business crisis and continuity management program to meet their specific requirements and provide guidelines for selection and professional development of organizational leaders with business crisis and continuity management responsibilities.

2.3 Research Scope

The primary research methodology used to gather data was a Web – Based survey using the Ultimate Survey software and The George Washington University Institute for Crisis, Disaster and Risk Management Crisis and Emergency Management Information Technology Laboratory server. Due to the wide scope of the supporting functions included in an enterprise wide BCCM program, over 175 candidate competencies were identified for preliminary review and a pilot survey. After the review and pilot, 137 competencies within 13 functional areas were included in the research survey.

Potential respondents were identified through professional contacts within the BCCM community, attendance at BCCM conferences and workshops, memberships in professional associations, BCCM electronic discussion groups and referrals. The value of the research was stressed in contacts with potential respondents and they were offered access to the survey results and research report as an incentive for their participation.

Although the survey software was very “user friendly” and provided an attractive survey format, the time required for completing the survey was generally between 30 and 45 minutes. This required time commitment limited the number of respondents who completed parts of or the entire survey. Of the 120 individuals who accessed the survey and indicated that they would like to receive the survey’s results, only 63 completed sections of the survey beyond providing demographic information. This relatively low level of response limited the statistical significance of the survey data and the ability to generalize the research results.

2.4 Justification for the Research

Is this research study important, and if so, why? In a 1996 Washington Post Article, *Sporkin Preaches Crisis Management: Judge Wants a University to Teach How to Handle the Unexpected*, U. S. District Court Judge Stanley Sporkin, a former general council for the CIA, makes the case for a major university to create an institute of crisis management to teach business people how to cope with corporate emergencies. Through several examples, Judge

Sporkin makes the point that corporate America has “failed Crisis Management 101 (Glasser 1996).” He has chosen the term crisis management to describe the corporate failures described in the article, but clearly his examples and argument extend to the more global concerns of BCCM.

Have universities embraced Judge Sporkin’s challenge to adequately prepare corporate leaders to prevent, mitigate, prepare for, respond to, resume, recover, restore and transition from a disruptive (crisis) event in a manner consistent with strategic objectives? The Masters of Business Administration (MBA) Program Information Web Site, <http://www.mba.info.com/> provides an alphabetical listing of 526 universities/colleges offering MBA programs in the United States (as of June 2003). Since the listings are not searchable for specific course titles, a random sample of 123 universities/colleges was accessed and course titles were scanned for the key words: business continuity, crisis management, emergency management, and risk management. Of the chosen sample, 110 of the universities/colleges had no courses containing any of the key words. Of the remaining 13, nine had individual courses in financial, environmental, political or general risk management, one had a course in risk perception and three had courses more widely addressing overall business crisis and/or continuity management. Assuming that MBA programs are a recognized source of academic preparation for corporate leaders and considering the results of the Masters of Business Administration (MBA) Program Information Web Site search, the answer to the above question is that universities have not widely embraced Judge Sporkin’s challenge.

A similar search of the Federal Emergency Management Agency Emergency Management Institute Web Site (as of October 2003), <http://training.fema.gov/EMIWeb/cgi-shl/college/User.cfm>, found a listing of 29 colleges, universities and institutions offering Masters level programs, and six offering Doctoral level programs in Emergency Management (the six Doctoral programs are all offered by universities offering Masters programs). A review of the overall program descriptions and, where available, individual course descriptions, identified three courses focused on overall business crisis management and/or business continuity and one 18 semester-hour graduate certificate in Crisis Management for emergency managers and business continuity professionals (University of Richmond).

This paucity of graduate level education may reflect the overall lack of appreciation of the strategic importance BCCM and provides very limited opportunity for educational preparation for a very demanding position. Equally as important, the absence of educational programs and courses supporting BCCM may be indicative of the lack of clear definition of position responsibilities, overall program integration and a widely accepted inventory of the competencies required of executive level BCCM leadership. As Ian Mitroff and Thierry Pauchant conclude from their extensive research in the area of business crisis management (their umbrella term for an integrated BCCM program), most businesses do not have an adequate crisis management program, supported by corporate culture, individual and organizational level expertise, infrastructure and plans and procedures to fully understand, prepare for, and manage the crises they may face (Mitroff and Pauchant 1992). Mitroff (with Gus Anagnos) has since updated his conclusions in the 2001 book, Managing Crises Before they Happen. Mitroff states that “The vast majority of organizations and institutions have not been designed to anticipate crises or to manage them effectively once they have occurred. Neither the mechanics nor the basic skills are in place for effective CM. (Mitroff 2001)” Mitroff’s conclusions are further supported through the results of the 2001 Business Continuity Readiness Survey, jointly conducted by Gartner, Inc. Executive Programs and the Society for Information Management that found “Less than 25 percent of Global 2000 enterprises have invested in comprehensive business continuity planning. (Gartner 2002)”

How then should businesses select personnel and develop position descriptions for their BCCM program coordinators and where do these BCCM professionals turn to determine a realistic and meaningful plan for their personal and professional development? Past research has indicated that the selection and development processes vary widely. A 1997 survey of Fortune 1000 companies conducted by The George Washington University Institute for Crisis, Disaster and Risk Management and the Corporate Response Group asked the question, “Who is responsible for Crisis Management (the umbrella term used to describe BCCM)?” Not surprisingly, the responses included seventeen different functional areas including security, environmental health and safety, public affairs, corporate communications, facility

emergency management, business continuity, risk management, etc. (GWU/CRG Survey 1997).

More recently, a July 2004 Internet-based survey -- “What’s under the Business Continuity Umbrella?”-- conducted by the United Kingdom based Continuity Central

(<http://www.continuitycentral.com>) asked the question “What areas of activity were the responsibility of the business continuity function/department in their organization?”

Respondents could check any number of the forty one different activities listed in the survey and could also add activities to the list. There were 146 respondents to the survey with 41.3% from the United States and 30.7% from the United Kingdom. Of the forty three activities listed in the survey report (41 listed activities plus 2 “other” activities added by more than 3% of the respondents), only nine of the activities were identified as being under the business continuity umbrella by over two thirds of the respondents. All of the remaining thirty two activities from the original survey list had a percentage of inclusion of 12% or higher. (Continuity Central 2004).

Based upon these two referenced surveys, there is no attempt to conclude that the disparity of responses is by itself a negative thing for any of the individual businesses, but the disparity does indicate the lack of agreement of the overall scope of the responsibility and the required level of program integration.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

The literature review is structured on the following three assumptions, supporting the research study stated problem, purpose, scope and justification as presented in Chapter 2.

1. Business Crisis and Continuity Management (BCCM) is evolving as a strategic program for organizations supporting the organizational imperatives of survival and economic viability.
2. A comprehensive BCCM program supporting overall organizational enterprise management includes many interdependent, yet organizationally dispersed functions that require integration for the sake of effectiveness and efficiency.
3. The individual or internal organizational entity responsible for BCCM program leadership and management requires certain BCCM specific and supporting competencies (knowledge, skills, and abilities) to meet her/his responsibilities.

Accordingly, the literature review for the research study focuses on:

- The case for integrated BCCM to support organizational enterprise wide management
- Frameworks of BCCM
- Current sources of BCCM program competencies

Noticeably missing from the literature review are academic and peer reviewed papers and articles from leading academic institutions in the United States. Referring back to Judge Sporkin's assessment (Section 2.4) that "corporate America has failed crisis management 101," the absence of such written materials addressing comprehensive Business Crisis and Continuity Management, further supports Judge Sporkin's position.

As recently as September 21, 2004, the Web Sites and connecting links for some of the leading business schools in the United States were accessed and searched for relevant articles.

For example, the Web Sites of the top ten business schools (1. Harvard Business School; 2. Stanford University Business School; 3. University of Pennsylvania (Wharton); 4. Massachusetts Institute of Technology (Sloan); 5. Northwestern University (Kellogg); 6. Columbia University Business School; 7. University of Chicago Business School; 8. California – Berkeley (Haas); 9. Dartmouth College (Tuck); and 10. University of Michigan-Ann Arbor Business School) as rated by U.S. News and World Report (USNews.com 2005) were accessed and searched via available site search engines for key terms such as “business continuity,” “crisis management” and “risk management.” This search was extended to some of the better known university business periodicals including the Harvard Business Review, Harvard Business School Cases, the Sloan Management Review, Stanford Business, and to the Internet available research documents for these universities with largely negative results. Several papers and books addressed the functional areas of crisis management and risk management, but no one article addressed overall Business Crisis and Continuity Management from a holistic and integrated manner. The Harvard, Stanford, MIT, Columbia, University of Chicago, and Dartmouth Web Sites failed to provide any resources identified by the term “business continuity,” while the remaining four, produced very minor references to business continuity procedures.

Accordingly, the literature search for this research is largely limited to government, not-for-profit organization, and association authored documents that promote business continuity management and crisis management in the context of overall private sector preparedness, response and recovery, certification standards and programs, and/or business continuity trade journals where authors often promote and make a case for a product or for a profession that may support their livelihood. This statement is not intended to be an indictment of the articles’ validity; however, it is noted that many of the trade journal articles base their arguments on largely anecdotal observations and sometimes fail to document/cite sources of data and other information presented as facts.

3.2 The Case for Integrated BCCM to Support Organizational Wide Enterprise Management

Since the early 1990s, business continuity management has evolved from a technology centric disaster recovery focus to a much wider holistic business focus (Wheatman, Scott and Witty 2001). John R. Harrald's 1998 paper, *A Strategic Framework for Corporate Crisis Management*, makes the case that Crisis Management is a strategic function for all organizations and links numerous supporting functions such as risk management, safety management, environmental management, security, contingency planning, business recovery and emergency response. He proposes a model (described in section 3.3) of Crisis Management and Organizational Continuity "linking the functional elements involved in a corporate crisis management system that will assist in the integration of all crisis management and organizational continuity related functions." His paper goes on to explain how the many functions have been accomplished in a non-integrated manner and concludes the need to "Integrate crisis management functions wherever possible. Where formal integration is not feasible ensure policy and procedural consistency and facilitate the quick and accurate exchange of information (Harrald 1998)." Such integration and coordination can be facilitated through centralized responsibility and authority under the direction of an executive level leader.

The need for BCCM functional integration is further emphasized in the Business Continuity Institute (BCI), Business Continuity Management (BCM): Good Practices Guidelines which state, "Business Continuity Management is a holistic management process that identifies potential impacts that threaten an organization and provides a framework for building resilience and the capacity for an effective response that safeguards the interests of its key stakeholders, reputation, brand and value creating activities." The BCI BCM Guidelines go on to add, "Business Continuity Management (BCM) is not just about disaster recovery, crisis management, risk management control or technology recovery. It is not just a professional specialist discipline but a business owned and driven issue that unifies a broad spectrum of business and management disciplines (Smith 2002)."

Building on this theme of the evolution of BCM, the Standards Australia Business Continuity Handbook (Draft) notes that, “In recent years our understanding of business continuity has evolved substantially from the historically narrow concepts of business continuity planning (BCP) in specialized areas such as information technology, disaster recovery and crisis management, to a more holistic approach embracing all aspects of strategic and operational areas of an organisation. A large part of thinking on business continuity recognizes the importance of BCP and disaster recovery, but now places it firmly as an essential aspect of not only sound risk management, corporate governance and quality management.” The Standards Australia description of BCM differs from that of the BCI and the BCCM framework included in this study (Figure 1), in that it encourages the inclusion of BCM as an integral part of overall risk management while recognizing that the BCM process may be carried out separate from risk management at the cost of degraded efficiency and flexibility afforded by an integrated approach. Standards Australia does however recognize that “BCM is a necessary inclusion in the business planning and management cycles throughout an organization.” and that BCM “is a powerful force for business sustainability,” and “provides for business success.” (Standards Australia 2003).

In the United States, the Disaster Recovery Institute International (DRII), the counterpart of the United Kingdom’s BCI, is a not for profit organization founded in 1988. DRII supports the stated goals of:

- Promote a base of common knowledge for the business continuity planning/disaster industry through education, assistance, and publication of the standard resource base;
- Certify qualified individuals in the discipline; and
- Promote the credibility and professionalism of certified individuals.

Within its charter, DRII recognizes the term “Business Continuity Management to define holistic management processes that identify potential impacts that threaten an organisation and provide a framework for building resilience with the capability for an effective response that safeguards the interests of its key stakeholders, reputation and value creating activities. The primary objective of Business Continuity Management is to allow business operations to continue under adverse conditions, by the introduction of appropriate resilience strategies,

recovery objectives, business continuity and crisis management plans in collaboration with, or as a key component of, an integrated risk management initiative (DRII 2004).”

The Certified Recovery Planner Professional Certification Program, based at the University of Richmond, Virginia has identified 21 business continuity competencies that form the foundation of its certification program. The first competency expresses the overall philosophy of the program and emphasizes the role of BCM in an enterprise wide context – “Advocate business continuity as a core strategic element of an organization’s business. In this context, understand organizational mission, values, vision and strategy.” The second competency recognizes the permanence of BCM in an organization – “Establish, organize, budget for, and manage the business continuity function as a permanent unit. (Certified Recovery Planner 2003).”

The New York City and Washington, DC based Securities Industry Association (SIA), in response to the events of September 11, 2001, developed its Best Practices for Business Continuity Planning for securities firms. The guidelines recommend that each firm establish Business Continuity (BC) program that ensures:

- “The development, implementation, testing and maintenance of business continuity and emergency response plans that enable the business to protect its assets and meet its business recovery objectives.
- Prevention and mitigation activities that reduce the likelihood and impact of a disruption.
- An ongoing employee awareness program (SIA 2002).”

The attainment of these objectives touches multiple organizational functions and responsibilities that require coordination and singleness of purpose for maximum effectiveness and efficiency. The SIA emphasizes the importance of coordination through its recommendation that “Each firm should have an Executive and corporate group responsible for overseeing the business continuity program (SIA 2002).”

The U. S. Securities and Exchange Commission in its April 2003 *Interagency Paper on Sound Practices to Strengthen the Resilience of the U. S. Financial System* also emphasizes the importance of business continuity integration and executive level leadership in the post 9-11 risk environment through its charge to senior management and boards of directors: “Boards of Directors should review business continuity strategies to ensure that plans are consistent with the firm's overall business objectives, risk management strategies, and financial resources. Decisions about overall business continuity objectives should not be left to the discretion of individual business units (SEC 2003).”

The United States Business Roundtable, an association of business chief executive officers of leading corporations with the stated objective of improving public policy, explicitly recognizes the role of the Board of Directors and Management in the area of corporate governance in general, including specific business crisis and continuity management responsibilities. The Roundtable’s white paper *Principles of Corporate Governance* charges the Board of Directors to periodically review management’s plans for business resiliency and designate management level responsibility for business resiliency. Within the scope of business resiliency various functions are specifically mentioned and include business risk assessment and management, business continuity, physical and cyber security, and emergency communications. The chief executive officer and management are assigned the responsibility of identifying and managing the risks undertaken in the course of carrying out day to day business (The Business Roundtable 2002).

Building on the necessity for sound corporate governance, the ASIS International *Business Continuity Guideline* bases its Business Continuity planning model on the assignment of organizational accountability. The planning process is prefaced with the statement that “It is essential that senior leadership of the organization sponsors and takes responsibility for creating, maintaining, testing, and implementing a comprehensive Business Continuity Plan (BCP) (ASIS International 2004).”

In the post 9-11 risk environment, The United States government has also recognized the need for enhanced business level focus on emergency preparedness for disruptive events. The

National Strategy for the Physical Protection of Critical Infrastructures and Key Assets recognizes that the “private sector generally remains the first line of defense for its own facilities,” and encourages private sector owners and operators to “reassess and adjust their planning, assurance and investment programs to better accommodate the increased risk presented by deliberate acts of violence (National Strategy 2003).” Clearly, these BCCM supporting functional areas require integration and alignment with the overall business strategy if the National Strategy is to be supported.

The 2004 Deloitte Research Study, *Prospering in the Secure Economy*, further emphasizes the role and responsibility of the private sector in maintaining a secure economy. The report makes the case that “National security is no longer the province of governments alone. Whether they like it or not, private companies man the front lines in the battle against global terrorism...The secure economy is characterized by a fundamental shift in the way security is viewed by companies and governments: while once mostly signifying the physical protection of assets and people, the concept of security has taken on a broader meaning. It now stands for sustainability, and the ability to make rapid adjustments to the business, to enforce compliance, and to absorb unforeseen costs – all essential components of managing a business. (Eggers 2004)” In addition to being essential components of business management, sustainability, the ability to adjust rapidly, compliance and dealing with unforeseen costs are all components of a comprehensive BCCM program.

Additional United States Government guidance to businesses in the form of the most recent versions of the *National Response Plan* (Final draft June 30, 2004) and the *National Incident Management System* (March 1, 2004) include the private sector in all phases of crisis and emergency awareness, prevention, preparedness, response and recovery planning and operations. The *National Response Plan* explicitly charges the private sector to enhance overall readiness (NRP 2004).

Supporting this goal of improved private sector readiness and intra and inter sector coordination, the 9/11 Commission chartered the American National Standards Institute (ANSI) to develop a consensus on a national standard for preparedness for the private sector

(9/11 Commission 2004). Based upon its collaboration with the National Fire Protection Association (NFPA) and the research of the 9/11 Commission, the “American National Standards Institute (ANSI) recommended to the 9-11 Commission that the National Fire Protection Association Standard, NFPA 1600 *Standard on Disaster/Emergency Management and Business Continuity Programs*, be recognized as the national preparedness standard (ISHN 2004).” The 9-11 Commission report contains the following recommendation concerning private sector emergency preparedness and business continuity:

“We endorse the American National Standards Institute’s recommended standard for private preparedness. We were encouraged by Secretary Tom Ridge’s praise of the standard, and urge the Department of Homeland Security to promote its adoption. We also encourage the insurance and credit-rating industries to look closely at a company’s compliance with the ANSI standard in assessing its insurability and creditworthiness. We believe that compliance with the standard should define the standard of care owed by a company to its employees and the public for legal purposes. Private-sector preparedness is not a luxury; it is a cost of doing business in the post-9/11 world. It is ignored at a tremendous potential cost in lives, money, and national security (9/11 Commission 2004).”

On September 23, 2004, the Secretary of the Department of Homeland Security, Tom Ridge, participated in a roll out ceremony for the Ready.gov, Ready Business, Internet site and program at the National Chamber of Commerce, Washington, DC. The headline of the Ready Business Internet site is “Every business should have AN EMERGENCY PLAN (Ready.gov 2004).” The program brochure points out that “American businesses form the backbone of the nation’s economy (Homeland Security 2004),” and refers businesses to the ANSI/NFPA 1600 standard for improving preparedness.

The particulars of the ANSI/NFPA standard are discussed in the following section, but from a more strategic perspective, any national standard should require the clear identification and integration of functions and executive level management competencies and responsibilities within each business.

The trade journals of Business Continuity also generally emphasize the need for business continuity program integration and centralized management at the senior levels of an organization. Neil Kaufman and Jonathan King's article, *The Case for a Business Continuity Officer*, states: "Creation of an executive position, such as a chief continuity officer (CCO), is needed to elevate the importance and strategic nature of BC and regain control of the process. A world-class BC program must integrate recovery of business process functionality, technology DR, site level emergency response activities and human capital crisis plans. These plans must be integrated not only with each other, but also aligned to the strategic and economic objectives of the corporation. BC management then becomes an important strategic process that, when properly implemented, provides a sustainable competitive advantage to the firm (Kaufman, King 2003)."

Paul Kirvan in his article: *Global Assurance: Mission-Critical Strategies for Business and Government* makes the case for melding business continuity, security and emergency management functions under the functional title of Operations Assurance and the direction of a C-level officer, the Chief Assurance Officer (CAO). He goes on to recommend that that inter function reporting relationships and that functional linkages with other C-level officers be fully defined (Kirvan 2003).

Despite all the cases made for integration and executive level leadership, there is no widely accepted functional framework for BCCM upon which to define responsibilities, relationships and authorities and a comprehensive list of the prioritized competencies required of an executive level leader to manage an enterprise wide BCCM program. The next two sections of the literature review address these deficiencies.

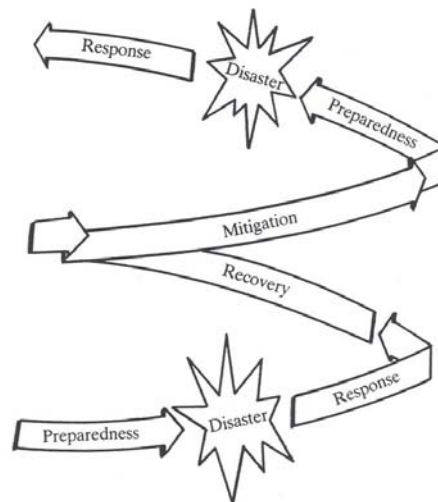
3.3 Frameworks of BCCM

Prior to the publication of John R. Harrald's 1998 paper, *A Strategic Framework for Corporate Crisis Management*, no overall graphic framework for a functionally integrated business crisis and continuity management has been identified in the literature review. Some

of the more prominent books such as Steven Fink’s Crisis Management Planning for the Inevitable (1986), and Ian Mitroff and Thiery Pauchant’s Transforming the Crisis-Prone Organization (1992), and the business continuity focused professional organizations, Disaster Recovery Institute International and the Business Continuity Institute address issues of functional integration and leadership in their text and on their Web-Sites, but provide no graphical framework for such integration.

Within the public sector, the Federal Emergency Management Agency’s graphical framework for Comprehensive Emergency Management (Figure 2) has served as a very valuable reference for emergency management at all levels of government (Drabek and Hoetmer 1991). Such a framework could be equally valuable for BCCM and is viewed as a logical starting point for visualizing the integration of enterprise wide BCCM supporting functions and identifying and grouping program and function specific competencies.

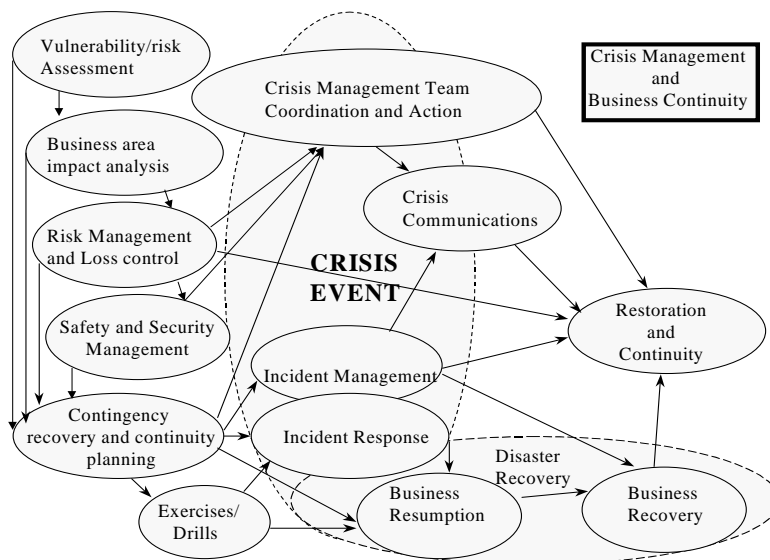
Figure 2
Comprehensive Emergency Management Framework



John R. Harrald’s 1998 framework of Crisis Management and Business Continuity is shown in Figure 3. It served as the unifying model for the structure of Federal Emergency Management Agency Higher Education Project University-level course “Business and Industry Crisis Management” (Shaw 1999), and over the past five years has been modified slightly as it has been incorporated into teaching the graduate level course, Crisis Management, Disaster Recovery and Organizational Continuity at The George Washington

University. The 1998 framework, with some additional modifications based upon other identified models/frameworks, is the primary source of reference for the final Business Crisis and Continuity Management framework shown in Figure 1.

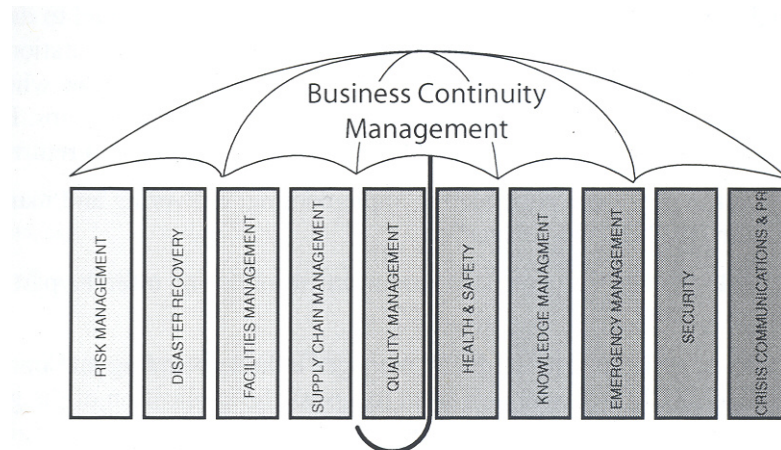
Figure 3
Crisis Management and Business Continuity Framework



Several additional post 1998 frameworks for integrated business continuity were located during the literature review. The Business Continuity Management: Best Practices Guidelines document (2002) as adapted in Publicly Available Specification (PAS 56) Guide to Business Continuity Management (2003) portrays Business Continuity Management as an umbrella activity (Figure 4) “that unifies a broad spectrum of business and management disciplines in both the private and public sectors, including crisis management, risk management and technology recovery, and should not be limited to information technology disaster recovery (PAS 56 2003).” The framework, as presented, does emphasize the overall need to unify myriad functions supporting overall BCM, but does not express the temporal nature of these functions or any hierarchy and excludes certain functions such as Knowledge Management, Planning, Systems Monitoring and Restoration and Transition. Both the Business Continuity Management: Best Practices Guidelines and PAS 56 Guide to Business Continuity Management describe and incorporate the missing functions within the function descriptions;

however, inclusion within the visual framework serves to emphasize their importance to an enterprise wide program.

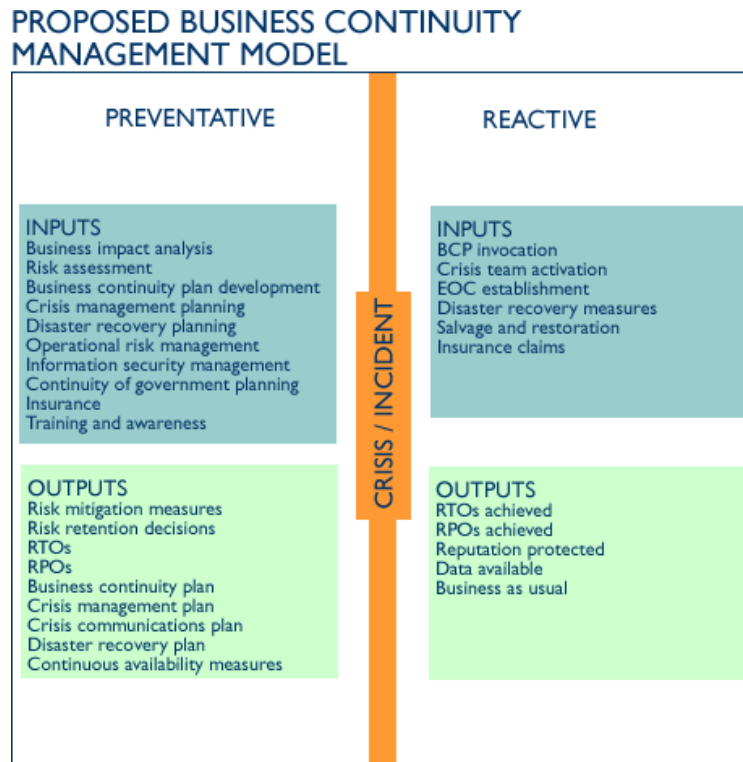
Figure 4
Business Continuity Management Umbrella Model



In June 2003, Continuity Central, a United Kingdom based resource that provides international business continuity information proposed a Business Continuity Management Model (Figure 5) on its Web Site with the explanation that “There seems to be no widely accepted model which can be used to present the concept of business continuity management in a way which is simple enough to allow rapid understanding in people new to the industry, yet comprehensive enough to be useful in other areas of the BCM process, such as communicating with the company board and in awareness and training programmes (Continuity Central 2003).” Industry review and input was solicited via the Web Site to gather “feedback and additional ideas” to improve the model. As of October 2004, the proposed model and any revisions were not available on the Continuity Central Web Site. An e-mail response from Mr. David Honour, Editor Continuity Central, on May 19, 2004 stated that he had received numerous comments and recommended amendments and would attempt to update the model as soon as possible. This model, even in the “straw man” stage goes beyond the Business Continuity Management: Best Practices Guidelines and Publicly Available Specification (PAS 56) Guide to Business Continuity Management umbrella model to include many additional functions and their temporal nature. Several of the functions

identified in this model were incorporated in the Business Crisis and Continuity Framework and competency identification process employed in this research study.

Figure 5
Proposed Continuity Central Business Continuity Model



The Disaster Recovery Institute International (DRII) and The Business Continuity Institute (BCI) have jointly developed and have widely disseminated their set of subject areas of a common body of knowledge, *Professional Practices for the Business Continuity Planner*, “that characterize the business continuity profession (DRII 2004).” Although, not a graphical framework for an enterprise wide program, the subject areas displayed in Figure 6 and their supporting skills, tasks and activities do serve as a model for describing BCCM as an ongoing process.

Figure 6
DRII and BCI Professional Practices for
Business Continuity Professionals Subject Areas

1. Project Initiation and Management
2. Risk Evaluation and Control
3. Business Impact Analysis
4. Developing Business Continuity Management Strategies
5. Emergency Response and Operations
6. Developing and Implementing Business Continuity Plans
7. Awareness and Training Programs
8. Exercising and Maintaining Business Continuity Plans
9. Crisis Communications
10. Coordination with External Agencies

The general description and the Professional's Role in each subject area are aimed at a relatively high level and were a valuable source for identifying potential executive level competencies for the proposed research study. As an example, the description and Professional's Role for the Risk Evaluation and Control subject area is included in Figure 7.

Figure 7
Risk Evaluation and Control

Determine the events and external surroundings that can adversely affect the organization and its facilities with disruption as well as disaster, the damage such events can cause, and the controls needed to prevent or minimize the effects of potential loss. Provide cost-benefit analysis to justify investment in controls to mitigate risks.

A. The Professional's Role is to:

1. Identify Potential Risks to the Organization
 - a. Probability
 - b. Consequences/Impact
2. Understand the Function of Risk Reduction/Mitigation Within the Organization
3. Identify Outside Expertise Required
4. Identify Exposures
5. Identify Risk Reduction/Mitigation Alternatives
6. Confirm with Management to Determine Acceptable Risk Levels
7. Document and Present Findings

Supporting the Professional's Role definition, the identification of more specific areas in which "The Professional Should Demonstrate a Working Knowledge," are generally aimed at the practitioner level that may not be valuable to a BCCM executive in determining what competencies she/he should master and to what level. For example, under Risk Evaluation and Control a working knowledge of specific detailed topics is recommended as listed in Figure 8.

Figure 8
Understand Loss Potentials

- a. Identify exposures from both internal and external sources. These should include, but not be limited to, the following:
 - (1) Natural, man-made, technological, or political disasters
 - (2) Accidental versus intentional
 - (3) Internal versus external
 - (4) Controllable risks versus those beyond the organization's control
 - (5) Events with prior warnings versus those with no prior warnings
- b. Determine the probability of events
 - (1) Information sources
 - (2) Credibility
- c. Create methods of information gathering
- d. Develop a suitable method to evaluate probability versus severity
- e. Establish ongoing support of evaluation process
- f. Identify relevant regulatory and/or legislative issues
- g. Establish cost benefit analysis to be associated with the identified loss potential.

In October Fall 2003, Virtual Corporation of Flanders, NJ released its latest update of the Complete Public Domain Business Continuity ModelSM (BCCMSM) which represented an over six year effort to develop an objective "measuring stick of an organization's business continuity competency and capability (BCCMSM 2003)." Enlisting the input and peer review of a team of private, public, not-for-profit and academic business continuity professionals, the

project leader, Mr. Scott Ream, published a graphic model targeted at organizational level competencies rather than individual management level competencies. Performance goals for the BCCMSM were established as:

1. “Provide a diagnostic tool for objective evaluation of business continuity effectiveness.
2. Generate consistent data from which meaningful benchmark analyses could be drawn.
3. Answer the following key questions for senior management:
 - a. Where are we now?
 - b. What is the target we are shooting for?
 - c. What evolutionary path do we follow to get there (BCCMSM 2003)?”

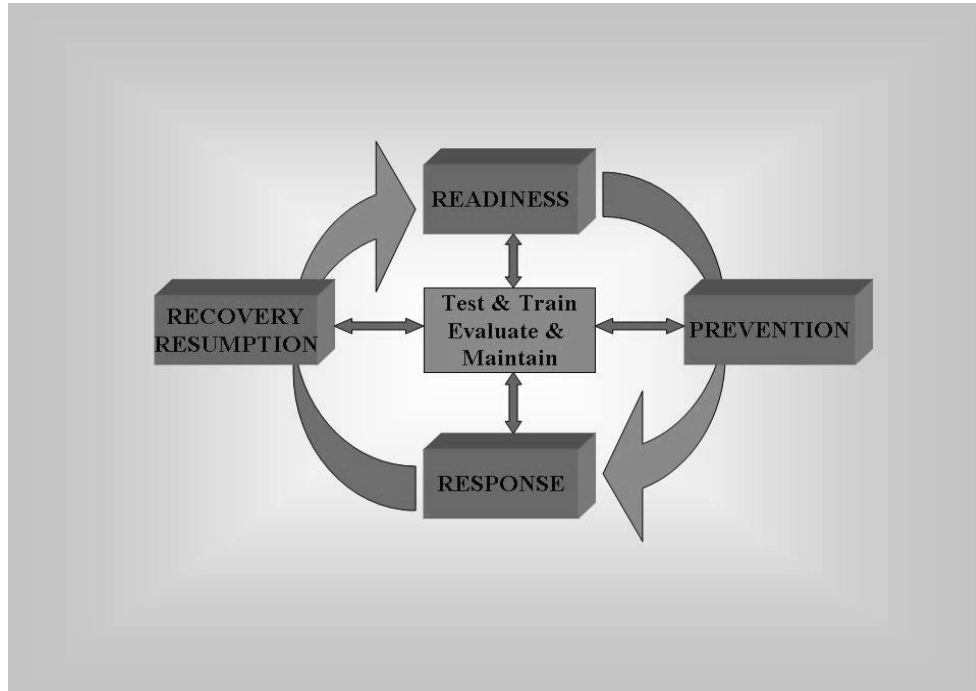
The BCCMSM Business Continuity Maturity Levels and the supporting corporate competencies are as shown in Figure 9. Although the model does not focus on individuals’ BCCM competencies, the organizational level competencies are a source of guidance for considering what a business crisis and continuity manager needs to know and do to integrate BCCM across the enterprise.

**Figure 9
Business Continuity Maturity Levels and Corporate Competencies**

BC Maturity Levels/ Corporate Competencies	Level 1 Self - Governed	Level 2 Supported Self – Governed	Level 3 Centrally Governed	Level 4 Enterprise Awakening	Level 5 Planned Growth	Level 6 Synergistic
Leadership						
Employee Awareness						
BC Program Structure						
Program Pervasiveness						
Metrics						
Resource Commitment						
External Coordination						
BC Program Content						

ASIS International, located in Alexandria, VA, through its Commission on Guidelines is developing the *Business Continuity Guideline: A Practical Approach for Emergency Preparedness, Crisis Management, and Disaster Recovery*. The draft guideline document was placed on the ASIS Web Site on July 12, 2004 for a public review and comment period that concluded on September 10, 2004. Contained within the draft document is the ASIS framework for Business Continuity as shown in Figure 10.

Figure 10
ASIS International Business Continuity Framework



The ASIS framework is similar to the Comprehensive Emergency Management Framework shown in Figure 2 with Preparedness and Mitigation included in Readiness and Prevention and Recovery expanded to include the Resumption of critical functions. The ASIS framework also emphasizes the central importance of Testing, Training, Evaluation and Maintenance which are included throughout the Comprehensive Emergency Management framework. The ASIS framework was not available until after the development of the BCCM framework (Figure 1) and the fielding of the research study survey.

The last model to be described is the National Fire Protection Association Standard, NFPA 1600 *Standard on Disaster/Emergency Management and Business Continuity Programs*, which the American National Standards Institute (ANSI) and 9/11 Commission recommended as a national standard (ISHN 2004) (9/11 Commission 2004). Originally published in 1995, the NFPA 1600, 1995 Edition, focused on *Recommended Practice for Disaster Management*. The 2000 Edition, since updated in the 2004 Edition, expands the focus to a “total program

approach for disaster/emergency management and business continuity programs (NFPA 2004).” Similar to the DRII and BCI model, NFPA 1600 does not include a graphical framework of overall BCCM, but lists a set of program elements listed in Figure 11, that contain general descriptions and are referenced to the DRII and BCII Professional Practices. Like the Professional Practices, the program elements mix high level descriptions and specific tasks and are of limited value in identifying the core competencies for an executive level business crisis and continuity manager. They are of use in identifying some competencies at the appropriate level, but must be supplemented by additional sources.

Figure 11
NFPA 1600 2004 Edition Disaster/Emergency Management
and Business Continuity Programs Elements

- | |
|--|
| <ol style="list-style-type: none">1. General2. Law and Authorities3. Hazard Identification, Risk Assessment and Impact Analysis4. Hazard Mitigation5. Resource Management6. Mutual Aid7. Planning8. Direction, Control and Coordination9. Communications and Warning10. Operations and Procedures11. Logistics and Facilities12. Training13. Exercises, Evaluations, and Corrective Actions14. Crisis Communication and Public Information15. Finance and Administration |
|--|

3.4 Current Sources of BCCM Program Competencies

Before addressing the available sources of BCCM Program competencies and the process of identifying and crafting executive level competencies, the term competency needs to be defined and placed in the context of this research study. The definition chosen and included in the glossary is:

Competency - A level of capability comprised of the knowledge, skills, abilities and/or attitudes required for effective performance within the context of a person's job responsibilities and in relationship to the organization and its goals (adapted from Dartmouth Research 2003). *For the purpose of this research study, effective is defined as the ability to meet an organization's strategic and tactical objectives.*

This specific definition was chosen because it focused on performance based capabilities that are demonstrable on the job and are related to the organization's strategies, goals and objectives. Accordingly, the "competencies" comprising the research study survey were crafted to include action verbs (e.g. develop, define, determine, etc.) and substance that are directly related to job responsibilities and are demonstrable on the job, and are supported by knowledge, skills, abilities and attitudes, but not necessarily restricted to any one of these components. Strictly speaking, the "competencies" included in the research survey are actually written as functional area or function supporting activities. This wording is necessary for the intended purpose of the research study survey in order to rate individual competencies for the required levels of involvement and mastery and the resulting competency prioritization.

Competencies can be categorized or grouped in many ways, however, for this research study the American Society of Training and Development (ASTD) layered competency model was selected as a means of addressing BCCM specific competencies. The foundation of this model is appropriately named "Foundational competencies" and includes those competencies that are "desirable regardless of an individual's area of expertise (specialization) or role (Davis 2004)." These foundational competencies are primarily general management competencies (e.g. building trust, communicating effectively, thinking strategically, etc.) that could

reasonably be expected of any executive level manager and have been studied and identified in numerous research efforts and authors' works. As discussed in Section 1.4, these foundational competencies were not included in this research study.

The next two layers of the ASTD model, "Areas of Expertise" and "Roles" are applicable to this research. "Areas of Expertise are the specific technical and professional skills and knowledge areas required for success in the workplace (Davis 2004)." These BCCM "Areas of Expertise" specific competencies are the major content of the research survey.

"Roles are broader areas of responsibility within workplace performance that require a select group of competencies and Areas of Expertise to perform effectively (Davis 2004)." Several of the research survey competencies stand at a level above an "Area of Expertise" and are primarily located in the Enterprise Management/General BCCM functional area. For example, the competency -- Define a BCCM program structure that supports overall corporate, business unit, functional and program objectives -- is inclusive of many specific "Areas of Expertise" included in the survey. Additionally, the survey questions on Required Level of Responsibility for functional areas are related to the idea of identifiable workplace roles.

The identification, grouping and prioritization of executive level BCCM competencies as accomplished in this research study are not an end to themselves. The real value will be realized to the extent that they support an organization's competency management processes. Competency models (the description of key capabilities for performing a specific job) and a competency management process serve as criteria for the following:

- Training curriculum design
- Recruitment, selection and assessment
- Coaching, counseling and mentoring
- Career development, and succession planning (McLagan 1980)

The identification, grouping and prioritization of BCCM specific competencies are the necessary foundation for an organization's competency model and management process.

The logical starting point for identifying the executive level competencies to be included in this research study was to investigate current sources of business continuity and crisis management competencies. As described in the previous section, DRII and BCI, the two predominant certifying organizations for Business Continuity Professionals in the United States and Business Continuity Managers in United Kingdom respectively have jointly agreed on a list of ten subject areas for Business Continuity Professionals (DRII) and Business Continuity Managers (BCI). Each subject area contains a list of the Professional's Role which includes high level knowledge elements, skills and abilities which were useful for identifying the candidate list of executive level competencies to be included in the research survey. The extensive lists of tasks under the title "The professional should demonstrate a working knowledge in the following areas: (DRII 2004 and BCI 2004)," by the nature of their action verbs (e.g., create, identify, evaluate, establish, etc.) go beyond a "working knowledge" to specific skills and abilities. These tasks generally target the practitioner level and were of much less use for identifying appropriate executive level competencies.

The University of Richmond's Professional Development Model and Certified Recovery Planner Certification Program is based on a set of 21 competencies for business continuity professionals and is structured to encourage career progression (Green 2002). The listed competencies are written at the highest level (e.g., 4. Assess natural, technological, and security hazards and identify threats to the organization. and 5. Conduct a Business Impact Analysis) and generally address functions rather than provide the level of detail for competencies as identified in this research study.

The BCI *Business Continuity Management: Good Practice Guidelines* defines a Business Continuity Management Life Cycle consisting of six stages displayed in Figure 12 (Smith 2002).

Figure 12
Business Continuity Management Life Cycle

1. Understanding Your Business
2. Business Continuity Strategies
3. Develop and Implement a BCM Response
4. Building and embedding a BCM Culture
5. Exercising, Maintenance and Audit
6. BCM Programme Management

The *Good Practice Guidelines* go on to identify one to several major components of each stage (e.g. within the Understanding Your Business stage the major components are identified as Business Impact Analysis and Risk Assessment and Control). Each major component is further described within nine areas listed in Figure 13 (Smith 2002).

Figure 13
Areas within Major Components

1. Purpose
2. Outcomes
3. Components
4. Methodologies and Techniques
5. Process
6. Frequency and Triggers
7. Participants
8. Deliverables
9. Good Practice Evaluation Criteria

The *Good Practice Guidelines* were the most comprehensive and useful source for identifying executive level competencies for the research study survey with the outcomes, components, and methodologies and techniques sections the easiest to translate into statements of

competencies. Overall, the *Good Practice Guidelines* include 228 pages of very detailed information. Without considerable synthesis and prioritization of the content, the clarity of presentation and usefulness for executive level business crisis and continuity managers is questionable.

The Standards Australia Draft Business Continuity Management Handbook lays out a ten step approach displayed in Figure 14 as a best practice methodology to provide a “structured and systematic process for placing the organization in a state of flexible readiness to respond to a wide range of potential scenarios (Standards Australia 2003).

Figure 14
Standards Australia Ten Step Approach

- | |
|--|
| <ol style="list-style-type: none">1. Commencement2. Risk and Vulnerability Assessment3. Business Impact Analysis4. Response Strategies5. Developing Resource Requirements6. Developing Interdependency Requirements7. Documenting the Plan8. Developing the Communications strategy9. Testing, Training and Maintaining Plans10. Activation and Deployment of Plans |
|--|

Each step is summarized in a tabular format that identifies the key components of the step along with the desired outcomes and supporting activities for each component. Although considerable procedural detail is included, the activities and outcomes can be combined to define executive level competencies.

The draft ASIS Business Continuity Guideline contains a listing of tasks with a narrative description for each of the five areas contained in the ASIS framework (Figure 10) These tasks range from general high level statements such as “Agree on Strategic Plans,” and

“Compliance with Corporate Strategy,” within Readiness and Prevention respectively, to action specific tasks such as “Declare a Crisis,” and “Test the BCP” within Response and Testing and Training respectively. The descriptions of each task and the Business Continuity Guideline Checklist included in the document would have assisted in the identification of competencies, had the document been available prior to the design and delivery of the research study survey. Reviewing the Guideline after the design of the research study did, however, validate the selection of many of the competencies identified in other sources.

Additional sources of executive level BCCM competencies are listed in section 4.1 of the research study. From the literature review and structured interviews with recognized experts in Business Crisis and Continuity Management and /or the supporting functional areas, each candidate competency is identified in multiple sources. No single identified source provides a complete listing of the required competencies or a level of prioritization beyond the author’s/respondent’s area of emphasis (e.g., risk management, security, crisis communication, etc.)

CHAPTER 4

RESEARCH DESIGN AND METHODS

4.1 Research Framework

A list of candidate executive level competencies, grouped and presented by functional areas (Figure 1), was developed by interviewing/reviewing/analyzing available sources including:

- Structured interviews with BCCM practitioners (Initial Interview Guide with the entering BCCM framework included as Appendix A³).
- The DRII and BCI Professional Practices for Business Continuity Professionals
- Standards Australia. Draft Handbook *Business Continuity Handbook. 3.2.1 – Peer Review Draft*
- Standards Australia International Limited. *A Handbook on Business Continuity Management: Preventing Chaos in a Crisis*
- Business Continuity Institute. *Business Continuity Management: Good Practices Guidelines*
- NFPA 1600. *Standard on Disaster/Emergency Management and Business Continuity Programs*
- Securities Industry Association Business Continuity Planning Committee. *Best Practices Guidelines*. August 5, 2002
- Relevant government and not-for-profit Web Sites and publications such as OSHA, IBHS, and FEMA
- Relevant published books covering any and all functions included in the BCCM framework
- Relevant published periodical articles covering any and all functions listed in the BCCM framework
- BCCM related conferences and workshops agendas

³ This interview guide and the accompanying Protocol Summary and Informed Consent Form were reviewed and approved by The George Washington University Institutional Review Board (IRB) on April 28, 2003 (IRB# U08020236ER).

- BCCM related training programs offered by private sector companies

The complete list of resources consulted is included in Appendix B and was provided to survey respondents in the survey instructions.

The identified and functional area grouped competencies (purposely worded at the activity level as explained in Section 3.4) formed the basis of a Web-based survey that asked BCCM practitioners, managers and leaders to rate each competency by the required level of involvement and required level of mastery for each competency. During a pilot test of the survey (5 respondents), Likert scales of 1 to 5 were tested and it was apparent that respondents tended to select the same rating for required level of involvement and required level of mastery for each competency. For the final survey, the required level of mastery Likert scale was changed to 1 to 3 to counteract this tendency with the 1 to 5 Likert scale for required level of involvement retained. Respondents were given the specific instructions:

Please note that your rankings should reflect the levels of involvement, mastery, and responsibility that should (ideally) be part of an executive level manager's job description and personal inventory of competencies (skills, knowledge, abilities and/or attitudes) for the effective and efficient management of a comprehensive and integrated Business Crisis and Continuity Management (BCCM) program.

The survey also allowed respondents to specify additional competencies (up to five for each of the functional areas included in the BCCM framework) which they felt were missing from the inventory of listed competencies. After considering the definition of each functional area and function, rating the included competencies, and adding any missing competencies, respondents were asked to rate the level of responsibility of the executive level BCCM manager for the overall functional area on a Likert scale of 1 to 5.

Respondent demographic data was gathered in the following areas (survey demographic data questions are included in Appendix C):

- The sector of their organization (private, public, not-for-profit, not applicable)
- The size of their organization (large – 500+ employees, medium – 100 to 500 employees, small – 1 to 99 employees, not applicable)
- The number of reporting levels that separate their organization's senior most Business Crisis and Continuity Manager from their organization's Chief Executive (none – senior most BCCM Executive is the Chief Executive, one, two, three, four or more, not applicable)
- The level of their position within their organization (board level director/officer, senior non-board level director/officer, senior level manager, middle level manager, junior level manager, non manager, not applicable, other – free text entry of position allowed)
- A self ranking of their level of expertise in Business Crisis and/or Business Continuity Management (expert, intermediate, novice)

Three dependent variables of BCCM competencies and responsibilities were selected to develop the research method for this research study. The dependent variables (Table 1) are the competency specific rating of the Required Level of Involvement and Required Level of Mastery, and the functional area rating of Required Level of Responsibility. As originally proposed, the research study author assumed that there would be a sufficient level of survey response to allow for meaningful statistical analysis of the dependent variables based upon the selection of independent variables (Table 1) from specific categories or grouped categories derived from the five demographic areas listed above. This assumption was not realized due to the relatively small number of responses (63 respondents completed portions or all of the survey) resulting in a single independent variable – Overall Respondent Population for the vast majority of the research analysis.

Table 1
Research Variables

INDEPENDENT VARIABLES	STATISTICAL ANALYSIS	DEPENDENT VARIABLES
<u>RESPONDENT'S DEMOGRAPHICS</u>	<p align="center">SIMPLE CORRELATION OF RANKINGS OF CALCULATED MEANS</p> <p align="center">BOX PLOTS OF DISTRIBUTIONS OF CALCULATED MEANS</p> <p align="center">CHI-SQUARE TEST OF FREQUENCY OF LIKERT SCALE RATINGS FOR EACH COMPETENCY</p> <p align="center">SCATTER PLOT DETERMINATION OF DOMINANCE</p>	<u>RATINGS OF COMPETENCY</u>
1. OVERALL RESPONDENT POPULATION		1. REQUIRED LEVEL OF INVOLVEMENT
2. ORGANIZATION SECTOR		2. REQUIRED LEVEL OF MASTERY
3. SIZE OF ORGANIZATION		
4. REPORTING LEVELS BETWEEN THE SENIOR MOST BCC MANAGER AND THE CHIEF EXECUTIVE		3. FUNCTIONAL AREA REQUIRED LEVEL OF RESPONSIBILITY
5. SELF RANKING OF EXPERTISE		

4.2 Research Questions

The research study attempted to answer the following research questions:

1. What are the required executive level competencies to manage BCCM functions, sub-functions and processes in an integrated manner in support of an enterprise wide program? (not testable by the Internet-based survey)
2. What is the required executive level of involvement for each competency to manage these functions, sub-functions and processes in an integrated manner in support of an enterprise wide BCCM program? (testable)
3. What is the required executive level of mastery for each competency to manage these functions, sub-functions and processes in an integrated manner in support of an enterprise wide BCCM program? (testable)
4. What is the required executive level of responsibility for each functional area within the overall BCCM framework? (testable)
5. How do BCCM experts evaluate the BCCM framework, the identified competencies, the required executive level of involvement and required level of mastery of these competencies, and the required executive level responsibility within each of the BCCM framework functional areas as to appropriateness, clarity of presentation and usefulness? (not testable by the Internet-based survey)

4.3 Research Questions 1 and 5 (not testable by the Internet-based survey)

Research questions 1 and 5 are not testable through the research survey method. For research question 1, candidate competencies were identified, grouped and presented following the process described in section 4.1. The candidate competencies were presented to five BCCM experts for their consideration/review and recommendations for revision, deletion and/or

inclusion of additional competencies. For the purpose of this research study, experts were categorized as widely recognized leaders in the field of BCCM (e.g. authors of BCCM related text books, corporate or government executives from organizations with integrated BCCM programs, consultants who have contributed to BCCM related publications). Based upon the expert input, the finalized lists of competencies, grouped by functional area and function, were included in the pilot survey which was completed by five respondents.

During the pilot survey respondents provided their comments/suggestions via the “add a competency” capability of the survey software and their input resulted in the lists of competencies included in the final research survey. As previously described, the pilot survey demonstrated the tendency to rate each competency at the same level of involvement and mastery when five point Likert scales were used for both. The decision to change the level of mastery Likert rating to a three point scale reflected the results of the pilot survey.

For research question 5, the functional framework and analysis of the survey results was presented to six BCCM experts (three who completed the survey and three who did not complete the survey) for their appraisal of the BCCM functional framework, the listing of competencies, the ranking and significance of the required levels of involvement and mastery of the competencies based upon the survey results, and the required level of responsibility within the functional area of the framework. Again, for the purpose of this research, experts were categorized as widely recognized leaders in the field of BCCM (e.g. authors of BCCM related text books, corporate executives from organizations with integrated BCCM programs, consultants who have contributed to BCCM related publications). Through interviews, the experts were asked to evaluate the research results by appropriateness, clarity of presentation and usefulness with respect to BCCM program structuring and executive level BCCM selection and professional development. The evaluations and recommendations were captured and incorporated in the final research report (dissertation) where general consensus was reached.

4.4 Research Questions - Hypotheses (testable)

As originally planned and proposed, testable research hypotheses and the accompanying null hypotheses were derived from research questions 2, 3 and 4. For example, the representative research hypothesis and null hypothesis derived from research question 2 were:

Hypothesis: Research Question 2 - The identified competencies within each functional area and across all functional areas can be ranked with statistical significance according to the required level of involvement rating for the following demographic groups:

1. Overall survey respondent population
2. Respondent's organization sector
3. Respondent's organization size
4. Reporting levels between the senior most BCC manager and the Chief executive of the respondent's organization
5. Respondent's self reported level of expertise

Null Hypothesis: Research Question 2 - The identified competencies within each functional area and across all functional areas can not be ranked with statistical significance according to the required level of involvement rating for the following demographic groups:

1. Overall survey respondent population
2. Respondent's organization sector
3. Respondent's organization size
4. Reporting levels between the senior most BCC manager and the Chief executive of the respondent's organization
5. Respondent's self reported level of expertise

The low number of responses in the self selection (volunteer) respondent method used in the research combined with the high correlation of the relative ranking of competencies within and between demographic groups did not allow for meaningful analysis based upon the multiple independent variables within and between the chosen demographic groups. Analysis

of the three dependent variables was thus limited to the single independent variable Overall Survey Respondent Population.

4.5 Research Methods for Research Question 1

1. What are the required executive level competencies to manage BCCM functions, sub-functions and processes in an integrated manner in support of an enterprise wide program?

The structured interview guide used to solicit input from BCCM experts to answer research question 1 is included as Appendix A. The interview guide includes a modified version of the Crisis Management and Organizational Continuity functional framework (Figure 3), definitions of functions, and asked the experts to identify skills, knowledge elements and abilities required of Business Crisis and Continuity Manager.

Input from 14 experts in overall BCCM and/or specific functional areas and functions was obtained and contributed very little to the task of identifying competencies. For all of the experts, the interview guide was sent electronically and was followed up with a phone interview (7 experts) or a face to face interview (7 experts). In every case, the experts focused on the functional framework, definitions and general management competencies and provided little or no input concerning specific BCCM function competencies. Their input was, however, very valuable in revising the functional framework to reach the final version shown in Figure 1 and to refine the definitions to the final version shown in the glossary of terms. A description of the titles and/or qualifications (written to protect the identities of the individuals) of the experts is displayed in Table 2.

Table 2
Experts Consulted for Research Question 1

Experts Consulted for Research Question 1	
Exec. Vice President, Consulting and Crisis Management Training Company, Ed.D.	Educator, Independent BC Consultant, Educator, Ph.D.
Manager, Business Continuity, Leading National Financial Lending Company	Manager, Business Continuity, Fortune 500 Financial Services Company
Director, International Business Continuity Web Site	President, BC Consulting and Training Company, Ph.D.
Crisis Communication Author	Federal Government Department, Deputy Director, Office of Security and Emergency Planning
Senior Vice President and Vice President Crisis Consulting Company	Business Continuity manager, Fortune 500 Pharmaceutical Company
Manager, Fortune 100 Company Crisis Response Team	Independent BC Consultant and Author, Ph.D.
Federal Government Organization, Corporate Services Security Manager	FEMA certified EM Instructor, BC Instructor UC Berkeley, BC Text Author

Specific contributions to the final functional framework included the addition of the functional areas Enterprise Management/General BCCM, Knowledge Management, Preparedness, Response and Recovery Planning, Program Implementation, and Systems Monitoring and the consolidation of the five Risk Management supporting functions into a single Risk Management functional area. Additionally, the framework presentation was changed to a tabular form and the use of arrows, which was viewed as distracting and incomplete, was removed from the framework. Several recommendations for the definitions were also incorporated into the final framework. Most significantly, Knowledge Elements, Skills and Abilities were consolidated into the single term, Competencies, the definition of Crisis was expanded to include the potential for positive results, and the definition of Crisis Management was contracted to a much more concise statement.

Several of the experts recommended that the proper approach to identifying competencies within each functional area and/or function would be to develop a “straw man” list based upon existing sources of information and to formulate the research survey from that “straw

man” list. Accordingly, over forty sources (listed in Appendix B – Survey Instructions) were consulted to develop a list of candidate competencies. The resulting list of “straw man” competencies was then selected based upon the research study author’s “expert judgment” combined with the criteria that a specific competency could be found in at least two of the sources consulted.

The functional framework and “straw man” list of competencies were presented at the Continuity and Planning Management Conference (CPM East) in Washington, DC on November 11, 2003 at the session titled “Competencies Required of Executive Level Business Crisis and Continuity Managers,” by the research study author. Of the 50 plus session attendees, 28 agreed to review and comment on the “straw man” competencies. An electronic version of the “straw man” competencies was sent to these volunteers and eventually, five of the volunteers provided their recommendations which were considered and incorporated into the final competency list as deemed appropriate. The “straw man” competencies were also included in a pilot version of the web-based survey which was completed and critiqued by five BCCM experts. The expert input was also considered and incorporated into the final choice and wording of the competencies included in research study web-based survey. The final list of competencies, grouped by functions and functional areas is included in Appendix D. The competencies included in the representative functional area “Enterprise Management/General BCCM” are displayed in Table 3.

Table 3
Enterprise Management/General BCCM Competencies
Included in the Research Study Survey

Enterprise Management/General BCCM
1. Establish a consultative process with BCCM stakeholders.
2. Determine local, state and federal laws and regulations with BCCM implications.
3. Determine corporate governance requirements with BCCM implications.
4. Establish and lead a multi-disciplinary BCCM Steering Committee.
5. Develop a business case for an overall BCCM program and supporting functions.
6. Communicate top level management's acceptance and support of the BCCM program throughout the organization and to external stakeholders.
7. Define a BCCM program structure that supports overall corporate, business unit, functional and program objectives.
8. Establish policies and procedures that incorporate BCCM considerations into the management of all business operations (existing and developing).
9. Define a measurement process and measures of effectiveness for the overall BCCM program and its component functional areas.
10. Define a BCCM program maintenance process.
11. Determine and specify the roles for internal and external (consultants) personnel in the BCCM program.
12. Incorporate BCCM roles, accountabilities, responsibilities and authority into job/position descriptions.
13. Incorporate BCCM responsibilities into the performance management and appraisal system.
14. Establish a BCCM audit program.

The final version of the web-based survey included the ability for the respondent to input additional competencies that they felt were missing from the survey lists of competencies. For each functional area, the respondent was able to input (type in a free form box) up to five additional competencies. The survey software did not, however, permit rating inputted competencies for required level of involvement and required level of mastery.

4.6 Research Methods for Research Questions 2, 3, and 4

2. What is the required executive level of involvement for each competency to manage these functions, sub-functions and processes in an integrated manner in support of an enterprise wide BCCM program? (testable by the Web-Based survey)

3. What is the required executive level of mastery for each competency to manage these functions, sub-functions and processes in an integrated manner in support of an enterprise wide BCCM program? (testable by the Web-Based survey)
4. What is the required executive level of responsibility for each functional area within the overall BCCM framework? (testable by the Web-Based survey)

The Web-Based survey addressing research questions 2, 3 and 4 was authored on the Ultimate Survey software and hosted on The George Washington University Institute for Crisis, Disaster and Risk Management Crisis and Emergency Management Information Technology Laboratory server. Survey instructions presented on the first page of the survey are included in Appendix B. Respondent demographic information was requested on page 3 of the survey in the categories shown in Appendix C. Each functional area included in the BCCM framework (Figure 1), with its supporting competencies, served as a separate section of the survey. A representative section of the survey (Crisis Communication functional area) is displayed in Appendix C.

Survey participants were solicited at two conferences where the research purpose and method were presented by the research study author (CPM East Washington, DC November, 2003 and the Homeland Defense Journal Continuity of Government Operations Arlington, VA January 2004). Interested participants were asked to provide their e mail address and were contacted with survey information. Additionally, personal contacts with individual BCCM practitioners and managers, the Association of Contingency Planners (ACP), Mid Atlantic Chapter Washington, DC and the Business Recovery Managers' Association (BRMA), San Francisco, CA, Singapore Exchange Limited and the United Kingdom based Business Continuity Electronic Discussion Group resulted in distribution of the invitation to participate in the survey to between 350 and 400 individuals with a best estimate of distribution to 375 individuals.

Respondents were asked to rate each competency by the required level of involvement and the required level of mastery on Likert scales of 1 to 5 and 1 to 3 respectively as shown in Table 4 (Research Questions 2 and 3).

Table 4
Survey Likert Scales Involvement and Mastery

Required Level of Involvement	Required Level of Mastery
1 = No involvement	1 = Awareness
2 = Monitor	
3 = Delegate and Evaluate	2 = Competent
4 = Team member	
5 = Primary participant/Leader	3 = Expert

For each BCCM supporting functional area (except Overall BCCM Program Structure and Management in Support of Enterprise Management) respondents are asked to consider the definition of the functional area, their ratings of the competencies and any competencies they added, and to rate the level of responsibility an executive level Business Crisis and Continuity Manager should have within that functional area according to the scale shown in Table 5 (Research Question 4)

Table 5
Scale Level of Responsibility

Executive Level Business Crisis and Continuity Manager's Level of Responsibility Within a Functional Area
1 = No responsibility
2 = Monitor
3 = Consult and advise other executives
4 = Shared responsibility with other executives
5 = Total responsibility

The survey concluded with one general question with three possible responses:

Based upon your professional experience and the contents of this survey, please indicate the preferred source of experience and expertise for an Executive Level Business Crisis and Continuity Manager.

1. An Executive Level BCCM Manager should come from an operational business background and learn the additional BCCM competencies.
2. An Executive Level BCCM Manager should come from a BCCM background and learn the additional operational business competencies.
3. It does not matter; an Executive Level BCCM Manager could come from either background.

This particular question was raised on several occasions during the interviews supporting research question 1. and by the audience at the research study author's presentation at the CPM East Conference in November 2003. It is very relevant to the organizational positioning and the specific responsibilities of the BCCM leader in an organization and should be the basis of further research on the evolution of the BCCM professional.

Survey respondents were not required to respond to any demographic data question or rating within the survey. They were permitted to skip individual items and even sections and continue with the following items and sections.

4.7 Survey Data Analysis Methods for Research Questions 2, 3, and 4

The three dependent variables (Table 1) for data analysis in research questions 2, 3, and 4 were the competency specific rating of the required level of involvement and required level of mastery, and the functional area rating of level of responsibility. The entire survey respondent population served as the primary independent variable. Based upon the number of

responses within the categories of demographic data, independent variables were individually chosen or grouped for correlation of response comparisons to include (Table 1.) the respondent's: organization sector; size of organization; number of reporting levels that separate their organization's senior most Business Crisis and Continuity Manager from their organization's Chief Executive; level of position; and self ranking of expertise and exploratory analysis employing Box and Whisker Plots (Section 5.2). SPSS and MINITAB statistical software and Excel spreadsheet statistical tools were utilized to perform data analysis.

For research questions 2 and 3, the mean and standard deviation of the rating of each competency for required level of involvement and mastery were calculated for the entire survey respondent population. Within each functional area and function and across all functional areas and functions the component competencies were sorted by the calculated means of the required levels of involvement and mastery. Based upon the review and recommendations of the research results by selected subject matter experts (research question 5), the calculated means for the required levels of involvement and mastery were summed to provide a single dependent variable and the competencies were sorted within functional areas and functions and across all functional areas and functions by the combined level of involvement and level of mastery dependent variable.

For research question 4, the mean and standard deviation of the rating of each functional area (Enterprise Management/General BCCM excluded) for the required level of responsibility was calculated for the entire survey respondent population. The functional areas were then sorted by the calculated means of the required levels of responsibility.

4.8 Research Methods for Research Question 5

5. How do BCCM experts evaluate the BCCM framework, the identified competencies, the required executive level of involvement and required level of mastery of these competencies, and the required executive level of responsibility within each of the BCCM framework functional areas as to appropriateness, clarity of presentation and usefulness?

The functional framework and the analysis of the survey data was presented to six BCCM experts for their review, comments and recommendations. The six experts were selected to include three who had completed the survey and three who had not. This choice reflected the desire to obtain an evaluation of the research method and results by a sample of reviewers who had been involved from the beginning of the research, and compare that to the evaluation by reviewers who were only viewing the research results. The six experts were specifically asked to review the BCCM functional framework, the listing of competencies, the ranking and significance of the required levels of involvement and mastery of the competencies based upon the survey results, and the required level of responsibility within the functional area of the framework. Through interviews, the experts were asked to evaluate each area as to its appropriateness, clarity of presentation and usefulness with respect to BCCM program structuring and executive level BCCM selection and professional development. The evaluations and recommendations were captured in the interview process and were incorporated in the final research report where general consensus was reached. A description of the titles and/or qualifications (written to protect the identities of the individuals) of the experts is displayed in Table 6.

Table 6
Experts Consulted for Research Question 5

Experts Consulted for Research Question 5	
Experts Who <u>Had Participated</u> in The Survey	Experts <u>Who Had Not Participated</u> in The Survey
Vice President Crisis Consulting Company	President, International BC and Crisis Consulting Company
FEMA certified EM Instructor, BC Instructor UC Berkeley, BC Text Author	Director, Business Development, Asset Protection Systems Division, Fortune 1000 Company, BC Author
Managing Director and Principal, BC Consulting Company	Senior Vice President and Knowledge Manager, Crisis Consulting Company

CHAPTER 5

RESEARCH ANALYSIS AND RESULTS

5.1 Demographic Data

The demographic data collected through the survey was intended for use in the analysis of the testable research questions 2, 3, and 4. This demographic data, with minimal analysis to the extent of reporting the percentages falling into specific categories, is presented in tables 7 to 10. With the exception of the self rating of expertise, the other demographic questions included the option to respond as “Not Applicable (NA).” This option was intended to accommodate respondents who were not employed by a specific organization (e.g. and independent consultant). Additionally, since respondents were not required to make an entry for each of the demographic survey questions, the total number of responses is not the same for each question. Specifically, two of the respondents did not include their self rating of level of expertise, resulting in 61 total responses while the other questions received 63 responses (the 63 total includes the NA responses).

The position titles reported by respondents through the demographic questions are included in Appendix E. There has been no attempt to group titles due to the free text entry and great disparity of terminology used by respondents; however the titles are captured and presented as a possibly interesting and useful list of position titles within the current BCCM areas of responsibility. The selection of demographic data collection questions did not allow for the capture of a respondent’s specific type of business or whether she/he provided BCCM services as an employee or as an external consultant. This information, coupled with the position titles might have provided additional insight as to the current state of BCCM staffing and support.

**Table 7
Organizational Sector**

What is the sector of your organization?		
Response	Count	Percentage
Private	32	50.8%
Public	22	34.9%
Not-for-Profit	6	9.5%
Not Applicable	3	4.8%
Total	63	100.0%

**Table 8
Organization Size**

What is the size of your organization?		
Response	Count	Percentage
Large (500+) Employees	45	71.4%
Medium (100 - 500) Employees	3	4.8%
Small (1 - 99) Employees	13	20.6%
Not Applicable	2	3.2%
Total	63	100.0%

Table 9
Reporting Levels

How many reporting levels separate your organization's senior most Business Crisis and Continuity Manager from your organization's Chief Executive?		
Response	Count	Percentage
Zero	9	14.3%
One	9	14.3%
Two	19	30.2%
Three	11	17.5%
Four or more	7	11.1%
Not Applicable	8	12.7%
Total	63	100.0%

Table 10
Level of BCCM Expertise

What is your level of expertise in the area of Business Crisis and/or Continuity Management?		
Response	Count	Percentage
Novice	3	4.8%
Intermediate	22	34.9%
Expert	36	57.1%
No response	2	3.2%
Total	63	100.0%

5.2 Analysis Using Demographic Data as the Independent Variable

The low level of survey response (a total of 63 respondents filled out parts or all of the survey) greatly limits the ability to conduct meaningful analysis of the three dependent variables (Required Level of Involvement, Required Level of Mastery, and required Level of Responsibility) by the grouping of the independent variables within the demographic data collected. Obviously, the independent variable, Overall Respondent Population, contains the

most responses and provides the greatest statistical significance for analysis from the independent variables. As described in Section 4.6, survey participation invitations were provided to between 350 and 400 potential respondents with 375 selected as the best estimate of the invited population size. For the overall respondent population, a sample size of 63 responses represents 16.8 percent of the invited population which provides a level of statistical significance and face validity of the survey results based purely upon sample size. For all of the other demographic categories, only large organization size (45 responses – 12.5%) approaches statistical significance and provides little substance to the analysis as a single independent variable. All of the other demographic categories (individual or grouped in Table 11) represent less than 10 percent of the invited population.

In addition to face validity, the invited population and the sample population should be representative of overall population which is the universe of personnel performing or managing BCCM level activities. The invited population includes individuals interested enough in the subject to attend conference sessions on “The competencies required of executive level Business Crisis and Continuity Managers,” and members of professional societies with a BCCM focus from the Washington, DC and San Francisco Bay areas, and International business continuity groups.

Considering the demographic data collected, the responses are heavily skewed towards large organizations (71.4%), as compared to 28.6% for small and medium businesses and Not Applicable). The other demographic areas show a more even mix of respondents with the sector of the organization almost evenly split between private and the combination of public, not-for-profit and Not Applicable). Reporting levels were also more evenly distributed with 58.7 percent indicating two or less reporting levels between their organization’s senior most Business Crisis and Continuity Manager and their Chief Executive (consistent with the research study’s definition of executive) and 41.3% reporting three levels or more. Ninety two percent of the respondents evaluated themselves as experts in BCCM, while less than 5 percent evaluated themselves as novice and approximately 3 percent as Not Applicable.

The demographics of the sample population, combined with the respondents' position titles as displayed in Appendix E can be considered together to make a judgment of the content validity of the sample population. Of the reported position titles of actual respondents (Appendix E includes the reported position title of all individuals (91 total) who accessed the survey and indicated a title but did not necessarily respond to the survey), only 12 (19 percent) listed the word consultant in their title and 32 (50.8 percent) included words such as Director, Vice President, President, Senior Manager, etc. in their title indicating that they are in BCCM leadership positions. Although this is a very subjective analysis, the distribution of the demographic categories and the position titles indicate a knowledgeable and representative sample of BCCM practitioners and managers within the respondent population and support the content validity of the overall respondent sample population.

Reflective of the low number of responses, independent variable data were grouped as shown in Table 11. Not applicable responses are not included in the groupings.

**Table 11
Independent Variable Groupings**

Independent Variable Groupings			
Independent Variable	Grouping of Independent Variables	Number	Percentage
Overall Population	None	63	100%
Organization Sector	Private	32	53.3%
	Public	22	36.7%
	Not-for-Profit	6	10.0%
Organization Size	Large	45	73.8%
	Medium and Small	16	26.2%
Reporting Levels	Two or Less	37	67.3%
	Three or More	18	32.3%
Expertise level	Expert	36	59.0%
	Intermediate & Novice	25	41.0%

Prior to the analysis of the dependent variables based upon the independent variable it was useful to examine the data by correlation of the means for Level of Involvement and Level of Mastery for the groupings displayed in Table 11. Table 12 displays these correlations.

**Table 12
Correlations for Independent Variables**

Correlation of Responses of the Independent Variables for the Calculated Means of the Level of Mastery (LOM) and Level of Involvement (LOI) for all Competencies									
Correlation of LOM									
	Expert	Intermediate /Novice	Large	Medium /Small	NFP	Public	Private	3 Re - porting Levels or More	2 Re - porting Levels or Less
Expert	1.0000	0.6944							
Intermediate /Novice		1.0000							
Large			1.0000	0.7174					
Medium/ Small				1.0000					
NFP					1.0000	0.5048	0.5569		
Public						1.0000	0.7328		
Private							1.0000		
3 Reporting Levels or More								1.0000	0.6408
2 Reporting Levels or Less									1.0000
Correlation of LOI									
	Expert	Intermediate /Novice	Large	Medium /Small	NFP	Public	Private	3 Re - porting Levels or More	2 Re - porting Levels or Less
Expert	1.0000	0.7587							
Intermediate /Novice		1.0000							
Large			1.0000	0.7357					
Medium /Small				1.0000					
NFP					1.0000	0.5048	0.5662		
Public						1.0000	0.8080		
Private							1.0000		
3 Reporting Levels or More								1.0000	0.7745
2 Reporting Levels or Less									1.0000

The correlations for the calculated means of Level of Mastery and Level of Involvement for the individual or grouped demographic descriptors within the chosen independent variables are relatively high ranging from 0.5048 to 0.7328 and 0.5048 to 0.8080 for Level of Mastery and Level of Involvement respectively. The correlations of the Not-for-Profit (NFP) responses with the Public and Private sector responses yield the lowest correlation values (below 0.6000). The number of Not-for-Profit responses is relatively small (6 of 60 responses) for the Organization Sector independent variable, and if Not-for-Profit is combined with Public Sector (total of 28 out of 60 responses) the correlations between Private and the combined Public/Not-for-Profit rise to 0.7609 and 0.8274 for the means of Level of Mastery and Level of Involvement respectively. The Not-for-Profit independent variable category was retained and not originally grouped with the Public independent variable category since this appeared to be the only possibility for a statistically meaningful analysis involving three categories within one independent variable.

The distribution of the calculated means between categories within an independent variable is also displayed graphically in a series of “Box and Whisker” graphs displayed in Appendix F. An example “Box and Whisker” graph displayed in Figure 15 provides the comparative plots for the distribution of the calculated means of Level of Involvement and Level of Mastery for all competencies for the two demographic groups within the independent variable Organization Size – Large and Medium/Small. Defining the box in the “Box and Whisker” graphs, the top of the box represents the third quartile (Q3) of the data, the bottom of the box represents the first quartile (Q1), and the central line represents the median. The whiskers of the “Box and Whisker” graph extend to the adjacent values which are the lowest and highest data point that remain within the region defined by the limits:

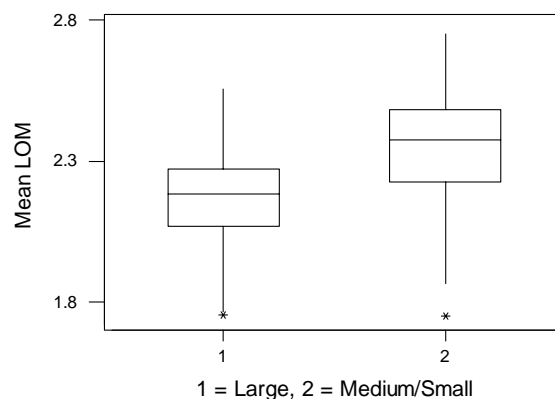
$$\text{Lower Limit: } Q1 - 1.5 (Q3 - Q1)$$

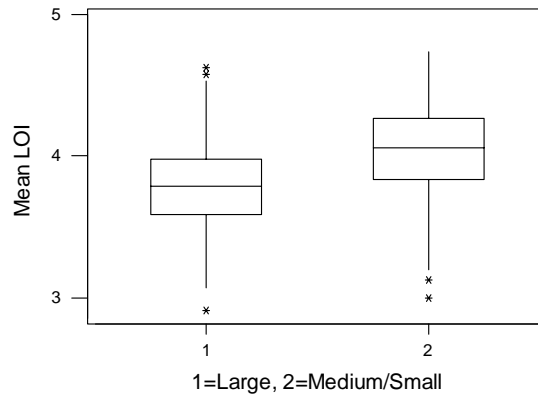
$$\text{Upper Limit: } Q3 + 1.5 (Q3 - Q1)$$

Data points lying outside the adjacent values are plotted as an asterisk (*). Although the “Box and Whisker” plots do not convey very detailed information, they do provide a

visual representation of the distribution, shape and spread of the data. For example, in Figure 15, The Medium/Small Organization respondents consistently rated the competencies higher than the Large Organization respondents for both level of Involvement and Level of Mastery. The distribution of data within the “Box” and the overall spread of the data as portrayed by the “Whiskers” are similar within each plot and the interquartile range of the boxes overlap slightly. Each distribution has some number of outlying data points, however, those numbers are minimal (3 or less). The visual inspection of the plots combined with the correlation of the calculated means of the competencies between the two demographic groupings (0.7174 and 0.7357 for Level of Mastery and Level of Involvement respectively), indicates that although the Medium/Small organization respondents consistently rated competencies higher for both dependent variables, the differences in the ordering by calculated means are essentially insignificant for the purpose of developing a prioritized list of competencies. Additionally, the correlations of the calculated means of the Large Organization and Small/Medium Organization groups to the Overall Population were calculated to be 0.9746 and 0.8418 respectively for Level of Mastery and 0.9815 and 0.8438 respectively for Level of Involvement. This further supports the choice of the single independent variable Overall Population for the majority of the research analysis and presentation of the results.

Figure 15
Box and Whisker Plots for Organization Size
LOM – Level of Mastery
LOI – Level of Involvement





5.3 Research Question 1.

1. What are the required executive level competencies to manage BCCM functions, sub-functions and processes in an integrated manner in support of an enterprise wide program?

The final list of 137 competencies, derived from over 40 sources (listed in Appendix B), vetted through the process described in section 4.5 of this dissertation, and grouped into 13 functional areas, is included as Appendix D. *Through the research study literature search, no other list of competencies could be located that are consistently written at the executive level and adequately cover the myriad functional areas supporting an enterprise wide BCCM program.*

Survey respondents were provided the opportunity to input additional competencies that they felt were missing from the survey list of competencies. Overall, survey respondents identified an additional 66 competencies in twelve of the thirteen functional areas (no additional competencies were identified in the Restoration and Transition functional area).

Appendix G contains a list of the respondent added competencies by functional area. Three of those added identify general management level competencies (program

management, interpersonal skills, and personal and professional development) that were purposely excluded from the list of survey competencies as explained in the survey instructions. For 52 of the 63 remaining respondent added competencies, the right most column in Appendix G references the respondent added competency to the single or multiple competencies included in the survey that convey the same content as the added competencies. The process of matching respondent added competencies to survey competencies was generally subjective, since there were not exact matches of words; however in most instances the matching was obvious. For example, the added competency (in the Enterprise Management/General BCCM functional area) -- Determine local emergency management response capacity as it relates to BCCM functions -- is thoroughly covered by the three survey competencies:

Incident Management 2 - Determine community level emergency response organizations' capabilities and requirements.

Incident Response 1 - Establish working relationships/agreements with local public sector emergency management organizations and personnel (e.g., community Emergency Manager, Police Department, Fire Department, Haz Mat Teams, Emergency Medical Services, etc.) to coordinate and support incident response operations.

Incident Response 2 - Establish working relationships/agreements with other non public organizations (private and not-for-profit sector) to coordinate and support incident response operations.

For those added competencies (11 out of 63) that could not be matched to survey competencies, six of the eleven (CM3, CC3, ATE1, IM1, IR1 and BC1) did not actually identify an additional competency, but commented that the survey competency relates to a supporting person below the BCCM executive; two of the eleven (RM4 and PL1) commented that the role of security should receive more emphasis; one (PL2) added planning responsibility in both voice and data Information Technology Management; one

(PL3) added operational capabilities beyond the planning process; and one (RM 1) extended the scope of risk management from a purely operational focus to financial and strategic risk management.

An empiric observation from the analysis of the added competencies is that the respondents focused on the first functional area -- Enterprise Management/General BCCM – without considering the remaining twelve functional areas when they entered the additional competencies. This is supported by the fact that thirty eight (58%) of the added competencies were in the Enterprise Management/General BCCM functional area and that each of these added competencies were easily related to the survey competencies from the Enterprise Management/General BCCM functional area and the following functional areas. As the respondents progressed through the survey, they tended to enter fewer additional competencies (77% of the added competencies were included in the first three functional areas of the survey). Additionally, there was minimal duplication of added competencies (there was no duplication for those added competencies that could be related to the survey competencies) by the survey respondents which provides some level of support to the supposition that the 137 survey competencies comprise a relatively complete and comprehensive list of the competencies required of an executive level Business Crisis and Continuity Manager.

5.3 Research Questions 2 and 3

2. What is the required executive level of involvement for each competency to manage these functions, sub-functions and processes in an integrated manner in support of an enterprise wide BCCM program?
3. What is the required executive level of mastery for each competency to manage these functions, sub-functions and processes in an integrated manner in support of an enterprise wide BCCM program?

Due to the low number of responses and the relatively high correlation between the individual and grouped categories within the independent variables as described in the previous two sections of this research study report, the primary analysis for research questions 2 and 3 focuses on the single independent variable, Overall Respondent Population. In conducting the interviews for research question 5 -- How do BCCM experts evaluate the BCCM framework, the identified competencies, the required executive level of involvement and required level of mastery of these competencies, and the required executive level responsibility within each of the BCCM framework functional areas as to appropriateness, clarity of presentation and usefulness? -- the six experts unanimously agreed that attempting to display and compare the rankings of competencies by the calculated means for multiple independent variables only confuses the presentation of the research results. From a BCCM practitioner point of view, what they viewed as appropriate, clear and useful was a single listing and prioritization of the competencies in an overall view and within the functional areas using one independent variable for data analysis and presentation. The Overall Respondent Population was selected as that single independent variable.

Appendix H contains a total of four lists, two lists each for the Level of Involvement and the Level of Mastery, which prioritize all of the competencies taken together by the calculated mean for each competency and by the competencies within each functional area and function of the research study BCCM framework. In order to provide a level of reference for the 137 competencies taken together, demarcation points are shown for the overall calculated mean of all competencies by all respondents and the levels signifying one and two standard deviations above and below the overall calculated mean for the Level of Involvement and the Level of Mastery rankings. The calculated overall means and the standard deviations for all competencies by all respondent rankings are displayed in Table 13.

Table 13
Overall Means and Standard Deviations for LOI and LOM Rankings for all Competencies by all Respondents

	Level of Involvement Scale of 1 - 5	Level of Mastery Scale of 1 - 3
Mean for all Competencies	3.8405	2.2156
Standard Deviation	0.3036	0.1647

Appendix I provides two prioritized lists for the combination of Level of Involvement and Level of Mastery for all respondents for all competencies and within the functional areas and functions. The combination and prioritization was accomplished by adding the mean for each of the dependent variables for each competency for all respondents and then sorting the competencies by the sum of the means. Again, demarcation points are shown for the overall mean of the sum of the calculated means for all competencies and the levels signifying one and two standard deviations above and below the mean of the sum of the calculated means.

The experts interviewed in research question 5. agreed that there is value in retaining separate analyses for the Level of Involvement and the Level of Mastery responses since they are of value for different purposes --Level of Involvement for determining the organizational role and positioning and Level of Mastery for personnel selection and professional development -- but they also agreed that the presentation of the combination of the two dependent variables would be useful for considering and applying the results of the analysis of research questions 2 and 3 in a single prioritized list. The correlations between the calculated means for each competency for all respondents and between each of the dependent variables and the sum of the calculated means are displayed in Table 14. The high correlations reflect the similarity in relative rankings of individual competencies in both Level of Involvement and Level of Mastery and between Level of Involvement

and the combination of Level of Involvement and Level of Mastery and Level of Mastery and the combination of Level of Involvement and Level of Mastery.

Table 14
Correlation for Dependent Variables

Correlation of Responses of the Dependent Variables for the Calculated Means of the Level of Mastery (LOM) and Level of Involvement (LOI) and for LOI and LOM to the Sum of the Calculated Means for all Competencies			
	LOI	LOM	Combined
LOI	1.0000	0.9030	0.9879
LOM		1.0000	0.9586
Combined			1.0000

Additional analysis of the survey results for research questions 2 and 3 consisted of a Chi-Square analysis of the distribution of Likert Scale responses and the use of scatter plots to identify the deterministic dominance of specific competencies within functional areas and functions.

The Chi-Squared analysis consisted of the calculation of the p value for the distribution of responses within the Likert Scales for each competency for the Level of Involvement and the Level of Mastery for all responses. Not surprisingly, the Chi-Square analysis of Level of Involvement, measured on a 5 point Likert Scale, indicates a stronger preference for specific responses than the Level of Mastery which was measured on a 3 point Likert Scale. For the 5 point Likert Scale for Level of Involvement over 90% of the responses were located in the 3, 4, or 5 ratings with less than 10% in the 1 and 2 ratings. For the 3 point Likert Scale, the responses were more evenly distributed amongst the 1, 2 and 3 ratings. The number of responses within each rating and the percent of the total responses for the two Likert Scales for all responses are displayed in Table 15.

Table 15
Distribution of Responses over the 3 and 5 Point Likert Scales

Distribution of Responses over the 5 and 3 Point Likert Scales for all Competencies for all Respondents						
Level of Involvement						
Scale Rating	1	2	3	4	5	Total
Number of Responses	222	604	2041	2892	2587	8346
Percent of Responses	2.66%	7.24%	24.45%	34.65%	31.00%	100%
Level of Mastery						
Scale Rating		1	2	3		Total
Number of Responses		1293	3925	3079		8297
Percent of Responses		15.58%	47.31%	37.11%		100%

The calculated p values for the 5 point Likert Scale with 4 degrees of freedom (number of responses minus 1) range from a high of 1.393E-03 to a low of 2.440E-29, with all values below the .05 level of significance. For the 3 point Likert Scale with 2 degrees of freedom, the calculated p values range from a high of 0.705 to a low of 1.730E-08 with 15 of the 137 competencies above the 0.05 level of significance. Since the same respondents rated each competency on both Likert Scales, the fact that no p value for any competency raised above the 0.05 level for the 5 point Likert scale would tend to indicate that, even though 15 of 137 competency p values were above the 0.05 level for the 3 point Likert scale, the distribution of responses for these 15 competencies were not the result of random assignment, but reflect an actual preference that was relatively evenly distributed across the 3 point Likert Scale. Appendix J displays the calculated p value for each competency for the Level of Involvement and the Level of Mastery ratings by all respondents.

Scatter plots of the Cumulative Probability Distribution (ordinate) for the Likert Scale responses (abscissa) were prepared for the BCCM functional areas and functions to graphically display and identify which of the competencies first order stochastically

dominated the competencies within the functional areas and functions. Since the number of competencies varied between functional areas and functions, the identification of a set number of first order stochastically dominant competencies within each grouping would skew the results towards the groupings with smaller numbers of competencies. Instead, based upon preliminary inspection of the scatter plots, the identification of one third of the competencies within a grouping was selected as the standard for identifying the deterministically dominant competencies. The standard rounding convention of rounding up above the .5 mark, and down below the .5 mark, was followed. For some of the functional areas and functions, it was not possible to select the full one third of the total competencies for deterministic dominance due to similar cumulative probability distributions shared amongst multiple competencies.

Figure 16 displays the scatter plots for the Enterprise Management/General BCCM functional area for the Level of Involvement and Level of Mastery. Since this functional area contains 14 competencies, the standard was to identify the five (one third of 15 rounded up to 5) competencies for Level of Involvement and Level of Mastery that deterministically dominate the remaining nine competencies. Table 16 displays the results of the analysis for the scatter plots in Figure 16. Dominance within the functional area is indicated by the word Yes or No in the columns titled LOI Dominant and LOM Dominant. Accompanying the determination of dominance is a number signifying the order of dominance from #1 (most dominant) to #5 (fifth most dominant). The order of dominance does not necessarily follow the ordering of the means within the functional area. For example for the Level of Mastery, the ordering of the dominance reverses the ordering of the means for the second and third competencies.

Figure 16
Scatter Plots LOI and LOM for Overall BCCM Program Structure and Management

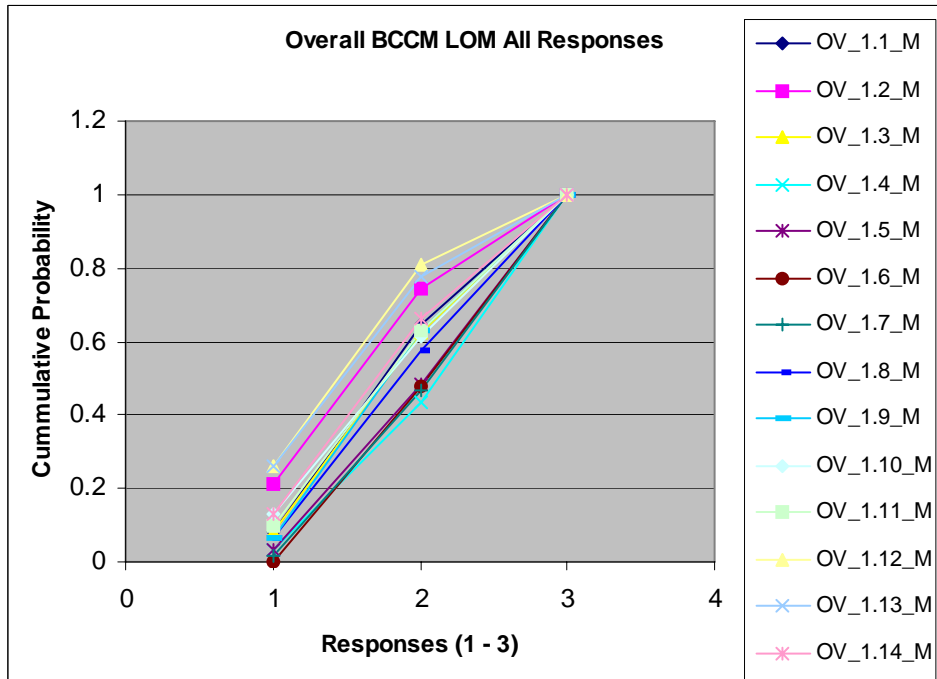
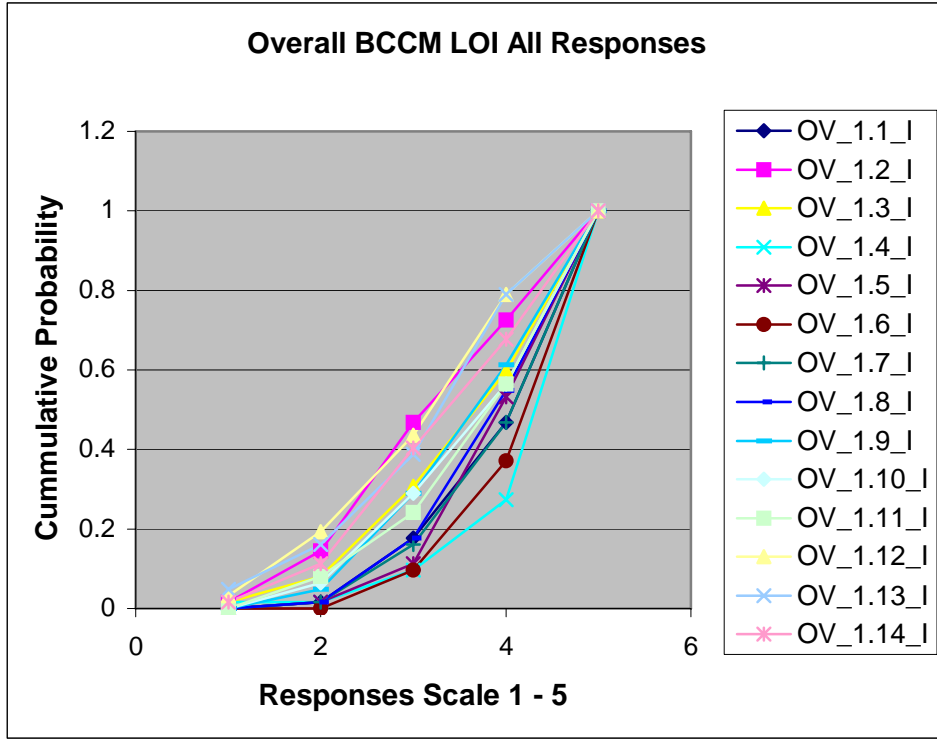


Table 16
Deterministic Dominance for Overall BCCM Program Structure
and Management Functional Area

	LOI Mean	LOI Dominant	LOM Mean	LOM Dominant
Establish and lead a multi-disciplinary BCCM Steering Committee.	4.5968	Yes #1	2.5323	Yes #1
Communicate top level management's acceptance and support of the BCCM program throughout the organization and to external stakeholders.	4.5323	Yes #2	2.5246	Yes #3
Define a BCCM program structure that supports overall corporate, business unit, functional and program objectives.	4.3548	Yes #3	2.5161	Yes #2
Develop a business case for an overall BCCM program and supporting functional areas.	4.3387	Yes #5	2.4839	Yes #4
Establish a consultative process with BCCM stakeholders.	4.3387	Yes #4	2.2742	No
Establish program policies and procedures that incorporate BCCM considerations into the management of all business operations (Existing and developing).	4.2581	No	2.3607	Yes #5

Appendix K displays the scatter plots for all of the functional areas and functions and Appendix L displays the determinations of dominance by functional areas and functions for Level of Involvement and Level of Mastery. Although the differences in ordering by the calculated means are relatively minor, the ordering by deterministic dominance has been selected as the more meaningful method for ordering the competencies.

5.5 Research Question 4

4. What is the required executive level of responsibility for each functional area within the overall BCCM framework?

The analysis of research question 4 followed the same method as that for research questions 2 and 3. The Likert scale for the levels of responsibility within a functional area was presented in Figure 3. Again, the Overall Population was selected as the

independent variable for data analysis. Table 17 displays the ordering of calculated mean for the level of responsibility by functional area. The Enterprise Management/General BCCM functional area was not included since the focus of this functional area and the supporting competencies was intended to transcend all of the functional areas in the enterprise wide BCCM framework.

Table 17
Level of Responsibility within Functional Areas

Ranking	Functional Area	Calculated Mean
1	Crisis Management	4.1154
2	Incident Management	3.9661
3	Planning	3.8966
4	Awareness/ Training/Exercising	3.7759
5	Restoration and Transition	3.7458
6	Incident Response	3.7368
7	Business Continuity	3.7119
8	Risk Management	3.6964
9	Crisis Communication	3.6182
10	Systems Monitoring	3.5690
11	Knowledge Management	3.5172
12	Program Implementation	3.5000

Figure 17 is a scatter plot of the Cumulative Probability Distribution (ordinate) for the Level of Responsibility Likert Scale responses (abscissa). The plot graphically displays that the Crisis Management, Incident Management and Planning functional areas tend to dominate the other functional areas, while the Program Implementation, Knowledge Management and Systems Monitoring functional areas are the most dominated by the other functional areas. This finding is totally consistent with the rank ordering by the calculated means for all responses.

What does appear to be inconsistent with the research author's expectation for the results is the rank of the required level of responsibility of the Crisis Communication functional area (9th out of 12). Since Crisis Communication is so closely tied to Crisis Management, there was an expectation that the Crisis Communication functional area would be ranked considerably higher. A review of Appendix I (All Competencies Sorted by the Sum of the Means of Level of Involvement and Level of Mastery) shows that 10

of the 12 Crisis Management functional area competencies were ranked above the overall mean ranking of all competencies while only 2 of the 7 Crisis Communication functional competencies were ranked above the overall mean ranking of all competencies. It appears that the Crisis Communication competencies were worded and structured in such a way that they were likely candidates for delegation to readily identifiable job descriptions within an organization (e.g. the Public Affairs Officer). Possibly, if the Crisis Communication functional area had been presented as a function within the Crisis Management functional area (similar to the Risk-Based Decision Making, Risk Assessment, etc, functions within the Risk Management functional area) or combined with the Crisis Management competencies, the rankings of the Crisis Communication competencies would have been higher.

Figure 17
Scatter Plot for Level of Responsibility within Functional Areas

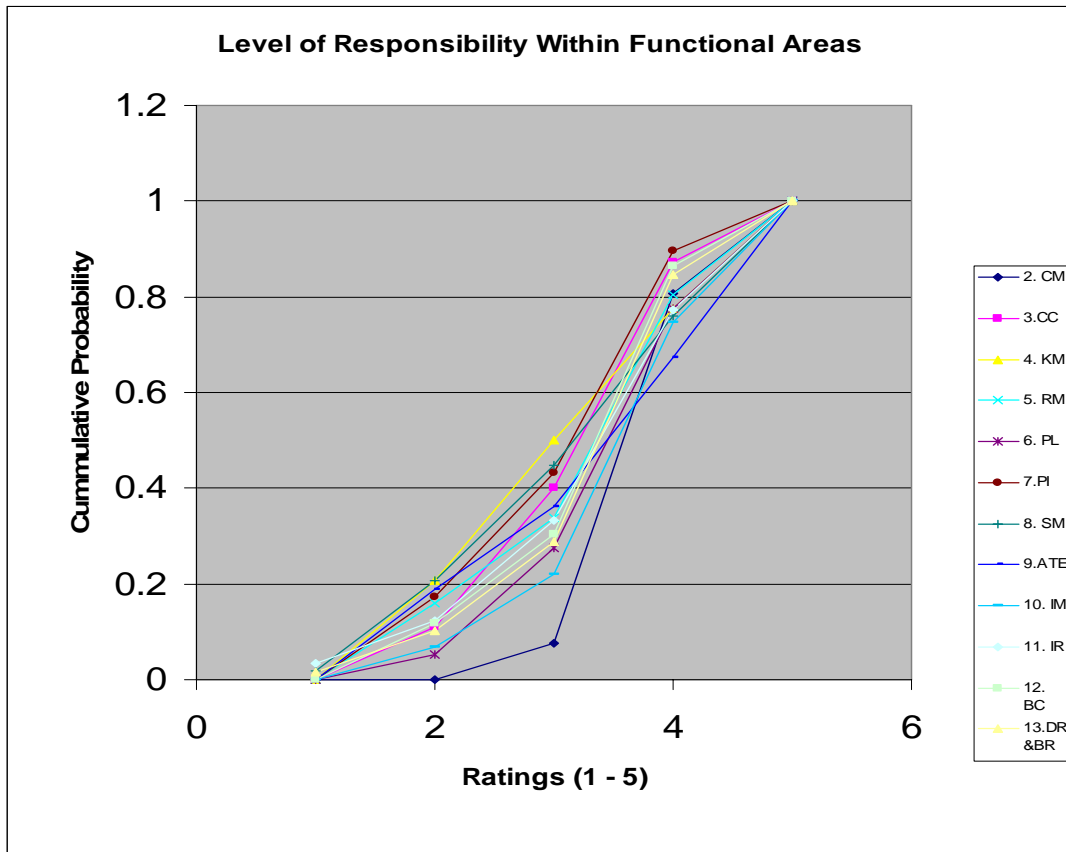


Table 18 displays the distribution of the responses over the 5 point Likert scale for the rating of the level of responsibility within each functional area. Clearly, the respondents exhibited a preference for the 2 (Monitor), 3 (Consult and advise other executives), 4 (Shared responsibility with other executives) and 5 (total responsibility) responses over the 1 (No responsibility) response. A Chi-Square analysis of the responses yielded calculated p values for the 5 point Likert scale with 4 degrees of freedom ranging from a high of 2.32E-06 to a low of 2.76E-41, all considerably below the .05 level of significance.

Table 18
Distribution of Responses over the 5 Point Likert Scale

Distribution of Responses over the 5 Point Likert Scale for Level of Responsibility for all Respondents						
Scale Ranking	1	2	3	4	5	Total
Number of Responses	4	83	142	320	138	687
Percent of Responses	0.6%	12.1%	20.6%	46.6%	20.1%	100%

5.6 Research Question 5

5. How do BCCM experts evaluate the BCCM framework, the identified competencies, the required executive level of involvement and required level of mastery of these competencies, and the required executive level responsibility within each of the BCCM framework functional areas as to appropriateness, clarity of presentation and usefulness?

The functional framework and the analyses of the survey data were presented to six BCCM experts (three who completed the survey and three who did not complete the survey) who were asked to verbally comment on the framework and analyses appropriateness, clarity of presentation and usefulness with respect to BCCM program structuring and executive level BCCM selection and professional development. A

structured interview form was not used for this research question. Instead, the research question was used to frame a general conversation.

The experts were unanimous in their overall assessment on the functional framework. They found it to be complete and relatively clearly presented. Two of the experts made the suggestion that the research BCCM framework be related to the 2004 Edition of NFPA 1600 Disaster/Emergency Management and Business Continuity Programs elements through a graphic representation similar to the one displayed in the NFPA 1600 document that crosswalks the NFPA 1600 Disaster/Emergency Management and Business Continuity Programs Elements to the Federal Emergency Management Agency (FEMA) Capability Assessment for Readiness (CAR) Emergency Management Functions and the BCI and DRII Professional Practices Subject Areas. This crosswalk is displayed in Figure 18.

Figure 18
NFPA 1600 and BCCM Functional Framework Crosswalk

NFPA 1600 Program Elements	BCCM Framework Functional Areas
General	Overall BCCM Program Structure and Management
Laws and Authorities	Overall BCCM Program Structure and Management
Hazard Identification, Risk Assessment and Impact Analysis	Risk Management – Risk Assessment and Business Area Analysis and Business Impact Analysis
Hazard Mitigation	Risk Management – Risk-Based Decision Making Program Implementation
Resource Management	Overall BCCM Program Structure and Management and Program Implementation
Mutual Aid	Incident Management and Incident Response
Planning	Planning and Business Continuity and Restoration and Transition
Direction, Control and Coordination	Crisis Management and Incident Management
Communications and Warning	Risk Management – Risk Communication and Crisis Communication and Incident Response and Knowledge Management – Environmental Sensing, Monitoring and Signal Detection
Operations and Procedures	Planning and Incident Management and Incident Response and Business Continuity and Restoration and Transition
Logistics and Facilities	Program Implementation
Training	Awareness/Training/Exercising
Exercises, Evaluations and Corrective Actions	Awareness/Training/Exercising and Knowledge Management – Organizational Learning
Crisis Communications and Public Information	Crisis Management and Crisis Communication and Risk Management – Risk Communication
Finance and Administration	Overall BCCM Program Structure and Management and Program Implementation

There was general consensus that the functional framework, as a stand alone diagram, could be interpreted as an organizational diagram. This was not the intent of the research study and the resulting display of the framework. Additionally, there was a general

consensus for the necessity to somehow communicate through the framework that Enterprise wide BCCM is not just a one time project, but an ongoing program where each functional area and function is an input to and output from every other function. The research study author intentionally omitted any arrows showing links between functional areas and functions since they were too many in number and tend to confuse the presentation of the framework. The input from the experts does, however, point out the necessity of presenting the framework with some minimal level of description to highlight the functional vice organizational intent of the framework, the linkage of all functional areas and functions, and the need for a sustainable BCCM program rather than a BCCM project.

The experts also felt that it is valuable to maintain separate prioritized lists of competencies across all functional area and functions and within functional areas and functions for the Level of Involvement and the Level of Mastery. They did, however, agree that since the correlation between the Level of Involvement and Level of Mastery was so strong, that a combined (Level of Involvement and Level of Mastery) prioritized list across all functional area and functions and within functional areas would be a more concise and useful presentation of the research results. The results displayed in this manner best support the stated research purpose of presenting results that can assist organizations in structuring an enterprise wide business crisis and continuity management program to meet their specific requirements and provide guidelines for selection and professional development of organizational leaders with business crisis and continuity management responsibilities. Appendices H and I contain the prioritized lists as described above.

5.7 Additional Research Question

The Web-based survey concluded with one general question, not related to any specific competency, but to the range of BCCM supporting competencies in general. The survey respondents who made it to the end of the survey were asked:

Based upon your professional experience and the contents of this survey, please indicate the preferred source of experience and expertise for an Executive Level Business Crisis and Continuity Manager.

No real analysis short of merely recording and reporting the results was accomplished. The results are displayed in Table 19.

Table 19
Preferred Source of Experience and Expertise

Response	Number	Percent
An Executive Level BCCM Manager should come from an <u>operational business background</u> and learn the additional BCCM competencies.	8	12.5%
An Executive Level BCCM Manager should come from a <u>BCCM background</u> and learn the additional operational business competencies.	19	29.7%
<u>It does not matter</u> , an Executive Level BCCM Manager could come from either background.	37	57.8%

This particular question was raised and answered on several occasions during the interviews supporting research question 1 and by the audience at the research study author's presentation of the research proposal at the CPM East Conference in November 2003.

The distribution of the responses was somewhat surprising to the research study author since the vast majority of the interviewees for research questions 1 and 5 expressed their opinion that the person primarily responsible for BCCM should have a total understanding of the business as a foundation for any and all BCCM responsibilities and

authorities. The fact that 87.5% of the respondents answered that an executive's experience and expertise should come from a BCCM background or that the source of the experience and expertise does not matter is totally contrary to what was expected. A possible explanation for this result is that the wording of the question and/or its positioning at the very end of the survey influenced the responses. Additionally, the respondents were almost universally current BCCM practitioners and managers, a fact that could also influence their responses. If the question was asked to more operationally focused business executives, such as Chief Executive Officers or Chief Operating Officers, the results might well shift to a preference for an operational business background.

The consensus answer to this question is a very important point to consider since an organization's philosophy and response to this question is relevant to the positioning and the specific responsibilities and authorities of the BCCM leader in that organization and could be the basis of further research on the evolution of the BCCM profession and professional. A possible comparison with the evolution of the Chief Information Officer (CIO) and/or the Chief Knowledge Officer (CKO) could form the basis of such a research study.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Research Study Goals

The research study described in this dissertation was proposed and conducted to meet two specific goals:

1. The development and validation of a unique conceptual framework for visualizing, organizing and linking the myriad functional areas and functions inherent in an integrated enterprise wide business crisis and continuity management program.
2. The development and validation of a prioritized inventory of competencies required for an executive to effectively manage an enterprise wide business crisis and continuity management program.

The achievement of these goals and the dissemination of the research results can assist organizations in structuring and implementing their enterprise wide business crisis and continuity management programs to meet their specific objectives. Additionally, they can provide guidelines for the selection and professional development of organizational leaders with business crisis and continuity management responsibilities.

Are these goals important? Business Crisis and Continuity Management, by whatever name it is called (Business Continuity Management, Business Continuity Planning, Crisis Management, Enterprise Wide Risk Management, etc.), is evolving as a strategic organizational program worthy of board and ownership level attention and executive level management and leadership. The evolution of BCCM to strategic importance is documented and supported in Section 1.3 (The Case for an Integrated BCCM Program) and Chapter 3 (Literature Review) of this dissertation. Most recent evidence of this evolution can be found in Federal government level documents and studies such as the *Final Draft of National Response Plan (2004)*, *The National Incident Management*

System (2004), and the *9/11 Commission Report* (2004); financial sector studies and guidance such as the Securities Industry Association's *Best Practices for Business Continuity Planning* (2003) and the Securities and Exchange Commission's *Interagency Paper on Sound Practices to Strengthen the Resilience of the U. S. Financial System* (2003); and the public statement of Department of Homeland Security Secretary Tom Ridge at the September 23, 2004 roll out of the Ready.gov, Ready Business Internet site and program, when he stated that private sector preparedness will be market driven, but if the private sector does not comply voluntarily, the Federal government will mandate compliance (Shaw 2004).

6.2 Meeting Research Study Goal 1

1. The development and validation of a unique conceptual framework for visualizing, organizing and linking the myriad functional areas and functions inherent in an integrated enterprise wide business crisis and continuity management program.

The functional framework displayed in Figure 1 is indeed unique and provides a conceptual framework for visualizing, organizing and linking the myriad functional areas and functions inherent in an integrated enterprise wide business crisis and continuity management program. The functional framework, is, by itself, a significant contribution to the evolving BCCM profession and reflects the synthesis of several other frameworks and models, primarily the Crisis Management and Business Continuity framework developed by John R. Harrald in 1998. The validation of the model was not directly testable through the research survey, but as described in Section 4.5, fourteen experts provided their review and comments on the functional model during the formative stage of the research. Additionally, the survey respondents' identification of additional competencies, through the "add a competency" capability, did not result in the discovery of any additional functional areas or functions that were missing from the framework as presented.

Lastly, the final review of the research functional framework and results by six experts did not yield any substantive recommendations for modifying the framework as presented. The experts did, however, recommend that the framework should be accompanied by a short explanation that it is not an organization chart and that the framework represents an on going program that has no beginning or end and not a one time project. The experts unanimously found the framework to be complete, clear and useful for meeting the goals of the research study. Based upon this expert review, the functional framework was cross walked to the NFPA 1600 Disaster/Emergency Management and Business Continuity Program Elements as displayed in Figure 18. The framework's graphical presentation can be considered to be more complete, clear and useful than the narrative presentation of elements contained in the NFPA 1600 document.

6.3 Meeting Research Study Goal 2

2. The development and validation of a prioritized inventory of competencies required for an executive to effectively manage an enterprise wide business crisis and continuity management program.

Research study goal 2 was pursued through the five research questions listed in Section 4.2. For research question 1, the process of identifying, grouping, revising and finalizing the competencies to develop the Web-based survey is described in Section 4.3. ***No other single comprehensive listing of competencies, focused at the executive level, and covering the myriad functional areas and functions comprising an enterprise wide BCCM program was located in the research study literature search.*** Even without prioritization, the functional area and function lists of competencies are a peer reviewed synthesis of over 40 relatively authoritative sources and can provide guidance for the selection of and professional development of an executive level business crisis and continuity manager. Additionally, the competencies can provide a level of understanding of the functional areas and functions and their inter relatedness.

The analysis of the survey results, for reasons as described in Sections 5.1 to 5.5, did not include the multiple demographic groups beyond the Overall Respondent Population independent variable. The analysis of the survey responses did allow for the ranking (prioritization) by calculated means of competencies within functional areas and functions and across all functional areas and functions for the dependent variables of Required Level of Involvement (LOI) and Required Level of Mastery (LOM). Due to the high correlation between the ordering of the calculated means for the LOI and LOM dependent variables (0.9030), and the recommendations of the final expert review for research study question 5, the ranking (prioritization) of the LOI and LOM dependent variables were combined to form a single ranking (prioritization) list. The ranked (prioritized) lists for the LOI and LOM dependent variables and for the combined LOI and LOM dependent variables are displayed in Appendices H and I.

Beyond a ranking (prioritization) by calculated means, the Chi-Square analyses of the distribution of responses across the 5 and 3 point Likert scales for LOI and LOM respectively, indicate that respondents provided their actual preference for their Likert scale selections rather than a random selection. Additionally, the scatter plot of the cumulative probability distribution for the Likert scale responses provides a means of visually determining which competencies tend to deterministically dominate the other competencies within the same functional area and/or function based upon the distribution of the Likert scale responses. The results of the deterministic dominance analyses are very similar, if not identical, to the ranking (prioritization) by calculated means for LOI and LOM and provide an alternate method of determining the ranking and prioritization. The results of the Chi-Square and scatter plot analysis are displayed in Appendices J and L respectively.

Research question 4, though not directly linked to the rating of competencies by LOI and LOM, requires the consideration of the competencies within the functional areas and functions to rate the dependent variable, Required Level of Responsibility (LOR), for a functional area. The LOR, while not explicitly stated in either research study goals, is implicit in meeting both of the goals. The clear assignment of responsibility is necessary

for the development and maintenance of an organizational framework for enterprise wide BCCM and for the formulation of the position description of the business crisis and continuity manager.

As with the LOI and LOM analyses, only the single independent variable, Overall Respondent Population was used for the analysis of the LOR responses. The distribution of the Likert scale ratings for all of the functional areas demonstrated a clear preference for rating the LOR for any functional area as either a 2 (Monitor), 3 (Consult and advise other executives), 4 (Shared responsibility with other executives), or 5 (Total responsibility) with less than 1 percent of the responses indicating a rating of 1 (No responsibility) for any functional area. This preference is also supported by the Chi-Square analysis of the distribution of the responses which indicates that respondents provided their actual preference for their Likert scale selections rather than a random selection. The fact that over 99% of the responses indicated a preference for some level of responsibility for all functional areas included in the conceptual framework as presented in the survey supports the validation of the functional framework for enterprise wide BCCM . The scatter plot analysis for deterministic dominance of LOR for a functional area provided the same ranking (prioritization) as the calculated mean ordering.

Research question 5 provided the opportunity to review the results of the research study with recognized experts in the BCCM field to determine how they evaluated the functional framework and the analyses and results of research questions one through four as to appropriateness, clarity of presentation and usefulness. For the functional model, the consensus was that it is complete (appropriate), clear and useful with the caveat that it should be accompanied by some level of explanation that it represents an ongoing program and not a one time project with a set beginning and end point, and that it does not necessarily represent a recommended organizational structure but an inventory of functions and functional areas that should be coordinated for effective and efficient BCCM.

The experts also agreed that the identification and grouping of competencies at the executive level is, by itself, unique and a significant contribution to the evolution of BCCM as a strategic program with leadership at the executive level. All other listings of competencies they were familiar with (DRII and BCI, ASIS International, ISO Standards, Commercial training courses, etc.) were primarily developed for practitioners or written at such a high level as to be not really useful for personnel selection and professional development of an executive. One of the expert reviewers commented that the list of competencies will be a valuable tool for the Human Resource Department to develop a position description for a BCCM executive and to screen applicants. Equally as important, the competencies will let other executives know what they should expect from the BCCM leader and will help to establish that person's credibility with the organization's leadership.

The prioritized lists of the competencies across all functions and functional areas and within functions and functional areas were also seen as an appropriate, clear and useful product. Although the identification and grouping of all competencies was viewed as useful, 137 competencies are probably too many for any practical application and some level of prioritization, particularly within functions and functional areas is necessary. The combination of Level of Involvement and Level of Mastery to develop a single prioritized list was viewed as more useful for practical application than retaining the separate lists of prioritization. The experts found the Chi-Square and Scatter Plot analysis interesting, but of limited practical value beyond the point where they support the prioritization of competencies.

A review of the ratings of the Required Level of Responsibility led to interesting discussions with the experts. The distribution of responses across the Likert scale (Table 15) was interpreted as demonstrating a preference for leading a BCCM program through a collaborative, rather than a directive management style. At the extremes of the Likert scale, less than 1% of the responses rated any functional area as requiring No involvement (Likert scale 1), and approximately 20% rated any functional area as requiring Total responsibility (Likert scale 5). Almost 80% of all responses rated the

level of responsibility for any functional area as Monitor (Likert Scale 2), Consult and advise other executives (Likert scale 3), or Shared responsibility with other executives (Likert scale 4), all of which are more collaborative than directive in nature.

This interpretation of the Required Level of Responsibility responses is generally consistent with the rating of the competencies for Level of Involvement, Level of Mastery and Combined. For example, the following four competencies which reflect a collaborative management style are four of the five highest rated competencies across all functions and functional areas for Level of Involvement, Level of Mastery and Combined.

:

- Establish and lead a multi-disciplinary BCCM Steering Committee.
- Establish and lead a multi-disciplinary Crisis Management Steering Committee.
- Communicate top level management's acceptance and support of the BCCM program throughout the organization and to external stakeholders.
- Engage/inform the Management Steering Committee, Crisis Management Team, and other key stake holders in all functional areas comprising the enterprise wide BCCM program.

Conversely, the following two competencies which support a more directive management style, are rated as below the mean of all competency ratings across all functional areas and functions for the Level of Involvement, Level of Mastery and Combined.

:

- Incorporate BCCM responsibilities into the performance and appraisal system.
- Incorporate BCCM roles, accountabilities, responsibilities and authority into job/position descriptions.

6.4 Significance/Limitations of the Research

The development of a unique conceptual framework inherent in an enterprise wide BCCM program and the identification and grouping of a list of executive level focused

competencies are the primary contributions of this research study. The literature review (Chapter 3.) describes several existing frameworks and sources of competencies, all of which are critiqued and found lacking in some way. The research study functional framework and competency inventory and grouping were developed by synthesizing these frameworks and competency lists along with the information gathered from multiple additional authoritative sources through the process described in Sections 1.5, 4.1, 4.3, 4.5 and 5.3.

At the standard-setting level, the framework and competency inventory complement the *NFPA 1600 Standard on Disaster/Emergency Management Programs* which appears to be emerging as the de facto “national standard.” As displayed in Figure 17, the BCCM functional framework can be cross-walked to the NFPA 1600 program elements and provides a means of displaying, organizing, and linking the myriad functional areas and functions supporting the NFPA 1600 Standards. This visualization is essential to establishing and organizing a truly integrated BCCM program and is lacking in the NFPA 1600 Standards. The competency inventory also provides the level of detail that organizations will need to select and develop their executive level BCCM leadership.

Returning to Judge Sporkin’s assessment (Section 2.4) that “Corporate America has failed Crisis Management 101,” and his challenge for universities to teach business people to cope with corporate emergencies, the functional framework and competencies are a logical starting point for executive level educational and training curricula development. The existing competency lists and their presentations, as described in Section 3.4, are primarily focused at the BCCM practitioner level, and have not to date, found their way into executive level selection and professional development processes.

As stated in the research study goals and research questions, the logical step following the functional framework and “straw man” competency list development and validation was to prioritize the identified and grouped competencies. Required Levels of Involvement, Mastery and Responsibility were chosen as the dependent variables for this prioritization via a Web-based survey. Survey participants were solicited via the process

described in Section 4.6. Although the development software provided for a very user friendly and attractive survey instrument, completion of the survey was a daunting task, requiring more than 30 minutes due to the large number of competencies (137) and functional areas (13). Potential survey respondents self selected based upon their interest and desire to assist in the research. Not surprisingly, the number of responses (only 63 respondents completed all or portions of the survey) was disappointing and limits the generalization of the survey results for the purpose of prioritization of the BCCM supporting competencies to any generic organization.

Although demographic data, related to the size and sector of organizations, reporting level of the respondent's organization BCCM leader, and the respondent's level of expertise was collected and referenced to the survey responses, the small number of responses in each category did not permit analysis beyond the single independent variable of Overall Respondent Population. The end product of the survey data collection and analysis is a set of lists which prioritize the survey competencies within functions and functional areas and across all functions and functional areas by Required Level of Mastery, Required Level of Involvement and the combination of the two dependent variables. Do these lists reflect the true level of prioritization for the competencies? To the extent that they reflect the preferences and responses of the 63 respondents, who taken as a group are a representative and statistically significant sample of the population of BCCM practitioners and managers invited to participate in the survey, the answer is yes. Beyond that, the prioritized lists can not be generalized to specific organizations identified by their size and/or sector. The same analysis and conclusions hold true for the Required Level of Responsibility survey responses.

In addition to the limitations imposed by the number of survey respondents, the research study data collection and analysis results as displayed in the functional framework and competency inventory are generally not applicable to small and even medium sized businesses. The functional framework has been used by the research study author in conducting short (two hour) BCCM workshops for small and medium sized businesses for the Business Development Agency of a county adjacent to Washington, DC. The

framework was used to explain the general thought process associated with business preparedness, response and recovery and that certain functions and functional areas such as risk management, planning, awareness/training and exercising, incident response, business continuity, and response and restoration are applicable to any business, regardless of the size. Without a thorough context setting explanation, the functional framework could be viewed as overwhelming and even confusing to a small or medium sized business owner.

The same reasoning can be applied to the competency inventory. A small or medium sized business owner will probably be overwhelmed by a list of 137 competencies, even if they are prioritized. The overall inventory does contain many competencies that are in fact applicable to small and medium sized businesses and these small and medium sized business specific competencies need to be identified, appropriately worded and explained to be of use to small and medium sized businesses.

This said, the analysis and results of the research study were judged as logical by the experts participating in the final research review (Research question 5). They reviewed the functional framework and the prioritized lists of competencies and did not identify any glaring problems with the method and the research study products. To the extent that the experts are seasoned professionals who understand BCCM, their review provides a level of validation of the functional framework and the survey based prioritization of competencies.

6.5 Recommendations for Further Research

This research study attempted to assist organizations understand the myriad functions and functional areas supporting the management of disruptive (crisis) events and continuity of operations, the inter dependencies of these functions and functional areas, and the competencies required by an executive level individual and/or organizational unit responsible for coordinating the functions and functional areas into a comprehensive and integrated program supporting the entire organizational enterprise. The research results as presented in this dissertation are a first step in reaching this understanding. A second step could be to validate the research study results through their presentation to and systematic assessment by, executive level leadership in organizations with recognized comprehensive and integrated BCCM programs. This validation process should not be solely limited to the review of BCCM executives and practitioners. The review should be extended to the highest levels of leadership within an organization to capture their perspective on the importance of and commitment to a BCCM program in the context of the organization's strategic goals and objectives.

Also, as described in Section 1.1, a functional framework and a prioritized inventory of BCCM supporting competencies, reflected in competent leadership and structure may be a necessary condition for the development and sustainability of an integrated BCCM program. Is this; however, a sufficient condition for BCCM program success? Many other factors such as organizational culture, risk preference, internal and external organizational politics, financial condition, etc. may intervene to inhibit or restrict the BCCM program. These factors need to be studied, understood and documented through comprehensive research to provide a fuller understanding of the structure and importance of BCCM in the context of organizational strategic planning, goals and objectives.

Looking beyond the current research study results and to the lessons learned through the study, the structure and content of the research study survey should be improved for any future research in this area. The choice of a self selecting survey covering all the

functional area (13) and included competencies (137), and requiring over 30 minutes to complete, greatly limited the number of responses. Further research efforts should focus on the individual functional areas to develop surveys that can be completed in much shorter periods of time (10 minutes or less) and that can be targeted to specific audiences through affiliations with organizations such as the Association of Contingency Planners, the Business Continuity Institute, Disaster Research Institute International, Business Recovery Managers' Association, etc. All of these organizations have expressed an interest in the results of such research and provide the linkage to large numbers of BCCM practitioners and experts in the United States and Internationally. Given the potential for much higher response rates, factorial experiments could be designed and implemented to investigate statistically significant results that consider the responses of multiple independent variables based upon interesting and meaningful demographic descriptors. The results could then be generalized to specific types of organizations and to organizations in general to provide more useful competency inventories.

Additionally, the evolution of the Chief Information Officer (CIO) over the past thirty plus years could provide valuable analogies and lessons learned for the evolution of the BCCM profession and the elevation of BCCM leadership to the executive level. Scholarly research projects such as those conducted by Massachusetts Institute of Technology Sloan School of Management Center for Information Systems Research, examine the evolving role of the CIO (Ross and Fenny 1999) and the changing role of the information systems executive (Rockhart 1982), could serve as the foundation for such comparative research and analysis. The additional research question described in Section 5.7 focuses on the preferred source of experience and expertise for an executive level Business Crisis and Continuity Manager. Comparison with the evolution of information system executives could help answer this question.

6.6 Concluding Remarks

The research study described in this proposal met two specific goals:

1. The development and validation of a unique conceptual framework for visualizing, organizing and linking the myriad functional areas and functions inherent in an integrated enterprise wide business crisis and continuity management program.
2. The development and validation of a prioritized inventory of competencies required for an executive to effectively manage an enterprise wide business crisis and continuity management program.

The achievement of these goals supports the ongoing evolution of integrated Business Crisis and Continuity Management as a widely accepted strategic program worthy of executive level management and leadership and commensurate resource allocation. The research study results, as presented, provide a platform for meaningful discussion within the BCCM community and serve as a point of departure for further research. No prior research study has met these goals.

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