

**Degree to Which Project Managers Have Implemented Risk  
Management Planning, Identification, Evaluation and Strategies within  
Information Systems Projects**

by

**Reil Snyder**

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*Degree to Which Project Managers Have Implemented Risk Management Planning,  
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DEGREE TO WHICH PROJECT MANAGERS HAVE IMPLEMENTED RISK  
MANAGEMENT PLANNING, IDENTIFICATION, EVALUATION AND  
STRATEGIES WITHIN INFORMATION SYSTEM PROJECTS

A Dissertation

Presented to the  
Faculty of Argosy University-Orange County

In Partial Fulfillment of  
The Requirements for the Degree of

Doctor of Business Administration

by

Rell Snyder

March 2003

Abstract of Dissertation Presented to the  
Graduate School of Argosy University-Orange County  
in Partial Fulfillment of the Requirements for the  
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Rell Snyder

2003

Chairperson: Dr. Joseph M. Vo

Committee: Dr. Paul Bramhall

Dr. Judith L. Forbes

Department: School of Business

The purpose and overall goal of the study is to further develop an understanding of the degree to which Information Systems project managers have implemented risk management planning, identification, evaluation and strategies within projects.

The population selected for study consisted of 651 Information Systems Development (ISD) project managers who are responsible for managing the ISD components of projects who are members of the Project Management Institute Information Systems Specific Interest Group (PMI-ISSIG). With almost 90,000 members

worldwide, PMI is the leading nonprofit professional association in the area of Project Management

The survey was constructed using the Project Risk Management Processes Checklist to determine the nature of risk management processes utilized within ISD projects. As well, the survey was developed using the Risk Management Maturity Checklist for the purposes of constructing questions to assess the degree to which risk project management activities are occurring as well as the level of risk-maturity associated with these efforts.

The research design selected for the study was an exploratory survey design. The implementation of an exploratory survey design permits the researcher to explore and discover relationships among a large number of variables within a study. The main purpose is to establish whether two variables are related, and if so, establish the direction of the observed relationship.

Using comparisons of means, it was found that on average, both years experience and education level effected how respondents' viewed risk management strategies. In general, as education increased and as years experience increased, respondents thought that risk management strategies were being employed more often.

It appears that when upper management and clients were involved in the implementation of risk management techniques, those techniques were far more likely to be implemented across the board.

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Orange, California

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Director, School of Business

## DEDICATION

To my wife Harriet, who has put up with my being a student once again. Also to our children Derrick and Ian who have understood my drive and determination to get this degree.

For your patience, love and silent sacrifice, I hope that I may, in some special way, repay you.

Thank you!!!

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## CHAPTER ONE: INTRODUCTION

Within Chapter One, an overall introduction to the study will be provided. Initially, relevant background information that documents the relevance and significance of the study will be reviewed. A theoretical framework will be presented that helps to provide a conceptual foundation for risk management, followed by a conceptualization of project risk management. This conceptual framework will serve as the theoretical foundation of the study. Subsequently, a statement of the problem will be provided and the purpose of the study will be presented. Chapter One will conclude with a summary of information provided and an outline of the remaining chapters of the study.

### Background Information

Following the development and rapid integration of computers into the everyday lives of humans, within the last 12 years, a growing need to transfer information quickly and accurately amongst the global interconnected network of computers has emerged. Explosive growth in networking, resulting in a remarkable number of users able to access the Internet, is estimated to be well over 544

million worldwide (Nua Ltd., 2002). Although the rate of new users is expected to slow, growth is expected to continue as people in new nations connect to the global network (Clemente, 1998).

With the proliferation of computers and near universal network connectivity, the field of information technology has continued to shift from a focus on stand alone personal computing to developing solutions to support people and the systems within which they work in collaboration activities. Network technology and global information systems have provided the opportunity for people to conduct work in a variety of locations continuing to further increase the appeal of IT initiated collaboration and communication. As well, organizational systems have expanded, moving from a localized to an increasingly global presence.

Increasing competition and advancing information and communication technologies have forced organizational systems to operate within evermore complicated, turbulent environments, such as, e-commerce based business to business (B2B) supply chains. To adjust to the volatile environment, theorists argue for the need to establish organizational paradigms that promote flexibility (Drucker, 1999; Davenport & Prusak; 1998) as well as organizations

having access to information on risks that can lead to project failures and solutions that can prevent such failures (Artto & Hawk, 1999). The flexibility to continuously assess programs and operations and change procedures to meet shifting customer/consumer expectations allows an organization to thrive in a volatile and turbulent environment while project risk management offers organizations the ability to avoid and prevent potential risks that can lead to project and organizational failure.

Accompanying these growing demands and expectations is ongoing concern regarding the number of information system application development projects that fail (e.g., Kharbanda & Stallworthy, 1983; Standish, 1995; Kharbanda & Pinto, 1996; Artto, 1997; Pinto, 1997; Hoffman & King, 1997; Ulfelder, 2001). According to the Project Management Institute (2000), the major reasons projects fail are as follows:

1. Insufficient early planning
2. Unrealistic project plan
3. Scope underestimated
4. Customer / management changes

5. Insufficient contingency planning
6. Inability to track progress
7. Inability to detect problems
8. Insufficient number of checkpoints
9. Staffing problems
10. Technical complexities
11. Priority changes
12. No commitment to plan by team
13. Uncooperative support groups
14. Sinking team spirit
15. Unqualified project personnel

As suggested by Kanabar (1997), common factors associated with project failure have been identified as the result of a proactive risk management environment by project managers. According to McManus and Grushka (1999), while best practices, currently used by ISD project managers to emphasize the identification of risks beginning during a project selection process or during the early planning process, risk events continue to be addressed most

often by project teams in a cursory manner during the latter phase of the planning process, if addressed at all. As explained by McManus and Grushka, if risks are addressed, they are most often identified as independent events requiring independent responses. Consequently, project risk management when operationalized by project managers and teams continues to reflect a lack of experience in risk analysis, lack of data or adequate time, and the complexity associated with many of the available risk assessment tools (McManus & Grushka, 1999).

During the 1990s, the focus on project risk management development began to turn from developing the quantitative assessment of risks into developing an understanding of the risk management process (Chapman & Ward, 1997; Cano & Cruz, 1998). According to Artto and Hawk (1999), the knowledge accumulated from project failures and/or unfavorable events in projects has increasingly led to a focus on learning and understanding the reasons and responses associated with failures. This focus has further emphasized the importance of the risk management process and how it should be organized in a project or in a project organization as a focal point for future work in the field of project management. As suggested by Artto and Hawk, the current

direction of the risk management field is to promote learning and creative ways to conduct project risk management for organizational learning. Project management efforts have led to a growing conceptualization and understanding of the process of assessing and identifying risks to be used in the introduction of experience-based solutions for avoiding and preventing risk damage. According to these authors, the risk knowledge bases are expected to grow as experience about risks and potential risk responses are recorded during project executions. The resulting knowledge base will eventually provide assimilated information to organizations and those engaged in project risk management with access to information and understanding about risks in real time.

#### Theoretical Framework

Within this section of Chapter One, an overview of a general theoretical framework for conceptualizing and understanding risk management will be presented. The model presented will help to further clarify the foundations upon which project risk management is based. Subsequently, a conceptual model of IT risk management will be reviewed. This conceptualization will provide the theoretical framework upon which the study is based.

According to Eyles (1994), risk is one of the central concepts and concerns of late twentieth century western society and has resulted in the emergence of what Eyles termed as a "risk society". As explained by Eyles, a risk society has further emerged with the intensification and globalization of risks. As Risks are seen as resulting from the modernization process and are perceived as cutting through and across existing boundaries in the social order, breaking down the borders between individuals, groups and countries. As awareness has increased of the realities of living within a risk society, society has accepted that exposure to risk has become inescapable. Eyles thus explained that humans are left trying to evaluate, assess and manage it, while the pervasiveness of risk challenges societal expert-systems (i.e., science and technology). Consequently, efforts to assess and manage risk have been incorporated into all aspects of human life.

In considering the conceptual view of risk and risk management as it is used within the context of organizations and businesses, a framework used to conceptualize operational risk management developed by Sparrow (2000) will be reviewed. According to Sparrow, operational risk management is defined as the systematic

assessment and management of the trade-offs made between risk and opportunity to run an efficient and effective organization. The basis upon which operational risk management is founded is that the up-front investment costs of mitigating risks or realizing opportunities are much better known than the potential costs associated with realized risks or missed opportunities. As organizations are often driven by both tangible and intangible factors, there is an increasing reliance on those decision-makers who base decision-making and judgment on operational measures (i.e., that which is systematic and explicit) of risks, opportunities and investment costs. As explained by Sparrow, while many operational decisions must be subjective, fallibility will be reduced if such decisions are made utilizing the results of systematic and explicit assessment.

As suggested by Sparrow (2000), whenever organizations are faced with investment decisions to reduce exposure to risk or to realize opportunities, the value of the risk or opportunity must exceed the cost of the action necessary to reduce risk and/or to maximize opportunity. Investment will not occur in either risk mitigation or realization of opportunity until the required margin above the resource

cost and uncertainty value are obtained. In this respect, as suggested by Sparrow, the value of a decision-maker lies in how well he/she manages the trade-off between opportunity, necessary actions, and risk.

Dixit and Pindyck (1994) have suggested that the value of a risk must exceed the purchase and installation cost of the action necessary to treat it appropriately (i.e. by an amount equal to the value of keeping the investment option achievable). As explained by the authors, the opportunity cost of investing in risk reduction activities can be extensive and the cost associated with maximizing opportunity may be sensitive to uncertainty as a result risk reductions costs. Consequently, there is an incentive at times to not engage in risk reduction activities and hold opportunity in abeyance, since exercising the risk reduction activities may be at least partially irreversible. As well, as explained by Dixit and Pindyck, the option to invest is valuable in itself as a consequence of the uncertainty associated with the potential realization of an opportunity or a risk. If the value of the risk exposure or opportunity reward rises, the net value of investment in risk reduction and opportunity maximization rises accordingly and vice versa. As further

explained by the authors, the cost of postponement must be assessed against the costs imposed by a realized risk or missed opportunity. Thus, under such circumstances, doing little or nothing becomes a valid choice if risk assessment is based solely on the likelihood and impact of a potential event.

According to Sparrow (2000), such a model of risk management only is present in the absence of clear parameters and data. In operationalizing such a model, the value of a manager lies in the judgment to "know" when, and how much, to invest in the reduction of each risk and maximization of opportunity. According to Sparrow, lacking data upon which to base his/her decisions, managers rely on the following principles:

1. First, the investment is partially or completely irreversible. In other words, the initial cost of the investment is at least partially sunk and cannot be recovered should there be a change of mind.
2. There is uncertainty over the future rewards from the investment. The best one can do is assess the probabilities of the alternative outcomes that can mean greater profit (or loss) for organization.