

UNIVERSITY OF STRATHCLYDE

DEPARTMENT OF MANAGEMENT SCIENCE

**The Effect of Cultural Difference on Project Risk
Management Practice: A Thai Culture Analysis**

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Abstract

Project Risk Management (PRM) has become an important tool supporting project success. Many project organizations have now gained benefits from employing the concept. The problem with RPM practice lies in the effectiveness of the implementation process. This brings to the study of a soft aspect of project risk management. The most effective way to implement the PRM concept in an organization is to tune the PRM process in accordance with organizational culture and practice. This would bring some level of difficulty where a PRM process was to be applied in a place where values, norms and practice are different to the place where it originated.

In this study, the researcher examines the influence of culture and compares it with PRM practice. The study seeks to investigate the social dynamics in Thailand, a country whose risk management lags behind that of Western economies and whose cultural characteristics differ significant from Western nations.

First the researcher reviews the literature on PRM process in order to understand its principle and processes. The study of PRM implementation and its behavioral aspect of also conducted. The study led to the extraction of PRM values. These values help to enhance understanding of PRM practice and managerial practice required to support effectiveness in the PRM process. In order to gain an understanding of cultural difference, Hofstede's framework is employed to serve as a tool to analyse Thai culture. The social impact is then analysed by the discussion of the effect of Hofstede' dimensions of PRM values.

The study is based on a qualitative paradigm trying to understand the effect of Thai culture on management practice. It results in three research methods substantiate each other. The case study is to provide understanding of the effects of Thai culture in a real life context. The interviews give the perspective of Thai project managers towards risk and risk management principle. The workshop is to investigate Thai managers' response to the risk management process.

The researcher presents a cultural analysis of Thailand and discusses the effect of cultural factors on the PRM values within Thai management practice. The researcher concludes with a discussion of the effect of Thai culture on PRM practice.

The findings of this research support that in order for PRM to be adopted in places where culture is different to Western norms, it is important to investigate and gain an understanding of a particular culture prior to commencing PRM adoption programmes.

Acknowledgement

I wish to thank my supervisors, Terrence Williams and Lesley Walls for their helpful and constant feedback and encouragement. Without their guidance and patience, the completion of this work would have been much less likely to happen.

GLOSARY

AAT	Airport Authority of Thailand
BIA	Bangkok International Airport
CSC	Construction Supervision Control
MOCT	Ministry of Communication and Transportation
NBIA	New Bangkok International Airport
PMC	Project Management Consultant
PLC	Project Life Cycle
PRM	Project Risk Management

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Chapter 1 Introduction

1.1 Background Perspective

With regard to the characteristics of a project and its environments, risk management is discerned as an important even a fundamental basic component, which must be integrated to all project functions [Clark et al., 1992, PMI, 2000, and PRINCE, 2000]. Fundamental project management must be supplemented with effective risk management so that the achievements of the project can be attainable. While PRM can provide tremendous benefits to project organisations both as a supportive analysis tool and a tool to increase management effectiveness, the majority of project organisations still do not recognise this concept. Research into the risk management area comprises two main issues. The literature review of the PRM process has been mainly focused on the development of risk management tools and techniques in both qualitative and quantitative techniques. It has only been recently that “soft issues” concerning risk management and organisational structure and behaviour have stirred academic interest [Ward, 1999, Smallman, 1996, and Hillson, 1996]. The study of the management aspect is important because of the extent to which PRM benefits can only be gained through an effective implementation process [Ho and Pike, 1991, Hertz and Thomas, 1984].

Basically, the PRM adoption process must involve an understanding of individuals, organisations’ skills, attitude and adaptation capability, as integration of PRM involves a profound renewal of attitudes, and embedding of ideology which signifies cultural change [Clarke and Varma, 1999, Tood, 1999 and Uher and Toakley, 1999]. According to, Smallman, [1999] social as well as technical considerations should be integrated with existing requirement methods.

Culture, in particular, has been pointed as a primary concern in the success of the PRM implementation process. Culture influences both risk behaviours [Douglas and

Wildavsky, 1992] and characteristics and management practice of project organisations [Dingle, 1992]. Therefore, the role of culture must be understood if the risk management implementation effort is to be successful. Nevertheless, in a PRM context the role of culture is poorly understood.

Hofstede [1991] and Brown [1996] suggest that an understanding of culture is necessary to penetrate the surface level and gain awareness of basic values and assumptions, hence providing understanding of behaviours. Having understood the importance of culture, an effective PRM adoption programme can be established. The problem is that cultures are different from one to another. Some organisations may have cultures which respond positively to the PRM practice, but PRM principles may be cumbersome when attempting to create acceptance in other organisations. The best way to implement a PRM process is to adjust its application in accordance with a target organisation. The Risk Maturity Model is a great tool for providing analysis of risk management capability [Hillson, 1999]. This tool can be used to benchmark an organisation's risk management capability. The results can be used to support an appropriate PRM adoption programme. However, an effective risk management practice requires several managerial practices/activities to support it. This study could be taken further by investigating and understanding managerial activities which can be used to support an understanding and create an environment for PRM supportive organisations.

This research takes a further step to this challenge by combining national culture theory, Hofstede's framework in particular, to see how it enhances a PRM integration framework. The principle of PRM is a Western invention, which reflects different attitudes and value which do not always perfectly fit. Project managers should, it has been argued [de Bakker, 2002], apply the PRM practice to a particular country when developing successful PRM and examine the appropriateness of the methodologies and adapt them to suit the local culture. Organisations in developing countries have adopted original management theories and techniques from industrialised countries as they have benefited from their prescriptions. Therefore, many organisations in developing

countries are based on an uncritical emulation and extrapolation from the experiences of the economic growth model of western countries, grossly disregarding the fundamental differences in socio-cultural constraint and local conditions and circumstances [Sinha and Kao, 1988 p.11 and Kanter, 1983].

The Royal Society [1996] also states the importance of cultural theory on interrogative examination of the different type of organisations approaching risk management and with regard to cross-national variations in risk management. The researcher contends that by taking into consideration of national culture theory can significantly increase the capability of the PRM adoption process to tackle cultures that differ from its origins. The researcher proposes Hofstede's framework as a guideline in analysing cultural differences. Without contemplating the culture differences, PRM can be fruitless. This research concerns itself with developing a model that presents connections between the PRM practice, organisational culture/structure and national culture. The primary objective of the research presented here is to enhance the literature of PRM implementation by employing national culture as a mirror to reflect cultural differences between Thailand and PRM values.

The motivation for developing a suitable risk management process for Thai project organisations is based on the awareness that effective risk management can enable better project management performance. However, to gain full potential of managing risks, the process must fit the organisational context and the special requirement of Thai project organisations. Most studies of the PRM process focus on developed countries. This is understandable since PRM has been developed and widely used in these countries. However, the study of PRM in developing countries is very important for the promotion of the PRM concept. Furthermore, the validity of the PRM process and its theories need to be tested in different environments in order to assess its general adaptability. For developing countries, the project risk management concept can be vital to the success of increasing infrastructure projects. The use of such a principle in developing countries is, however, still low.

Nevertheless, there is an increasing interest in the PRM process in several developing countries. In order for these countries to apply the PRM process effectively, it is important to provide studies concerning the PRM process and its application in other countries. Due to increasing globalisation, there are many international projects undertaken around the world. Organisations from developed countries which are familiar with PRM may find it difficult to practice the concept with other project members from developing countries. While recognition of cultural difference would allow countries other than western countries to utilise the PRM process; it would also provide opportunities for joint venture organisations to design appropriate PRM tools and techniques within their organisations and avoid cumbersome collaboration.

1.2 The study of PRM in Thailand

In developing countries, where there is a swiftly increasing number of infrastructure projects [Park, 1998]. The concept of risk management can significantly improve project success. Regarding its benefits, the PRM process has seen wide success and has been practiced extensively in developed countries such as the USA, UK and Australia [PMI, 2000, PRAM, 1996, AS/NZ 3860, 2000]; however, the application of PRM in developing countries is still rare. Some developing countries in South East Asia such as Taiwan, Hong Kong [Mak, 2001 and Picken and MaK, 2001], Malaysia and Singapore [Yeo, 1990] have tried to apply PRM discipline in their countries, especially for major transportation projects; however, the application is limited to the contractual phase. These countries have realised the benefits of the PRM principle in coping with the pressures of economic, time and quality constraints. There is high potential that risk management will play an increasingly important role in these countries [Tummala et al., 1997 and Kohli, 1992]. Nevertheless, it is troublesome to utilise the concept of PRM on a continuous basis throughout a project life cycle. Many constraints have been stated for instance, unfamiliarity of project practitioner characteristics, attitude towards risk and trust in risk management process. Culture in particular has been pointed out as a prime factor determining the success of risk management implementation as it affects

organisation structure, behaviour, risk perception, attitude towards risk and risk management approach. In an organisation, there are several prevailing cultural values which influence the organisation's management practice. These values may be supportive to PRM practice or may be troublesome depending on the particular culture. Consequently, it is of paramount importance to seek a way of pursuing the PRM concept in different organisational/national cultures.

In Thailand, there is no evidence regarding PRM practice. In Thailand, the PRM concept and its benefits have been rarely acknowledged. PRM is a relatively new concept to Thai practitioners. The study of Thai project organisation has been done with a view to developing a theoretical framework for conceptualising the organisational issues around the adaptation and use of more formal risk management programmes. Furthermore, while the number of mega infrastructure projects in Thailand is increasing [TDRI, 1999], in parallel the number of project failures is also obvious [Bangkokpost, 1994]. For instance, the Second Stage Expressway, the Don Muang Tollway project linking Bangkok [Ogunlana, 1997], and the Bangkok Elevated Transport System, initially envisaged as a 60 km rail system and road through the capital [Tam and Leung, 1999] have all faced both project delays and failed to meet their revenue targets.

An attempt to conduct research concerning PRM in Thailand will be of interest to many parties who wish to explore the nature of PRM. The Thai construction market is very attractive for those international companies. The practice of PRM in Thailand would enable the foreign companies to work with Thai contractors more effectively.

Along with this trend, risk management must become accepted as a primary aspect of project management. However, little is known about Thai construction' response to project risks. Furthermore, in Thailand infrastructure often depends on the advanced technology and knowledge of foreign countries, which are far more familiar with the concept of PRM. It follows that it will be beneficial for Thai project practitioners and organisations to become more knowledgeable about the PRM process.

1.3 Research Objectives

Several practitioners have endeavoured to construct a PRM process that is applicable to diverse project organisations; however, organisational environments are also diverse regarding their culture. Therefore, to study the implementation of the PRM concept in different environments would contribute to the development of a more reasonable implementation strategy of the PRM principle. As mentioned above the application of PRM is widely evidenced in developed countries. The PRM implementation frameworks and a supportive national cultural theory will be used as guidelines for this research in trying to adjust a suitable framework for Thai project organisations.

This study will seek to explore Thai cultural factors that have contributed to the state and development of Thai project management practice. The study will utilise three research methods: case study, interviews and workshop/focus group. The case study will allow the researcher to explore the effect of Thai culture on the project organisation. The survey is employed to investigate Thai project management practitioners concerning their attitudes towards risk, their perception towards risk management and the potential ways to implement risk management practice. Finally, a focus group will enable the researcher to gain consensus ideas of the PRM implementation process for Thai organisations.

The objectives of this study are as follows:

- to understand the inhibiting factors of Thai culture towards PRM practice
- to understand risk perception and attitude towards risk of project practitioners
- to investigate Thai project management practice in the construction industry
- to investigate the risk management practice of Thai project practitioners

The objectives lead to the following questions:

-What are the perceptions of Thai project management practitioners of the PRM concept?

-Do implications of national culture affect the managerial behaviour of Thai project organisations?

-What would be a suitable PRM application for Thai project organisations?

The objectives of this research were refined through an iterative process of the literature review. The literature review on PRM directs its focus onto the behavioural aspect of project practitioners and organisation behaviour. Their views affect dramatically to risk management approach and risk management practice. Primarily, the study focuses on both Thai project practitioners' perspective and behaviour of Thai project organisations. An effective PRM implementation process requires inputs derived from both project practitioners and project organisations; it is believed that both issues are influenced by culture. The main focus here is to gather an understanding from both project practitioners and organisations and try to understand cultural values which form their behaviour and thinking. This information would allow a construction of an appropriate PRM process as well as designing PRM implementation process' for Thai project organisation.

The following figure illustrates the logical flow of the research objectives that aim at solving the research problem:

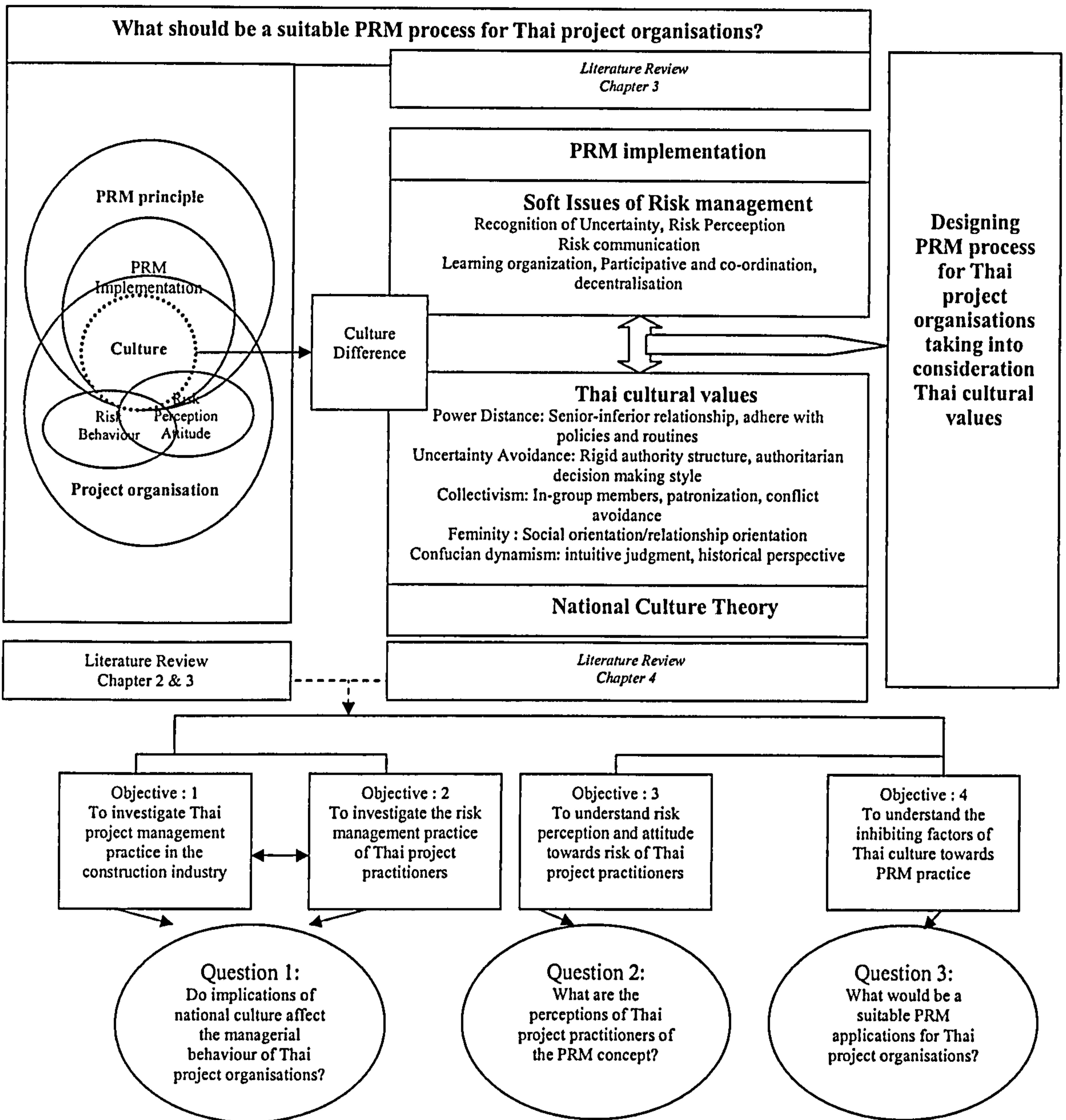


Figure 1.1: A development of research objectives

1.4 The scope and limitation of the study

The study aims to be the foundation for a full DBA research study in attempting to structure the model of implementing PRM in Thailand. This dissertation is primarily based on the development of the literature review of PRM, culture theory and national culture theory. The perspective of conveying the way to implement PRM in this thesis is limited to the extent of the practicality of PRM implementation in Thai project organisations. Furthermore, the proposed PRM process is yet to be employed, tested and evaluated by the Thai project practitioners. It must also be noted that the application of this study is probably limited to the construction industry as well, since the data gathered was derived primarily from this industry.

1.5 Research Approach and Methods

The research approach of this study is a combination of qualitative research methods. The aim of this study is not so much on creating new scientific knowledge but rather on forming a construct that is applicable in practice and at the same time increasing theoretical understanding on the research subject.

This research uses a combination of literature study, an empirical case study, interviews and a workshop as research methods (see figure 1.2). The aim of the literature study is to gain understanding of the current practice of project risk management, along with its advantages and disadvantages, and form an appropriate risk management process used for Thai project practitioners in the construction industry. The problem with Thai culture is that its cultural values are different that those mostly found in Western countries. The unique set of prevailing cultural values underlies its attitude towards risk, risk management, organisational structure and organisational behaviour. Thai project organisations thus pose a challenge for traditional risk management application hence it is a valuable object of study.

Literature used in gaining proper understanding of the existing theory will represent several different knowledge areas. The logical flow of the literature study is based on a requirement for further understanding substantive topic in understanding risk management practice in project organisations. Literature concerning project risk management will be the main source of information to solve the research problem and the objectives of the study. An application of PRM literature leads to further exploring important roles of both project practitioners and project organisations aspects. The study in this area points to an investigation of the two issues including the important features of project organisational culture and project practitioners. The literature describing them will be studied. This clarifies the challenge that risk management in this kind of organisation culture has to cope with.

The requirements of the risk management process for Thai project organisations will be developed with the help of a case study, interviews and a workshop. The case study will aim at understanding Thai project and project risk management practice within a Thai managerial environment. This provides an in-depth understanding of how local culture – Thai culture – would affect the project and risk management practice. In order to capture project practitioners' view on risk management, interviews will focus on scanning Thai project practitioners' view on their risk management practice and to see whether the risk management principle would capture their interest in terms of its benefits and management activities. Furthermore, as PRM is an alien concept in Thailand it is considerable to gain a reflection of the use of PRM practice with groups of Thai people. A workshop will provide experiences of Thai managers on risk identification and the risk assessment phase. In formulating and developing the PRM process the evidence gathered from these research methods will act as a fundamental platform for seeking the most effective and appropriate process for risk management implementation for Thai project organisation.

1.6 Research Structure

This thesis consists of nine chapters which contain theoretical and empirical investigation of risk management practice in Thai organisation in order to develop the most suitable PRM implementation process in Thailand.

Chapter 2 presents a literature survey concerning the understanding of project risks, core elements of risk management process, the principles underpinning its practice as well as the benefits it can provide to project organisations.

Chapter 3 is a discussion of the PRM implementation process. It supports the main argument of how the behavioural aspect of risk management affects the implementation process. The soft aspect of risk management practice refers to managerial practice of the organisation as well as human's risk perception. These attributes are crucial for supporting the PRM implementation process. Finally, the chapter demonstrates the importance of culture in the PRM process and its requirement for an effective PRM implementation.

Chapter 4 explores more fully how cultural theory plays a supportive role in the PRM implementation process. It also demonstrates the effects of cultural differences in a project management context and indicates a requirement of cross-cultural theory to support PRM adoption. National cultures will be discussed, specifically Hofstede's dimension model. Finally, Thai culture values will be explored and discussed.

Chapter 5 will provide a discussion of the research methods used in this study. As an objective of this research is to gain an understanding of the subtle areas between risk management and culture, qualitative methods have been chosen. Three research methods including a single case study, interviews and workshop are discussed.

Chapter 6 is the analysis of a case study: The New Bangkok International Airport. This helps to explore how Thai culture affects project organisation risk management. The analysis is based on Hofstede's framework.

Chapter 7 provides an analysis of interviews with Thai project practitioners. This chapter is separated into four main parts. The first part is concerned with Thai project practitioners' attitude towards risk, the second part covers the project risk management practice of Thai project practitioners, the following section examines the Thai project practitioners' perception towards the PRM concept, and in the final section recommendations of Thai project practitioners towards adopting PRM principles are outlined.

Chapter 8 gives an analysis of a workshop centred on the application of risk management. The chapter begins with a brief explanation of the workshop, then it looks at the social interaction analysis of group thinking; finally, a discussion of the attitudes and behaviour of the participants is laid out.

Chapter 9 provides a summarisation of research findings, a proposal of PRM practice for Thai project organisations, the change process of PRM in Thai project organisations, the discussion of encouragements of PRM practice in Thailand, the implications of the research findings, the limitations of this findings and future research possibilities.

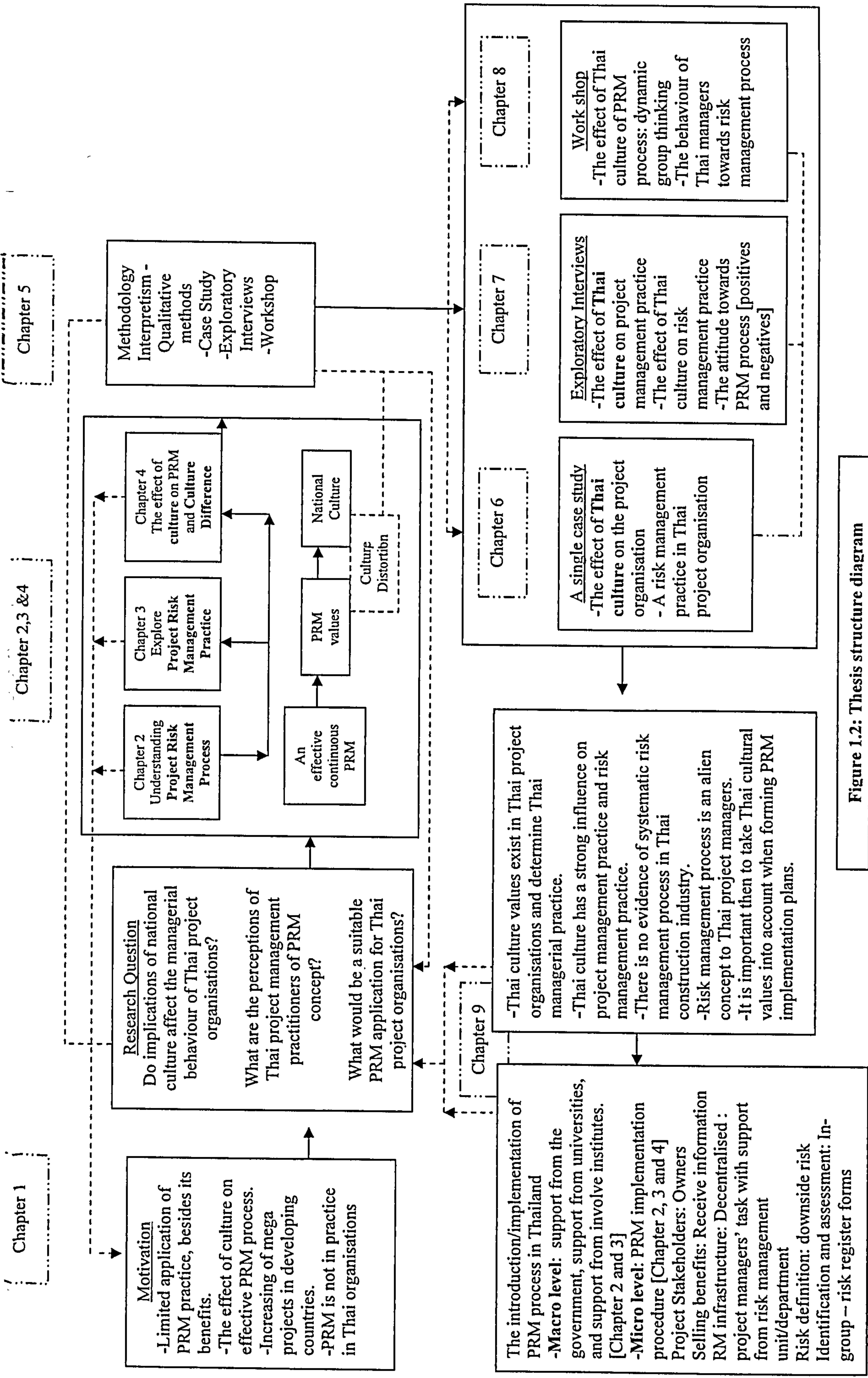


Figure 1.2: Thesis structure diagram

Chapter 2: Project Risk Management

2.1 Introduction

In this chapter, the researcher intends to discuss the important factors constituting project risks, the nature of risks, the relationship between risk and uncertainty, the principles of project risk management and the benefits of effective risk management process' in a project context. This chapter will begin with providing an understanding of project risks, which limit the validity of traditional project management discipline. Furthermore, the meaning of risk and uncertainty as the important elements for the project risk management process will be discussed explicitly. The rest of the chapter will deal with project risk management principles, process and its benefits.

2.2 The nature of projects and risks

A project has been recently recognised as a common term used by almost all industries. It is created in response to the project stakeholders' desire. Projects are discerned as steps to achieve forward development and revolution of organisations [Gareis, 1994] and nations [Al-Sedairy and Rutland, 1994]. A successful project is one that can achieve its stated objectives in the most effective manner possible. Typically, the success of a project can be measured by three typical dimensions: time, cost and specification [Turner, 1993].

Project management has been particularly created to manage the process, or to manage the sum of all the sub-processes that together constitute the project [Gardiner and Simmon, 1992]. It is the discipline which concerns itself with the understanding of projects to achieve project stakeholders' objectives. The discipline contains an extensive body of knowledge [Cleland and King, 1998, Dinsmore, 1993, Turner, 1993 and Lock, 1994]. At the simplest level, the primary tasks of project

management can be summarised as consisting of two main components: project planning and managing project activities as planned [Kerzner, 1998]. The project management concept is flexible and can be used with projects of any size and in all industries hence; there is a high popularity of project management employment in diverse fields [Bennet and Kathryn, 2002, p.10 and Shenhar and Dvir, 2004]. However, recently it has been recognised that typical project management seems to be insufficient to deliver project success as many projects have failed to complete in accordance with the specified objectives. There are several studies and surveys which demonstrate numerous project failures. For instance, [Morris, 1994] discusses the painful experience of mega project failures undertaken in several industries across different nations. Baccarini et al. [2004] also list several surveys and studies of IT project failures. KPMG [1994] conducted an international programme management survey of 300 large companies concerning IT projects. The result indicates that 65 percent of organisations have gone grossly over budget on at least one project. Project risk is claimed to be the primarily responsible factor for these project failures. The following will provide an investigation of risk in a project context. An exploration of project risks will provide a foundation to properly understand the way to manage them.

It has been widely acknowledged that the nature of a project is inherently risky as it is subjected to change and uncertainty, and risk is a main factor affecting project achievement [Smith, 1999, Ward and Chapman, 1996, and PMI, 1996]. The best way to understand project risks is perhaps to begin with a discussion of project definition. The definitions of a project are various but the most cited one is derived from Turner [1993], who defines a project as

"an endeavor in which human, material and financial resources are organised in a novel way, to undertake a unique scope of work of given specification, within constraints of cost and time, so as to achieve unitary, beneficial change, through the delivery of quantified and qualitative objectives".

The above definition of a project indicates three interesting primary areas for further investigation about project risks: the project characteristics, project life cycle and project environment. The project is a temporary process, which has a specific period for initiation and completion. The temporary attempt undertaken generates uniqueness, which differentiates individual project from others, and it is this uniqueness that makes a project difficult to be managed and controlled as it contains high flexibility and uncertainty [Carter et al, 1996]. The degree of risk in a project is in relation to the novelty of that project. A high level of project sophistication increases the difficulties for project teams to handle. With little prior knowledge concerning the project, it is difficult to conduct effective management for the project.

Moreover, managing a project involves change and a transitional process, as the project moves along its life cycle. Hartman [1997] points out that the nature of project development is subjected to change and transition and transformation management implies uncertainties as project development is commonly an execution of a series of phases. Each phase has its own set of management objectives [Pugh and Soden, 1986], requires different skills [Jessen, 1988] and requires different important risk sources. Ward and Chapman, 1995 propose a characterisation of the project life cycle into more detailed stages to highlight important risk sources in the project management process.

Finally, projects normally exist within two layers of environment: immediate or internal environment and external environment. The internal environment is the project organisation. Projects are subjected to the management of project teams or organisations. The characteristics of project organisations, which include structure, process and management practice, have a significant impact on the project performance. Apart from the management aspect of project organisation, at a wider perspective the projects are embraced by external environment, which includes technology, regulations, social factors, political factors, conditions, technology, economic conditions and the degree of integration between nations [Hartman, 1997]. It is common to assume that the world is constantly changing and developing. The

change in the project environment, both internal and external has a significant impact on the operating environment of the project. Change leads to uncertainty and creates threats to managing projects. Throughout the PLC uncertainty from a number of sources combines in many complex ways to produce risk to the project's overall objectives [Williams, 1993].

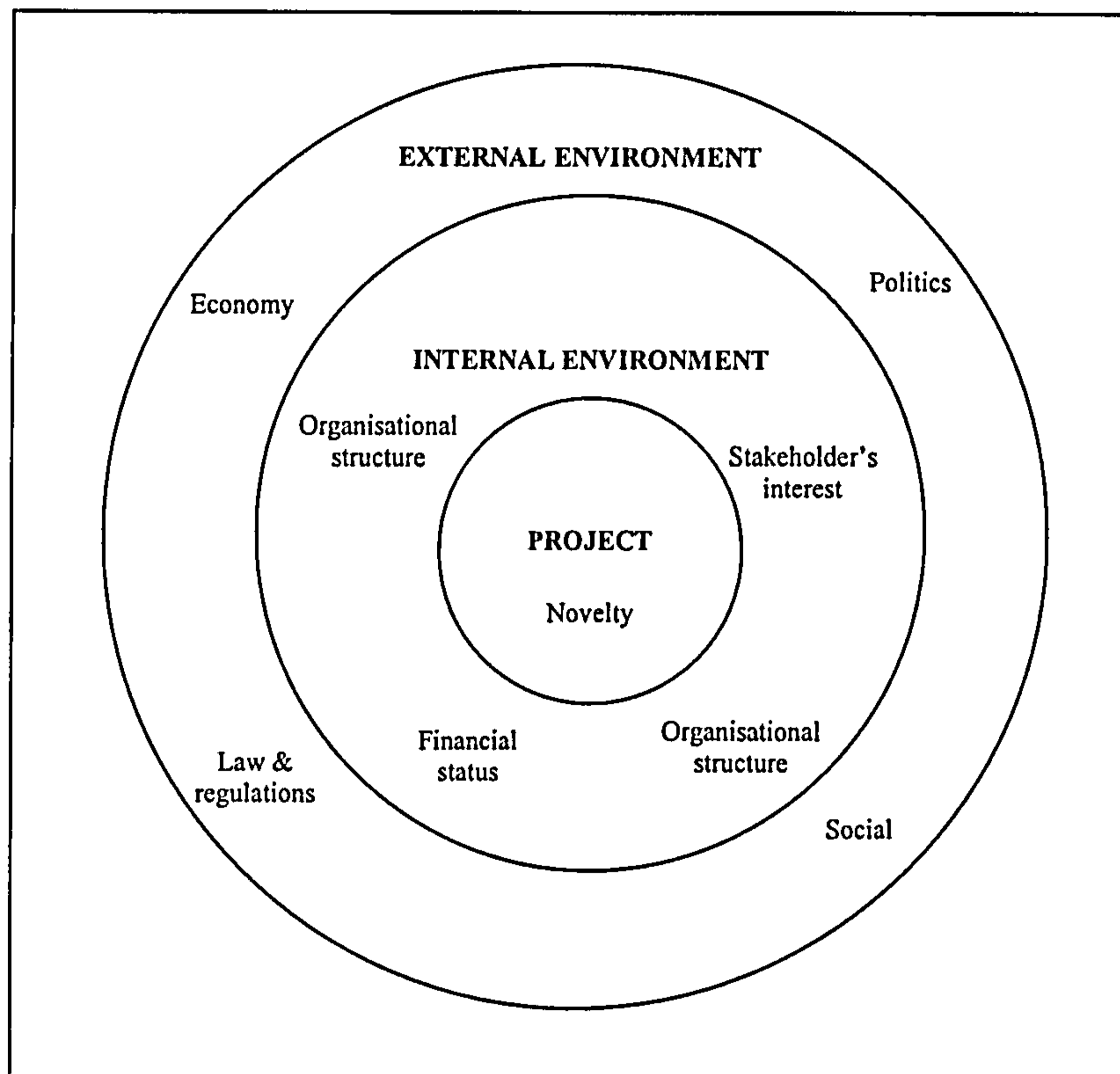


Figure 2.1: Project risks and project environment
 Applied from Datta and Mckerjee [2001]

The size of a project is also considered as another factor increasing uncertainty for the project. Dey [2002] points out that size of project can be a major cause of risk as uncertainty of project outcome can increase with size. Furthermore, Flyvbjerg, Bruzelius and Rothengatter [2003] further stress that the main causes of the mega-project paradox are inadequate deliberation about risk and lack of accountability in

the project decision making process. The complexity of project activities has a positive correlation to the size of the project. Jaffari [2001] summarises that complexity is created not only due to inter-dependencies among project activities but more significant forms are from the environment and the influence of project stakeholders. Williams [1996] points out two factors increasing the project complexity within the project organisation environment: multi-objectives and multiplicity of project stakeholders. He further explains that the complexity in a project context involves with two main elements: differentiation and interdependency, in both organisation and technological dimensions. The effect of such complexity creates the instability of the assumptions upon which the activities are based [Jones and Decro, 1993].

Apart from the fact that the difficulties and uncertainties of projects depend on the size, complexity, novelty and technical sophistication of the project [Ward and Chapman ,1991], the project performance is also affected by the presence of constraints on time, constraints on resources, and the conflicting objectives of the parties involved. The primary reason is derived from the influence of market pressure which is getting ever more intent. The world is not static but changing constantly and at an apparently ever-increasing pace. This creates not only new opportunities and challenges but also risk and uncertainty, not least in emerging markets [Olsson, 2002, p. 259]. Under the increasing acceleration of change and the confluence of multiple streams of change, yielding outcomes that are impossible to predict, anticipating and responding to this new kind of change means leaders need to be ready to prepare and inspire their teams to swiftly move beyond the routine and familiar [Wynes ,2002].

It should also be noted here that change and uncertainty in project context are unavoidable and yet seem to be rapidly increasing due to the globalisation trend, the complexity of society and rapid technological change [Jaffari, 2003]. Lientz and Rea [2002] state that *“the changes are occurring simultaneously in different areas causing a multiplier effect and cross-pollination”*. As projects are being implemented under these conditions, traditional management processes are not sufficient [McGray et al, 2003].

This leads to a significant requirement for risk management processes to help project organisation deal with the uncertain environment. The primary cause of failure is an inability to cope with change and unexpected circumstances which affect project activities. This incidence is exacerbated by the rapid pace of change in the current global environment. Projects fail due to a lack of attention to individual project risks [Perry, 1986 and McFarlan, 1981]. Project objectives are affected by the uncertain environment within which projects are undertaken, resulting in a level of risk exposure. Hence, managing the project of today requires attention to risk, especially at the early stages of the project.

There are widely accepted principles of risk management that have been recognised as essential to project management [PRAM, 1996, PMI, 1996, PRINCE, 2000 and Carter et al., 1996]. Actually, according to the increasing pace of change, customer demands and globalisation, the importance of risk management principles is considered to be more important in the future of project management [Turner, 1993 and Barnes and Wearne, 1993]. Raftery et al. [2001] point out that the requirement for risk management will probably continue to be the case as long as human beings continue to possess limited capabilities for predicting the unpredictable and forecasting inflections in the cycle.

The problem with project risk is that when an organisation is faced with risk it finds itself in a state of perpetual crisis, and most of the time the organisation is unable to decide what to do, when to do it and whether enough has been done. Hence, in order to avoid such circumstances, the temporary project organisation must reflect the need to adapt and to satisfy the demands of the project within its unique environment. The project management must essentially negotiate with the complexity of the project, the cause of which is the uncertainty, inimitability and demands of the project and the project environment.

The following section is dedicated to explore risk definition, risk characteristic and the relation between risk and probability theory. All these issues surround the role of risk management.

2.3 Understanding risk and uncertainty

In order to manage risk effectively, it is a prerequisite to recognise the definition of risk, as well as the nature and reality of risk. Effective risk management is dependent on an explicit understanding of risks [Perry, 1984 and Hillson, 2003]. McKim [1992] states that it is necessary to understand the nature of risk before any knowledgeable management of risk can occur. Ho and Pike [1992] state that a thorough understanding about the nature and level of risk will enhance the decision-making and hence improve the project's organisational performance.

The need for risk clarification is also derived from the fact that the notion of risk is a most confusing and contentious matter. This is due to the fact that people perceive risk differently with regard to their background, knowledge and society [Ritchie and Marshall, 1986]. Risks are concerned with many aspects in the project, and people in the project perceive risk differently. People vary in their assessments of risks, and their actions or concerns tend to vary accordingly. Moreover, often people who face specific risks are different from the people who benefit from the products or activities that generate the risks, leading to conflict and litigation over proposed risk-reduction actions. Wheelwright and Clark's [1992] research demonstrates the need for having an overlap of people from different departments (finance, human resource and marketing plans) in the organisation to highlight how they perceive risk differently. The diverse perceptions toward risk lead to different paths of managing it. Hence, it is of paramount importance to understand the concept of risk and uncertainty. The following will provide a discussion of ambiguous risk definition, the clarification of risk and uncertainty and the role of probability and risk. This section will seek a clarification of issues concerning risk, including risk definition, characteristics of risk and the role of probability theory in risk management.

2.3.1 The definition of risk

The implication of risk definition affects directly the risk management procedure. A misunderstanding of risk definition can lead to ineffective risk management. The definition of risk is as contentious as the word “risk” is prevalent in daily vocabulary in relation to personal circumstances, society, business and diverse industries. Regardless of its common usage, there is a lack of official agreement on the basic definition of risk. The following section will seek to understand risk definition and attempt to find a conclusion of this term within the project context.

The traditional definition of risk is normally based upon a negative connotation. Webster’s dictionary [1988] defines risk as *“the chance of injury, damage, or loss: dangerous chance, hardship - the degree of probability of loss – the amount of possible loss to the insuring company – to expose the chance of injury, damage or loss; hazard”*. Actually for general people the definition of risk seems to be limited to its negative aspect. However, this view is not totally true.

The history of risk was studied by Bernstein [1996], who indicates that risk can be traced back to the Greek time and demonstrates the relationship between risk, statistics theory and gambling. Frosdick [1997] later provides the evolution of risk through a more recent period. He also indicates that risk initiated in gambling and the associated mathematics in the seventeenth century. The principle of losses and gains was later adapted in the marine insurance industry in the following century. In the nineteenth century, the idea of risk with respect to economic theory [Knight, 1921] emerged and became associated with the principle of prospect theory, which indicates that people are generally risk averse [Tversky and Kahneman, 1986].

In the twentieth century risk concept has been adopted in science and engineering fields. However, in these fields risk has been regarded as only having negative consequences and more specifically as being the hazards associated with industrial areas of activity. The definition of risk is addressed as the potential for future negative effects [Royal Society, 1992, Rowe, 1977, and BS 4778, 1991]. This

perspective of risk definition also agreed with the majority of project management academics and practitioners, for instance Barnes, [1983], Raftery, [1994], and Clark et al., [1990]. Nevertheless, it has been recently argued to be insufficient to be aware only of the issues that may be detrimental to project objectives. Risk must include both outcomes of uncertainty which are of a positive and negative result, as in the investment aspect, where risk includes both positive and negative potential outcome.

Khakonen [2001] states that basically; the notion of risk associates with negative outcomes in projects, but experience from practitioners leads to a more thorough idea about risk. Project practitioners, after conducting the process of risk management, understand that the concept must and should cover the positive side as along the way of risk identification one can also generate or think of some better ways of dealing with things. When attention is put on uncertainty, it leads to the fact that there are two sides to uncertain results, which includes both negative outcome or risk and positive outcome or opportunity [Wideman, [1992]. (see figure 2.1) Mills [2001] also points out that along the project life cycle, there will be many changes to the project environment which can bring about both opportunity as well as risk to the project team. Flanagan and Norman [1993] divide risk into two types: dynamic risk and static risk. For them dynamic risk is concerned with maximising opportunities and static risk involves with minimising losses.

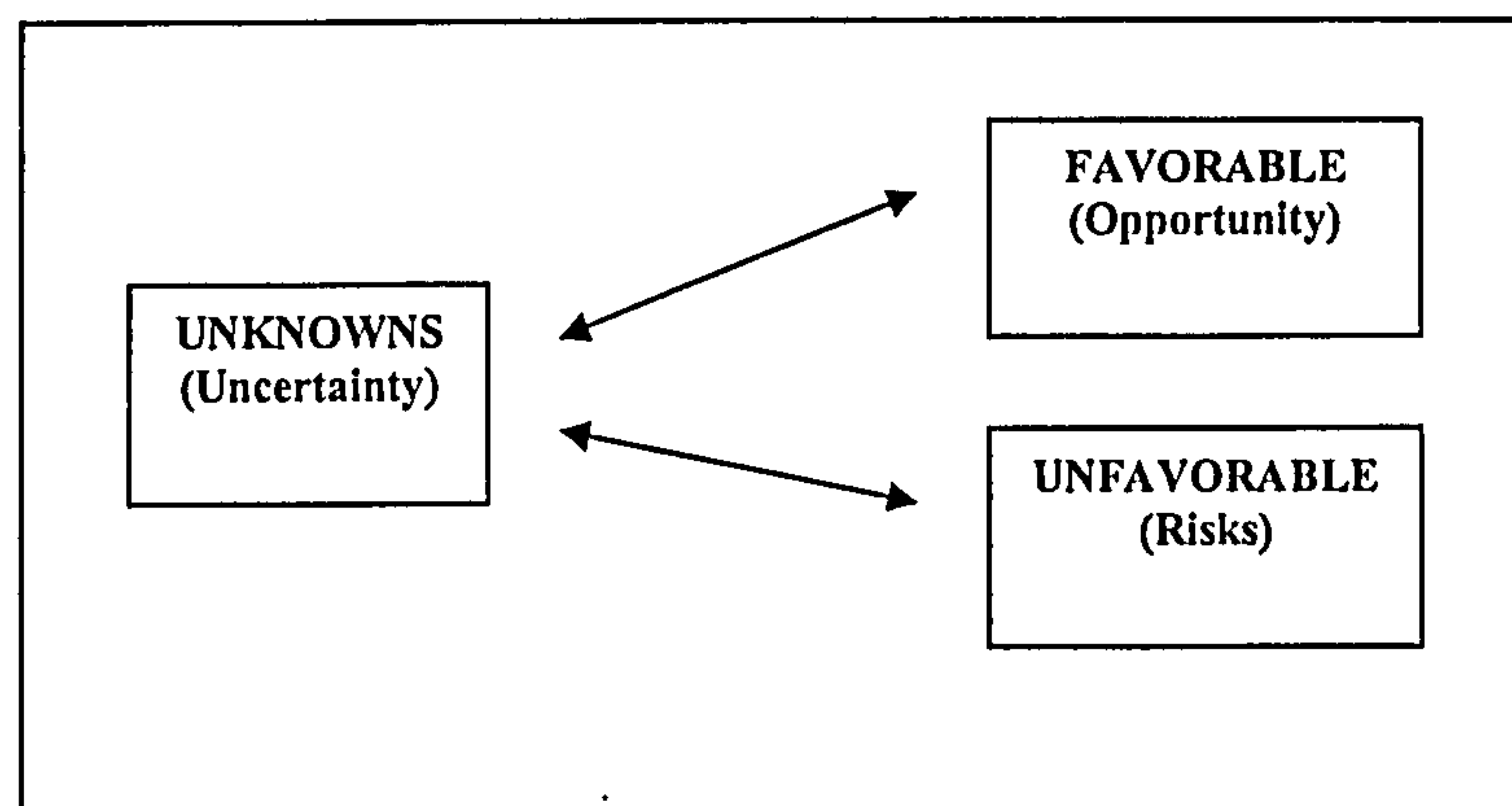


Figure 2.2 The uncertainty/opportunities/risk relationship

Source: Wideman, [1996]

Hillson [2001] suggests that there are two options available when considering a more holistic description of risk. Firstly, risk as the umbrella term and below the opportunity and threat as the positive and negative terms. Alternatively, uncertainty may be adopted as the umbrella term with risk and opportunity used as the terms to cover the good and bad sides of the uncertainty. As with risk, this awareness of positive outcomes or opportunities also generates some debate. Leitch [2003] states upside risk can refer to a good thing as widely accepted in the financial aspect where risk brings reward, with return on investment. In this respect, the outcome that identified risk is mitigated and benchmark objectives are achieved. He emphasises that upside risk should rather be renamed upside effect. This refers to the occurrence of the positive outcomes of a risk as opposed to the upside risk which refers to an event where there is a positive outcome. The distinction is made when it is recognised that the upsides effect may be offset by a downside effect of the same event.

The modification of risk definition in a project context leads to change in the process of the risk management process. While recognition of negative outcomes of uncertainties can limit the extent of the risk management process, however, by considering the positive outcomes of the uncertainties the project management team can gain more benefits [Chapman, 1990]. PMI [2000] mentions that project risk management includes maximising the results of positive events and minimising the consequences of adverse events. Several authors have changed the concept of risk management to “Project Risk and Opportunity Management” [Jaffari, 2001] and Project Uncertainty Management [Chapman and Ward, 2001] PMI [2000]. Kahkonen [2001] stresses that integrating both risks and opportunities in the risk management process will provide a more comprehensive practice for the process. Pritchard [1997] states that in recent years, risk management is evolving towards a more integrated Risk and Opportunity Management. He further cites that *“If no real opportunity exists, in fact, there is no reason to pursue a risk activity; however as a potential gains increase, so does the threshold for accepting risk.”* While the importance of moving risk definition to cover both negative and positive aspects is agreed, most practitioners are still more familiar with the negative side of risk. This is confirmed

by the recent survey of Hillson [2001a]. This is due to the fact that, in practice, the risk concept is primarily concerned with the negative impacts and threats; hence, in project management, the concentration has been to manage the negative side of risk.

2.3.2 Nature of risk and its characteristics in a project context

Project risk management is an attempt to manage and deal with risks effectively. It is important to have an explicit understanding of the nature of risk as it can lead to the appropriate way to manage it. Furthermore, having a thorough understanding of the nature of risk can provide a great opportunity to appreciate the risk management process and hence gain an ability to employ the process effectively. In the following section, the nature of risk and its characteristics will be discussed.

Mikkelsen [1990] believes the project risk is difficult to get hold of because the relationship between event and effect is not easy to see. There seems to be a need for a better conceptual apparatus to understand risk in relation to the course of events in projects. Risk is normally divided into three constituent parts. Kapland and Garrick [1981] state that risk is a set of triplets that answer three questions: what can happen? How likely is that to happen? If it happens what are the consequences? Dickson [1987, p. 1] states risk is caused by some factor or factors and results in some effect or effects. The cause is linked to the nature of the risk and the risk itself is linked to the effect. McCrimmon and Wehrung [1986] characterise risk as potential future events consisting of cause, the event or process and an effect, (the negative consequence for the project).

Thomas [1988] proposes a similar notion of understanding risk characteristics. He uses the development process of risk impact to provide a better explanation of risks. He states that every risk has three phases: the potential, the actual occurrence, and the impact. The evolution of risk is a chain event initiated from the source of the risk or potential risk generator. This has a possibility to trigger the end consequence, which is the result of the hazard/ adverse and negative outcomes. Normally risk is not noticed until it has developed into loss or harm, by which time it has reached the

final phase: risk impact. Potential problems are not harmful and do not produce losses until they move into the occurrence phase or the impact phase. On the one hand, uncertainty becomes risk when the perceived significance of the consequence of an uncertain event becomes critical. Tah and Carr [2000] state that risk factors do not affect project activities directly but do so through risks. The distinction made here between risks and risk factors allows us to make the assumption that risks are triggered by risk factors. The characteristics of risks and risk factors are important for assessment and analysis purposes. The source of risk must imply the degree of uncertainty, which include events generating positive outcomes to the organisational environment [Tchankova, 2002].

Having a clear understanding of the relationship between causes and effects is vital to the PRM process. The relationship can create confusion during the risk allocation stage as one risk can be derived from several sources [Carter et al., 1996]. Risk can have single or multiple sources and these causative events can be either independent events or dependent events [Rowe, 1977]. In the simplest case, one cause leads to a single risk which in turn could have just one effect, though of course reality is considerably more complex. Causes are definite events or sets of circumstances which exist in the project or its environment, and which give rise to uncertainty.

Apart from ambiguity in risk sources, Ren [1994] points to the importance of risk relationship. He states that in project context, independent risk is rarely existent, rather as most of project activities are conducted subsequently it is common that risks can influence others. He further demonstrates four types of risk relationships, namely, independence, dependence, parallel and series. While one risk source and cause can provide sequence impact over and above one risk, one risk can also create more than one risk in the project system. The importance of such a peculiar feature of risk relationship should not be ignored as a degree of risk analysis accuracy is dependant on it.

The above risk development structure has been further developed adding a time variable to support risk analysis process. Franke [1987] proposes that knowledge of

risk structure, its development and its specific period of risk occurrence during the project sequence make it possible to initiate definite measures for minimising risk. Similarly, Ren [1994] suggests the concept of risk life cycle, which includes two main phases: risk concealment and risk action. Risk concealment refers to a period from the possible existence to the occurrence of the risk event and risk action means the period of risk event occurrence. Smith and Guy [2002] suggest that for a risk to be manageable, it must have a limited time frame. The time component could be expressed as a condition that determines when the risk ends, rather than directly in terms of time.

2.3.3 Risk, uncertainty and probability theory

In this section the relationship between, risk, uncertainty and the probability concept will be discerned. Statistical theory contributes significantly to the risk management process, especially in risk analysis and risk communication. The notion of risk is allied to the probability theory, as risks are those uncertainties which can be identified and quantified. However regarding the rapid change in project environment, it is very difficult to predict with confidence what will be happening in the project planning. This sense of uncertainty engendered by rapid and unpredictable change is as evident in projects.

In project context there are **certain risks or issues** which can be identified in advance, using prior knowledge and experience, to provide a definitely negative effect to the project objectives. On the other hand, incomplete information of future events and uncertainty could bring potential risks to the project too. The concept of risk is usually expressed as a function of the uncertainty associated with such events. Hull [1990] says that risk can be defined as the probability of an event (uncertainty) and its consequence. With uncertain circumstance the accuracy of outcomes are hard to predict and the probability of gain varies from zero to one. Certainty can be defined as knowing exactly an outcome of the future, while the outcomes of uncertainty are unknown. McKim [1992] describes the relationship between risk, certainty and uncertainty as follows:

Risks occur when:

- An event is certain to happen, but the outcome of the event is uncertain;
- The outcome of an event is certain, but the occurrence of the event is uncertain; or
- The occurrence and the outcome are both uncertain.

Reddy [1996] also provides another view of the relationship between risk and uncertainty. He states that risk comes to rely upon conditions in which the probability estimates of an event are able to be known and knowable. Uncertainty, in contrast, is used as an alternative term when these probabilities are inestimable or unknown. This distinction presupposes that there is a form of indeterminacy that was not subject to rational calculation of the likelihood of various alternative possibilities. Bennet and Ormerod [1984] analyse uncertainty as comprising interference and variability. Interference is those external factors affecting the project, which cause stopping of work on a particular task. Variability refers to the rate of productivity with which work is executed. Focussing on this logic, Albrecht [1988] concludes that uncertainty is *“the lack of attributional confidence about cause-effect patterns”* [p.387]. Weber et al. [2002] state that risk is associated with outcome uncertainty, which is often defined in terms of the variability of outcomes, lack of knowledge of the distribution of potential outcomes, and the uncontrollability of outcome attainment. Emblemvag and Kjolstad [2002], however, state that risk is measured in terms of “consequences and likelihood,” where likelihood is understood as a “qualitative description of probability or frequency.” Frequency theory, however, is dependent on probability theory; therefore, risk is ultimately a probabilistic phenomenon as it is defined in most literature.

However, Hirschey and Pappas [1993] argue that uncertainty exists when the outcomes of managerial decisions cannot be predicted with absolute accuracy but all possibilities and their associated probabilities of occurrence are known. A reasonable summarisation of this group is the one that covers all main criteria concerned on project management. Even though the existence of certain events is already known, the emergence of risk from certain circumstances is normally based on the ignorance

of the project team involved or an inability to provide resources to cope with such a circumstance. Consequently, the emergence of a really risky situation is largely concerned with epistemic rather than aleatoric risks [Williams, 1993]. Rowe [1977] states that uncertainty is defined as the absence of information concerning the decision situation, this leads to the requirement of exercising judgement in determining or evaluating the situation, alternative solutions, and possible outcomes. In conclusion, risk is an event consisting of a pattern of cause and effect which we do not know for certain that it will definitely happen and the result of such event which affects the objectives can be diverse.

2.4 An exploration of PRM practice

This section contains discussion of risk management approach and the risk management process. These issues need to be explained to support understanding of PRM process. While generally risk management is referred to as a systematic process to tackle with complex project risks, it is important also to recognise the underlying principle of risk management which is a proactive management.

The PRM process is based on forward thinking, anticipating the potential uncertain events which can alter the project objectives and seeking to influence the project to a successful outcome through timely and effective interventions [Dickson, 1982, p.2]. Leith, [2003] states that risk management is decisions taken by an organisation in anticipation of or as a consequence to foreseen losses and the selection of appropriate strategies and response. It is a concept employed to ensure there is a timely, measured and effective response to incidents. Traditionally, the concept of risk management is mainly seen as a process, exhibiting planned preparedness. It uses analysis of risk, and development of appropriate responses, recognising that different responses may give rise to additional risks [Ward et al., 1997 and Simmons, 1999]. The PRM process is a formalised approach consisting of a set of processes for decision making support [Baccarini, 2001]. Weber et al. [2002] describe risk management in terms of decision making.

2.4.1 Risk Management Approach

The key concept of PRM is to adopt a proactive approach towards the uncertainties that endure in a project [Doherty, 1985, Mobey and Parker 2002, Moore et al, 2001, and Nikander and Eloranta, 2001]. Hillson [2001b] states that in order to develop the opportunities aspect of risk management, forward thinking has been focussed on the risk identification and analysis aspects as demonstrated by the observations by Mobey [2001]. Gluck et al. [1980] state that the analysis risk process contributes to understanding of project risk by exploring project cash flow and future scenarios. The concept of risk management is to help an organisation to think in advance of some events that may affect the organisation's achievement [Baird and Thomas, 1985].

The proactive approach is also discussed in terms of strategic terms for project lifecycle [Jaafari, 2001, and Floricel and Miller 2001]. It focuses on early adoption of risk management process in the project life cycle where there is the most uncertainty. Burchett and Tummala [1998] state that risk management process installs a discipline of strategic thinking through the risks of an investment, which in itself helps to ensure improvement in the investment decisions. However, Voetsch and Cioffi [2003] argue that risk management is even more necessary for the proper execution of the project management process with an absence of perfect initial plans.

Ramgopal [2003] states that generally, PRM can be applied in any stage of the project life cycle (PLC); nevertheless, the most powerful contribution is achieved during the conception phase when uncertainty is at its greatest. Frank [1987] argues that at the early phase of the project life cycle there is a very high degree of uncertainty, this uncertainty will decrease when the project progresses. It is generally understood that the realism of the estimates increases as the project proceeds; however, the major decisions are made early in the life of the project – at appraisal and sanction. Thus, the realistic estimate of the cost and duration of the total projects is required as early as possible in the life of the project. This means all risks and uncertainty must be identified as early as possible. Winch [2002] proposes a

framework to demonstrate how uncertainty is progressively reduced through time until all the information required for the project is available at completion and embodied in the asset created. (see figure 2.3)

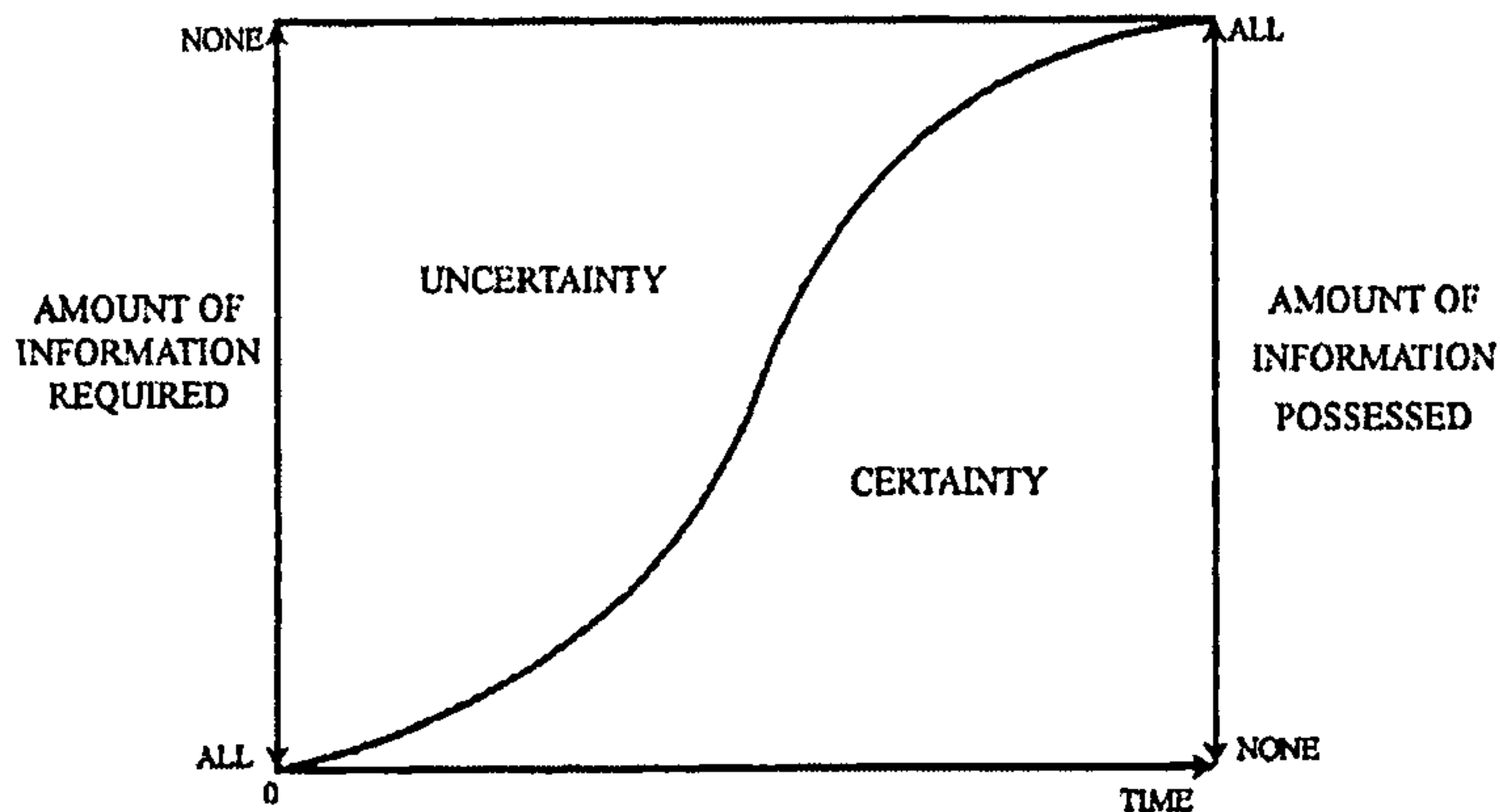


Figure: 2.3 Project process and information flow

Source: Winch et al. [1998]

At this stage there is some flexibility available in changing and adjusting project strategy [Ward et al., 1997] as well as contingency plans to counter potential risk events [Thomson and Perry, 1986]. Barki et al. [2001] also support the idea that rigidities inherent to high levels of forward planning decrease an organisation's ability to adapt to external changes associated with an uncertain environment. It will also highlight those areas where further development work or clarification is most needed [Mills, 2001]. Since the risk measures will eventually be included in the total project plan, the possible consequences of the risk measures for the existing project scope, plan and budget have to be analysed. This does not imply only a readjustment of budgets and deadlines, but also that project scope and project organisation may change considerably.

The proactive perspective alone, however, is not adequate to cope with continuous change of project environment, as there are several uncertain events which cannot be anticipated. Floricel and Miller [2001] propose two strategies for large scale

engineering projects to deal with turbulent environments. Robustness is defined as the strategy which deals with anticipated risk (proactive risk management), and governability (reactive risk management) refers to the strategy which reacts to unexpected risk events. While proactive provides advance thinking and planning for the project management, it is inevitable that the importance of crisis management or the reactive approach is recognised. Risk management in projects must also be conducted in a continuous manner in all phases of the project life cycle to monitor and update in order to analyse the development of the project risks and provide current information of the project status. In fact, the risk management must be conducted with an iterative manner throughout the entire PLC as the accuracy of the assessments depends on the process of constantly reviewing and updating the data as new and better data and feedback become available throughout the project life cycle [del Cano, 1992].

Jaafari [2001] argues that all project risks cannot be identified and characterised at the outset of a project and new variables always surface during project life while their probability of occurrence may shift over time. Their impacts have various possibilities regarding their inter-relationships. Early resolution of project variables is therefore insufficient, as the basic information needed to make decisions is not available and changes with time. A project is a dynamic progression; the constitution of risk is constantly changing. Risks in projects emerge overtime. They are indeterminate and often endogenous. Even when the status of a project variable has been determined it could change over time. This then creates unknown risk exposure. New risks can be encountered during the currency of the project and seemingly unimportant risks pose new threats [Winegard and Warhoe, 2003]. The specifications and plans must be made more specific and accurate over the project life cycle. This is due to the constantly increasing number of activities accomplished and risks occurred, so that the remaining risks associated with project cost and time are reduced [Artto, 1997].

In conclusion, the organisations intending to adopt the risk management process are required to adopt the above two key principles underlying the PRM methodology.

The emphasis of risk management is about thinking in advance, so that project organisation can prepare for the future. Project managers must think in advance to avoid cumbersome events as well as to seek to exploit future circumstances. PRM processes have been developed to support the principle thinking of the risk management. There is a variety of invented PRM processes; however, they commonly share a basic mechanism. The following section will provide a discussion of the PRM process, the systematic risk management approach developed to tackle project risks.

2.4.2 An exploration of PRM processes

This section will provide a discussion of the risk management process. The aim is to clarify the PRM process, its core components and procedures of risk management. It is only by having an explicit understanding of the PRM process that project managers can utilise the process effectively.

Project management is planning the way to manage a project and trying to adhere to the plan. The problem is that there are uncertainties which affect the project plan. Risk management in a project is to realise that the plan itself is full of uncertainty. This does not recommend changing the plan but instead it is essential to adhere to established rules and to try to understand and improve the plan accordingly. The primary objective of the PRM process is to collect and structure information to ensure that all the risks are managed and all actors are aware of the interfaces between their own work that involve risk [Reitan and Hauge, 1997 and Hulett, 2001]. It focuses on addressing uncertainties in a proactive manner in order to minimise threats, maximise opportunities, and optimise achievement of objectives [Turner, 1993, Kerzner, 1995, and Chapman and Ward, 1992].

Risk management is a forward thinking, logical and systematic process looking into future scenarios of potential risks [Clark et al, 1990], and one which reveals risk characteristics by investigating the structure of causes and its contribution to the risks [Hillson, 2003], it also assesses probability and the magnitude of consequences to the

project with an assessment of all envisaged events that could cause an increase in cost, a delay to the project programme or a failure to deliver an effective solution [Akinyote and MacLeod, 1997].

The risk management approach is flexible and can be adjusted to encompass most types of projects. The literature review indicates that risk management processes are carried out through different approaches. There are diverse forms of PRM processes employed to tackle different types of projects. The variations in using risk management practices are considerable and are dependent on numerous factors such as the size of the project, project life cycle, expertise of project practitioners and the maturity of project management in different industries [Cooke-Davies and Arzymanow, 2003]. The project organisations must adapt the risk management process to comply with its requirements. Furthermore, each project has its own unique set of risks; therefore, the process of PRM should be formulated to suit individual projects.

For instance, in the construction industry, Perry [1986] classifies PRM as consisting of four stages: identification, assessment, development of management and providing for residual risk in project estimates. Al-Bar [1998] introduces a risk management model called the “Construction Risk Management System”, which consists of four main components: Risk Identification, Risk Analysis and Evaluation, Risk Management and System Administrative. In the software industry, Boehm [1991] suggests a process consisting of two main phases: assessment, which includes risk identification, risk analysis and risk prioritisation and control, which cover risk management planning, risk resolution and risk monitoring. Fairly [1994] indicates seven steps of PRM: identify risk factors, assess risk probabilities and effect, develop strategies to mitigate identified risk, monitor risk factors, invoke a contingency plan, manage the crisis, recover from the crisis. The UK Ministry of Defence [1991] indicates five phases including initiation, identification, analysis, planning and management. Conrow [2001] gives five risk management process steps: planning, identification, analysis, handling and monitoring.

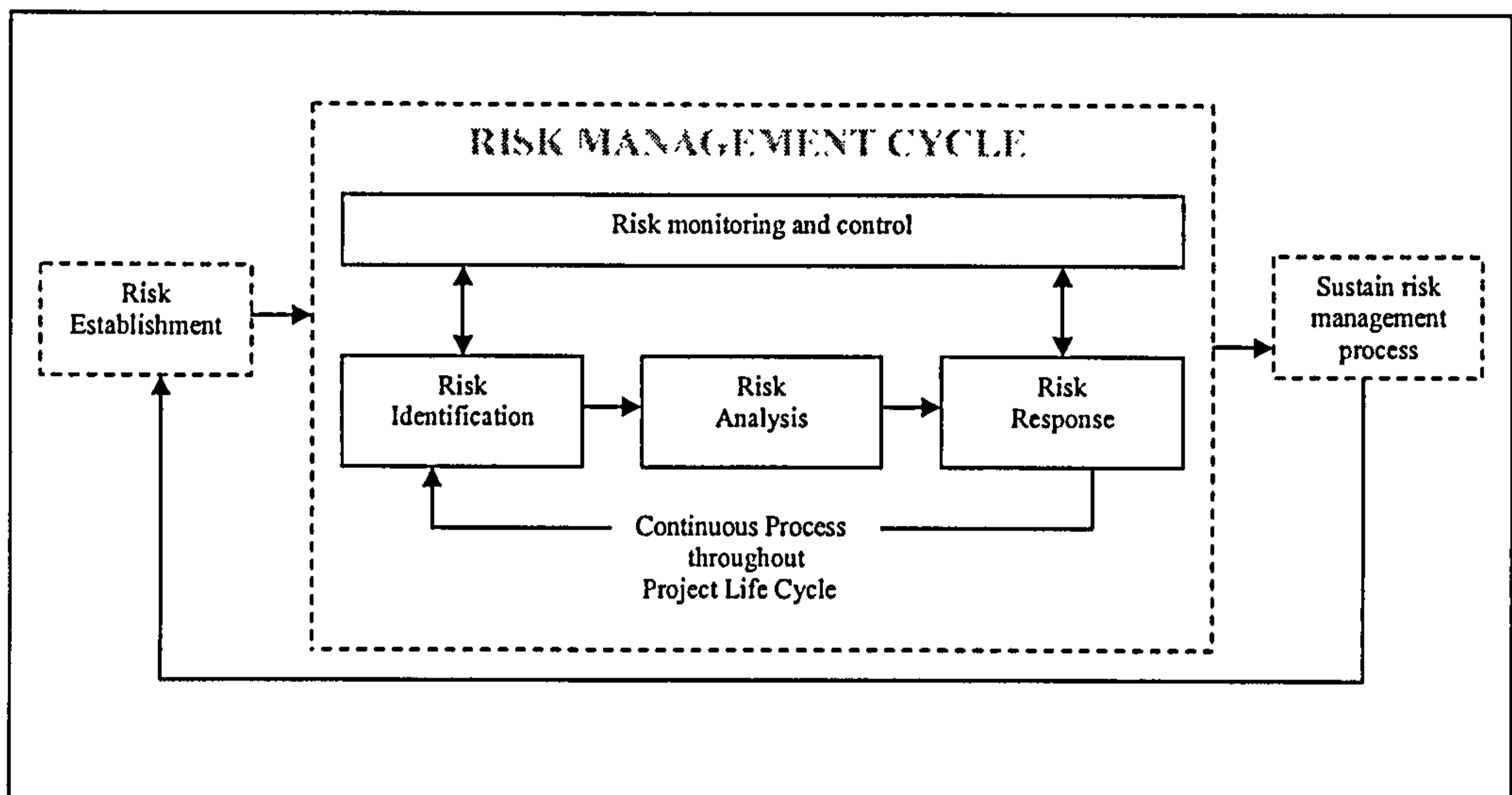


Figure 2.4 : Risk management process framework

PMI [2000] defines PRM as consisting of risk planning, risk identification, risk quantification, risk response development and risk response control. Carter et al. [1996] state that PRM includes risk identification, risk assessment, risk evaluation, risk mitigation, contingency, estimate, decision-making and control, and monitoring. PRAM [1997] suggest a nine phase process: define, focus, identify, structure, ownership, estimate, evaluate, plan and manage, which takes more advanced stages by blending the four main PRM processes with the important rules of operating PRM together. The model tends to identify risk events as well as the source of those risks so that the risks can be allocated to the owners and the impact of risks to other elements can be traced and risk response planning can also be managed effectively.

Although, risks are different regarding types of project industries, there is considerable convergence on the necessary elements required for the effective management of risk [Hillson, 2003]. While there are many templates of risk management processes and each has a different number of steps, the prevalent sequence of activities flows from risk management planning, risk identification and assessment to response planning and risk monitoring and control. However, there is

an obvious distinctive feature whether risk planning is included in the process and how many different phases are taken in the assessment phase.

It is interesting to note here that, the majority of literature review concentrates on the risk management process of identifying, assessing, managing and control risks, little attention focuses on a prerequisite plan for the application of risk management applying in organisations. Risk Planning or Risk Establishment is also a crucial part of the entire PRM process. It is concerned with risk management adoption or risk management introduction plans, the effectiveness of the PRM process in a project and its long term survival of the process. This phase contains numerous important issues and information and will be discussed in the following chapter. The rest of this chapter will focus on all the risk management process cycles, except risk planning which contains numerous issues. The discussion of PRM process in this thesis will be separated into four phases including risk identification, risk analysis, risk management and risk control. The primary reason for discussion of the PRM process in this manner is derived from the amount of information of each risk management phase. Each risk management phase will be discussed subsequently.

2.4.2.1 PRM: Risk Identification

Risk identification aims to generate a list of risk events and *“having identified a list of events, it is necessary to consider possible scenarios.”* [AUS/NZ, 1999]. The objective of this process is to identify the nature and the characteristics of project risk, influence sources and risk consequences and provide a clear description of project risks [Halman and Keizer, 1994].

The effectiveness of risk identification is the most important phase of the risk management process as unidentified risks cannot be managed [Ekington and Smallman, 2002, Chapman, 1998] and unidentified risks affect significantly the project objectives [Chapman, 2001]. An effective risk identification process must include project members from all areas. This will reduce the chance of overlooking important areas of risk. PRAM [1997] also suggests that risk ownership should be

identified so that appropriate responsibilities for managing the risks and risk response strategy can be developed effectively. Furthermore, regarding both positive and negative possible outcomes of uncertainty, the risk identification must include positive possibility as well as negative possibility. Missing a good positive possibility that an organisation seeks is a problem equal to bearing losses [Tchankova, 2002].

Risks are about events, that, when triggered will cause problems. Hence risk identification can start with the source of the problem, or with the problem itself. When either source or problem is known, the events that a source may trigger or the events that can lead to a problem can be investigated. The most common approach to categorising risks is into cause areas: “sources of risks are categorised by possible risk events” [PMI, 2000]. The cause of a risk is its most significant feature and “*only by influencing the causes can the risk be proactively managed*” [Carter et al., 1994]. Flanagan and Norman [1993] propose that when attempting to identify risk a clear view of the events is the first requirement, focusing on the sources of risks and the effect of the events. Perry [1986] also states that it is important to distinguish the source of risk from its effects, as ultimate risk encountered in project implementation affects one or all of the three primary engineering objectives. Consideration of each influencing factor will simplify the analysis and management of risk [Bajaj, 1997]. Different industries so far have developed their own risk classification taxonomies to distinguish risks from different sources, for instance, SET [1993]. Risk classification also allows establishing a cause and effect connection for risk events.

The examples of risk classification are provided as follows. At the global level, Kreamer [1976] suggests investigating the effect to project objectives: cost, time and specification. Ashley [1997] proposes the same lists but includes liability. Wideman [1996] supplements the above list with project scope. The following authors propose more comprehensive risks and a wider perspective of risk classification. Win [1994] classifies risks as follows: financial risks, social risks and environmental risks. Walker and Smith [1996] characterise risk according to: financing risks, political risks and technical risks. The following authors look at risk from a wider perspective.

Al-Bahar [1988] characterises risks into the following scheme: acts of God risks, physical risks, financial and economic risks, political and environmental risks, design risks and construction risks. Bannister and Bawcutt [1981] describe risks and their influential sources as: physical risks – injury / death, liability risks – suits from customers/ employees/ public, business Interruption risks – loss of earning from physical or other loss, management risks – poor planning, control, staff selection etc., wastage risks – poor packaging stock control, deterioration, corrosion etc., technological risks – failure of change of new technology, social risks – change in habit less product demand, political risks – government legislation, inflation and foreign exchange risk, and physical environments – climate, depletion of resources etc. Zhi [1995] says that risks may be derived from two sources. The first consists of the environmental impacts, which are called external risks. The second consists of the uncertainties existing in the project itself, which are called internal risks. PMI [1996] has further classified sources of risks as follows: external - but unpredictable, external predictable - but uncertain, internal – non technical, technical and legal risk. Ward and Chapman [1995] argue that throughout the project life cycle, there is a different type and degree of risks associated with each stage and each stage requires different managing requirement to deliver to the next phase. They propose considering a process risk in the project life cycle. Hence, it is reasonable to identify risks in accordance with each phase of the project. Tah and Carr [2000] propose the hierarchical risk breakdown structure to separate internal and external risks. Hillson [2002] proposes a comprehensive risk identification tool – Risk Breakdown Structure (RBS). The RBS can assist in understanding the distribution of risk on a project, aiding effective risk management. Similar to WBS which forms the basis for many aspects of the PRM, RBS can be used to structure and guide the risk management process.

There are several tools and techniques invented to support this process. The most popular techniques used are qualitative techniques, which rely on the experience and expertise of project management practitioners. The identification of risk and the creation of a risk list are dependent upon many factors, such as past experience, personal tendency and the possession of information. Pinto [1997] stresses that the

experience of problems and failures in past projects are most desirable when project risk identification and risk response is carried out. Arguably, most participants involved in the risk identification process rely exclusively on similar past project experience. Therefore, it is important to broaden the participants view when identifying risk [Towe, 2001]. Clark et al. [1990] also stress that it is important for an interview risk identification session to be creative and persuasive to lateral thinking. These tools are widely known as brainstorming [Royer, 2000], Nominal Group Techniques and the Brainstorming method [Chapman, 1998], interview [Clark et al., 1990] and Delphi [Dey, 1999]. Handy [1983] criticises the fact that several factors need to be taken into account in order to pursue the above techniques. For instance, interview skills, number of people involved and individual objectives and roles. Turner [1999, p.236] suggests expert judgment, plan decomposition, assumption analysis and decision drives.

A risk checklist is a common guideline for risk identification. Niva [1998] states that; a well-developed risk checklist should consist of dependent/independent risks, controllable/ uncontrollable risks, pure/speculative risks and risk life cycle patterns. The advantages of using checklists are that they are time saving, probability making, provide good documentation, influence project managements to acquire and collect important facts and facilitate the future work on risk as a base step. To assist project managers in focusing properly during risk management, the idea of using work breakdown structure has been further developed into risk breakdown structure [Hillson, 2002].

Stewart and Fortune [1995] argue that most risk identification techniques are reduction techniques, which fail to capture the interaction between disparate risks and limit the view of uncertainty surrounding the project. It is essential to gain a holistic view so that the complexity of projects can be understood. White [1995] enlists holistic techniques such as rich pictures, system maps, influence diagrams, soft systems models etc, which can be built up to emphasise the interconnectedness of interaction between a project and its environment including the human aspects.

The main outputs from this phase should include setting up a risk register or a database that lists and describes all identified risks and records decisions made concerning their assessment and treatment. Within risk registers, risks should be listed with details of their characteristics, including their ranked importance, any quantitative indicators and finally risk treatment plans. Risk registers can be more or less detailed and play an essential role in risk management as a primary document of record. Risk registers should be employed at the beginning of the risk management process: all risks and supporting information arising from risk analysis should be compiled in the form of a register. Williams [1993a] states that the project risk register has two main roles. The first is that of a repository of a corpus of knowledge. Project risk register contains an overview of the project entity. The second role of PRR is to initiate the analyses and plans that flow from the risk register. Williams [2002, p. 76] provides a formalised structure of PRR.

The next step is to conduct risk analysis. It is a procedure which investigates and seeks more understanding of identified risks and attempt to seek out only important risks to be managed in the next step.

2.4.2.2 Risk analysis and Evaluation

The aim of risk analysis is to determine which risk events warrant response [PMI, 2000]. Grey [1995] points out that *"having identified the risks in your project, you will usually have insufficient time or resource to address them all; so the next requirement is to help you to assign realistic priorities."* The consequence of the risk identification normally provides a large number of sources of risk. It is impractical to attempt managing all of these risks. The natural tendency is to seek to put identified risks in some kind of order or priority by assessing the risk exposure. The project organisation can then utilise its limited resources to establish risk management plans for only important and significant risks effectively [Grey, 1995 and Baccharini and Archer, 2001].

Risk analysis is to clarify the relationship between risks and the responses identified as well as determine their impact. This would be performed on cost and time elements of the project, and on specific elements as applicable. The essence of risk analysis is to allow the project organisations to consider an appropriate duration of time in developing responses to particular risks, explore particular risks in more or less detail and allocate reasonable amount of resource in responding to particular risks [Ward, 1997].

The assessment of risk can be either qualitative or quantitative depending on the information available and the level of detail required [Hall, 1990]. Qualitative risk assessment is normally done to provide the articulation of risks in terms of their likelihood and seriousness [Wharton, 1992]. The result of qualitative assessment is typically demonstrated using a Boston Square Matrix or so called probability-impact grid to address probability of occurrence and impact scenarios with labels like High/Medium/ Low. The grid approach can be regarded as a refinement of a simple minor/major categorisation and it is useful as a precursor to quantitative estimation [Ward, 1997].

The result of risk prioritisation or so called risk assessment affects significantly the risk management stage. The level of detail in the risk management plan should be compatible with the level of risk of the project. The high risk rated in the previous phase will influence the detail of risk management plans. The lower the risk rating the less detailed plan is acceptable. However, one of the most common, but arguably misleading methods used to rank risks is to multiply the probability of occurrence with the degree of impact to obtain a score for the degree of risk. Williams [1996] contests that the process is based upon using insufficient details of both impact and the likelihood of occurrence, and more considerations of both factors must be taken into account. In order to avoid such trouble, Lansdowne [1999] proposes the concept of a risk matrix to prioritise risks by using the Borda voting method. However, Morgan et al. [2002] are of the opinion that categorisation of risk is important prior to ranking of the risks ,as risk ranking efforts can be very sensitive to the way risks are divided in the first place.

Al-Bahar [1988] defines quantitative risk analysis as “*a process that incorporates uncertainty in quantitative manner, using probability, to evaluate the potential impact of risk*”. A quantitative analysis assigns a probability of future occurrence to each risk, where historical data is available, these frequencies can be estimated. Traditionally, quantitative assessment of the likelihood of occurrence and impact is based upon the classical probability theory and Bayesian theory. Emblemsvag and Kjolstad [2002] provide a discussion on the difference between the classic probability theory and possibility theory when utilized in risk assessment. Otherwise, as in the case of a new project, predictive techniques and subjective values are used. Overall probabilities can be developed by suitably combining the frequencies of occurrence of subordinate events from which data is available or can be estimated and which in total make up the new operation.

Furthermore, different approaches have been proposed to support risk assessment procedure. Soft system models have also been applied to increase the capability of the risk assessment process. For instance, system dynamics – a quantitative analysis technique that employs the results of mapping and influence diagrams [White, 1995]. Davidson and Huot [1991] state that in case of delay and disruption of the original schedule, the development of a system dynamic in particular contributes to discovering the re-work on the project. The application of a system of project management dynamics is fully discussed by Rodrigues and Willimas [1995]. James et al. [1996] demonstrate the use of the Influence Diagram and Monte Carlo Simulation in cost risk analysis. Their research stresses that risk can be classified into two categories, internal and external. To model external risks, Influence Diagram techniques are used in conjunction with Monte Carlo models, which are employed to model internally.

The complication of quantitative techniques is impossible to deal by hand calculations. Recently, project risk management software has been developed to help project managers dealing with complicated calculation on risk analysis process. Chris [1997] summarises the risk analysis tools that have been produced by several companies. Primavera has Monte Carlo, a system, which is designed to provide risk

analysis and reporting for project schedules. @Risk and Risk+ are two products designed to deliver similar analysis to Microsoft Project users. Welcome software originally designed Opera, to add Monte Carlo risk analysis to its open plan for the DOS product. Artto [1997] separates risk management software into four categories as follows; Decision Support & Modelling: Different AHP applications in general (AHP = Analytical Hierarchy Process), Modelling tools: DynRisk, Spreadsheet add-in: Crystal Ball and @Risk (Excel), Planning Package add-in: @Risk (MS Project), Monte Carlo (Primavera), Opera (Open Plan) and Risk+ (MS Project).

Kahkonen [1997] argues that Project management software packages still lack quite dramatically links to the acknowledged systematic project risk management practice. More holistic tools in terms of overall integration of systematic working methods and flexible risk modelling and analysis capabilities would help significantly promotion and implementation of systematic project risk management practices in companies [Artto, 1997].

Furthermore, within this phase the importance of risks needs to be assessed on a time dimension as well as an impact dimension. Risk may still be more or less important in the sense employed in risk identification and risk analysis but now effective use of management time requires that risks and their associated response also take on a priority ranking reflecting trends in each risk, and the urgency associated with responses. The urgency concerns the level of time pressure behind a given risk and its associated response.

2.4.2.3 Risk Response

The risk response phase is the process that determines an appropriate action to respond to specific risks. The manner in which risks are dealt with depends on the risk assessment results. Clark et al. [1990] say that the first stage of risk management is to consider the list of quantified risks and set criteria for determining actionable and non-actionable risks. The criteria would be flexible and would really consist of a

set of guidelines taking account of the level of impact, resources available to determine and implement response and cost of possible response. Ward et al. [1991] suggest that risk management effort needs to be concerned with priorities in developing and implementing responses, rather than the relative size of associated risks. The imminence of particular risks and the time needed to put in place an appropriate response need to be appreciated alongside the assessment of the probability and impact.

Several risk management strategies have been proposed for instance; PMI [2000] provides several strategies for dealing with risk including, avoidance, reduction, transfer, containment, contingency, absorption and acceptance. Kahkonen [1997] brings in a similar list: modification project objective, risk avoidance, risk prevention, risk mitigation, developing contingency plans, keeping options open, monitoring the situations and risk acceptance. Raftery [1994] introduces four possible techniques: risk elimination, risk transfer, risk retention and risk reduction. Nevertheless, there are four common risk management strategies including risk avoidance – seeking to eliminate uncertainty, risk transfer-passing ownership to another party, risk mitigation – reducing the probability and/or severity of risk and risk – acceptance - recognising residual risks and devising responses to control and monitor them [Hillson, 1999].

According to Thomson and Perry [1992], risk transfer can take two basic forms: (a) the property or activity responsible for the risk may be transferred, i.e. hire a subcontractor to work on a hazardous process; or (b) the property or activity may be retained, but the financial risk transferred, i.e. methods such as insurance. Hillson [2001b] extends the above strategies for both negative risks and positive risks including, exploit – eliminate the uncertainty by making an opportunity definitely happen, share – allocate ownership to another party who can both maximise the probability of occurrence and increase the potential benefits, enhance – increase the probability and/or impact by identifying and maximising risk drivers and ignore – those opportunities that cannot be addressed effectively by any of the above strategies. De Bakker et al. [2002] introduce the approach of a risk management

planning breakdown structure to help in determining the extent of risk management planning required for the project. This approach is discerned as a stepping stone towards the development of a risk response plan.

The principal guideline in determining whether a risk should be transferred to another should be based upon whether the party assuming the risk has both the competence to assess the risk and the expertise necessary to control or minimise it. The choice of risk management strategy depends on two criteria: the extent of control over risks and the degree to which risks are specific to a project or systematically affect large numbers of actors. When risks are endogenous, that is specific and controllable, the prescription is to mitigate with traditional risk management approaches. In contrast, when risks are specific but outside the control of any of the potential parties, shifting or allocating those using contracts or financial markets is the appropriate solution [Miller and Lessard, 2001].

Hillson [1999] has defined the following seven criteria for checking the effectiveness of a response to a risk or opportunity: appropriate, affordable, actionable, achievable, assessed, agreed and allocated and accepted. Piney [2002] puts forth the concept of risk response planning and the use of a tool known as a “project risk response chart” to help select the right strategy for risk response. The potential impact of risk or opportunity is a subjective matter and its impact can be categorised into four main categories – Dead Zone, Rationale Zone, Sensitive Zone and Saturation Zone using the Utility Curves. The response planning entails development of options and determination of actions to mitigate risks or enhance opportunities in the project. The project managers need to know the conditions under which each strategy will be considered acceptable, required or unacceptable. The potential responses are assessed with respect to the effect they have on the key parameters, expected values of the outcome, worst case scenario and best case scenario.

Ben-Davis and Raz [2001] argue that several risk reduction actions can be implemented with different costs and expected results. It is, therefore, imperative to address a selection of the best combinations of risk reduction actions for a given

project scope and a given set of predicted risk events. The risk strategy methods selection must concern both dependencies among the risk reduction actions and secondary risks – risks that did not exist before and were created by the risk reduction actions.

Kuismanen, Saari, and Vahakyla [2002] stress that; risk interrelationship management assists in risk response planning by creating responses that not only mitigate individual risk, but also mitigate the interdependent risks to reduce the impact on the overall project objectives. Chadbourne [2001] has suggested applying the root cause technique to future events so as to generate more information and use the information to develop better mitigation plans for risks. Clark et al. [1990] suggest that there are two classes of risk response strategy: immediate and contingency. Similarly, Ward [1999] points out that the risk planning process must include both proactive and reactive contingency plans.

Zhi [1995] says that the risks can be responded to through three broad channels: by contract, by insurance and by retention management. The first two are methods of allocating the risks to external parties and the last one reduces or controls the risks by internal management. Hartman [1994] explains that perhaps, the most single important tool used to control risk is the contract. The contract is the instrument to allocate risk to the party (parties) most able to evaluate, control, endure the cost, and benefit from the assumption of risk. However, every risk has an associated and unavoidable cost, which must be assumed by someone. Therefore, a proper risk assessment can be a powerful tool in identifying which risks could best be managed by certain parties. Moreover, some risks will need to be transferred to non-party participants through insurance or bonding. Ward et al. [1991] point out that successful and appropriate risk allocation presupposes an atmosphere of trust between contracting parties, and a clear, mutual appreciation of all relevant project risks and their effects. The effective risk allocation is central in that both parties have a clear and similar understanding of risk [Mills, 2001]. Chapman and Ward [1994] describe a mathematical treatment of allocating risk in contracts with varying degrees of controllability to optimise the choice of definition of contract type. Barnes [1983]

argues that risk and incentive go together. The person that carries risk has the incentive to minimise its impact. The person who has transferred risks to another body has no incentive to minimise its impact. It is consequently important that at least some risk should be allocated to contractors in order to sustain their incentive to achieve. For huge infrastructure projects, there has recently been a development of government project finance initiatives. It is an alternative approach favoured by governments to transfer risk using private finance through different types of contracts for instance, BOT, and BOOT, [Zhang and Kumaraswamy, 2001 and Kumaraswamy and Morris, 2002].

2.4.2.4 Risk Monitoring

The risk management plans must be assured to be put into action. The final phase of managing risk involves implementing risk management plans and the daily active management of risk and to assess the outcomes and administer the risk management process. Ward [1999] states that the management phase is primarily concerned with monitoring changes in risk exposure and implementing planned responses. It is the characteristics of planned responses that influence the intensity with which particular risks are actively managed and monitored. Tummala and Burchett [1999] point out that in the risk control and monitoring phase, the targets set and contract strategies employed as a result of risk evaluation should be checked periodically to observe if any deviations have occurred. If they occur, necessary corrective actions will be devised and evaluated using the risk evaluation phase of the model. Within this phase, it is also essential to monitor changes in risk exposure and update risk management process. Simon [1999] states that after planning is accomplished, the risk managers should be responsible for presenting the status of all risks at all reviews. The final process of the risk management process is to monitor the status of identified risks, identify new risks, ensure the proper implementation of agreed responses and review their effectiveness, as well as monitoring changes in overall project risk exposure as the project progress.

Risk review meetings may be held to assess the current status of risks to the project, and project review meetings should include status reports from the project team on key risks and agreed responses. The effectiveness of the risk process itself should be reviewed to ensure that it is meeting the risk management needs of the project [Hillson, 2001]. All risk management, especially treatment measures, should be monitored for performance so that appropriate counter measures or facilitative actions can be implemented should the risk management strategy prove inadequate. Possible methods of review include performance evaluation, audits and inspections. Risks must be reviewed as part of regular, mandatory tracking activities and these risks lists must be reported to senior management who in turn, consider the programme and project view, subsequently offering advice and guidance. Within this stage, it is necessary to develop and distribute periodic reports on the progress of the project, including the milestone, to the concerned senior management and process personnel. At the end of every project life cycle and at the commissioning of the project, the person responsible should collect data and store it in risk databases for easy access.

Upon the completion of the risk management process, risk management plans must be reported to the project principal. The plans documented in this phase include a list of risk issues and an analysis that provides ranges of potential cost and time outcomes. Baldry [1998] suggests that all information for risk assessment and analysis can be usefully brought together in a project risk register. Winegard and Warhoe [2003] state that some risk management professionals develop risk registers in spreadsheet form or develop a project database. Ward [1999] proposes the list of factors which should be included in a risk register. The content implies a fairly detailed document from each risk, from which the relative importance of risks is to be determined from time to time as the associated project progresses. Risk registers are undoubtedly a useful management tool, but warrant more careful design if they are to be the main basis for determining priorities in the risk management process.

The above discussions have explained the principle of risk management process. Risk management should be conducted proactively through a systematic process of

identifying, assessing, selecting appropriate risk responses, and monitoring to ensure that all risk plans are commenced timely. With a systematic risk management process can provide significant benefits to project organisations. The following section is to provide a discussion about benefits of PRM can provide to an organisation.

2.5 Benefits of the risk management process

Regarding the project environment, it is understood that the risk of project failure can be substantially reduced if a PRM process is practiced. It is the relationship between risk, uncertainty and project objectives that makes risk management such an important contributor to project success [Hillson, 2003a and Hillson, 2003b]. Proactive systematic risk management allows the early detection of risks and provides procedures for acquiring suitable risk managerial strategies. Hence, a project organisation faces minimum chances to response to risk reactively. Furthermore, the organisations can ensure that their limited resources are concentrated on the major risks to achieve maximum effect.

Many academics have confirmed the benefits of PRM. Burchett, Tummala, and Leung's [1999] survey indicates that most managers are positive that a risk management process provides a useful insight into project budgeting decisions. It is evident from these results that respondents consider the risk management process useful in providing more information for decisions and providing confidence, despite application difficulties. The risk management process is also perceived as increasing enthusiasm and communication among project managers and sponsors, strategic thinking, quality of investment information, improved project performance and efficiency, and hence increased project acceptance. It appears that organisations that manage their projects more efficiently and more effectively tend to attach more value to risk analysis tools that provide structure and discipline and organisation wide process associated with quality process and practices [Raz and Michael, 2001]. In-depth studies of firms using quantitative risk analysis suggest that management relies heavily on risk analysis techniques for evaluating complex strategic projects, and that corporate success can be attributed partly to the use of such approaches. Much work

has been undertaken in recent years on risk analysis, where capital budgeting surveys indicate a gradual but definite transition from theory to practice. In the USA, for instance, Klammer and Walker [1984] report a significant increase in the use of at least one formal method for risk assessment of adjustment from 39% in 1975 to 59% of responding firms in 1980. Pike [1988] reports that while 265 of the responding firms formally evaluated risk in 1975, the figure had increased for the very same firms to 86% by 1986. 7% of the respondents came from the energy industry [Ho and Pike, 1991].

Turner and Simister [2002] believe that benefits gained from using risk management techniques serve not only the project or investment, but also other parties such as the organisations as a whole and its customers. Furthermore, Merna [2003] points out that an effective operation of continuous risk management process within project organisations allows project stakeholders to appreciate wide range benefits of risk management. PRAM [1996] enumerates the benefits of risk management into two primary areas: hard and soft. While hard benefits concern the project management process, the soft benefits indicate organisational managerial perspective. (See table 2.1)

Hard benefits	Soft benefits
Enables better informed and more believable plans, schedules and budgets.	Improves corporate experience and general communication.
Increases the likelihood of a project adhering to its plans	Leads to a common understanding and improved team spirit.
Leads to the use of the most suitable type of contract.	Assists in the distinction between good luck/good management and bad luck/bad management.
Allows a more meaningful assessment of contingencies.	Helps develop the ability of staff to assess risks.
Discourages the acceptance of financially unsound projects	Focuses project management attention on the real and most important issues.
Contributes to the build-up of statistical information to assist in better management of future projects.	Facilitates greater risk-taking, thus increasing the benefits gained.
Enables a more objective comparison of alternatives.	Demonstrates a responsible approach to customers
Identifies, and allocates responsibility to the best owners.	Provides a fresh view of the personnel issues in a project

Table 2.1 : Benefits of the PRAM process

Source: PRAM, [1996], pp. 46.

Buchan [1994] states that the application of risk management at the outset of the project clarifies the objectives and helps refine the project brief. It helps recognise where the major risks lie and the priority they serve in amongst all the other demands on the organisational resources. Hence, it improves internal performance agreements [Grey, 2001], more realistic budgets and targets, and better contingency planning [Dey, 2001 and Mak and Picken, 2000], suitable types of contract [Turner and Simister, 2000] and feedback to the designer [Cooper, McDonald and Chapman, 1985].

Formal systematic risk management also increases the effectiveness of managerial judgement by providing a better approach to decision making [Cooper and Chapman, 1987 and Hall, 1986, Mills, 1999, Mills, 2001]. Cooper, MacDonald and Chapman [1985] add that other less specific organisational benefits appear in the form of study documents, which provide a structural database of corporate knowledge that usually resides in the mind of various individuals and might otherwise not be revealed explicitly.

The study of McKim [1992]'s PRM in construction projects indicates that PRM improves office/field communication and that between project functions, and reduces the number of unpleasant surprises as the project proceeds. Baskerville and Stage [1996] studied the application of risk management in controlling prototype development. They assert that risk management improves collaborative mechanisms that draw the participants towards a consensus about project priorities. Projects become more cohesive and better directed, particularly with respect to most critical project problems.

In conclusion, a successful and effective risk management process can encourage creative and lateral thinking and also increase communication between all project staff which tends to follow from the process and enlarge co-operation across group and company boundaries. Ultimately, PRM can be translated into a dynamic management function that will enhance the ability of the organisation to avoid loss, to survive disruption and to exploit the positive advantages of some risks. Hence, it will improve the organisational managerial practice.

2.6 Conclusion

This chapter has provided the literature review concerning project risks, and principles of PRM as well as its systematic process. The PRM process does not only supplement traditional project management by offering both tools and concepts to deal with uncertainty, but it also encourages project organisation to improve its management practices. However, the benefits of PRM can only be exploited if it is

systematically applied and continuously conducted within project organisations. Even though, there are several project based organisations and industries which have employed the process successfully, there are still many organisations, which are struggling to implement the process. Moreover, numbers of organisations have still not acknowledged such a concept. The success of using the PRM concept in projects has increased gradually [Byeges, 1997 and Thomas, 1997]; however, there are many organisations which still do not recognise the use of PRM. Furthermore, the main problem here is implementing the PRM concept for organisations. While it may seem that PRM promises many things to project managers, it has its limitations too. Not all risks are preventable through having effective risk management. In the coming chapter, the researcher will illustrate a planning for PRM implementation. The important factors supporting successful PRM adoption plans and applications of PRM will also be discussed.

Chapter 3: A discussion of PRM implementation

3.1 Introduction

The previous chapter provided a discussion of the structure of the risk management process, but the crucial element of beginning to introduce PRM has been omitted for further discussion in this section. As the focal attention has turned to an increasing acceptance of risk management in project organisation, recently several academics and practitioners have included introductions to the PRM process.

This chapter focuses on investigating the details and imperatives of a PRM adoption programme, which can significantly affect the welcoming of the PRM principle and its practicality. In the literature, it has been mentioned that the implementation process of PRM is important, yet there is only a small group of academics who provide discussion of such frameworks. Despite an increasing consensus on the value of PRM, its application is constrained by the ability of project organisations to exploit it. While there are some evidences that PRM has been utilised in many projects across industries, the numbers of project organisations which achieve risk management culture is rare. Many project organisations fail to achieve sustaining the application of the PRM process let alone reaching a “*maturity risk culture*” [Hillson, 1997]. The focus of attention is on the planning for PRM change programmes. The PRM implementation process is a crucial element for shifting the culture of project organisations towards risk management [PRAM, 1996 and PMI, 1996]. This also brings some light of PRM soft management issue, while there is an increasing interest in this aspect as it is claimed to affect the implementation process of PRM. This issue has rarely discussed. Within this chapter an exploration of this issue will be conducted. Furthermore, it has been indicated that there is a lack of knowledge on PRM implementation strategy.

3.2 An integrated approach to PRM

Management of risks and uncertainties should not be seen as an independent parameter, to be analysed in isolation. Instead risk management must be discerned as a continuous real time operation integrated with all project management functions and systems [Jaafari, 2002, Busman and Zuiden, 1998, Meulbroek, 2001, Wideman, 1992], and everyone should perform risk management daily [Conrow, 2001]. This means risk management must be synthesised to traditional project management to allow project organisation to survive rapid change and uncertainty of environment [Kloman, 1990]. In other words, *“risk management must be seen as a basic fundamental of project management techniques and the responsibility of the complete project team”* [Clark et al., 1990]. Furthermore, in order for the project organisations to gain extensive benefits from the PRM process, it is important that risk management should become fully integrated at both operational and strategic levels [BS, 2000 and Kaplan and Garrick, 1984]. Without such integration, there is a danger that the results of risk management may not be used appropriately, and that project and business strategy may not take proper account of any risk assessment.

Throughout the project life cycle, each individual must have an implicit responsibility to manage risks within their sphere of influence. The applications of PRM process have been seen in different stages along the project life cycle, for instance, conceptual design, bidding, and procurement [Ward and Chapman, 1997]. The integration of a risk management framework contributes an organisational management allowing a move beyond direct command and control approaches towards means of daily routine basis [Dennis et al., 2000, Chapman, 2004 and Busman and Zuiden, 1998].

Nevertheless, corporate risk management practice in project organisations is far from common. Project organisations, certainly, practice some form of risk management in either implicit or explicit form, but their current risk management practice still isolates risks rather than aggregating them [de Bakker and de Roode, 2001 and Tah and Carr, 2000]. According to Kendric [2004], even though organisations have

started buying in proprietary risk management practice, they do not employ risk management practice on a day to day basis. Furthermore, risk management techniques were not often used, and project managers did not regard them as a part of their jobs, they were unaware of suitable techniques and were over-optimistic [Raz et al., 2002].

Ensuring the PRM process is effective in practice is undoubtedly a major issue [Ward, 1999 and Ho and Pike, 1992]. The primary concern is PRM adoption or implementation programmes. The adoption programmes must increase risk awareness and encourage greater use of risk management tools and techniques. The integration framework must provide a proper guideline for project members to conduct risk management processes and ensure they are practiced on a daily basis. However, there are several issues concerning the difficulty of PRM adoption. These problems should be addressed prior to the commencement of the PRM implementation programme.

3.3 Deterrent factors for PRM adoption

Several surveys which have been conducted across industries and countries indicate similar sets of findings of the factors inhibiting PRM adoption [Ho and Pike, 1991, Tummalala et al., 1997, Burchett et al., 1999, Akintoye and MacLoed, 1997, Simister, 1994, Uher and Toakley, 1999, Burchett et al. 1999 and Hertz and Thomas, 1983].

An adoption of PRM discipline is obstructed by scepticism about the benefits of comprehensive PRM programmes [Pike and Ho, 1991]. PRM is discerned among project managers as a high cost, and time consuming process [Hertz and Thomas, 1983]. This cost represents the effort required, both at a personal and at an organisational level, to understand and to learn how to use PRM tools and techniques, and to acquire the necessary infrastructure [Raz and Micheal, 1999].

Jacobs [2002] describes that project managers often refers to risk management process as ponderous, expensive, and appropriate only to large government or

commercial investment projects. According to McGrew and Bilotta [2000], the most common rationalisations for project managers not to adopt systematic PRM are that the project is too small or too large to justify the time and expense of a review; that the benefits cannot be determined and, therefore, the costs are assumed to outweigh the benefits, and the effort is unlikely to uncover anything that is not already well known to everyone involved in the project.

Another major obstacle is concerned with the difficulty of PRM tools and techniques. A comprehensive PRM process also involves complex quantitative tools and techniques with which project managers do not feel comfortable [McKim, 1992]. Burchett et al. [1999] state that in considering the inherent problems of the PRM process we should also mention the difficulty in obtaining input estimates and assessments of their probability and also problems with the understanding and interpretation of the outcomes of risk management processes. Kangari and Rigg [1996] assert that probability models suffer from two constraints. Some models require detailed quantitative information which is not normally available at the time of planning, and the applicability of such models to real project risk analysis is limited, because agencies participating in the project have a problem with making precise decisions. The project managers are more prone to rely on their intuitive and gut feelings and their overall know-how to manage their project risks.

Project managers rarely use formal risk analysis when making important decisions. They are more comfortable to taking an intuitive approach and that risk management is ad hoc and dependent on the particular skills, experience and risk-orientation of individual key project participants [Byrne and Cadman, 1984, March and Shapira, 1987, Tah and Carr, 2000 and Mcgray et al., 2002]. Paul [2002] also points out the common behaviour of project managers toward project risks. He states that normally project managers tackle risk by denial, sidestepping and attempting to shield themselves. They develop various patterns of behaviour to fend off the impact of risk based failures.

More subtle issues inhibiting the PRM process include the organisation risk culture. Some organisations discern risk communication and discussion as a negative activity as it can drive good projects into bankruptcy. People do not want to stress negative attitudes to the project. Some project organisations perceive that risk is **bad news** which is unpleasant to be received [Royer, 2000]. Some organisations even contain a characteristic of “shooting the risk messenger” [Nasini and Spazio, 2001], where members who inform about risk are to be blamed as portrayed bad opinion about the project. Smith and Merrit [2002] similarly refers to this as a “kill the messenger” syndrome. Most organisations shun bad news as people do not want to look bad in front of the management. Discussion of risks is thought to create a defeatist attitude and was considered a negative motivator. This leads to highlighting more desirable news to project owners and project sponsors: *“there are no risks on my project was a common belief and voiced opinion”* [Webb et al, 2001]. Furthermore, within these organisations, nobody likes to take responsible for risks but risk events are blamed to be responsible of others [Kleffner et al., 2003].

An implementation of risk management may require some changes in an organisation including behaviour [Hall, 1975] and structure [Hertz and Thomas, 1983] as well. For instance, there is a challenge of risk communication across departments and lack of coordination among project members. Regarding to de Bakker and de Roode [2001], an organisation with no history of open communication will have a longer way to go when implementing risk than organisations with open communication structures. Hence, the adoption of the PRM process requires the organisation to develop appropriate structures to support the PRM process [Uher and Toakley, 1999], combined with the creation of a new culture. A primary focus is on an implementation process of PRM [Ho and Pike, 1998], which have to cope with organisational resistance to change [Tummala et al., 1997], organisational culture [Hulett, 2001 and Kleffner et al., 2003]. The PRM adoption or implementation process consists of several crucial issues of support and requires a considerable amount of time and resources to conduct. The next section will provide a discussion of the PRM implementation process.

3.4 A discussion of the PRM implementation process

This section is to give a brief discussion of issues concerning the implementation process including a nature of an organisation changing towards risk management practice, an approach to which the implementation should be conducted and at what phase of PLC the PRM should be implemented.

The aim of risk management implementation is to improve risk management efficiency. According to PRAM, 1997, p,11], risk management efficiency is an *“approach acknowledging that proactive and judicious spending of some of the risk budget before any adverse events occurs, offer the project manager the opportunity to exercise full management control over those events.”* This definitely involves changing in some level of organisations’ attitude towards risk management approach and practice. Implementing risk management within a project organisation takes a significant time [Hillson, 2002 and de Cano and del la Cruz, 2002]. Chadbourned [1999] concurs, advising one to two years to achieve consistent application for each level of a capability maturity model. The implication of this process is that project members inevitably have to adapt their management behaviour. Attitudes and motives cannot simply be changed overnight by a change in policy or management systems, so although an effective PRM is considered to be a necessary measure in achieving a good risk culture, it is not sufficient. Development of a good risk culture requires all individuals to accept the importance of risk, and such a culture is likely to be achieved only by concentrating on a long-term learning approach towards risk [Johnson, 2002, Chapman, 1997, and Carter et al., 1996]. Project members need to learn, conduct and develop their risk management practice until it is discerned as a common practice through out an organisation. Khakonen [1997] states that the implementation of systematic project risk management in companies has proved to be a learning process where one needs to obtain a satisfactory understanding of the most suitable and beneficial techniques, and the organisation in focus needs to gradually learn new ways of thinking and working.

The implementation of risk management can be approached as if it were a project itself [Chapman, 1997]. The implementation of risk management in a project context must be predefined. Several factors should be taken into consideration prior a commencement of risk management implementation programme including time allocation for conducting risk management, feasibility within the budget available for risk management, the characteristic of risk management, scope of risk management and determining the organisation support to the implementation of risk management [Klakegg, 1997]. The following section will provide a discussion of essential elements of PRM implementation programme.

3.5 A discussion of PRM Adoption Planning

The PRM adoption plan is very important to the effectiveness of PRM practice in a project organisation. While the characteristics of risk management process centred project organisations are widely known, the process by which organisations transform to risk management oriented are not well understood.

To begin the PRM adoption programme, proper risk management planning must be conducted. Without appropriate guidelines and planning the implementation procedure would be awkward and the attainment of implementation sceptical. Ward [2004] refers to this process as development of risk management and links it with implementation strategy literature. Halman and Van der Weijden [1997] concur that establishing risk strategy is prerequisite to the emergence of an implementation procedure. A PRM implementation context provides a program consisting of pathways for project managers to initiate the PRM process. Conrow and Carman [2000] state that risk planning is the process of developing and documenting an organised, comprehensive, and interactive strategy and methods for the PRM process. de Bakker et al. [2002], Nash et al. [2002] and Tavis and Saldaha [1999] concur that the main focus of risk management implementation strategy is twofold. The first issue is concerned with the degree of acceptance of an organisation towards the risk management adoption programme. The second is to ensure that risk

management process is accepted as a continuous function and allow a wider audience to appreciate the benefits of risk management.

While the importance of the PRM implementation process has been mentioned by several authors, only a small group of research recognises the importance of this stage [Baccarini, 2001]. PMI [2000] refers to this process as Risk Planning. It is called Focus and Define in PRAM [1997], Carter et al. [1996], del Cano and de la Cruz [2002] contain the most explicit and detailed components in their initiation phase. Konito [1997] proposes in his Riskit model that the initialisation phase lays the groundwork for carrying out risk management activities.

The goal is to ensure that effective risk management practices are embedded into all of its business processes so that a strong culture of risk management exists throughout an organisation. The characteristics of an effective risk management plan are that it is appropriate, achievable and affordable for the project organisation and that it ensures that risk management is integrated in a rational, systematic and proactive manner. The PRM planning stage must be undertaken with care and sensitivity to the project managers, project types and characteristics of a project organisation. Even though, this phase has been referred to differently by diverse authors, however they share similar features (see table 3.1).

- Risk Management Policy
 - o To Set Risk Management Scope and Objectives
- Acquire Commitment From Senior Management
 - o To Seek Supportive Project Stakeholders
 - o To Engage Project Stakeholders
- Establish Risk Management Infrastructure
 - o To Set Responsibility Parties
 - o To Design a Suitable PRM process
 - o To Establish Risk Terminology

Table 3.1: PRM implementation issues

[Ward, 2004, Noble, 1999, Miller and Lessard, 2001, Grey, 1995, Reitan and Hauge, 1997, Mak and Picken, 2000, Voetsch and Coffi, 2003, Merna and Merna, 2004 and PRINCE,2000]

These activities are to ensure that a risk management environment is created and that organisation risk management is moved towards **risk mature culture** where risk management is practiced regularly and risk is communicated freely [KPMG, 1999]. According to Hillson [2002], a risk mature culture is where the entire organisation members are risk aware and capable of using basic risk skills to support decision making at all levels. The PRM adoption programme is a change management program which requires a well defined objective, scope, commitment and support from project stakeholders, strong leadership of project practitioners, risk management guideline and platform to conduct, the risk language to communicate, the responsible parties to support risk management practice and learning process and improvement of PRM capability.

3.5.1 The Establishment of Risk Management Policy

Risk management adoption should be initiated with a corporate risk management policy statement, which should be accepted by senior management. A policy statement gives direction to all levels of management and specifies the goals of the organisation in relation to risk management. It is important to decide on the purpose of risk management and to prepare in advance an appropriate way and resource to initiate risk management practice [Halman and van der Weijden, 1997]. Wightman [1998] points out that it is vital to identify and agree the objectives of risk management within the organisation, so that these can be used to measure the effectiveness of the risk process. The project managers must determine “*what they hope to achieve with risk management, and when the implementation should be completed*” [van Well-Stam, 2004, p. 130]. The risk management policy should be seen as a driving force for the risk management process in developing an appropriate risk management model to identify and manage the risk associated with a given project. In addition, the risk management policy must be clearly articulated and communicated through the entire organisation [Khakonen, 1997 and Chadbourne, 1999]. Flyvbjerg et al. [2003] state that the main challenge to the preparation of a risk management plan is to actually fully identify the scope for risk management, and to **communicate** that it is much wider than what is normally appreciated.

In order to encourage a corporate risk management culture, the risk management policy must be driven by the overall strategic perspective of the project organisation [del Carno and de la Cruz, 2001 and Tatsiopoulos et al, 2003]. It is crucial to ensure that risk management strategy will be aligned with overall project organisations strategies, objectives and performance goals. A full understanding of the context of risk problems of target project organisations is obliged to set risk objectives and influence project stakeholders’ interest on the potential of PRM in contributing to the organisation’s ability to attain its project objectives. The crucial part of strategic risk is to capture information about the organisation and its operations [Howe, 2001]. Project objectives, definition, scope, project achievement variables are all vital to support a risk management policy [Klakegg, 1997, Smith, 2002 and Kendrick, 2003,

pp. 29-31]. A brief investigation allows the project managers to ascertain potential risks and discuss the contribution of PRM with other stakeholders. In order to implement PRM, the project organisations must realise the complexity of the risks they are facing, and that they are searching for a more comprehensive approach to managing risk. A result of preliminary project analysis in this phase can be employed to gain the agreement of project stakeholders about the requirement of an explicit risk management process.

3.5.2 The project stakeholders' role in PRM implementation

The successful implementation of risk management depends on the ongoing commitment, support, involvement and leadership of all senior management within the project organisation [Mobey and Parker, 2002]. The implementation should enhance understanding about risk management tools, establishing the role of risk management in the organisation, changing working practices, and a continuous development and learning process. This requires constant and visible top management support and sponsorship [Grey 1995]. Hulett [2002] states that the main ingredient in making it successful is the commitment of top management to professional, disciplined risk management. Without ongoing commitment from senior management, the introduction of integrated risk management will never become embedded into the project organisation culture. Senior management support must be clearly demonstrated throughout the entire project organisation. Furthermore, an adoption of risk management requires a substantial investment for training, developing process and techniques, changing management systems, expertise and acquiring the necessary infrastructure [Raz and Michael, 1999], without senior management support the success of PRM implementation seems impossible.

An achievement of risk management culture is not possible without strong leadership and high commitment from project stakeholders to incite project members to practice risk management and improve its risk management capability. Leadership is a key element in the effectiveness of teams as well as a driver to improve change and

increase performance [Chadbourned, 1999, Opfer and Abrams, 2004]. The senior management must foster change dialogue with project members on issues involving risk and build a climate of trust, credibility and understanding by being forthcoming about facts, evidence and information concerning risk assessment and decision taken. The senior management must play a figure head role to their members, trust in their member's capability to handle their own risks and motivate their team members to be alert about risks [Cleland, 1998 and Turner, 1993]. The project manager is also responsible for monitoring and managing all aspects of the risk management process. It is important to remember that the person directly responsible for risk management does not generally conduct all risk management assessment themselves, but facilitates them by involving relevant people, particularly key stakeholders and providing appropriate mechanisms for their discussion and documentation.

3.5.2.1 Engaging Project Stakeholders

To gain senior management commitment, it is important to have a proper introduction strategy. Apparently, a primary reason for project organisations to adopt the PRM principle is owner's requests and government mandatory policy. For instance, in the defence industry, companies have to enact risk management programs in order to satisfy government procurement requirements [Chadbourne, 1999]. Most project organisations still do not recognise the commercial benefits of PRM [Simister, 1994], or even recognise the PRM principle at all [Hulett, 2002]. Voetsch and Cioffi [2003] summarise the survey of PMI RMSIG of 175 SIG members stating that the more sensitive senior management is to project risk management, the more frequent is the use of various project risk management practices. The project stakeholders must first believe in the benefit of the PRM concept. Hence, in order to gain project stakeholder support, the benefits of PRM must be represented to the senior management of the project organisations. Management will continue to remain sceptical about investing in a comprehensive risk management program, if their understanding of the benefits of risk management is not clear. (see section 2.5)

In order to capture project managers' attention towards risk management, Grey [1999] suggests the elicitation of the potential negative events which affect all concerns of project objectives would instigate the organisation's awareness of hindsight difficulties to achieve its project objectives. Coupling past and future demonstrates potential advantages the organisations can gain from the PRM practice. Smith and Merrit [2002] suggest the management must be pointed to yesterday's problems and how they affected the project objectives. Moreover, clarification of the value of acting in advance on potential problems comes through analysis of what some past problems would have cost had they been dealt with before they occurred. Most likely, the analysis will show that addressing problems proactively is considerably cheaper than dealing with them reactively.

Clark et al. [1990] recommend explaining and presenting the principle and philosophy behind the PRM concept. Risk management practice must also be presented as a complementary managerial practice to other management functions. An investment in proactive risk management must be taken as a sign of good management practice that leads not only to an improved risk profile, but also to improved effectiveness in other areas. This can also be supported with empirical evidence of PRM benefits. The PRM process in the project organisation can become sustainable with regard to the consistency of the project stakeholders' belief towards the PRM concept. It is crucial that project stakeholders truly believe the incoming benefits of PRM process, as it is an initial step to commence risk planning. However, this has been proved to be a very difficult task regarding that most project managers still have negative thoughts about PRM process. Hence, it is imperative to find out the most suitable ways to draw project managers' attention on PRM process.

3.5.2.2 Project Stakeholder Analysis

Successful risk management implementation also relies on the "political issue" [Denis et al., 2000]. Project organisations intending to implement the PRM process must effectively control political behaviour. Obtaining inappropriate project stakeholders to support the PRM implementation process can sabotage its survival.

Project stakeholder analysis should be conducted as early as possible prior to the PRM implementation process as “inappropriate” project stakeholders can oppose and block its implementation. The key goal is to gain supportive project stakeholders and cultivate support among senior management, and other stakeholders and participants in the project.

Risk management will not benefit all project stakeholders. The nature of the complexity of project stakeholders’ involvement should be consistent with the complexity, uncertainty, impact and level of controversy associated with the decision to be made. The cause of PRM adoption failure can stem from various stakeholders having different and conflicting expectations about their roles. Stakeholders have varying degrees of power and access to resources. The advantages of implementing PRM must be proposed to the appropriate project managers. A project consists of different things for various project stakeholders who generally have different interests and purposes. These project stakeholders can significantly affect the achievement of project objectives [Freeman, 1984]. Regarding the nature project organisation, which contains many project stakeholders it is possible that risk management will not be seen as beneficial to all project stakeholders. Ward [1999] points out that it is important to consider other parties, as they may cause risk to increase or decrease, and it is important to recognise their potential role in defining, recognising and managing project complexity. Hence, project stakeholder analysis is a crucial element in providing primary investigation of their powers and incentive values.

Establishing project stakeholders’ perspectives or mental models concerning the project will identify, amongst other risks, potential areas of conflict, and varying approaches to roles and responsibilities. Identifying stakeholders’ perspectives enables the development of appropriate intervention strategies to reduce risk and uncertainty. “Journey Making” method developed by Eden and Ackerman [1998] can contribute to investigating participative parties for the implementation plan. The process commences with identification of project stakeholders who can be persuaded to underpin the project and those who can sabotage the project. The power versus

interest grid based on the work of Eden and Ackerman can be used to array stakeholders in terms of their organisations use of the PRM process. A consideration of coalitions that can assist and prevent the successful implementation is the next step of the process by constructing a stakeholder influence diagram indicating how the stakeholders on the power versus interest grid influence one another and the potential support groups can be reviewed. Furthermore, Ackerman and Eden's [1997] conflict analysis techniques can encourage groups of stakeholders with conflicting interests to discuss their differences. The stakeholder analysis technique can support the PRM process by finding appropriate supportive project stakeholders and understanding their incentives. Project analysis is the process of eliciting information about their potential contribution to project risk management during the PLC. Key information will be gained concerning stakeholders' abilities, perceptions, values and motivations.

The project stakeholder analysis should be considered as a part of risk planning or at least be recognised. Project stakeholder analysis should be conducted as early as possible in the risk planning as hostile stakeholders can oppose the risk management decision and block its implementation. The nature, extent and complexity of project stakeholders' involvement should be appropriate to the scope and impact of a decision and the potential of the decision to generate controversy.

3.5.3 Risk Management Infrastructure

An implementation of risk management requires setting up the corporate infrastructure for risk management that is designed to enhance understanding, communication and practice of risk management [KPMG, 1999, Leech, 2003 and Todd, 1999]. Williams [1999] refers to this important issue as risk management infrastructure. Risk management infrastructure determines the controls that need to be in place, as well as the mechanisms necessary to ensure that the risks are understood and the managements are in place. However, it must be noted here that in order to ensure risk management is a consideration in priority setting, it needs to be integrated within existing governance and decision-making structures at the

operational and strategic levels. Aligning risk management infrastructure with prevailing managerial practice can increase the acceptability of project members towards risk management practice. The larger the organisation and the higher the complexity and diversity of its projects, the more likely it is to require complex structure, and more likely it is to assign risk management to specialised functions.

The risk management infrastructure comprises of three main areas. The organisation must define the responsibilities and accountabilities of the responsible parties for maintaining risk management and control. The terminology of risk management including both risk language and risk tolerance must be established and agreed upon by project members. Finally, a design of simple, precise and suitable PRM process must also be conducted to serve as a platform for risk management practice in the organisation. These can increase awareness of risks by operational risk management, increasing coordination, with different areas responsible for risk management and move involvement and interaction in the decision making of other departments.

3.5.3.1 Responsible parties for risk management practice

To support the PRM implementation programme, it is necessary to select responsible parties to support the dispersal of risk management knowledge, training, providing information and other existing units throughout an organisation [Gibson, 1991 and Frame, 1997] and ensure that project members use the risk management process continuously [Katzendach and Smith, 1994]. Reitan and Hauge [1997] point out that an understanding of the objectives and methods of the risk management process is an impedimental factor for successful implementation of PRM. Such a problem can be overcome by an introductory training course which must contain the following statements: why risk management is helpful, how risk needs to be defined in order to be a good parameter to base decisions upon –how risk management function is to be carried out and how statements of concern may be directly translated into decision support.

There are several views on where the risk management function should sit within a project organisation. It may range from a single risk champion, risk team, a part time risk manager [Fraser 1984 and Katzendach and Smith, 1994], to a full sale of risk management department [Hirzel, 1986] or risk management committee [Williams, 1993]. Having a risk management team or committee seems to be an obvious process supporting PRM implementation programme; however an initial risk management programme can be responsible of quality control department [Herrow, 1997 and Henry, 1997]. Magro and Kellow [2004] state that risk management is a program which, when combined with project control and project assurance, become a synergistic part of a successful program manager's tool box.

The function of risk management team can be separated into two types. Centralisation means that support for risk management is provided from a central level to the subprojects, and that the risks are kept in check on a more centralised level. With centralised form, there is a clear hierarchy of responsibility and leadership, within which senior members set the framework of tasks for those low in the hierarchy. Williams [1993] suggests the use of a risk committee. This is a committee that consists of perhaps the risk manager, the project manager, and one each of the line management functions representing the three risk objectives. This enables assessments to be coordinated and decisions to be made. Regular meetings of this committee provide the basis for the cycle of risk analysis activity. This method of organisation has the advantage that a good overview of all of the risks is created but a downside is that the supporter's tasks become extremely large. In addition, there is the chance that the risk becomes less specific for individual subprojects. Morris [1988] describes the use of liaison positions, or taskforces, or co-ordinators. However, he points out that major projects usually start with a centralised structure, become decentralised and end centralised, and during that the decentralised phase, a large management superstructure is needed to maintain project integrity.

van Well-Stam et al. [2004, p. 120] propose that the responsible parties can be formed of decentralised units. With this option, the support is incorporated within individual subprojects. The advantage of this option is that the tasks designed to

support risk management remain relatively limited per supporter, and it is likely they could simply be added to the supporter's current task list. The disadvantage could be that there is no integral picture of the risk created at the project level. A good overview of the risk exists on all levels. The only disadvantage is that the support for risk management can be relatively difficult. Kloman [2000b] argues that risk management should be integrated fully with project management. This advice is aimed at meeting one of the shortcomings of the functional approach to managing, namely, that if something is someone else's responsibility it will be assumed to have been met. For risk, if there is a separate manager for the risk management function, other people will tend to assume that person or department has done all that is necessary to manage the risk. Nevertheless, at the same time, if this is not a specialist co-ordinator or manager, there is a risk that people will assume that someone else is taking care of risks that they do not themselves directly identify and manage themselves. There is clearly a need to balance functional centralisation, in order to ensure an overview and that overall risk management is actually carried out with an appropriate level of decentralisation to ensure individuals and groups actively manage their own risks.

Gettlo and Lands [1999] however, offer the godfather driven approach which is a combination of centralised and decentralised approaches. With their approach, the risk management process is effectively managed locally under sub project teams as well as monitored centrally with a specialised risk management department. This option involves the support on a subproject of both previous methods.

In conclusion, Williams [1993] states that the type of structure developed depends on the differing requirements for these two components: the level of complexity and high uncertainty with long duration, and size of project stakeholders. The framework for risk infrastructure, decision making on whether a more or less formal system is appropriate, and choosing whether a simpler or more complex system is more appropriate is determined by the degree of project complexity and number of parties involved with the project. Risks can be deferred as being top-down or as being

bottom-up. The former ensures an overview and the inclusion of super- item risks, while the later ensures coverage.

3.5.3.2 Risk management Terminology: Risk Language and Risk Tolerance

The most important step in adopting a more professional, consistent and transparent approach to risk management is to agree on terminology. Simply using the term risk opens the risk of miscommunication. In order to support an integration of risk management into other management processes, the terminology should be established and easily understandable by managers. The risk management terminology includes risk language and risk tolerance. Risk language and risk tolerance have a tremendous effect on effective risk strategy management.

It is useful within each corporate decision-making group to clarify individual definitions of risk and try to arrive at a consensus which would allow better communication within the group. As risk is a multifaceted concept, a basic definition of risk is not straightforward. Basically, risk has a variety of meanings with regard to an individual's background and knowledge [Fischhoff, 1985, Pablo, 1999 and Ritchie and Marshall, 1996]. Furthermore, individual members clarify their risks with a variety of meaning according to their tasks and objectives [Bettis, 1983]. Hence, project members' perceptions and interpretations of information, and factors that affects these individual level phenomena, are critical elements that must be taken into account to understand how risk will be handled in various activities. Therefore, it is useful to find a consensus of risk definition among project members. The establishment of a common risk definition will encourage consistent perceptions towards risk, increase communication and risk awareness; hence boosting risk management practice [Froderick, 1996, Scarff et al., 1993 and Mason and Mitroff, 1981].

Risk tolerance must also be agreed within a project organisation. The risk tolerance level is the maximum overall exposure to risk that should be accepted, based on the benefits and costs involved [PRINCE, 2002, p.23]. If the responses to risk cannot

bring the risk exposure to below this level, the activity will probably need to be stopped. To put it more simply, it is the amount of risk the organisation want to be exposed to. Once risk appetite is defined, an organisation must ensure that risk is managed as to stay within its self-imposed boundaries. The amount of risk the organisation is prepared to tolerate, or its 'risk appetite', will vary according to the perceived importance of particular risks and timing.

The PRM must also reflect the risk attitude of the organisation in its environment and whether this is reflected in the risk attitudes of its staff. A poor match will result in confusion at best and destructive tensions accompanied by high levels of stress at worst. Risk appetite is not a static concept within individuals. Risk will be perceived as either positive or negative depending upon the circumstances of the decision to be taken. Where personnel are less experienced, an organisation is likely to tolerate less exposure to risk. To establish the optimum balance of a risk occurring against the costs and value for money of limiting that risks, the organisation have to consider perceptions of tolerance in detail. Some organisations are willing to take more risk than other. Ward et al. [1991] state that attitude to risk refers to a party's preference for different risk/return tradeoffs. One party may require a higher expected rate of return for taking on a given level of risk than another party. One organisation may prefer low-risk, low-expected return opportunities, while another may prefer high-risk, high expected-return opportunities.

Determining and communicating an organisation's own risk tolerance is + an essential part of managing risk. The assessment of the current project risk management capacity will identify stakeholders affected by an organisation's decisions and actions and their degree of comfort with various levels of risk. Understanding the current state of risk tolerance of project stakeholders will assist in developing a risk profile and making decisions on what risks must be managed, how, and to what extent. It will also help identify the challenges associated with risk consultations and communication. And risk tolerances for issues such as project delays and over expenditure.

3.5.3.3 Development of risk management process

The PRM process is not a universal model which should be directly applied to any organisation [Lichtenstein, 1996, PRAM, 1996, Conrow and Carman, 2000 and Carter et al., 1996]. The PRM process must establish a system that is appropriate to its needs but adaptable to its respective project characteristics, organisational practice and risk management capability. Several authors have proposed several ways to obtain optimal risk management process for an organisation. The underlying concept of the **contingency theory** approach is that the situational factors of the project will have impacts on the designing of project organizations and the selection of project management tools and techniques [Winch, 2004, Shenhar and Dvir, 1996]. Dvir et al. [1998] put forth that project success factors are contingent upon the specific types of projects, where the types of projects are classified by technology, uncertainty and systematic complexity. Regarding contingency theory, Shenhar and Dvir, [1996] and Payne and Turner, [1999] indicate that managing projects under different environments calls for different sets of risk management tools and techniques depending on the situational factors. Barki et al. [2001] talk about an integrative contingency theory model of software project risk management. They propose that, in order to increase project performance, project risk management process needs to vary according to the project risk exposure. Their theory is based on two key dimensions to measure the project performance applied risk management process: process performance refers to how well the process of software development is, and the project and product performance relates to how good the developed system, that is, the product or output of the process.

Pritchard [2002] states that prior to the commencement of the PRM implementation process, it is important to review an organisation's practices to obtain clear understanding of an organisation's philosophy of risks. PRM implementation tends to be more successful in its attempts to introduce a risk management philosophy when managers have given adequate thought to how ready their organisation is to undertake a risk management exercise. The Risk Management Maturity Model was developed by Hillson [2002]. It is a diagnostic tool that can help managers evaluate

the maturity of their risk management. The model allows an organisation to implement a formal approach to risk management or to improve their existing approach and provides suggested risk management practices for effective risk management within specific organisations. The assessment requires an examination of the prevailing risk management culture, risk management processes and practices to determine if adjustments are necessary to deal with the evolving risk environment.

This model organises project organisation performance indicators within a holistic framework of five elements: process, planning, structure, organisational culture and people. These issues do not operate in isolation from each other, but are mutually interdependent, an organisation must have a minimum platform in each of these areas if it is to effectively utilise the risk management process. The model aids organisations in the development of a risk management infrastructure by providing a guideline for assessing their current maturity level and providing suggestions to move to higher levels of maturity in risk management. The model describes four levels of organisational maturity with respect to risk: level 1 – ad hoc, level 2 – initial, level 3 – repeatable, and level 4 – managed. A project organisation then benchmarks itself against the criteria covered under these headings. The risk maturity model helps to discover the risk management capability of the organisation and determine the appropriate tools and techniques.

Ward [1996] states that the design of a risk management process depends on the structure of projects and organisations, financial allocation, human resources and the facilities of the organisation. Furthermore, Chapman [1990] stresses that the design of a PRM process must also be based on the experience and intuition of project members and take into account several factors including time, resource, money available to perform analysis and the expected future use [Williams, 1999]. To sum up, the key of risk management process should be simple, creative, supportive, robust, with a specific objective for each phase [Chapman and Ward, 1996]. It should also be best practices instead of common practices [Chapman and Ward, 2002 and Turner, 1999, p. 249], as a suitable risk management process for an organisation will encourage project members to apply the selected risk management tools and

techniques throughout the PLC [Kahkomen, 1999, Ward 1999b and Halman and Keizer 1997:204].

The risk management process contains numerous risk management tools and techniques. White and Fortune [2002] point out that project managers use only a few of these. Raz and Micheal [2001]'s study indicates that with 38 project risk management tools included. They investigate the frequency of use, the perceived contribution of usage to project success, and the extent to which usage was associated with high performance in Israel's software and high-tech industries. Similar to the PRM process, the application of selected tools depends on the nature of the project, an organisation's policy, project management strategy, the risk attitude of the project team members, and availability of the resources and practice [Regan, 2003 and Ward and Chapman, 1997]. Grey [1999] states that there are several methods of PRM in common use. Some are extremely cost effective but the subject still attracts a lot of muddled thinking and well-intentioned efforts that can absorb more effort than the benefits they deliver. The selection of appropriate tools and techniques has a strong impact on the success of any PRM adoption programme. Suitable PRM tools and techniques would increase training and project stakeholder confidence as well as improve communication. Dey and Ogunala [2004] state that each risk management tool and technique has its strengths and weaknesses. Understanding those strengths and weaknesses is indispensable for their appropriate applications to risk management. Enhanced understanding of risk analysis tools and techniques will provide the industry with improved risk management support.

Several authors have attempted to seek a way to select appropriate risk management tools and techniques for their projects. For instance, Brenner [1994] and Dey [2002] discuss the use of the Analytical Hierarchy Process (AHP) as a tool for selecting risk management tools and techniques. Dey and Ogunlana [2004]'s studied the application of risk management tools and techniques in BOT projects. Among varieties of risk management tools, Lyons and Skitmore [2004] and Uher and Toakley, [1999] state that qualitative methods are far more favourable than quantitative methods. Hence, it would sensible that risk management process

development efforts progress should begin with simple qualitative methods towards more sophisticated quantitative methods associated with knowledge management aspects. Wright [1997] suggests a development of PRM practice should be tested first and even prior an announcement of risk management policy. He argues that a pilot study seems to be a reasonable method for introducing a programme. An experience gained from the study can be used as a step to improve the PRM framework for the project organisation, and a good way of disseminating PRM process within an organisation. The pilot project engagements will form a smooth transition into the implementation. Considering the further basis for implementation, it is natural to build upon the experience gained during the pilot projects on issues like the risk manager role and responsibilities, the risk information review system and the risk manual.

A PRM process should be designed in coupling with documentation. Risk management infrastructure must support risk information, risk communication, risk assessment, and monitoring risk management process [Smallman and Weir, 1999 and PRAM, 1996]. In order to maintain an ongoing PRM practice in an organisation, the progress of risk management must be reported to the responsible parties regularly. An organisation must develop a process of continuous monitoring and review to ensure that changes take place. The project organisation must adopt integrating mechanisms which increase its information processing capabilities. To deal with uncertainty in projects, project managers need substantive information to make a sound decision. Lack of information available to the project team from either senior management or other important sources can also pose potential risks [Cooper and Chapman, 1994]. The project organisations must establish its database management [Carter et al., 1996 and Bruce and Sanders, 2000], to be sufficient to provide information for the risk management process. The data concerning risk management must be organised in a systematic way [Roya, 2000], and should be assessable by all project participants and contain information feedback should be assessable by all project participants and contain information feedback and corrective actions on previous decisions. Furthermore, the record data should enable the project team to learn from the project's history which can then be used and applied to its later

projects [Wideman, 1992]. Hertz and Thomas [1983] point out the importance of adequate arrangement of information and data storage. The information should be recorded in a form that supports the efficiency of the PRM process and should also offer audit trail. Database for risk studies are required, says Williams [2002] and in recent years, this lack has been recognized, and risk databases are beginning to be built up. Niwa and Okuma [1982] describe a well structured database with a structure reminiscent of a risk register. Ashley [1987] describes a number of examples of expert systems based on risk knowledge. Some software vendor will now see databases specially structured to store project risk register from one project to the next. However, Wideman [1992] and Green et al. [1998] criticise that the record should enable the project team to learn, and supportive to the communication system so that all members can be informed and manage risk events effectively.

Ritchie and Brindley [2001] summarise that the improved quantity and quality of information provided by new technologies delivers and sufficiency of the information available will influence the perception of risk by those involved in the decision making process itself. Aleshin [2001] proposes a computer based training system and decision support system based on computerisation to support both risk management learning and decision making process towards project risks.

In summary, an important element of risk management is the supply of information and reporting on risks. By properly recording the flow of information on risks, every one on every level will receive the information they require for guiding that particular portion of the project. This means that the information will be fed in from the bottom up, and that sufficient freedom is given from the top down to enable projects or subprojects to be executed by those responsible for them [van-Well Stam, 2004, p.105]. Leech [2003] also suggests that another barrier to creating a unified understanding of risk is that these groups store risk information separately, without producing a consolidated picture. Each group in an organisation knows key elements about the state of risk but they rarely communicate with other groups or attempt to construct a consolidated picture of the total state of risk across the enterprise. Ward [1999] argues that a design of documentation must be done with

care as too detailed documentation and analysis may result in a project that is not-cost effective.

The project organisation must continuously improve PRM capability through benchmarking with a risk maturity model. Education and training are a priority to improve project members risk management practice levels [DeLoch, 2004]. As PRM consists of rather complicated tools and techniques, education and training should be provided to enhance member's capability of risk management. Training is a dominant factor enabling project implementation teams to overcome impedimental factors in the implementation process [Chadbourne, 1999]. The training process should be conducted in a continuous manner in relation to the level of PRM assessed by the Risk Management Maturity Model. Moreover, to achieve risk management excellence is a long-term process.

3.6 The Behavioural Aspect of Risk Management

Although the risk management process contains a clearly defined formal structure, it cannot be applied in a mechanistic manner. The design of risk management process must consider an importance of contextual influence of "working environment" [Ward, 1999]. The study of risk management has recently been criticised as focusing too much on technicalities which is are too technical, static, prescriptive and mechanistic [Green, 2001]. When risk management process is integrated into an organisation's philosophy and management activities, it becomes the practice of everyone within the organisation. Without support from management of some kind, technical risk assessment is a fairly futile exercise [Klein and Cork, 1998]. Hence, it is imperative to consider crucial elements such as the behavioural aspect of the organisation in planning the structure of the risk management process in a particular organisation. While there has been for a long time a concern with improving risk management tools and techniques, recently there is an increasing recognition of the behavioural side of PRM [Ward et al, 1991, Ward, 1999, Clark and Stoddard, 1996, Clemons et al, 1995, Smallman, 1996 and Lyne and Benjamin, 1997]. Kendrick [2004] states that there are two key dimensions to understanding risk in an

organisation. These include the issue of understanding the organisational and personal attitudes to risk which will provide an “attitude and behaviour” dimension. The behavioural aspect of risk management indicates that the success of the risk management process is contingent upon organisation management practice and the people within the organisation developing a positive attitude to risk management. To support an effective risk management practice, an organisation requires vivid risk communication, participative and co-ordination of project members, delegation and support continuous learning among project members [PRAM, 1996, Smallman and Weir, 1999, Turner and Cochrance, 1993, Kahkonen, 1997 Artto, 1996, Kloman, 1996 and Cater et al., 1996]. The human aspect has also been specifically pointed as a prime factor affecting the success or failure of PRM implementation [PMI, 1996, Cook-Davies and Arzymanow, 2003 and Hillson [2003]. McKim [1992] states that risk management is only as effective as the managers and staff involved in the risk management process. The awareness of these challenges will support a development of an existing, or new, practical risk management process. The researcher will provide discussion concerning these two aspects in the following sections. The discussion will begin with the organisation aspect and be followed by the individual risk management aspect.

3.6.1 Risk Management and Management Practice

Kendrick [2004] states that while risk maturity models exists to benchmark performance of risk management against a broad competency scale, the model does not explicitly outline an inside mechanism or details of PRM processes. To understand the PRM process, vehicles driving an effective systematic risk management process, must be identified. There are several managerial issues that support an effective risk management practice.

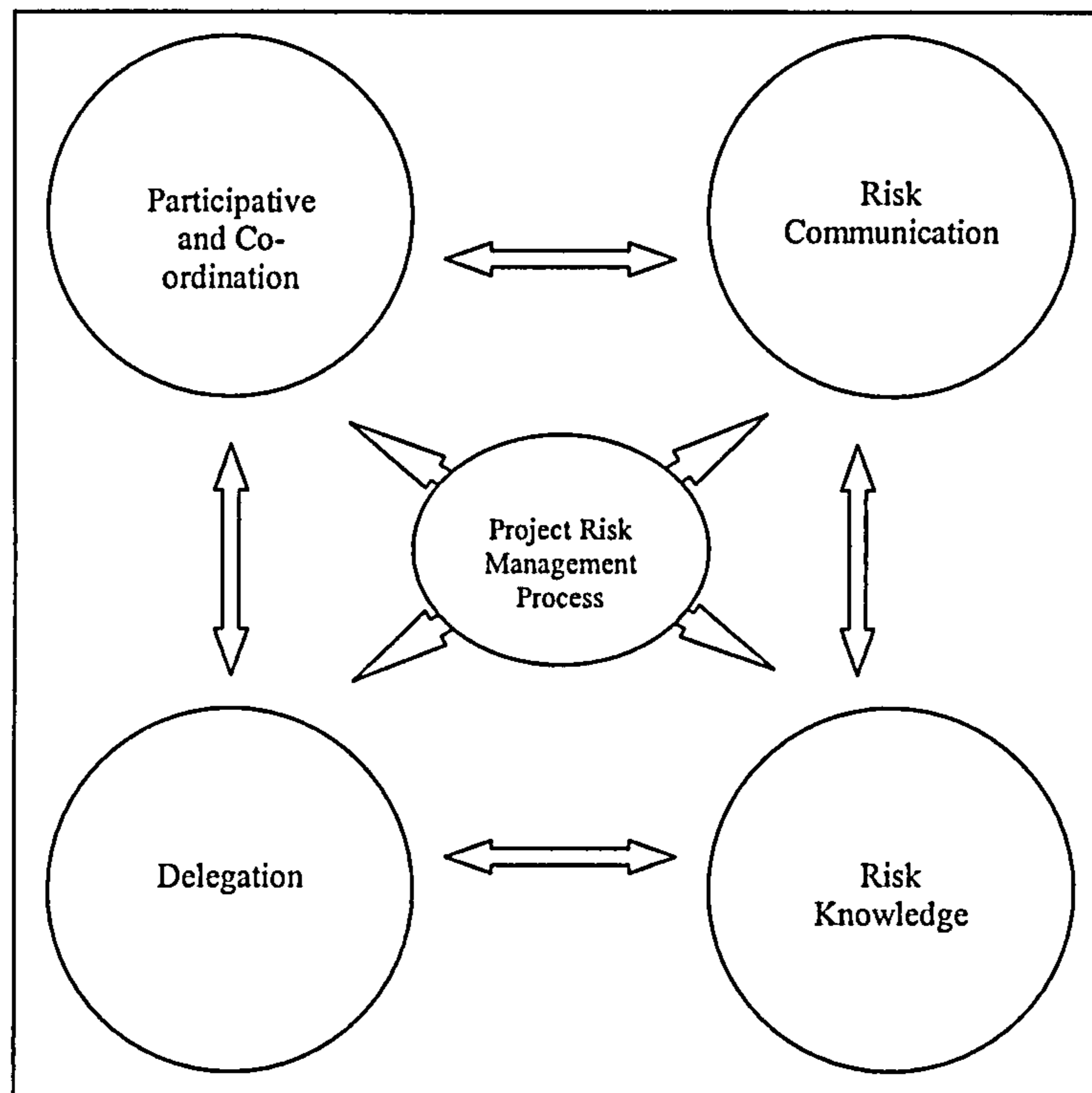


Figure 3.2 : The important of supportive managerial practice and risk management process

Participative is effective in risk management as well as in other practices as it combines information and knowledge of several individuals and personal groups [Chapman, 1998, Wideman, 1992, Williams et al., 1997]. Barton [1980] suggest that better quality decisions based on a more open application of the conflict-based decision process, means it is better to transform the team managerial organisation structure based on increased involvement of additional managers and their willingness to work together because of the de-personalisation of the conflict based process. Stakeholder collaboration is particularly important for risk management because there are many conflicting interpretations about the nature and significance of risks. A communication process must facilitate an exchange of information and ideas that is essential for enabling all parties to make informed decisions about reducing risks. Collaboration does not require consensus, but it does require that all parties listen to, consider, and respect each other's opinions, ideas, and contributions. Moreover, all members must be such key people of their organisational unit that they

are able to communicate, co-operate and make commitments concerning their own unit and also able to implement the actions decided upon [Klakegg et al, 1999]. The learning process is also crucial as it plays a significant supportive role in achieving more effective risk management process [Artto et al., 2000]. Basically, these managerial factors support the entire process of risk management. Ineffective of these managerial practice can leads to risk management deficiency.

3.6.1.1: Risk Management Practice and Participation

Pritchard [2002] states that “*effective risk management is not the province of individuals*. One of the reasons that project managers are unable to prevent project failures is that the groups of project stakeholders who know about potential adverse events fail to share their knowledge [Leech, 2003]. Within an organisation, risk should be treated as a team effort and to be effective requires an interaction between various parts of the organisation [PRAM, 1996]. Williams [1995] says that for effective PRM, project organisations have to become more participative allowing the whole team to contribute to risk identification and risk management strategy.

Flyvbjerg et al. [2003, p.6] believe that risk management should involve all project stakeholder parties to reflect their experience, in addition to including the usual suspects, from specific project stakeholders. Effective risk management requires comprehensive knowledge of all project members, especially because the process of risk identification and risk assessment involves a participative process where the project managers, team members and key project stakeholders complete a standard risk assessment through a series of discussions to achieve an overall series of risk assessments for the project.

Furthermore, Royal society (1992) stresses that “*people select certain risks for attention to defend their preferred lifestyles and as a forensic resource to place blame on other groups*.” Therefore, it is important to ensure that a broad range of perspectives is adequately represented in any management of risk exercise. Stakeholders’ collaboration provides opportunities to bridge gaps in understanding,

language, values, and perceptions. It must be noted here that risk events in the project are not entirely independent. A series of risk events can and frequently do cross-traditional functional responsibility boundaries, which with their classic difficulties of co-ordination and rapid response can lead to disastrous consequences. The adaptability of the decision process as the essence of successful management of strategic risk and, which includes more people from different levels and departments ensures an improvement in the quality of critical decisions in the projects. Nonetheless, the organisations must assure continuing adaptability of the organisation to the end of the project. Amendola [2001] criticises that recent paradigm of risk management call for a participatory procedure, in which the different stakeholders are involved early in the risk analysis process to characterise risks, even before they are given a formal assessment. This aims at eliciting the “values” and the perspectives of the community involved so that the multiple dimensions of risk can be taken into account early on in the assessment.

It is important that the project members must obtain the collaboration and support of other departments. The risk management process requires multi-disciplinary effort. The crucial element of PRM is gathering thoughts form people at different levels within organisations. Collaboration is particularly important for risk management because there are many conflicting interpretations about the nature and significance of risks [Bazerman and Watkins, 2004, p.96]. Collaboration provides opportunities to bridge gaps in understanding, language, values and perceptions. Collaboration does not require consensus, but it does require that all parties listen to, consider, and respect each others’ opinion, ideas and contributions. Sharing information and concerns, careful listening, and timely responses between mutually bound partners are essential risk management activities. The next section is to provide a discussion of an important of risk communication and risk management process.

3.6.1.2 Risk Management Practice and Risk Communication

A comprehensive communication system is an essential ingredient in the success of the risk management framework [Perry, 1996]. Communication is used to promote

risk awareness and management, to obtain information on risk in specific areas, to communicate with employees, encourage teamwork, increase motivation and ensure the involvement of all key project players, share information on risk management across agencies and communicate risk management objectives [Turner and Cochrane, 1993].

Effective risk management requires open and transparent communicating among differing or even opposing interests. The lack of mechanisms for communication between an organisation and its workers cause gaps between the workers' concerns about risk and the awareness of those in the organisation. In addition, attention to information within a company as it is passed on imperfectly or incompletely can lead to risk management concerns being overlooked.

It must be noted here that risk communication must be two-way in order to promote decisions that are both more workable and more acceptable to communities [Hance et al., 1989]. Moreover, a risk communication must be meaningful among project members in order to link risk management to other efforts to improve risk environment. According to the National Research Council [1989] risk communication is defined as "*interactive process exchange information and opinion among individuals, groups and institutions*". It involves multiple messages about the nature of risk and other messages, not strictly about risk, the express concerns, opinions, or reaction to risk messages or to legal and institutional arrangements for risk management. Risk communication represents a 'tangled web' of messages, signs and symbols. Besides the intended risk message, other unintended messages may be transmitted through signs and symbols and hence, result in outcomes that are unpredictable. Klakegg et al. [1999] propose that a structured communication process should be led by a facilitator because it would increase trust within the project team as well as increased openness would lead to more successful risk analysis.

Sufficient information must also be available within good time so that the management initiate defining measures for minimising risks [Frank, 1987]. PRNCE

[2002, p. 14] stresses that information on risk and its management needs to reach the people who have to take action or make decisions. Furthermore, delivering the right information to the right people, at the right time, is a vital dimension of proper risk communication. Smallman [1999] argues that the form of risk communication can be various through the risk management process depending on risk situations. While some situations require only a simple conveyance of information, others require a solicitation for input or dialogue surrounding a decision. Moreover, during crisis events, the transmission of data is rapid and spasmodic. Under this circumstance, the actors tend to process information more erratically and on an irregular basis through mainly ad hoc structures, since formal structures of the degenerate rapidly in conditions of crisis.

Risk management is seen to be inherent to each level, although the flow of information from level to level is not necessarily a top-down or bottom-up basis [Merna, 2003]. Driskill and Goldstein [1986] suggest that risk information can downwards and upwards between the organisational levels. In addition, there is also sideways flow across each level, between project organisational departments. Nevertheless, the vertical flows are the most important as they reflect levels of responsibility for decision making.

3.6.1.3 Risk Management Practice and Decentralisation

One possible argument concerning an effective risk management process lies in the devolution of decision making to employees as a part of the “*empowerment process*” [Kloman, 1996]. van Well-Stam [2004, p. 108] suggests that risk management must correspond to the level of authority. This means that the responsibility for a risk lies with the person who is responsible for the activities or work that can be influenced by the risk. In other words, project members is responsible for spotting and taking measures for those risks that fall under their area of responsibility. Similarly, PRAM [1996] argues that “*individual charged with executing risk response for specific risks should be empowered with appropriate information, authority and resource*”.

During the project life cycle, there is normally a circumstance which requires immediate risk management decisions. Under this circumstance, waiting for the approval of senior management may result in significant losses. A decentralisation approach can be helpful for an organisation to cope more easily with turbulent environments where there is a demand for informed, responsive and adaptive workforces [Swenson, 1997 and Mullins and Peacock, 1991]. Federickson and Mitchell [1984] point out that an unstable environment requires decision speed and flexibility to handle a changing list of opportunities and threats. Consequently, the delegation of authority and empowerment is vital for project organisations to allocate appropriate information, authority and resources to tackle such situations.

While decentralisation seems to ensure the efficiency of organisations to cope effectively with uncertain project environment, at the same time it can also increase risk of project performance inefficiency. The nature of decentralised decision making and more discretionary power to people lower in the hierarchy increases opportunities for misconception and misdirection for the holistic view of the project. Leaders of decentralisation units are often explicitly rewarded for pursuing their own interest and not looking out for a larger organisation objectives [Bazerman and Witkins, 2004]. Regarding to this potential problem, decentralisation calls for new ways of control. The project organisation must therefore, involve these individuals and should empower them with delegated authority through clearly defined guidelines [Chapman and Ward, 1997].

Decision making must have an overall view taken before an assessment can be made of the effect on the overall project. This in fact leads to a centralised decision making in risk management systems, since individual project cells understand less well the wider implication of their decisions, and thus can take a fully informed decision less often. Thus a more powerful core project management team is implied, with an overall view of the whole project, contrary to the current trends in management suggested in current project management discussion. Williams [1995] argues that risk management at the centre is required. Project elements and project risks are becoming increasingly in-dependent, and systematic effects not captured by the

decomposition methods are becoming increasingly important. An overall view must be taken before an assessment can be made for their effects on the overall project.

3.6.1.4 Risk Management Practice: Learning Organisation

Knowledge management's contribution to effective risk management is discussed in this section. Organisational learning is an influential factor to effective risk management practice [Smallman, 1998] and it is main factor influencing the organisation forward to holistic risk management [Smallman, 2002]. Luton [1999] states that there is a linear relationship between knowledge of risks, developing the attitude that one is at risk and adopting practices to prevent the risk happening to oneself. Hall [1980] states that organisational learning is a powerful tool that enables organisations to learn from the past errors and disasters within their organisations, hence enhancing risk management practice.

Risk management focuses on identifying future problems, although it is usually difficult for people to foresee future events and problems [Wieggers, 1998]. The study of past projects can help to sensitise project participants to foresee the potential obstacles to a new project's success. Yeo [1995] also points out that without prior knowledge there is a high chance for project organisations to face risk. By increasing knowledge there is a higher chance for project organisations to avoid and take advantage from risks [McBriar et al., 2003]. Managing projects requires prior experiences to quickly evaluate situations where information may be incomplete or unclear. In these circumstances, decision makers necessarily rely on know-how, experience and expertise [Dingle, 1991].

The basic idea is to learn from experience and introduce experience based solutions of how risk could be avoided [Artto, 1997]. Companies that make a serious effort to formally chronicle past project histories are usually better able to anticipate future problems than those firms that remain locked in the ad hoc nature of project risk management [Pinto, 2002].

Furthermore, continuous learning is fundamental to more informed and proactive decision making. Artto [1997] states that risk knowledge bases are used as organisational memories where experience about risks and e.g. potential risk responses is continuously recorded during the project execution in a multi-project environment. The knowledge base provides access to the organisations understanding about risks in real time. The knowledge base is easily accessible for risk management procedures, and it may contain possibilities to make different selections concerning e.g. the project type, or the content of information retrieved.

To be effective, project organisations must develop a learning process [Kahkonen, 1997 and Pritchard 2002]. Bazerman and Witkins [2004, p.111] state that organisations suffer from learning disabilities when leaders miss out on the opportunity to reflect and codify the lessons generated from past mistakes. They further pointed out that organisation learning disabilities happen when key lessons are not transmitted from the point of generation back to the front lines in both explicit and implicit forms.

3.6.2 Human Aspect and Risk Management Practice

The way project risks have been managed is clearly subjective and largely determined by individual personal experience. The organisation risk behaviour is dependence on their perception of attitude toward risk [March and Shapira, 1987, PIM, 1996, p.39]. Furthermore, the project manager is a leader who participates and facilitates the forward moving towards project risk management culture. The success of PRM implementation is clearly dependent on understanding how project managers perceive risk, how those perceptions vary among individuals, groups and communities and how managers deal with risk [Wakshull, 2001 and Royer, 2000].

An understanding of a project manager's perception towards risks and risk management would be beneficial for understanding the effectiveness of risk management process implementation since the attitude of the project manager towards risk would affect the attitude of the entire project team. This section is to

explore and attempt to understand the characteristic of project managers' risk perception, attitude towards risk, their characteristic, and other relating to the implementation of PRM process.

Under environment complexity, Jaafari [2003] suggests that project leaders should be aware of environmental change and seek information to improve their management practice. There are two relevant literature reviews concerning project leaders dealing with project uncertainty. Pinto et al. [1998] propose two types of leadership: transformational and transactional. Transformational leaders set out to make their mark on an organisation and do. They are great, **forward-thinking**, articulate, and often charismatic visionaries and doers. They are also the most effective leaders. They know how to get things done with a team of people, have fun with it, and make people feel good about what they are doing. Transactional leaders in contrast are focused on the task-at-hand and view the work as a set of discrete transactions between them and their subordinates. They are task driven and not likely to empower team members or to encourage creative thinking.

An effective risk management practice relies on an ability to recognise and perceive future uncertainty and the consequence it may cause [Dickson, 1989, p.2 and Keisler and Sproul [1982]. Smallman [2000, p.63] states that holistic risk management requires **anticipationists** who focus upon the need to detect potential threats and so prevent latent failures from building up. Making decisions under uncertainty require a "long time perspective", taking into account under uncertainty perspectives. Hence, the property of being anticipated plays an important role in our conceptual scheme, because it distinguishes risks from real events, particularly from the unexpected event [Emblemsvag and Kjolstad, 2002]. Weber et al. [2002] state that the effect generated by a potentially dangerous situation drives action to reduce the effect flagged risk, and that the absence of the affective risk perception component reduces the likelihood of risk management actions.

Risk identification is dependent upon the skills and experience of those involved, and extent to which they are able to handle some of the constraints on management

decision making, in particular those due to **risk perception** [BS, 2000]. The failure to manage is derived from low perceptions of the uncertainty. The problem is that if people fail to be alarmed about a risk or hazard, they fail to take precautions. Risk anticipation does not necessarily mean that project managers need to perform a formal identification but the expectation is at least for project managers to have an informal discussion by virtue of industry practice and this is proven for the risk management attitude. The project members, especially project managers should learn to perceive risk clearly, because only by perceiving potential risks and identifying risks in the earliest possible time period can, managers develop methods for minimising risk occurrences and impacts. Floricel and Miller [2001] criticise that risk anticipation does not necessarily mean that project managers need to perform a formal identification but the expectation is at least for project managers to have an informal discussion *“by virtue of industry practice and this is proven for the risk management attitude”*.

Risk management is essentially **psychological theory** of risk perception which focuses on personal factor in risk-related decisions. The attitude of project managers is important for applying risk management techniques [McGowen, 1999, and Mills, 2001]. Raftery et al. [2001] state that one of the most fundamental aspects of risk analysis and management is the distinction between risk exposure and risk attitude. Risk management involves making choices in the face of uncertainty. Many of these choices involve mundane directly perceptible risks [Adam, 1995, p.5] and attitude towards risk. The attitude of project managers is important for applying risk management techniques [McGowen, 1999 and Mills, 2001]. The risk management practice is varies regarding individual risk orientation. This should include the available of heuristics, to identify the unconscious rules used when making judgements under conditions of uncertainty. It should also consider risk attitudes and their effect on the validity of the risk process. A reliable means of measuring risk attitudes needs to be developed, to identify and counter potential bias among participants [Green, 1997]. The impact of risk attitude on perception of uncertainty should be explored to allow the effects to be eliminated.

Raftery et al. [2001] state that one of the most fundamental aspects of risk analysis and management is the distinction between risk exposure and risk attitude. Theoretically, risk exposure is measured in a quantitative way, given certain assumptions about people's capacity to articulate subjective impressions of risk. Fischhoff et al. [1978] investigate risk perception using a psychometric model, the risk perception can be measured by two overarching factors that may be termed "Dread" and "Novelty". The dread implies a measuring of how much control an individual has over a risk, and novelty represents how well a risk is understood. These are indications that the illusion of control may lead to poor risk management. Managers need to be aware of the conditions that encourage this bias. Mikkelsen [1990] employs similar concepts and states that our conception of risk can be divided into two essentially different sets of views: gambling and control. With the gambling view point, we use our experience of earlier occurrences to evaluate the chance or risk. We judge intuitively events which we can imagine. With the control view point, we use our experience of the uncontrollability of earlier events to evaluate the chance of risk. He further states that we consider events which we have not experienced but we can imagine with an intuitive evaluation of our possibility for control in the situation.

Risk management involves making choices in the face of uncertainty. Many of these choices involve mundane directly perceptible risks [Adam, 1995, p.5] and attitude towards risk. The attitude of project managers is important for applying risk management techniques [McGowen, 1999 and Mills, 2001]. Ward et al. [1991] and Raftery [1994] state that attitude to risk refers to a party's preference for different risk and return tradeoffs. One party may require a higher expected rate of return on a given level of risk than another party. One organisation may prefer low-risk, low expected return opportunities, while another may prefer high-risk, high expected return opportunities. There is a tendency for estimators to include an inflated buffer in the contingency estimates. This is due to personal bias and differences in personal risk attitude.

Wakshull [2001] proposes several factors that affect risk taking by project managers – risk propensity, prospect theory, mental accounting, fear of regret, availability, heuristic negotiation & estimating overconfidence. Adam [1999, p.9] indicates that everyone has a propensity to take risks and propose the “risk thermostat model”. This propensity varies from one individual to another and the propensity is influenced by the potential rewards of risk taking. Adam [1995, p. 15] states that “*individual risk-taking decisions represent a balancing act in which perceptions of risk are weighted against propensity to take risk*”. A person’s risk propensity plays a fundamental role in decision making and risk management procedure. The framing of a situation also affects the risk propensity of an individual and their decision making behaviour in risky contexts [Sitkin and Pablo, 1992].

Regarding Kahneman’s and Tversky’s [1974, 1979] prospect theories, a large body of research has shown that decision making is influenced by the context or “frame” in which decisions are made. Framing refers to the extensive body of research that demonstrates that decision makers who perceive risks frame a situation negatively tend to seek risk [Kahneman and Tversky, 1979]. While the Prospect theory’s Kahneman and Tversky [1979] say that a positive situation would make an individual risk averse in their choices and vice versa, March and Shapira [1987] give an opposite conclusion in situations that are labelled as opportunities, individuals are more risk taking and seek to take advantage of the potential benefits they perceive. They argue that decision makers expect the organisation will perform well below a focal performance level, and they seek risk as a way to raise performance to that level. In either of the cases, it is evident that risk taking is dependent upon the situation and it is not unknown for project managers to be embroiled in many such situations during the lifecycle of their projects. The ability to frame a situation could be a key to effective risk management by the project manager.

The “fear of regret” often causes project managers not to deviate from the standard procedures and this affects their willingness to take risks. Project managers seek to mitigate risks by obtaining buy-in from their peers or senior management and to share the risks with the organisation. Sharing of risk has been shown to be a

successful method of risk assumption [Wakshull, 2001]. Another factor that affects the risk taking attitude is the project managers available heuristic or in simple words his ability to relate past experience to current situation. The disadvantage of this is that it can obscure the project manager's view and may cause him to take a poor decision by rejecting an advantageous situation or by ignoring probable events due to the lack of occurrence of these events in previous projects [Wakshull, 2001].

Familiarity of events can cause oversight in identification and assessment of risk. Overconfidence from the heuristic by the project manager could lead him to think himself superior in terms of his abilities and this can result in over optimism and sometimes excessive risk taking. Overconfidence in their ability to control the environment can make them disregard the actuarial probability of occurrence of an event [Wakshull, 2001].

The section has provides a discussion of soft issue of risk management both managerial practice and human aspect. These two issues influence the effectiveness of risk management practice within the organisation. However, there is another factor included in soft aspect of risk management. The following section will provide an argument of how culture plays a role in a risk management implementation procedure.

3.7 PRM Adoption and Culture

Many academics point out the importance of cultural roles towards the success of PRM implementation. Within the sphere of risk management, culture has been pointed out as a prime factor influencing the effectiveness of the implementation process [Hillson, 2001, Carter et al., 1996, de Bakker and de Roode, 2001, and PRAM, 1996]. Saffold [1988] and Frosdick [1996] suggest that for the implementation of risk management programmes, the importance of culture and risk perception using the above theory should be taken into account. Risk management affects the culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects. Furthermore, an

integration of risk management process encompass the human factors, as well as the potency of interpersonal and inter-organisation relationships [Baldry, 1998]. Hulett [2001] suggests that culture determines supportive behaviour as well as barrier to risk management. Furthermore, risk management affects the culture, processes and structures of the project organisations.

Culture influences organisation structure and strategy [Smallman, 1996], internal politics [Noor et al., 2001], risk management approach [Royal Society, 1992], risk perception attitude towards risk [Royer, 2000, Wakshull, 2001 and Adams, 1999, p. 10], risk assessment [Rayner and Cantor, 1987], risk communication [Kasperson, 1986 and Krinsky and Plough, 1988]. de Bekker [2002] asserts that cultural values can be a reliable factor exhibiting the possibility of introducing a managerial concept. Risk management is not a universal approach and must be constructed regarding to the organisation and project members context. Understanding organisational culture can therefore support tremendously establishing effective PRM implementation programme. Furthermore, each step in its management framework is dependent on the individual cultural and regulatory context of each organisation [Kloman, 1996b]. (see figure 3.3)

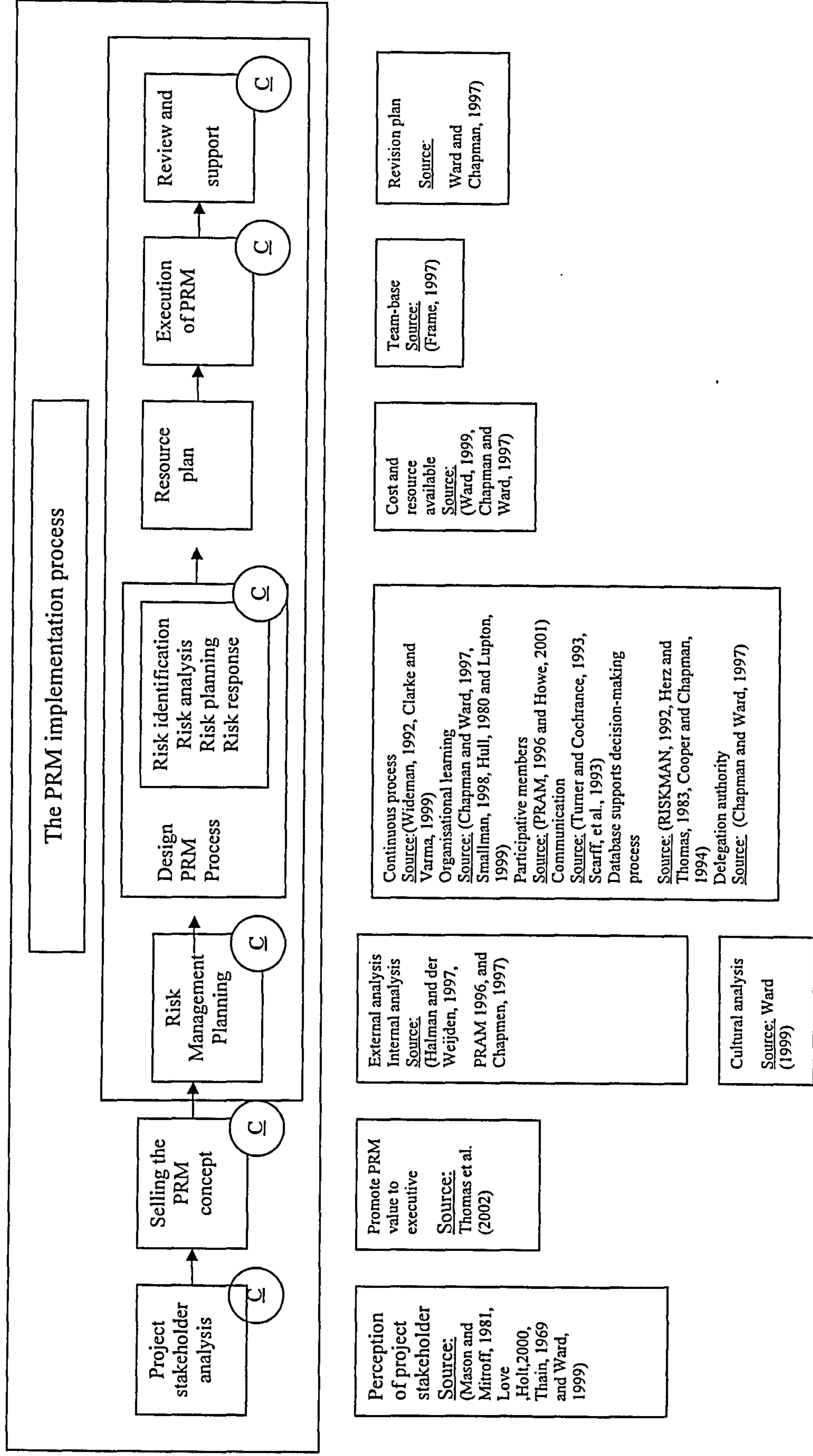


Figure 3.3 This diagram points out the important of cultural issue in PRM implementation processes

3.8 Conclusion

This chapter has provided a discussion of the PRM implementation process. Deterrent factors of PRM implementation have also been discussed. Core activities of PRM implementation have been outlined. Furthermore, the importance of soft risk management aspect, which includes two essential factors: managerial practice and human aspect, has been discussed extensively. This chapter ends with the role of culture in affecting the PRM adoption process. This issue will be discussed in more detail in the following chapter, which will provide a discussion concerning the effect of culture on project management and risk management.

Chapter 4: Culture and Risk Management

4.1 Introduction

The discussion of the PRM implementation process in the previous chapter leads to a contemplation of culture theory. This chapter will demonstrate the significant role of culture theory in supporting the PRM implementation process. The chapter also extends culture theory into cross-cultural theory so as to advance the PRM implementation practice to allow it to cope with cultural constraints in those countries where their beliefs, roots, attitudes and behaviour differ from the origins of the PRM concept.

This chapter begins with a summary of culture's role in the PRM implementation process as well as a definition of culture and the effect of culture on the project organisation and risk management. Furthermore, in this chapter the researcher also provides a discussion of cultural differences and their effect on international organisations. This chapter also includes a discussion of Thai culture and risk management based on Hofstede's cultural framework. PRM involves social interaction. The requirements are socially constructed within the environment of the organisation. Effective efforts to achieve risk management practice must recognise the importance of culture. The basic premise of this thesis is that it is essential to build on the strengths of national culture and to enhance professional and organisational cultures to establish a robust risk management culture.

4.2 The role of culture in the implementation process

Generally, the primary concern with any implementation is the resistance found in the organisational change process. The success of organisational change requires both behavioural and cognitive change [Sathe, 1985]. The problem is that the change process normally faces with resistance from a strong "institutional imperative", the prevailing organisational culture [McTaggart et al., 1994]. The change process often

imposes a new organisation administrative system. Inevitably, an implementation of new concepts always affects the present organisational routine activities [Ansoff, 1984]. Hillson [2003] puts forward the idea that true integration requires a number of changes, including recognition of the existence of uncertainty as an inherent part of being in business, together with proper interfaces to business processes and tools. In addition, there is a need to develop strategic risk-based thinking within organisational culture. The long-term success of the risk management process is contingent upon the people within the organisation developing a positive attitude to risk management. An integration of risk management practice is concerned with some degree of transformation in both organisational structure and its operational practice [Uher and Toakley, 1999]. Shifting from a present process and control approach to a more holistic and creative risk management platform is not easy [Jaffari, 2000 and Smallman, 1999]. The degree to which an organisation can accept or reject the principle of risk management practice is dependent upon the prevailing cultural values of the organisation. If the existing cultural values are receptive to systematic risk management practice, the success of PRM adoption can be very high. However, the result can be in an opposite direction of the organisation cultural values are diverse from risk management.

In order to avoid such problem, an adoption of PRM practice must at the beginning develop its risk management based on the present organisation practice and its culture. Ward [1999], van Well-Stam et al, [2003 p.129], Dalglish and Cooper [2005] state that the difficulty with the PRM adoption programme is that an organisation must establish a system that is appropriate to its needs but adaptable to its culture and operating environment. Sathe [1985] asserts that organisational change consists of behavioural and cognitive change. A successful change programme requires both levels of change. Gagliardy [1986], Pettigrew, [1980] and Kanfer, [1992] concur that the success of change involves the alignment of change with the basic values of the organisation. Kotter and Hasket [1992] point out that organisational change can be achieved faster and more effectively if driven by cultural change.

Culture has been considered as the most significant tool by far to provide an understanding framework as it creates a new form of systematic thinking for making organisational analysis [Smircich, 1983, Minzberg et al., 1999 and Davenport et al. 1992]. Culture can help explain the possible factors which influence managers' values and behaviours. Furthermore, there are many intricate interrelationships which need to be examined in attempting to determine the influence of culture on the management of institutions.

If organisational culture is to be managed it is imperative to first understand the definition of culture, for definitions of culture influence approaches to managing culture. The following section will determine the definition of culture as used in an organisational context.

4.3 Definition of Culture

Culture has been defined by a number of scholars. However, there is no one single definition which encapsulates the term 'culture'. Here is one example: "*Cultures are based in history of social structure, economic, politic, religion, education and language developing over time as groups establish patterns of behaviour and belief that seem effective in helping them to interpret and interact with the world in which they find themselves*" [Brown, 1995].

In an attempt to understand culture, Schein [1992] models culture on three levels: artifacts, values and beliefs and basic assumption. The most upfront level is artefacts, which is an observable organisational practice. They include organisational practices and activities, layouts, rituals, and so forth. The second level, values and beliefs, includes an organisation's espoused judgements of good and bad, which make sense of how actions are evaluated as exemplary or ineffective. Basic assumptions are the deepest and most comprehensive explanation of reality. They are views of fundamental truths about people and the world. He suggests that culture exists simultaneously on each of these three hierarchically-related levels, and that in order to describe a culture, all three levels and their dynamic interaction need to be

considered. The pattern of shared values and beliefs that help individuals understand organisational functioning and thus provide them with norms for behaviour in the organisation.

Alongside with Schein's view, Hofstede [1991, p.5] describes culture as "*a collective programming of the mind, which distinguishes the members of one group from another*". It is the distinctive way of life of a group of people which forms their complete design for living. Sennara and Hartman [2002] also summarise the definition of culture as "*objects that represent particular meaning, the essence of a culture, expected patterns of behaviour and collective phenomenon.*" O'Reilly and Chatman [1996 p. 160] see culture as a social control system, which is based on shared norms and values that set explanations about appropriate attitudes and behaviours for members of the group. In their view, culture can be thought of as the normative order, operating through informational and social influence that guides and constrains the behaviour of people in collectives. In conclusion, culture consists of patterns and behaviour acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional.

For a society, the culture has been built up for over many years and individuals have been attracted to the organisation because they fit in. People in a society have learned about what is appropriate in that particular culture. Culture, in general, is relatively stable, societal culture is much harder to change. Nevertheless, Hofstede [2001] states that culture is a dynamic rather than a static entity. "*Cultures do changes, but the change occurs very slowly.*" [ibid]

Willcocks and Margetts [1994] state that "*risk must be interpreted operationally as not just inherent in certain structure features of the environment or of a project, but also arising as a result of distinctive human and organisational practices and patterns of belief and action*". Therefore, to design an effective risk management process it is necessary to determine what beliefs and expectations the target people holds about the risk and the consequent behaviour intentions [Green, 1990, p. 31 and

Zegan, 1991, p.263]. The next section will provide a discussion of the effect culture on organisational behaviour and risk management.

4.3.1 Culture and Project Organisation

In organisation context, culture accounts for sense making in a particular organisation by describing life in all its fullness and, thus enhances understanding of the work context. In organisational context, culture refers to the underlying beliefs, values and principles that serve as a foundation for an organisations management system as well as the set of management practices and behaviours that both exemplify and reinforce those basic principles. The culture of an organisation, therefore, exerts a strong influence on all the members of the organisation who are undertaking projects in or for it. Cummings and Worley [1997, pp. 93] view organisational culture as part of the overall organisational design. They define culture in a project context *“as a means to promote coordination of a variety of tasks, serve as a method for socialising and developing people and establish methods for moving information around the organisation”*. Johnson and Scholes [1993] espouse the concept of a “culture recipe”, in which culture is seen as the influential composite of a number of variables, including the type of leadership, prevailing stories and myths, accepted rituals and symbols, the type of power structure, the form of organisational structure, the decision-making process, functional policies and management systems. It is the nature and intensity of the cultural recipe which results in one organisation developing greater competitive advantage over another. Organisational members respond far more to the deeper level of organisational values and beliefs of the organisation than to the official mission statement and logo [Schein, 1985]. Kanter et al. [1992] state that the deeper level of culture is reflected in the firmly established method of problem solving, decision-making practices, the group morale of employees and the interpersonal relationships between employees positioned at different levels of the organisational hierarchy.

Culture also plays a significant role in a project context. Cleland [1988] sets out that an organisational culture is the environment of beliefs, customs, knowledge, and

behaviours of a particular social group. Cultures arise within organisations based on members' own past experiences. Members who have shared in the organisation's past success develop assumptions about how the organisation performs work to meet objectives. Cooke-Davies and Arzymanow's [2003] study indicates that culture affects all aspects of project management practice including leadership style, organisational structure and practice for managing people. Lientz and Rea [2002, p.251] state that a project is set in the context of organisation, a legal system, a political system, a technology structure, an economic system, and a social and cultural system. Gareis [2004] further supports that culture impacts in several major ways, for instance, the environment of the project organisation, the approach and attitude toward technology, the value placed on project management, the extent to which the organisation supports initiatives and empowerment versus control, project artefacts, and project infrastructure. Culture is also claimed to be responsible for project success and failure [Dinsmore, 1984, Kerzner, 1997 and Turner, 1993].

Kerzner [1995] states that *"projects are people centred, and it is people behaviour that is critical in determining the effectiveness of organisations."* Stakeholders of projects are not just the project owner, the project manager and the project team members, but are also social systems having the potential to influence the success of the project. Kendra and Taplin [2004] provide that social dimensions of project success are specific to the individual organisational members who perform project-related work. These individuals include a project manager and project team members. In project organisation, the project manager is responsible for arranging the conditions that are conducive to a creative and disciplined culture that supports project teamwork. Several studies on project management indicate the importance of the skills and behavioural attributes of successful project managers [Jiang et al, 1998 and Verma, 1995, 1996, 1997].

Gareis [1989] points out that the social dimension of the project context refers to the relationship of the project to its relevant environment. The influence of culture on management can clearly affect their perception towards change of both the internal and external environments and will manifest itself in their ultimate reaction. How

they perceive and respond to internal and external opportunities and threats, whether they are voluntary or imposed, will as a consequence, be determined by the prevailing cultural recipe to which they conform [Bate, 1984].

4.3.2 Culture and Risk

While, culture theory is helpful to provide an understanding of project management, it also plays a significant role in risk management literature. Culture is discerned as a determinant of perceived risk, risk interpretation and communication, attitude towards risk, the decision making process and risk management behaviour [Douglas, 1992, Wildavsky and Dake, 1990, p. 42, Holmes and Gifford, 1997, p.11, Theil and Ferguson, 2003 and Kasperson, 1988, p.24]. Wildavsky and Dake [1990] state that what is perceived is closely tied to cultural adherence and social learning. Adams [1995] asserts that *“risk is governed via a heterogeneous network of interactive actors, institutions, knowledge and practices, people from various degrees must gather and modify both their levels of vigilance and their exposure to danger in response to their subjective perception of risk”*.

Social values and norms play an important role in the perception and distribution of risk. However, depending upon the social setting in which norms and related experiences have been established, the notion of risk will differ widely from one groups to others. Groups construct risk interpretation collectively [Joffe, 1999 and Douglas, 1985, p. 37].

Organisation can influence their employees' perception of risk by the context and culture of the work environment that define risk. Sitkin and Pablo [1992, p.21] note that *“organisation members come to view their world through the lens of their organisation's culture, which can distort their perception of situational risks, sometimes by over emphasising risk or underemphasising risks.”* Similarly, Covello and Johnson [1987] state that societies select particular risks for attention and that risks are exaggerated or minimised according to the social, cultural and moral acceptability of the underlying activities. Douglas and Wildavsky [1982] advocate

that the selection of risk is value laden and culturally constructed and reflects moral, political, economic and power positions.

Cultural theory provides a holistic view of risk that recognises that every person has their own individual view of the world, and this view will influence how they behave. Therefore the successful management of risks depends on the cultural and social context in which risk is place [Hovden and Larson, 1987]. Mikkelson [1990] also points out that handling risks depends on attitude to risk and on the risk taking culture in the project organisation. Differences in risk perception lie at the heart of many interpersonal and societal disputes about the course of action. These biases make risk perception intensely subjective [Douglas, 1985]. Dingle [1991] provides an example as follows projects are affected by the “business culture” of the engaged parties: by factors which, while not exactly outside their control, colour or condition, without actually determining, project development decisions. He further points out that corporate culture find expression in attitudes of mind, mind sets, or propensities. Instances are: cautious or gambling attitudes to risk taking; authoritarian or consultative attitudes to decision-making, individualism or cooperation in organisations, the interpretation of procedures as tramlines or road markings. Bozerman and Kingsley [1998] state that the concept of risk culture pertains to managers’ perception that their superior and colleague take risks and promote risk taking behaviour. It seems plausible that one’s perception of risk taking in one’s organisation is related to the propensity to take risks. If one believes that other take risks and especially that one’s superiors take risks, then it is likely that risk taking well be perceived as legitimate and less likely to meet with disapproval. Therefore, a perception of a risk tolerant organisation culture is itself important.

Thomson et al. [1992] explore the risk preferences of different life styles based on Douglas [1992] grid-group typology. People from different countries differ in their perception and evaluation of risk.

-individualists are bound by neither group incorporation nor prescribed roles. They regard risk as an opportunity. Without risk there would be no place for entrepreneurs, since there would be no prospect of personal reward.

-egalitarians operate within strong group boundaries with minimal prescriptions. Egalitarians attempt to shore up their way of life and discomfort rival ways

-hierarchists are constrained by strong group boundaries and binding prescriptions. Based on expert decision

-fatalists must live up binding prescriptions but are defied access to group membership. Hence, they do not knowingly take risks.

The organisational culture also affects the risk management approaches and risk behaviour within the organisation as well. Mikkelson [1990] also points out that handling risks depends on attitude to risk and on the risk taking culture in the project organisation. Therefore, the successful management of risks depends on the cultural and social context in which risk is place [Hovden and Larson, 1987]. Schneider and De Meyer [1991] and Daft and Weick [1984] point out that organisations' perception of environment uncertainty and its capability and control influence the choice of proactive vs reactive behaviours in an organisation [Schneider and De Meyer, 1991, Daft and Weick, 1984] and Royal Society, 1992]. Similarly, Miles and Snow [1978] define four main types of organisation which imply risk management attitudes as follows: Analysers tend towards a predominantly proactive approach, Prospector organisations take a less proactive approach, Defenders tend towards a more reactive approach and Reactors are fatalistic and inconsistent and react to risks inappropriately. Davies and Walters [1998] state that organisations could be described as fitting somewhere along a spectrum of being crisis-proof or crisis prepared (see figure 4.1)

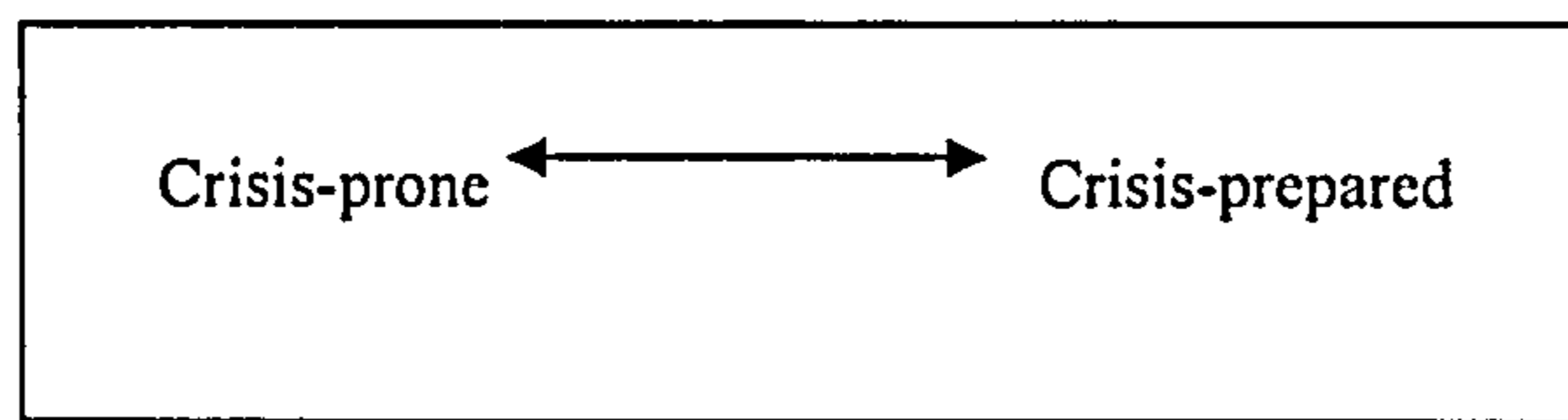


Figure 4.1 Characteristic of organisations

Source: Davies and Walters [1998], Do all crisis have to become disasters? Risk and risk mitigation, Disaster Prevention and Management, Vol.17, No.5, pp.399

Culture further affects risk behaviour of members within an organisation too. It is essential to acknowledge that organisations range from being risk averse to risk takers in character. For instance, organisations which have a responsibility for safety or which have along history of cautionary behaviour will tend to have a risk averse culture. Not only will individuals be discouraged from taking risks, they will also tend to avoid owning up to risks which they may have taken. In these organisations risk taking is seen to be a career-limiting behaviour, and as such is avoided. [Wakshull, 2001]. However, Hillson [1999] suggests that risk taking organisations have a tendency to support individuals who have the courage and vision to back their hunches and launch themselves and their organisation into high risk/reward strategies In conclusion, organisational culture affects the willingness of project managers to assume varying degree of risk within the project and relative to the strategic initiatives of the organisations

4.4 A requirement of PRM in developing countries

This study is to apply the PRM concept to a developing country –Thailand. Actually, there is an increasing trend of PRM application in developing countries. Several developing countries have begun to realise the benefits of the PRM process. Risk management principle is relatively new in developing countries. Regarding its benefits several developing countries have attempted to utilise the concept. The study of how to improve project management in the construction industry in developing countries indicates an implication of risk management requirement. For in stance, Kartam and Kartam [2001] employed the risk management analysis during project planning in Kuwait. Picken and Mak [1992] maintain that risk management started to

play an important role in the Hong Kong construction industry. However the application is conducted in project planning phase. Kim and Beijaj [2002] state that the risk management process does not exist in South Korea and attempt to develop risk management processes for the construction industry. The model is closely similar to those generic risk management implementation process recommended by others. But no evidence of their application has been mentioned. Shen [1997] studies the risk management actions practiced in Hong Kong and investigates their effectiveness. His survey indicates that systematic risk management process has not been found in any industries yet there is an increasing awareness of the concept. Gupta and Sravat [1998] conduct a risk management study in a power project in India. Again risk management is still limited during risk planning phase. In Turkey, Ozdoganm and Birgonul [2000] conducted risk identification of a hydro power project in Turkey and provide potential list risks of the project. Bing et al. [1999] provides a study of joint venture companies in Singapore employing PRM in construction industry. Their study also demonstrates the use of risk management during an initial of project life cycle.

Linn and Asgha [1987] and Kohli [1995] assert that one of the main constraints in project failure in developing countries is a need for risk management capabilities in government entities. In developing countries, there are several important issues to be concerned about that are unfamiliar. For instance, non-international standard contract forms, different interpretations of contract terms, lack of familiarity with contract conditions for claims and litigation, special local requirements are common problems in overseas contracting. In addition, for developing countries there are different sets of project risks which require the tailoring of risk management strategies. Wang et al. [2004] propose an alien's eye model for risk classification and management for construction projects in developing countries. Yeo and Tiong [2000] demonstrate the risk of differences between enterprise stakeholders in several projects.

In order to develop an effective PRM implementation programme, it is necessary to take into account cultural differences, de Bakker [2003] point out the impact of cross-culture differences can limit the achievement of a PRM adoption programme.

PRM has a root in Western culture, and contains many attributes that differ from developing countries. Furthermore, there several studies indicating that culture difference can inhibit the application of project management practice let alone project risk management practice.

4.5 A discussion of differences in managerial practice

In developing countries the advancement of project management tools and techniques is still in its early phase of development. A serious challenge these developing countries is their inability to adopt and adapt established management practice already working in other countries [Ngowi, 2003]. This due to the existence of social, cultural, political, non-existence of institutions to provide training and education and financial problems which lead to poor management performance [Voropajev, 1998]. Among these, cultural difference between developing countries and developed countries is considered a major factor inhibiting application of management principle [Muspratt, 1987, Pant et al., 1996 and Ngowi, 1997]. In particular, it has been argued that Western models of project organisation are incompatible with culturally-derived job attitudes and values of employees in many developing countries [Zomorrodian, 1987]. Baba [1996] reports that in transferring and utilising the systems and methods developed in the field of project management, specifically in the construction industry, in some developed countries to suit Asian countries' needs, strong resistance and potential conflict arise from the differences in cultures.

Eriksson et al. [2002] conducted a study of a project in a globally dispersed organisation. They addressed geographical, cultural and organisational issues and concluded that culture affected management process and outcome. One cultural issue explored was authoritarian control. The avoidance of authoritarian control was credited as contributing to the success of the project. Chapman [2004] states that Western project management theories do not easily translate into practice within the Middle East region. Even where the project and management are indigenous, little insight is offered on how to adopt tools and techniques. Murithi and Crawford [2003]

believe project management is a social construction. Management of the concepts, tools and techniques of project management are based on economic rationality and analysis of means-ends chains. When used in cultures whose values are not based on economic rationality such as those in African countries, the techniques may be inappropriate and result in project failure. There is little written for the indigenous project manager of a developing, least of all Asian country. As already stated, in developing countries the advancement of project management tools and techniques is still in its early phase of development. Therefore, the strategy for implementing project management in developing countries must be consistent with the culture and characteristics of the particular society and the configuration of its economic, political and administrative systems [Abbasi and Al -Mharmah, 2000].

In international projects, several studies have indicated that local culture and environment can affect project management practice. For instance, Chan [1997] demonstrates cross-cultural influence on construction project management through an identification of cultural influence on the resolution of foreign-related construction project disputes in China. Pheng and Leong [2000] study joint venture Chinese and American Companies in a construction project in China. They point out that several prevailing Chinese cultural values affect coordination between project partners, and American managers need to understand and adjust themselves in accordance with counterparts behaviour. Similarly, Kwak and Dewan [2001] feel that project management deals with people and international development project manager must understand and appreciate the importance of cross-cultural difference. They indicate that the project managers should perform a cultural analysis of the recipient country and plan mechanisms such as social settings. Their study of joint venture companies between Swedish and Americans demonstrates that the Swedish members preferred to analyse a problem thoroughly while the US members preferred to quickly focus on a method led to rework and additional cost.

In risk management context, there are several studies concerning effective risk management and cultural differences. Magerl [2001] states that some cultures seem to be farther away from dealing effectively with risks than others, e.g. whenever

there is a higher tolerance for things do not go the way that they were planned. Time, for instance, does not seem to be an important factor in some environments, especially in the Middle East. It is hard for a project manager to deal with the underlying missing drive to succeed that he encounters at all levels of the project. Magerl [2001] states that risk management is not a part of the business culture in any of the countries that make up the Europe Middle East-Africa region. It always requires educating the project team and customers on the approach and stressing the benefits. Pe Bento Claudio [1988] mentions that most risk analysis approaches, methods and models of developed countries are not directly applicable to developing countries, partly because of inadequate local data. Modelling and development of cost-effective, adaptable risk analysis approaches and methods are very challenging areas for research. Furthermore, it is necessary to establish a good information centre to support risk analysis and practices. It is significantly important to develop local experts on risk analysis. The training required includes both managerial and technical training. Unfortunately, local experts who can provide training are very few and have to attend to numerous and more urgent risk related concerns. Pe Benito Claudio is concerned about the risk management in the environmental context in developing countries. Pe Benito Claudio [1988] suggests that "Risk analysis must be adaptable to the process of development-generally a fast-changing process, although not consistently towards growth. Risk analysis must also be compatible with the cultural, physical, and resource characteristics of a developing country." For example, in the Philippines, a risk analysis approach can take advantage of the bayanihan, a community team work spirit of many Filipinos. Keown [1989] studied of risk perceptions of Hong Kongese and Americans – to date there are several cross cultural studies comparing risk perceptions for people living in different countries. This is determined by cultural, environmental and governmental influences.

4.6 A study of Cultural Difference

An awareness of cultural different should provide how and what the project managers should do and make decisions to continue the plans. Understanding people with different backgrounds can be achieved by understanding the values, why they

have acquired through their lives in their own culture. This suggests that cultural differences from various orientations and behaviour patterns of people. The national culture influences organisational culture, structure and behaviour patterns of people. The national culture theory can explicitly contribute to providing an understanding of culture differences between countries. Hence, it allows the researcher to search for the gap between PRM practice and Thai organisation management practice.

National culture theory contributes examination and investigation of how a country's national culture influence the organisational managerial practices. This is due to the fact that managers from different national cultures hold different assumptions as to the nature of management and organisation. National culture influences organisational culture, structure and behaviour. National culture acts as a common frame of reference or logic by which members of society view organisations, the environment and their relations to one another [Hofstede, 1991]. Geletkanycz [1997, p.617] argues that *"differing views and assumptions embedded in national culture are reflected not only in managerial views and assumptions embedded in national culture are reflected not only in managerial attitude and belief, but also in the behaviour and actions by which organisational members discharge their roles"*. Muller and Thomas [2001] also theorise that national culture is responsible for causing individuals to engage in behaviour that is not as prevalent as in other countries. National culture serves to delineate different groups of people on the basis of the extent to which each group is perceived and perceives itself to share similar ways of seeing and interacting with animate, inanimate and spiritual world.

National culture theory contributes examination and investigation of how a country's national culture influences the organisational managerial practices. This is due to the fact that managers from different national cultures hold different assumptions as to the nature of management and organisation. *"National culture can be interpreted as a common frame of a society view of organisations, the environment, and their relations to one another"* [Hofstede, 1991].

To study cultural influence on societies, there is a need for a paradigm as a guideline for conducting an analysis of behaviours, actions and the values of their members. According to Ogbor [1990] there are three main paradigms used to study the differences of cultures: cultural paradigm [Schien, 1985], dimensions [Hofstede, 1980] and cultural patterns [Geertz, 1973]. Among these study methods, an exemplification of culture using dimensional values is the most popular procedure as it provides insight investigation, and powerful comparisons between organisational values and managerial values [Tata and Prasad, 1998].

A value is defined as a “... *centrally held, enduring belief which guides actions and judgements across specific situations and beyond immediate goals to more ultimate end-states of existence*” [Pornpitakpan, 2000]. Values are the fundamental shared beliefs which form the organisations’ timeliness guiding principle for behaviour division and interaction [Thornbury, 2003].

Bond [1984] reasons that the significance that people place on their personal values is dependent on their culture, and that the difference in value significance could then be used to predict the behaviours of people from different cultural backgrounds. A number of people have examined dimensions of cultural variations across countries e.g. Kluckhohn and Strodtbeck, [1961], Triandis and Albert, [1987], Hampden-Turner & Trompenaars [1994] and Hofstede, [1980].

Hofstede’s [1980, 1994] study is seen as an appropriate model for this study and it is widely applied in many management studies. Hofstede’s dimensions have direct connections to an organisational structure, behaviour as well as risk management. The next section will briefly examine one of the most widely quoted frameworks “cultural dimensions” as exposed by Hofstede [1980]. Researchers have cited numerous reasons for employing the cultural dimensions posited by Hofstede, including the parsimony of the framework, the capacity of the model to tie cultural orientation to institutional differences between countries [McGrath et al., 1992], and the ability of the framework to accurately predict individual behaviours [Mueller and Thomas, 2001]. Hofstede’s framework may therefore be useful for comparing Western and

Asian cultures. Furthermore, he contends that national cultural differences are stable, lasting and non-convergent. For Hofstede, mechanisms in society “*permit the maintenance of stability in culture patterns across many generations*” [Hofstede, 1984, p.22].

The cultural dimensions of Hofstede also are also popularly utilised, for instance, Sweirczek’s [1994] study on joint ventures in Asia and the study of Jessen [1996] applied Hofstede’s model to investigate attitudes and characteristics of nations towards project management values and emphasised that Western countries seem to fit with the concept far more than developing countries. Hofstede’s framework has been widely applied in a variety of social science and business disciplines. A recent study of culture’s impact on organisation management especially leadership, Project Globe, compared 18,000 middle managers from 62 countries Javidan and House, [2001] adapted the Hofstede’s model to investigate the cross-cultural study of leadership. The study indicates that different cultural groups are likely to have different conceptions of what leadership should entail.

4.7 A discussion of Hofstede’s model and the utilisation of the framework

The work of Hofstede [1980] has been considered classical, focused as it is on value differences as part of national cultures. Hofstede finds that these could be classified along four dimensions that are largely independent of each other. The four dimensions were initially detected through a comparison of the values of similar people (employees and managers) in 64 different national subsidiaries of the IBM corporation. The underlying premise was to study that people working for the same multinational, but in different countries. Later on in 1987, he invented a fifth dimension called “Confucian dynamism” introduced in work with Chinese cultural connections and then renamed as long-term versus short-term orientation. The Hofstede’s questionnaire concerned the work situation and used questionnaire information on the values of individuals to produce comparisons of the cultures of different societies. Hofstede [1987] adds a feature that is characteristic of Asian cultures, which is Confucian dynamism. Confucian dynamism emphasises the

importance of: persistence, ordering relationships on the basis of status, thrift and a sense of shame. It was later renamed as long-term versus short-term orientation.

Hofstede suggests that the concept of a common culture is more applicable to societies than to nations. However, he recognises that where there are strong forces for integration within a nation such as a dominant language, common media, national education system, national political system, national armed forces and national representation in sports events then nationals can be regarded as the “*source of a considerable amount of common mental programming of their citizens*” [Hofstede, 1991, p. 12]. His quantitative work certainly enabled him to reveal some of this common programming by classifying national culture into clusters using the five dimensions.

Hofstede’s [1991] five cultural dimensions are as follows:

- Power distance: “the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally” (p.28)
- Uncertainty avoidance: “the extent to which the members of a culture feel threatened by uncertain or unknown situations” (p.113)
- Individualism versus collectivism: ranges from “societies in which the ties between individuals are loose” to “societies in which people from birth onwards are integrated into strong, cohesive in-groups” (p.51)
- Masculinity versus femininity: the extent to which qualities of gender range from “societies in which social gender roles are clearly distinct” to societies in which social gender roles overlap” (p.82)
- Confucian dynamism: ranges from long-term orientation to short-term orientation (p.166).

These five dimensions represent the basic elements of common structure in the cultural systems of the countries. They provide an important framework not only for analysing national culture but also for considering the effects of cultural differences on management and organisation [Hofstede, 1980]. Hoecklin [1996] supports that

this framework is useful for understanding people's conceptions of an organisation, mechanisms that are considered appropriate in controlling and coordinating the activities within it, and the roles and relations of its members.

The following section intends to investigate the differences of national culture where PRM is already in practice, and of Thailand where the concept of RPM is not yet existent. To a large extent, PRM is being adopted internationally, especially in the UK, USA and Australia. The next section aims to establish that the adoption of PRM by certain organisation practices is associated with understanding the nature of local managerial practice especially in Thai project organisations. It is hoped to establish that PRM principle, when implemented as a package of practices as it should be for maximum effect is associated with management performance across different cultural settings.

4.7.1 Comparison study of PRM practicing countries and Thailand

PRM is a management practice which was invented in developed countries where it has been utilised widely. Numerous pieces have indicated that the PRM principle has been widely employed in three main countries: the UK, USA, and Australia. According to Ashkansy et al. [2002] these countries are members of the Anglo cluster in respect of management and leadership. They state that these countries are characterised by an individualistic performance orientation, masculine dominated, and high participative style. One of the problems in transferring the Anglo Saxon management style to other countries is the challenge of the universal validity of the propositions of the management doctrine.

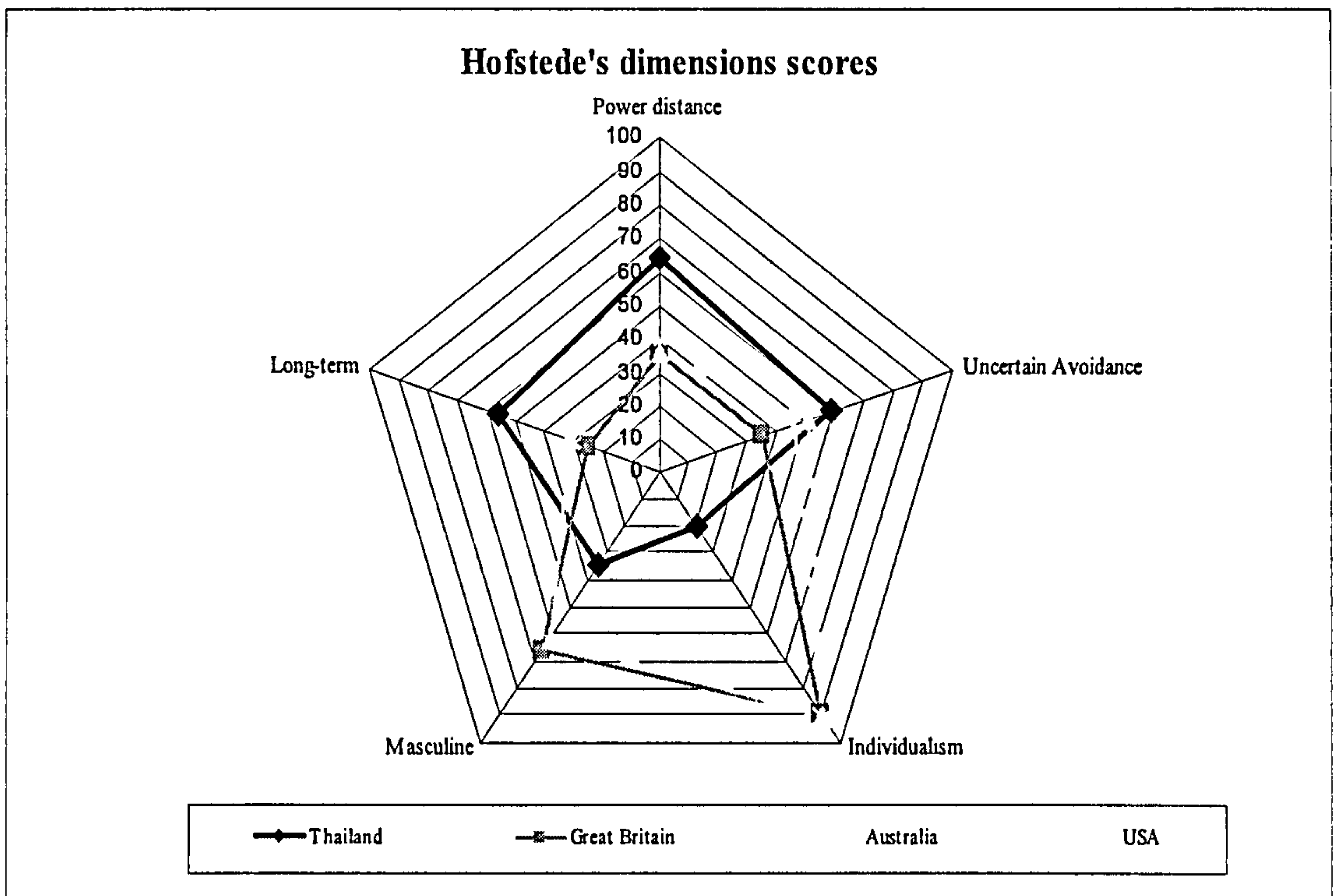


Figure 4.2: Country plot of Hofstede's dimensional values for UK, USA, Australia and Thailand.

Extracts of Hofstede's findings are plotted in Figure 4.1. It suggests that Thailand and the three developed countries are different in cultural dimensions. The greatest difference between Thailand and these advanced economies lies in the individualism vs collectivism dimension for by power distance. In this figure, it is obvious that the three developed countries cultural values tend to separate from Thailand. In the figure, the three developed countries portray markedly different scores to Thailand demonstrating a sharp contrast of national cultural values between these groups of countries. It is this common mental programming that forms the basis of the definition of a national culture. There is no doubt from the data of this study that there are cultural differences arising from differences in common mental programming between the Anglo Saxon countries and Thailand, which would certainly account for variations in attitudes to duty and the slow slog up the hierarchy of a single bureaucratic organisation. Detailed examination of the data shows that there are significantly different values held by the Anglo Saxon countries and Thailand in areas of management theory and practice, such as motivation, resistance

to change, attitude to appraisal, the use of delegation, preferred leadership style, risk-taking behaviour and expected career structure. The different degrees of Hofstede's dimensions affect organisation structure and managerial behaviour which in turn influence the success of PRM implementation. In the following section, a discussion of each dimension and its implication on risk management will be discussed.

4.7.1.1 The implication of Power Distance

This dimension focuses on the nature of human relationships in terms of hierarchy. Power distance is a "*measure of the interpersonal power or influence between the boss and the subordinate*" [Hofstede, 1980: p. 70-71]. Power distance is the degree to which less powerful members of an organisation or society accept the unequal distribution of power. Power distance is the degree to which less powerful members of an organisation or society accept unequal distribution of power. This dimension also reflects a characteristic of the organisational structure, decision making style of the organisation and the senior management characteristic.

With high power distance scores, these countries tend to be more authoritarian and may communicate in a way to limit interaction and reinforce the differences between people. In **high** power distance culture obedience to authority is expected, this is also reflected by language filled with power of hierarchy indicators; managers tend to be autocratic while subordinates expect direct supervision. Team members resist the idea of their manager becoming a member of their team, although they feel strong affinity with their fellow workers. In **low** power distance societies or organisations managers are expected to act as facilitators and mentors, delegating rather than deciding, encouraging open communication between levels, providing necessary strategic information to teams and participating in problem solving and conflict resolution [Nicholls et al., 1999].

Managers with low power distance will be more willing to engage in risky behaviour aimed at improving their firms' current industry standing [Shane, 1993]. Hence,

managers in high power distance cultures will be more likely to adopt defensive strategies that solidify their current position in the industry.

Power distance also reflects the degree to which people feel they should be involved in decision making. In low power distance, employees feel they should have power and be involved with the manager in decision making [Randolph and Sashkin, 2002]. In low power distance cultures the emphasis is on challenging decisions, expecting autonomy and independence. Power distance also implies decentralisation where people at lower level can have great responsibility and should be taken seriously and are sometimes more important than the boss. In contrast, young executives in high power distance organisation never question or even comment on decisions of their superiors, even if they totally disagree [Muller et al., 1997]. This also reflects the relationship between superior and subordinates, where employees feel that it is the managers' job to have power and to make decisions. This is evident in high power distance cultures where status is very important.

High power distance also has a direct impact on the sharing of **information** since information is equated with knowledge and power. In low power distance culture, sharing information makes managers and employees feel more equal. Furthermore, informality in these cultures makes employees comfortable about sharing information with their manager [Hofstede, 1991]. This dimension also implies trust. A high trust society can organise its workplace on a more flexible and group-oriented basis, with more responsibility delegated to lower levels of the organisation. Low trust society, by contrast, must fence in and isolate its workers with a series of bureaucratic rules. Workers usually find their workplaces more satisfying if they are treated like adults who can be trusted to contribute to their community rather than feeling like a small cog in a large industrial machine

Compared to most of its neighbours in Southeast Asia, power distance in Thailand is weak, but it is fairly high compared to the USA, UK and Australia. (see figure 4.3). It can stand as a measure of the degree of authoritarianism with characteristics of

hierarchical structure, rules, and relationship centralisation, high power distance society seems unwelcoming to PRM practice.

4.7.1.2 The implication of uncertainty avoidance

Uncertainty avoidance implies the extent to which people in a culture feel threatened by uncertain or unknown situations and a group's level of anxiety regarding future events. It evaluates the degree of tolerance within a culture for the ambiguity that is inherent in a continuously unfolding future as well as seeking individual opinions, of how they approve risk taking [Hofstede, 1991].

Cultures that are high in uncertainty avoidance rely heavily on written rules and regulations, embrace formal structures to cope with uncertainty, and have a low tolerance for ambiguity or change. Employees from high uncertainty avoidance cultures expect senior staff to be experts who know the answer; in contrast, members of low uncertainty avoidance communities feel comfortable with uncertain situations. In other words, cultures with lower uncertainty avoidance accept not only familiar but also unfamiliar risks, whereas cultures with high uncertainty avoidance tend to limit the risks they take to those risks which are known [Hofstede, 2001]. Martins and Treblanche [2003] have associated risk and risk taking behavior with creativity and innovation culture in organisations. They point out that an effective risk management should not entirely rely on rules but organisation members should stimulate creative thinking and always seek better way to improve their managerial practice. Hofstede's research would only indicate a rate of uncertainty avoidance or willingness to take risks in managing such projects.

Kahn and Sarin [1988] propose that the psychological factors that lead to risk aversion also lead to uncertainty avoidance. Furthermore, they suggest that ambiguity accentuates the effects of risk aversion. Cultures with high uncertainty avoidance scores tend to demonstrate a preference for affirmative and consensus. On the other hand; cultures with low uncertainty avoidance tend to demonstrate a preference for independent decision processes and individual decision-making

Brown, [1994] suggests that low uncertainty avoidance is considered as part of “monochromic cultures,” which believe that time is money. For example, people from a low uncertainty culture set agendas for meetings and adhere to preset schedules. High uncertainty – “Polychromic avoidance cultures” – differ in the fact that they believe that time is never wasted; these people feel that taking the time to build relationships with others is more important than preset schedules.

There is a strong link between uncertainty avoidance and risk taking. Since risk taking generates high levels of outcome uncertainty, managers must be willing to cope with ambiguity in strategic situations. In societies which accept uncertainty, there is a fundamental belief that *“conflict and competition can be controlled within the rules of fair play and used constructively, in high uncertainty avoidance culture on the other hand, it is believed that conflict and competition unleashes destructive aggression and should be avoided”* [Mueller and Thomas, 2001, p. 61]. In uncertainty accepting societies, Colin and Slevin [1989] found a greater willingness on the part of managers to engage in conflict and competition. They found that this led to the increase in the proactive tendencies of firms; which they highlight is understandable since competitive aggression is at the heart of proactive behaviour. By this measure Thais are less moderately comfortable with uncertainty compared to the USA, UK and Australia.

4.7.1.3 The implications of individualism vs. collectivism

This dimensional value implies the relationship between the individual and the collectivity in a culture. Trompenaars [1993] states that people in collectivist cultures tend to use language that is indirect, ambiguous, and understated. People expect their members to pick up on and to understand unarticulated intentions and feelings, subtle gestures, and other nonverbal or environmental cues, while in individualist cultures, communication is direct and to the point, using language that is precise, open and frank. Andersen [2000] points out that those highly collectivistic cultures believe that it is the group that is important. People are more likely to avoid contact by blending

in or using intermediaries. The populace of a country that tends towards being individualist will have more autonomy to perform the actions they deem suitable.

PRM is reliant on an abundance of information. In the individualistic cultures, people want the information sharing to focus on information that relates to individuals. They want information that is directly related to their jobs, especially if they are held accountable for the results. Information sharing helps people understand why something must be done and it builds trust among society the members. As for Thai culture, which contains a high amount of collectivism, people want the information sharing that focuses on team effort rather than the individual. In collectivist culture, information sharing that focuses on individuals creates a sense of unease due to feelings of being “singled out” [Randolph and Sashkin, 2002]. Even though, collectivist societies react favourably to sharing information, Nicholls et al. [1999] argue that *“this is overshadowed by the fact that these cultures are based on paternalistic, high power distance culture in which managers make most of the decisions.”*

As stated previously, Anderson [2000] pointed to the group being more important in a collectivist culture, the interests of the group prevailing over the interests of the individual. Collectivist cultures tend to group people into strong, cohesive in-groups that continue throughout the lifetime of a project; in exchange for unquestioning loyalty [Hofstede, 1997]. The dimension also affect the relationship between employer and employee as well. Regarding Hofstede, [1984], the relationship between employer and employee in individualist cultures tend to base on contracts and hiring. A promotion is based on skills of each individual. In contrast, the collectivist culture the relationship between employer and employee is perceived as a family links. As for a promotion in these cultures take the employees’ in-group into account tool.

Hall and Hall [1990] differentiate between high context and low context cultures. They define context in this case in terms of how individuals and their society seek information and knowledge. Hall and Hall [1990] highlight that people from high

context cultures gain information from personal information networks; these people ensure that they are fully informed of the facts before they make decisions. The personal information networks include discussing the matter with friends, family and associates in order to become fully aware of the position. People from low context cultures, however, tend to seek their decision making information from a research base. The stress is placed on reading and gathering data from information sources rather than from others, although they shall listen to the opinions to others

Hofstede [1980] asserts the view that managers in individualistic cultures have a tendency to place a higher value on individual accomplishments than collectivist managers. Morris et al. [1993] expand on this by saying that managers in individualistic countries tend to be more independent than they are in collectivist cultures. These managers appear to be more willing to go against group tendencies and partake in actions that other managers would perceive as being of greater risk.

Hofstede [2001] states that in collectivist culture *“the personal relationship prevails over the task and should be established first”*. Countries where task issues are considered to be more important spend most of their time in discussion about specific operational details of the project, as opposed to broad objectives. However, countries where relationship values are more important spend their time engaging in activities that build trust and relationship between the members of each team and discussing broad objectives. For collectivist cultures, a good relationship must be established before task issues can be discussed. As the social relationship develops, task issues will be blended in and eventually resolved.

The developed countries that are perceived as having individualistic cultures are those such as the USA, UK and Australia, while Asian countries like Thailand have been described as collectivist.

4.7.1.4 The implication of Masculinity and Femininity

This dimension focuses on the extent to which members in a society prefer achievements or nurtures. It is also used to distinguish between cultures which are oriented toward competition, achievement, assertiveness and material success and cultures which are oriented toward cooperation, relationships, modesty and quality of life [Hofstede, 1984]. Masculinity is primarily concerned with the level of aggression and assertiveness present in a culture. Femininity is seen to be the trait, which stresses caring and nurturing behaviours, sexual equality, environmental awareness, and more fluid gender roles. The feminine tend to focus on awareness of those who are in need and social accommodation is important. Highly masculine cultures place a high emphasis on assertive and ostentatious behaviour and material goods and prestige are highly sought after, individuals tend to exhibit the need for achievement, and organisations are more willing to engage in industrial conflict [Andersen, 2000].

People in high masculine cultures desire clear task goals and task-related information. But in high feminine countries, people avoid heavy emphasis on results, since it may harm their relationships. Consequently, they tend to prefer process-related information and boundaries. With a high femininity focus, people from these countries may focus too much on team development and not enough on the results [Randolph and Sashkin, 2002]. Teams in these cultures must become more than close and friendly groups of workers, they must become a force for responsibility regarding outcomes.

Managers exhibiting a high need for achievement will be more willing to engage in taking calculated, business related risks than other managers. Hofstede [1991] also asserts that managers in masculine cultures will value decisive and immediate actions, while managers in feminine cultures will be likely to make decisions that have been more carefully thought out. Managers in feminine cultures, who spend great amounts of time analysing strategic situations, will be likely to talk themselves out of an action that they perceive as continuing unnecessarily high levels of risk

[McGrath et al., 1992]. Thai society inclines to feminine society, while the three developed countries tend toward masculinity.

4.7.1.5 Long-term orientation vs Short-term orientation

This dimensional value was supplemented later with consideration of Chinese ancient teachings. This new dimension was previously known as Confucian work dynamism, now more commonly called long-term orientation versus short-term orientation to life. Confucian work dynamism refers to dedicated, motivated, responsible and educated individuals with a sense of commitment and organisational identity and loyalty [Hofstede and Bond, 1988]. This dimension describes cultures that range from short-term values with respect for tradition and reciprocity in social relations to long-term values with persistence and ordering relationships by status. For risk management to be a meaningful concept, it is both necessary that people have an understanding of the concept of time, which includes the future, and that people recognise that they can, at least partly, control their environment [Bernstein, 1998]. According to Hofstede and Bond [1988] long-term orientation includes strong orientation towards ordering relationships by status, thrift, and having a sense of shame, as well as weak orientation toward protecting face, respect for tradition, and reciprocity in results. Short-term orientation is consistent with spending to keep up with social pressure, less saving, and a preference for quick results.

This dimension also focuses on whether the society embraces, or does not embrace, long-term devotion to traditional, forward thinking values. High long-term orientation culture indicates the country prescribes to the values of long-term commitments and respect for tradition. This is thought to support a strong work ethic where long-term rewards are expected as a result of today's hard work. A short-term orientating indicates the country does not reinforce the concept of long-term, traditional orientation; in this culture, change can occur more rapidly as long-term traditions and commitments do not become impediments to change.

This dimension is similar to the “time dimension” of Hampden-Turner and Trompenaars’s [1994] work. In some societies what people have achieved in the past is not important, it is more important to know what plan they have developed for the future. In other societies people can make more impression with their past accomplishments than those of today. In certain cultures, time is perceived as passing in a straight line, a sequence of distinct and separate events. Other cultures think of time more as passing in a moving circle, the past and present together with the future possibilities. This makes considerable difference to planning, strategy, investment and ways of training people on the job or buying outside talent. Organisations in cultures that maintain positive expectations of future outcomes, that are willing to deal with the stress and anxieties created by uncertainty, and that place a high value on ambition and personal success will tend to exhibit higher levels of risk-taking than firms in cultures that value certainty and conservative behaviour.

In this dimension, Thailand scores more highly than its counterparts the USA, UK and Australia. Time is a critical dimension in the PRM concept, and also forms the foundation of the PRM principle.

In conclusion, an analysis of Hofstede’s cultural factors indicates that a Western style of PRM is more likely to emerge within cultures that express values related to: low power distance, low uncertainty avoidance, high individualism and masculinity. A review of country scores in Hofstede’s study indicates that this profile closely fits the industrialised Anglo-Saxon nations. This should come as no surprise since PRM found its expression in the USA, and UK and later flowered in the cultural context of Australia. Therefore, if culture supplies the initial social conditions under which risk management practice emerges, then the behaviour and practices that constitute current notions of risk management should be expected to fit the values of the cultures that generated and shaped the phenomenon. The mental programming present in several Anglo-Saxon countries seems to support a certain style of risk management. It has created a social context where risk management practice is widespread and available to many and where risk management practice is rewarded both materially and psychologically. Many Western countries such as the USA, UK

and Australia, have been described as individualistic, low power distance cultures, while many Asian countries such as Thailand, Hong Kong, Singapore and China have been described as collectivistic, high power-distance cultures.

4.7.1.6 Hofstede's framework and Thai culture

The aim of this section is to provide some specific features of Thai organisations, which will illustrate the differentiation of Thai organisational cultural values from others. Inside working organisations, as in all areas of human activity, the behaviour of people is affected by the values and attitudes that they hold. In order to provide an in-depth and holistic view of Thai organisation, the literature review on Thai cultural values will be discussed along with Hofstede's cultural dimensions.

Regarding to Power Distance dimension, Thailand scored rather highly, which implies that for Thai organisations the inequality of power and authority distribution within organisations is receptive. This characteristic of Thai organisations implies military oriented hierarchical rule which derives from a long history of absolute monarchy [Gupta et al., 2002], which stresses the significant importance of social status diversification. The strong and rigid bureaucratic management structures of Thai organisations bring into existence obedience towards superiors and clearly distinguishes between those with status and power and those without it. Redding [1993] criticises the fact that due to the strong characteristics of centralised authority the relationship between boss and officer tends towards the personal rather than the professional. The unique relationship between senior and inferior in Thai organisation creates a centralised decision making process or "authoritarian way" as Thai people respect others regarding their status, and inferiors would seem awkward raising any suggestions to their superiors [Komin, 1990]. PRM requires strong leadership; leadership in a collectivist society tends to be a group phenomenon [Bures and Alyshbaeva, 2001].

Mosel [1991] points out that Thai leadership is not familiar with facing unexpected events as they are aware that the consequences of their actions may affect their

superior benefits. Thais are less likely to take risk, for example, Pornpitakpan [1997] observes that Thai customers rely on their acquaintances or trusted sources of information before purchasing new products and/or services. In the Thai community, managers of organisations tend to be selected based on their seniority; higher ranking managers are generally much older and more experienced than their low uncertainty avoidance index counterparts. If a subordinate was to presume to exercise authority, it would be a clear case of overstepping one's station, so subordinates are reluctant to exercise their initiative, to make recommendations or suggestions, or to contradict their boss.

The Thai organisational system is highly dominated by the relationship between members as can be explained by the **Individualism and Collectivism** dimension of Hofstede. In this cultural value Thailand scored higher than the developed countries. Societies with collectivist characteristics tend to stress the values of interpersonal relationships and group connections. This implies the relationship between the individual and the collectivity is reflected in the way people live together. Sorod [1999] states that for Thais, the relationship-orientation is more significant than the work-orientation. Within Thai organisations, there are several unique relationships which play vital roles in forming peculiar management behaviours. In order to understand a relationship of members within Thai organisations, Rohitrattana [1997] proposes the concept of vertical and horizontal relationship perspectives. The vertical relationship represents the relationship between superiors and their subordinates and the horizontal perspective contributes an understanding of relationship values maintained at all levels within an organisations. Being collectivist, Thai people are oriented toward family, organisations and community. According to House et al. [2002] Thailand inclines towards cohesiveness in its organisations creating families.

The spacious influence of Thai organisations' structure bestows a special relationship on people within organisations. *"Thai organisational culture is inclined to perceive and respect the leader as the father figure of the organisation"* [Thanasakit and Corbitt, 1999], as is demonstrated in the family. This relationship is widely known as 'seniority' or the 'superior-inferior' system. The status of being superior in Thai

organisations is not only regarded in the organisations but it is also retained beyond the organisational environment [Verluyten, 1997]. Members within the same organisation also pay respect to their superior even outside the workplace. It is typical for Thais to pay respect to their boss on any occasions. This is due to the fact that most people tend to attain individual vested interest, especially work status, though maintaining good relationships with senior management.

Moreover, Holmes and Tangtongtavy [1996] advocate that in order to be a successful manager in Thailand, one needed a combination of three factors. These are: to earn their friendship in order to get their trust; to earn their respect by being in a position of seniority or creating fear resulting from your power; and to make them owe you something. The attributes create a traditional system of patronage in Thai organisations. Apart from the traditional organisational system, which contains a strong paternalism, the uniqueness of the relationship between the bosses and workers in Thai culture is also essential to be noted in order to provide a more explicit picture of Thai organisational culture. Each person has a moral responsibility to learn from their elders, which included occupational knowledge and expertise, and to pass on the wisdom to their progeny [Gupta et al., 2002].

While vertical perspective values have a great importance in building up hierarchical relationships in Thai organisations, Thais also have another group of values concerned with maintaining relationships at all levels in an organisation. These values are found in any direction: top-down, bottom-up, or at the same level. This group of values are the so-called horizontal perspective values. Thais base their relationships upon trust and emotion. Conflict between individuals is kept to a minimum or is avoided if possible. Swierczek [1994] says that in Thailand, in most cases, conflict does not occur overly if there is stability of social relationships and surface harmony is maintained. The achievement of harmony requires the maintenance of an individual's face. In Thai culture, face is a person's dignity, self-respect and prestige. These characteristics are expressed through the appearance, manners and interpersonal approach of Thais. Thais usually find indirect ways to soften any negative message. To make a person 'lose face' regardless of rank is to be

avoided at all cost [Komin, 1990]. The behaviour strongly affects communication and discussion procedures. Fisher and Ransighe [2001] note that loosing “face” or suffering embarrassment is a crucial element of a collectivist social system rather than an individualist community. Sweierczek [1994] also points out that in collectivistic culture people tend to be responsible for both individual and group face and they need to reconcile the state of harmony with some activities conducted under social requirements, whereas individualistic communities do not take this behaviour seriously. As a result of the behaviour, Thais are claimed to be “*criticism avoidance people*” [Cooper, 1994]. Charoenngam and Jablin [1999] find that Thai business professionals reflect their cultural values by communicating in reserved, respectful, deferential and intimate ways. Rohirattana [1998] states that criticism is regarded as destructive to the social system in Thai organisations. Pathmanand [2001] states that the Thai motto is “*the more you talk the more you loose..., better stay quiet and you will earn some penny!*” (Quoted from Gupta at el. 2002) Rojjanaprapayon [1997] demonstrates specific communication strategies in Thai communication: Thais do not use specific names when they express negative feelings; Thai tend to use words and phrases expressing probability, such as “may be, “probably”, “sometimes”, “likely”, and “I would say so, but I am not sure”, Thais do not show their feelings if doing so would make the other person feel bad; and Thais also use indirect nonverbal communication with less or avoidance of eye contact and great personal distance.

Regarding to Hofstede [1980], Thai culture tends towards feminine culture which prefer to put importance on social orientation rather than individual achievements. Sutton [1984] determines that Thai people believe that individual success is derived from one’s blessing. This idea is based on Buddhist doctrine and other worldly doctrines (Hindu). The notion of karma is the most functional one in the sense that it is more commonly used in everyday life interactions. The individual duties and responsibilities to serve and reward are the result of good and bad things which had been done in the pre-life. Thais prefer maintaining positive relationship with their close friends and networks. Tim and Nartnalin [2001] indicate that business success in Thailand relies on powerful network from the crux of people from diverse backgrounds. Thai business culture is more generally expressed in the manner of

insider and outsider. Loyalty is expected between group members as within a family because they are considered to share the same world views and communicate more efficiently in routine situations [Tim and Nartnalin, 2001].

Confucian dynamism is defined as preferences between a forward-looking vs. more historical perspective. The long-term orientation cultures tend to put emphasis on the future with an inclination to no necessary for change and adjustment for success. Members of this culture hold an assumption that environments are dynamic and individuals must be flexible to adapt themselves in accordance with surrounding context. The cultures of long-term values are likely to be concerned about past and present, as a result their members value an importance of tradition and stability [Hofstede, 1993]. Gupta et al. [2002] suggest that **Confucian teaching** has a profound influence for most Asian countries. According to Bond [1987], the Confucian philosophy has become part of many Asian beliefs. In Thailand, Chinese people have come and lived in the country for more than 500 years. These elders brought with them of course Chinese beliefs and culture. Actually, in Thailand, many mottos are similar to those found in Chinese society. For instance, Confucian values include acceptance of unequal relationships, and a concern for virtue rather than truth. It is criticised that these characteristics distinguish people from Asia very different from Western people [Bond, 1987].

4.8 Conclusion

The underlying assumptions of organisational culture dictate the strength and limitations of the concept of culture for understanding the situation. From an organisational point of view it embodies the underlying values and norms of the organisation. While culture reflects a specific behavioural characteristic of an organisation, which may help such an organisation to be successful, a strong culture may be responsible for resistance to change when change is required. The level of success of PRM implementation is dependant upon the closeness between the values and the practical aspect of PRM and the organisations. Those organisations in the advanced economy countries where PRM and its roots originated can, according to

culture theory, definitely apply the concept smoothly while organisations in the developing countries will definitely struggle to pass the resistance derived from its cultures.

This chapter has described the effect of culture on project organisation and risk management. It also portrayed the significant effect of culture difference on project management practice. A national culture theory – Hofstede's model in particular was chosen to explain cultural differences. Hofstede's model was used to examine the characteristics of Thai culture. The next chapter will provide a discussion on research methodology.

Chapter 5: Research methodology

5.1 Introduction

This chapter aims to describe and discuss the research methodology, the analytical framework, and the rationale underpinning the selection of research methodologies employed by the researcher and the discussion of the research framework development. There are a large number of research methodologies that are applicable to culture and implementation research. However, the selection of a methodology for any particular research programme is critical to the resulting quality and value of that piece of research. As a result, the research objective and the nature of the research topic should be considered as fundamental in determining the appropriate methodology for that research.

This chapter will provide an in-depth discussion on the appropriateness of research methodologies. Furthermore, there will be a discussion on the difficulties encountered which resulted in some adjustments to the research framework. The description of each research method will be demonstrated in turn beginning with the case study, interviews and a workshop – held for an ASEAN Executive Development Programme held in July 2003.

5.2 The research objective revisited

The objective of this research is to seek an appropriate PRM process for Thai project organisations, particularly in the construction industry. Generally, managing construction projects is considered to be a risky matter. In project construction, the amount of risks can be massive. Thus, in order to comprehend the types of risks that may arise, the availability of a formal risk management process is required. However, the application of systematic risk management process is not quite popular in practice. This is due to several constraints for instance, project managers' attitude, management practice, organisational risk culture and the implementation process of

PRM. The study concerning an implementation of risk management process leads to an essential issue underpinning the effectiveness of PRM practice. The behavioural side of risk management contains crucial issues including managerial practices, human perception of uncertainty and culture. Among these, culture is prime factor influencing both project managers' risk perception as well as managerial practice within an organisation. (See figure 5.1).

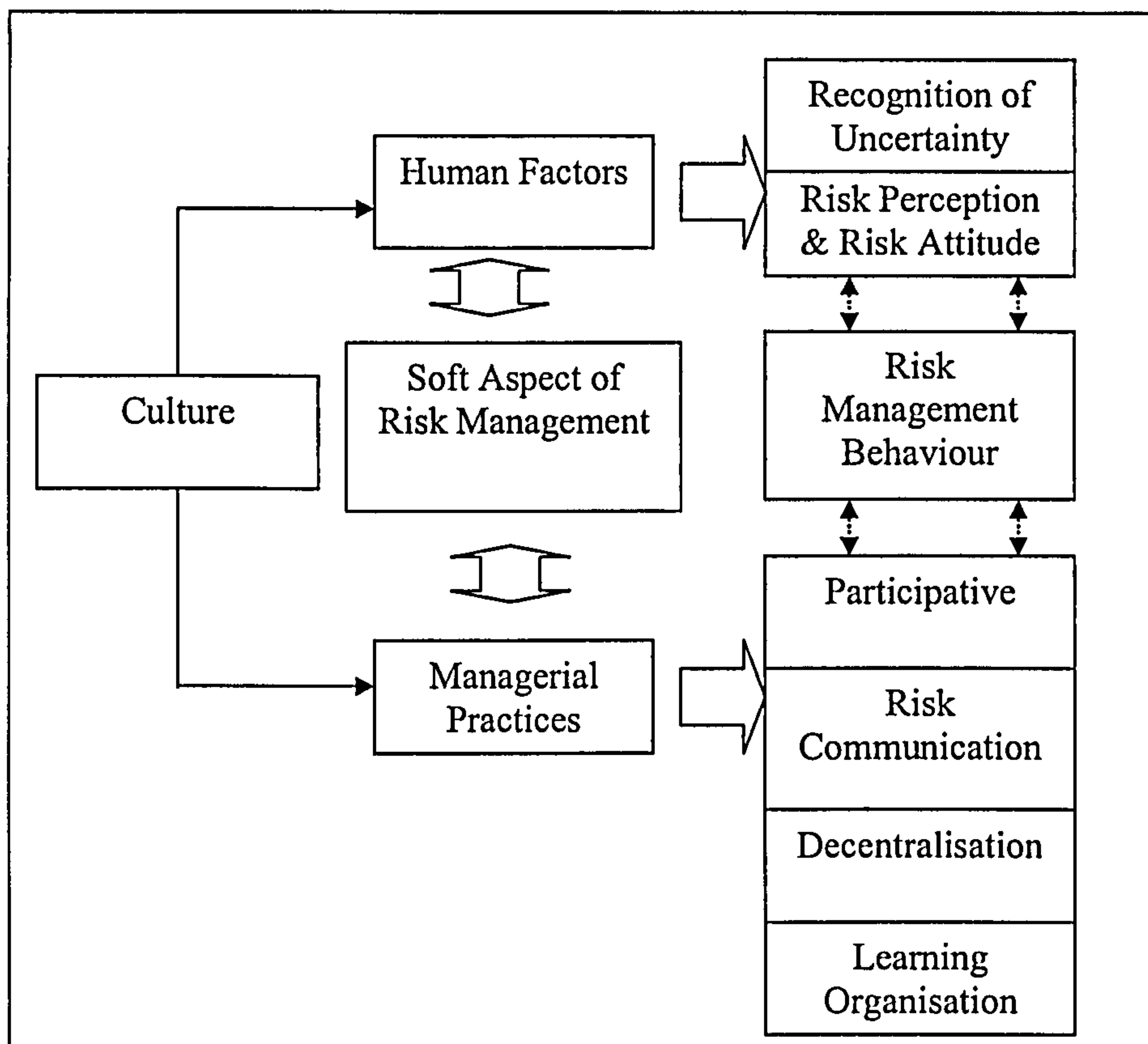


Figure 5.1: The role of culture and Risk Management practice

However, cultures are diverse. The values of different cultures influence organisation's members both in term of cognitive thinking and behaviours. Hence, people who live in a specific culture share to same thinking and behave in the same way. Cultural difference also affects the way people comprehend risks as well as the way they manage risks. Some cultures may be comfortable with uncertainty and risk and are ready to tackle with it while others may prefer certainty and avoid risks at all

costs. Risk management behaviour differs across nations. This is due to the fact that different cultural assumptions regarding the environmental uncertainty and the nature of relationships within the organisation result in different approaches to managing uncertainty [Schneider, 1989]. National culture is only one of the contextual elements on which to examine country differences, and on which to measure the practices within the organisation. The model of national culture chosen for this research is Hofstede [1984]. A study of Thai cultural values based on Hofstede's dimensions seems to indicate that a formal risk management process may not easily implement into Thai organisations. (See figure 5.2)

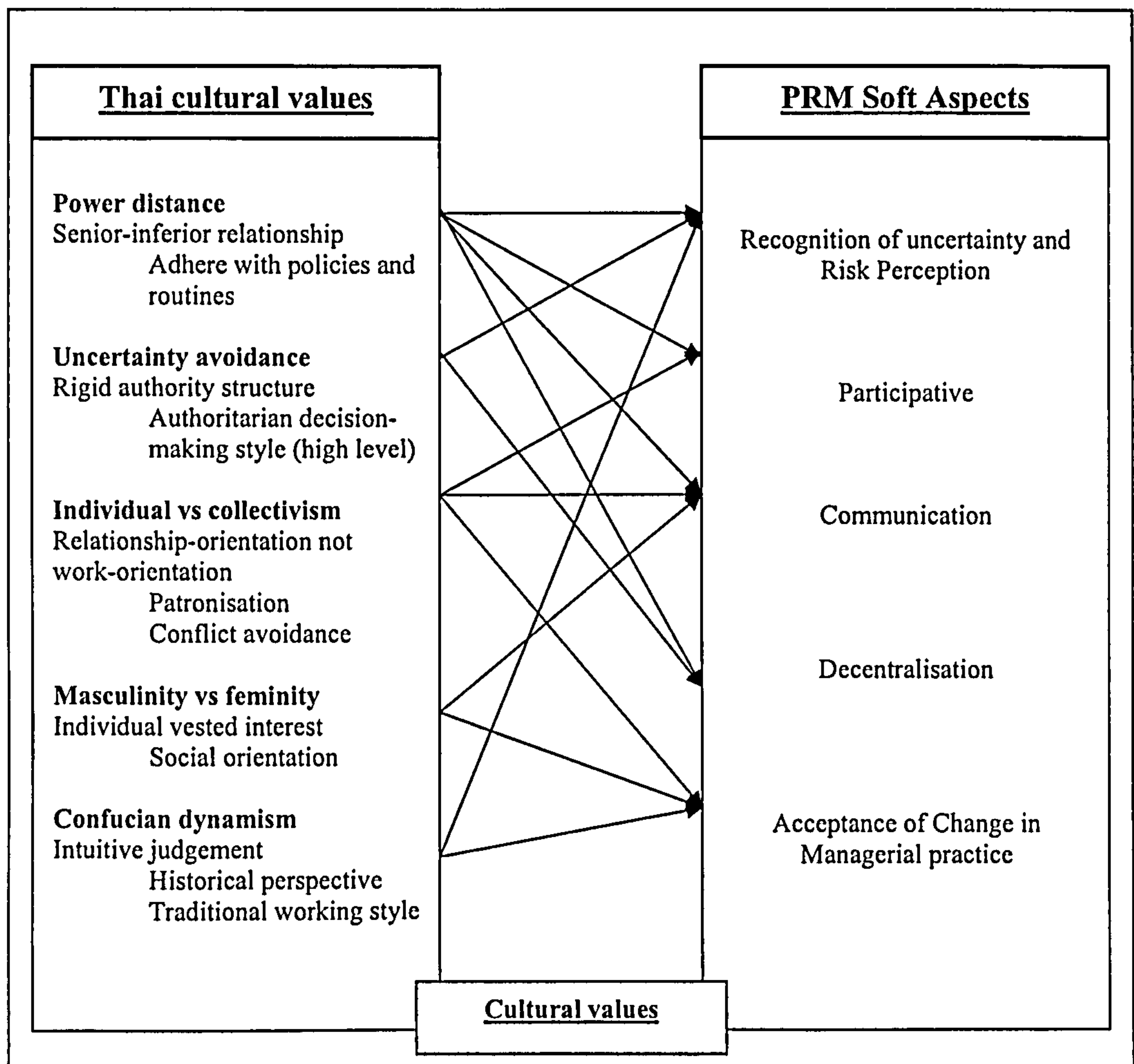


Figure 5.2: The effect of culture difference and risk management practice

An effective formal risk management process requires anticipationists who are aware of future uncertainty and have a long-term vision. Such leaders or project managers would also prefer proactive management approach. Furthermore, according to this study, soft risk management is stressed and highlighted by the importance of teamwork, communication, decentralisation and knowledge management. A combination of these managerial practices supports a formal risk management process by increasing risk management performance, risk awareness among project members, and individual risk management capability. However, implementing soft risk management may pose some problems depending on culture of the organisation. The study of national theory attempts to seek explanation of these cultures using multi dimensional values. This study has employed Hofstede's framework to explain Thai managerial practice. The framework acts as a guideline for researchers to understand Thai managerial practices and to comprehend with soft aspects of risk management practices.

The literature suggests that teamwork, transparent risk communication, decentralisation and knowledge transfer are essential to the effective risk management process. These management activities seem applicable to Thai cultural organisations. For instance, teamwork is suggested to be necessary for effective risk management as the project is composed of several distinct speciality areas. However, it may not be common for Thai organisations to accept such participative working style regarding the senior-inferior relationships. In contrast, Thai people are also group-oriented which means that within their own groups, members can discuss freely. Team building and creating trust is also essential for effective risk management to enable open communication within the team. Project team members are the key people in supporting the effectiveness of risk management performance and ensuring that all relevant parties are aware of risk management efforts. Nevertheless, communication about possible risk impacts can help in determining risks at other organisational levels. Ensuring open information transfer may be more challenging in the Thai organisation because Thais tend to avoid creating conflict among members. Furthermore, Thai language is considered to be high context, which may be difficult for open and transparent discussion about risks. An effective risk

management requires some degree of project members to have some level of authority to handle and manage risks at their levels. This again does not seem to fit well with Thai organisation. The structure of Thai organisations is inclined to bureaucracy, tall hierarchy with centralised decision-making.

Regarding to the literature review, the planning of risk management processes must take in account two important aspects. The first is concerned with project managers. An implementation of risk management requires strong commitment from project managers. Without support from leaders the implementation procedure of risk management process will most likely face with failure. Project managers are generally risk managers in organisations. Their understanding about risk, risk perception and attitude towards risks can affect a risk management approach of the entire organisation. Hence, it is important to gain an understanding of project managers regarding their risk perception and risk management.

The previous chapter has identified the shortcomings of social aspect in risk management. It has been debated that social characteristics need to be accounted for to gain an explanation of how risk management practice should be conducted. Therefore, another area of this study's investigation is to explore the impact of Thai culture on Thai project organisations managerial practices.

5.3 A discussion of the research paradigms

It is important for researchers to formulate their research methodologies as guidelines to conduct their research activities and achieve their objectives. However, there are many varieties of research methodologies that are applicable to management research. The selection of a methodology for research is crucial to the quality and value of the research. Therefore, it is important for researchers to carefully select their appropriate research methodology [Hussey and Hussey, 1997]. Different approaches to research encompass both theory and method. The way in which research is conducted may be conceived of in terms of the research philosophy subscribed to, the research strategy employed and so the research instruments utilised

in the pursuit goal and the research questions. In addition, the type of research methodology should reflect the assumptions of the researchers' paradigm [Easterby-Smith et al, 1997, 2002]. In the management area, there are two main research paradigms, namely positivism (quantitative) and interpretism (qualitative) [Hussey and Hussey, 1997 and Remenyi et al. 1998].

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used. The initial decision for research methodology should reflect assumptions about the social world, how science should be conducted, and what constitute legitimate problems, solutions, and criteria of proof. Positivism has been recognised as the natural science model of social science research. Positivists assume that the social world is discerned as existing externally and best measured through objective methods, which in turn generate objective viewpoints [Hussey and Hussey, 1997]. Therefore, the act of investigating reality has no effect on that reality and little regard is referred to the subjective state of the individual. Easterby-smith et al. [1997, p.22] note that for positivists "knowledge is only of significance if it is based on observations of this external reality. The positivists believe that the study of human behaviour should be conducted in the same way as studies conducted in natural science. The application of these research (quantitative) methods to social science is premised on searching for general laws of causation and assumes the existence of a real world of social and physical phenomena. (see table 5.1)

Feature	Quantitative methodology	Qualitative methodology
Nature of reality	Objective; sample; single; tangible sense impressions	Subjective; problematic; holistic; a social construct
Causes and effects	Nomological thinking; cause-effect linkages	Non-deterministic; mutual shaping; no cause-effect linkage
The role of values	Value neutral; value-free inquiry	Normativism; value-bound inquiry
Natural and social science	Deductive; model of natural science; nomothetic; deductive; based on strict rules	Natural and social sciences are different; inductive; ideographic; no strict rules; interpretations
Methods	Quantitative, mathematical; extensive use of statistics	Qualitative, with less emphasis on statistics; verbal and qualitative analysis
Researcher's role	Rather passive; is the 'knower'; is separate from subject-the known: dualism	Active; 'knower' and 'known' are interactive and inseparable
Generalisations	Inductive generalisations; nomothetic statements	Analytical or conceptual generalisations; time-and-context specific.

Table 5.1 : Differences between Quantitative and Qualitative Methodology

Source: Lincoln and Guba [1985]

In contrast with positivism, interpretism is grounded in the assumption that features of the social environment are constructed as interpretations by individuals and these interpretations tend to be transitory and situational. Interpretism believes that natural

science is the basis for understanding action and behaviour and in the view that knowledge can only be generated by objective measures [Hussey and Hussey, 1997]. It tends to focus on human interpretations and meanings relating to its social environment. Merriam [1988] characterises the interpretism paradigm as a concept covering several forms of inquiry that help to explain the meaning of social phenomena with as little disruption of the natural setting as possible, and in which the focus of the study is on interpretation and meaning.

The application of this paradigm, qualitative methods, highlights the richness of the big picture and the appealing explanations of how process, chronological facts and causal links occur [Miles and Huberman, 1994].

The research design for this study is based on interpretism. It consists of three main parts. The first section is constructed around a single case study seeking to provide an understanding and exploring the effect of Thai culture on a project management organisation. The following part is established with an interview method. Its intent is to explore the attitude of Thai project practitioners regarding project risks and risk management as well as understanding their risk management practice. The interviews also attempt to search for a reflection of Thai cultural values in Thai project management practice. Finally, a workshop is concerned with an effect of Thai culture on dynamic group thinking and behaviour of Thai managers' on the PRM practice. An in-depth discussion of an adoption of a qualitative inquiry is discussed as follows.

5.4 Justification and rationale for a selected approach

This study attempts to investigate the possibility of applying the PRM concept in a new social environment, in particular Thai organisations, where the acknowledgement of such concept is rare. The researcher intends to explore socio-cultural and organisational process, which can identify and describe important aspects of the phenomenon under the study. This researcher is also trying to gain better understanding of the complexities of human interactions and human

perceptions towards possible changes in social system introduced by different aspect of managerial practice, the PRM processes.

The researcher assumes that a contemporary societal setting, which is established in organisations, is framed and shaped by systems and social process. The general approach in organisational processes is to understand cultural influences that make organisational procedures [Hofstede, 1993 and Brown, 1993]. A change management programme, therefore, must take cognisance of social processes in that society. If it is unable to assimilate and recognise social processes that impact on human agents who practice in the society then the new process will have a limitation of use in curtailing and directing organisational process [Sathe, 1985]. In essence, a planning of PRM process should be supported with an understanding of the social culture and practice of the organisation [PRAM, 1996, Carter et al.,1996, and Smallman, 1996]. Furthermore, within this social setting human factors play a vital role in a manner embraced and determined by organisational values. The human agents provide an interface between organisational processes and managerial practices. They provide the interpretation of models and set the parameters required to make the systems operate. To provide their interpretation of organisational process, human agents are subject to cultural and social factors, which impact on them at a personal level [Schein, 1992]. Furthermore, where organisations as social settings are attempts to change their forms of operations then human agents become subject to the demands set by these new rules of operation. An understanding of their attitudes toward providing new managerial circumstances can anticipate their behaviour in that societal setting. Once this social structure has been established they determine acceptable behaviour and modes of conduct for human agents, and create a purpose and function for every system within the settings. This can create the reality of organisations and society in its contemporary setting.

The researcher is fond of the philosophy of interpretism regarding social context and social relations, which influence human perception, attitude and interaction toward the design and the use of PRM practice. Creswell [1998] states that qualitative

research allows an inquiry process of understanding by employing methodological traditions of inquiry that explore a social or human problem. The interpretative approach promotes the subjective nature of social structures and presents it as the primary frame of reference within which subjects and phenomenon ought to be studied [Denzin and Lincoln, 1994]. Whereas quantitative research takes apart a phenomenon to examine component parts, which then become the variables of the study, qualitative research can reveal how all the parts work together.

5.5 The progressive stage of research methods

There are large numbers of research methodologies, however, a selection of research methods is dependent upon research objectives, research questions and the ability of researchers to collect data. For this study, a mixture of research methodologies in the phenomenology paradigm is designed to achieve the intent of the investigation.

There are three research methods employed in this study including a case study, interviews and a workshop. The case study is chosen to investigate an influence of Thai culture on managerial practice in a project organisation. While several studies indicate that Thai cultural values play a significant role in determining organisation behaviour [Rohitrattana, 1997, Redding, 1993 and Mosel, 1991], however, there has not been any study on the effect of Thai culture in a project organisation. The study of a Thai project organisation would allow the researcher to understand the effect of Thai cultural values on the project management practice. While the case study can provide a tremendous understanding of Thai project management practice, however, the implementation of PRM practice also relies on the attitude of a project practitioner towards the principle of PRM [Paul, 2002, McGray et al., 2002 and Towe, 2001]. Consequently, interviews method was chosen to investigate Thai project practitioners' attitude towards risks, project risks, risk management practice and perception towards the principle of PRM. The interviews method allows the researcher to understand Thai project practitioners' risk handling practice and seek potential to engage Thai project practitioners to employ a systematic risk

management practice. Finally, the researcher was fortunate to be involved in a workshop concerning with Thai managers and the application of PRM process. It has been widely acknowledged that risk is a cultural construct [The Royal Society, 1992, Wildavsky and Dake, 1990 and Douglas, 1985], and risk perception and risk behaviour are also determined by cultural constraint [Pablo, 1992]. The workshop can provide an opportunity to the researcher to observe the effect of Thai cultural values on the risk management process, and participants' reaction to the risk management concept.

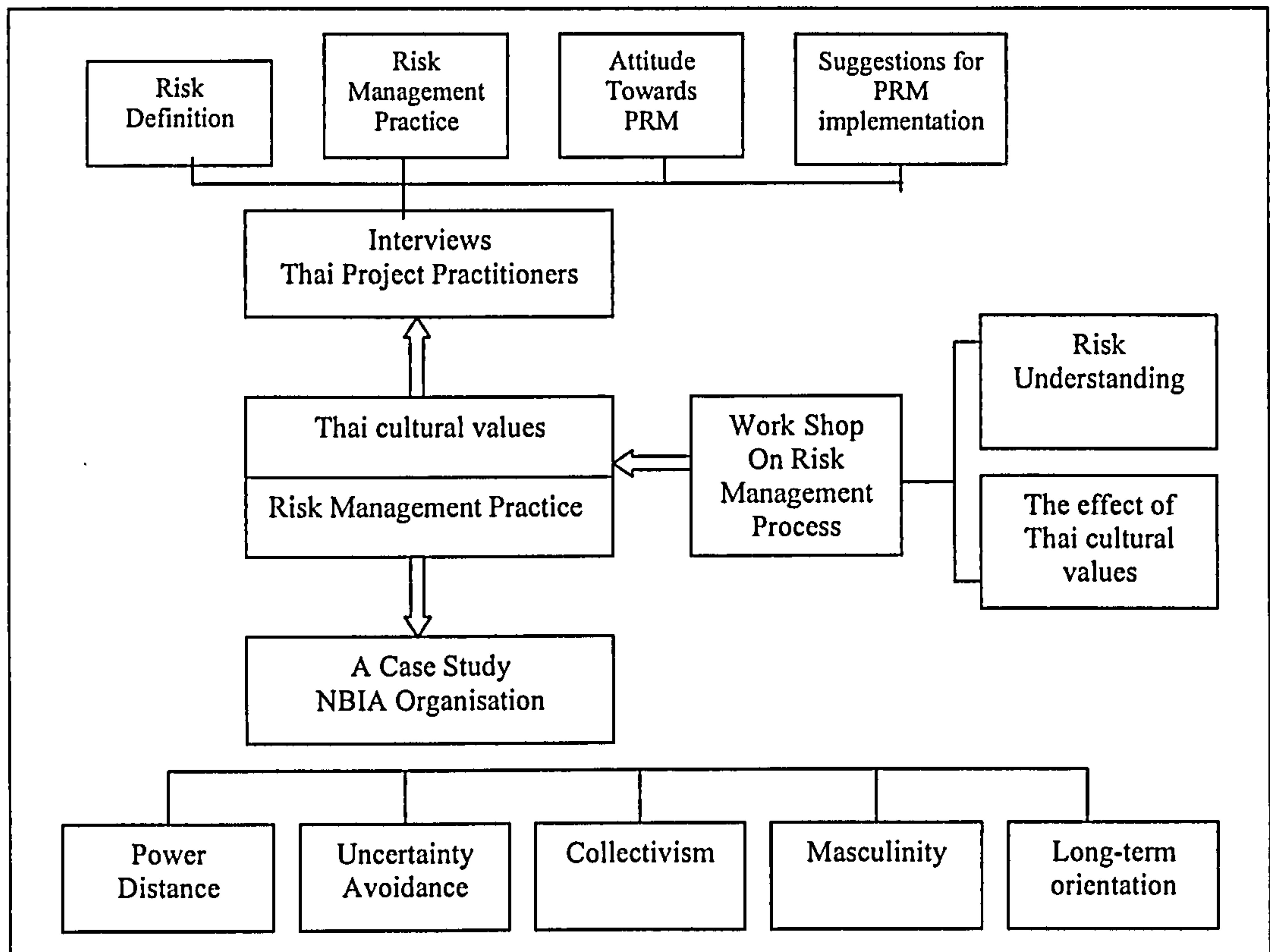


Figure 5.3: The relationship of research methods and their contribution

The combination of these research methodologies would allow the researcher to gain an understanding of the effect of Thai cultural values on the PRM principle and enable the researcher to come up with appropriate risk management principle for Thai project organisations. In the following section, the researcher will provide a justification of research methods choice and explain how they operate and

interoperate in this study. In the section that follows, the research methodology used throughout the rest of the study is discussed.

5.6 Case study as research method

The first objective of this study is to understand the patterns of managerial behaviour of Thai project organisations in the construction industry. The most helpful research methodology for this study should offer an ability to observe and gain insight into clues about the relationships and reactions of the organisational members as well as their managerial behaviour. Hence, the research methodology, which enables a researcher to understand a holistic view of an organisation, is needed. Consequently, case study is considered to be an appropriate research methodology for the objective of this study. Robson [1993 p. 153] states that case studies are appropriate for answering research questions, which ask how and why and which do not require control over the events. Furthermore, the quintessential characteristic of case studies is that they strive towards a holistic understanding of cultural systems of action. Yin [1994] defines case studies in terms of research process as “... *an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when boundaries between phenomenon and context are not clearly evident.*” In addition, case study seems to provide an epistemological advantage over other inquiry methods as a basis for naturalistic generalisation [Robert, 2000]. An exploratory single case study was adopted for this study. The focus in this research is on an investigation of Thai culture and its effect on managing project risks. The selection of single case study methodology is based on the fact of the non-existence of studies on cultural analysis of Thai project organisations. Robson [1993, p.147] mentions that an exploratory case study is the most appropriate to seek to find out what is happening, to seek new insights, to ask questions and to assess phenomena in a new light. Exploratory studies are generally better served by single cases. However, single case can also be used to test an existing, well-formed theory.

Yin [1994] states that the single case study method focuses on holistic description and explanation and by concentrating on a single case phenomenon or entity, the research will be able to uncover the interaction of significant characteristic of the phenomenon. Furthermore, the investigation of the case study followed a national cultural framework – Hofstede’s dimensional values. The case study was conducted to find Thai cultural values and pattern of behaviours as mentioned in Hofstede’s model (section 4.7). Case study research has often been criticised on the grounds that its findings are not generalisable. Stake [1994] argues on this point that case studies involved with naturalistic generalisation which is a different kind of generalisation from that which is characteristic of science. Yin [1994] further supports that generalisation of results, from either single or multiple designs are made to theory and not to populations. Creswell [1994] supports that the study of more than one case can dilute the overall analysis; the more cases an individual studies, the greater the lack of depth in any single case.

5.6.1. The selection of the case study

The selection of a case study was limited to a project organisation. In Thailand, project management principle is mostly practiced in the construction industry [Dangjumroon, 2000]. The construction project is inherently risky [Perry and Hayes, 1992], therefore project practitioners are familiar with dealing with project environment uncertainty. The literature review indicates that mega projects tend to have more potential for employing the PRM process regarding their technical and management complexity [Dey et al., 1999]. In Thailand, during the period of this study there were two huge infrastructure projects undertaken. These were the Bangkok Underground project and a New Bangkok International Airport project. Both projects were under the responsibility of state owned enterprises acting as project managers.

After two months contact with both projects, the researcher was permitted to conduct research at a NBIA Co. Ltd – a project manager of the New Bangkok International

Airport project. A single case study was conducted on NBIA Co. Ltd. This project is one of the biggest projects in Thai history. During the study, the NBIA project was at the initial state of construction and was facing several obstacles delaying the project progress. The NBIA organisation was recently claimed to be one of the main causes of the slow operation. Like most project organisations which are responsible for infrastructure projects in Thailand, the employees in NBIA are from several governmental departments and state owned enterprises. These employees are criticised as displaying strong characteristics of a traditionally Thai management style which is not suitable for managing such complex infrastructure project. After the first discussion with the managing director, the researcher was given the opportunity to briefly discuss with two directors concerning the objectives of his study. This was helpful to the researcher as he could introduce himself to the directors in front of the managing director. This meant that he could definitely gain collaboration from both directors, at least.

5.6.2 Data collection methods for case study

The empirical research was carried out through an exploratory type of research to investigate the existing practice of project management and the effect that Thai culture had on the organisation. The interest of the researcher was to investigate the social aspect of the NBIA Co.Ltd. This required an explicit understanding of the entire organisational context: managerial practice, infrastructure, structure and the culture of the organisation.

In the case study approach, researchers need to have a wide array of information to draw an in-depth picture of the case. Feagin et al [1991] point out that a triangulation strategy can help to ensure accuracy and alternative explanations of the collected data. Yin [1994] suggests that the key strength of the case study method involves using multiple sources and techniques in the data gathering process. He suggests the data collection methods for case studies as direct observation, indirect observation, interviews and documentation. Among these data collection methods, Benbasat et al.

[1987] conclude from their review on case studies research that almost all of the studies used interviews for data collection. Half of them relied solely on interviews. The rest used interviews incorporated with other methods. Stake [1995] also points out that interviews are the most important source of case study information. As for this study, three data collection methods: semi-structured interview, observation and documentation have been considered to gather data during the empirical research. Empirical evidence collected using different types of data collection techniques supports constructing data validity.

5.6.2.1 Interviews

There are several forms of interviews that are possible. They vary from the structured interview, in which the same questions are asked of each respondent in the same way and in the same sequence, to the type of ethnographic interview in which there is a minimum of questioning or directing by the interviewer. It relies upon a standard structure so that the researcher can determine patterns of response among the target population which are normally explained in terms of causal analysis. In other words, structured interviews allow very little room for the interviewee to express their own opinions in the manner of their choosing. Unlike structured interviews, unstructured interviews, sometimes called focused interviews [May, 1993], allow the interviewee to simply talk about an issue in terms of their own frame of reference.

The semi-structured interview is considered as the main method for data collection of this study. Semi-structured interviews are suitable in approach when the objective of the research is to explore individual motivations and when psychology and circumstances of respondents need to be interrelated. This method can provide a great deal of general information about behaviour and the attitudes of individuals [Hussey and Hussey, 1997]. Regarding this research objective, the research intended to obtain a holistic and insightful view of the NBIA company which responds to the current management practice and its social interaction. By conducting interviews

with the senior managements of the NBIA organisation, the researcher could develop an understanding of the respondents' perception of the NBIA organisation.

The intention was to evaluate the NBIA Company in terms of performance and organisational culture, to contribute to setting questions which would involve seeking a PRM implementation strategy in the second phase. The interviews started with the researcher contacting the organisation and relaying the purpose of the study to each project stakeholder, then scheduling individual interview times with as many project stakeholders as could co-operate.

Sampling procedure for choosing interviewees was based on the positions, authority and the degree of involvement in the project. In order to gain a holistic view of the NBIA organisation's managerial behaviour, the researcher decided to conduct interviews with project stakeholders from different management levels and organisations. Using project stakeholders from both inside and outside the NBIA Company provided both internal and external views of the project performance. The researcher conducted ten interviews. Interviewees were chosen from four main organisations including Airport Authority of Thailand (AAT), National Bangkok International Airport Co. Ltd (NBIA), Project Management Consultant Company (PMC) and Italian-Thai Plc. (a contractor company). The interviewees from NBIA Co, Ltd. were a former of Managing Director, two directors and their subordinates. Other interviews are a director from PMC, an engineer from Italian Thai Plc. and a director of AAT Plc.

Organisations	Positions	Ages	Educational Backgrounds
AAT Plc.	Director of Management and Administration	55	Master Degree
NBIA Co.Ltd	Former Managing Director	50	Ph.d.
	Director of Project Engineering	52	Master Degree

	Director of Planning and Business Development	55	Master Degree
	Employee : Business Development Department	28	Master Degree
	Employee : Procurement Division	23	Bachelor Degree
	Employee : Engineering Division 1	25	Master Degree
PMC	Managing Director	46	Master Degree
Italian Thai Plc.	Civil Engineer	27	Master Degree

Table 5.2 : Interviewees' profiles in a single case study method

The selected interviewees were put in interview profiles describing their positions, experience and background knowledge on the project construction (see table 5.2). A one to one interview method using a semi-structured format was conducted according to interviewees' available time.

The use of interviews as a data collection method began with the assumption that the participants' perspectives were meaningful, knowable, and able to be made explicit, and that their perspectives affect the success of the project. Interviews also encourage capturing of respondents' perceptions in their own words. Its goal was to elicit rich data, details, and new insights from the interviewees' perspective. The researcher intended to investigate the effect of Thai cultural values on NBIA managerial practices. The questions used were developed based the literature review concerning the effect of Thai cultural values on NBIA managerial practice. The set of questions used during the case study acted as a guideline for discussion rather than expect to gain direct answers from the interviewees. This is due to the fact that direct questions could cause interviewees to answers questions which they did not feel comfortable with. Furthermore, topics concerning social context are rather sensitive to Thai

people. Therefore, it was important that the researcher had to avoid causing uncomfortable feelings to the interviewees. The researcher also spent some time prior the interview sessions to discuss general issues with interviewees so that they could feel comfortable and provide useful responses to the research. The questions used are as follows:

- How do you feel about your senior managers? (Subordinates)
- Do you have problems contacting senior management during urgent circumstances? (Subordinates)
- Are employees called on any meeting?
- Does the organisation have problem with co-ordination among departments or organisations? (AAT/NBIA/PMC)
- What are your career expectations? (Subordinates)
- How do you think about managerial practice of NBIA Co. Ltd?
- How concerned are you with the project completion/ objectives?
- What do you think are risks on the NBIA project?
- How do you feel about your members working performance?

There was also another set of questions used to investigate the application of risk management practice in the Department of Planning and Business Development at NBIA Co. Ltd. as well as Planning Department of Italian Thai Plc.

- How did the department start to implement the risk management software?
- What happened when the risk software first used in the department?
- Are there any problems concerning the employment of the software and how do you overcome these problems?

Although these sets of questions were preset, each question was subject to change, adaptation, addition or subtracting down. Furthermore, the unintended answers may result due to the influence of Thai values. The interview sessions lasted about two to three hours. Each interview was tape recorded and later transcribed in English.

5.6.2.2 Documentation

Documentation was chosen to provide general information concerning the NBIA project including background, and its present activities. Documentation was used throughout the entire period of the empirical research. Both external and internal sources of information were captured for instance, internal sources of information included monthly progress reports from PMC (NBIA consultant company) and memoranda within NBIA. This documentation was obtained from NBIA directors and AAT plc's library. Other documentation consisted of governmental documents: the Thai Development Research Institute and Ministry of Finance, administrative documents, newspapers, internet and other articles appearing in the mass media.

Documentary information that was stored in files according to their details will be kept as field documents. Reference to Remenyi et al. [1997], was used to establish the context for interview as well as provide the interview reliability by triangulating the data source.

5.6.2.3 Direct Observation

Direct-observation was carried out throughout the whole period of the empirical research. Remenyi et al. [1998] state that direct observation is a very useful source of evidence and an important way to triangulate. By directly observing operations and activities, the evaluator can develop a holistic perspective and an understanding of the context within which the project operates. Observational approaches also allow the researcher to learn about things the participants may be unaware of or that they are unwilling or unable to discuss in an interview [Creswell, 1994]. The researcher

had an access to the NBIA organisation, PMC and an ITO contractor company. However, during the site visit the researcher spent most of the time observing the NBIA members' working behaviour. Direct observation gave the researcher with an opportunity to collect data on a wide range of behaviours, to capture a great variety of interactions, and to openly explore the evaluation topic.

The researcher expected to observe and record the behaviours of NBIA members such as

- the language used in conversation among project members
- a formal conversation between subordinates and senior management
- an existence of small social groups within the organisation
- the behaviour of project members towards their activities
- the physical locations of each department
- the communication procedure among departments

5.6.2.4 An Analytical Framework

This section is aimed to explain a framework of analysis used in the case study. According the literature review, Thai organisations maintain values, norms, culture and context which affect their managerial practice. These factors impact not only on the way of thinking, tackling and handling the situations, but also on the actions and reaction between groups of people.

One of the key elements of analysis focused on social context of the Thai project organisation. Social context involves both social actions and interactions between different groups of people and among the same group. Thai values which were discussed in section 4.8 are brought to consideration in analysing data in order to

enrich the analysis. These values interact with each other as a complex web and are difficult to separate. The analytical framework of the case study will be based on Hofstede's framework and take the concept of Thai values into consideration together in order to gain a deeper understanding and a rich picture of project management practice in NBIA Co. Ltd.

5.6.2.5 The difficulty during the case study

The problem during the case study was the conducting of interviews. Some interviewees were not willing to participate in the interview, but rather than refuse to have an interview the interviewees just kept postponing interview dates. The researcher arrived at the meeting but the interviewees asked to postpone a few times. Until eventually, the interviewees refused to give any interviews. This sort of interviewee caused a delay of three to four months. Another problem, which arose during the conducting of the case study, was to get reliable documentation. Most obtainable documents were confidential and given by the previous senior management of NBIA.

In conclusion, the case study research explained above was used to investigate the prevailing Thai culture within a project organisation. The findings of the case study will only demonstrate a significant effect of Thai culture on the project organisation as well as the PRM process. However, the acceptance of a PRM adoption plan is dependent upon a project manager. Therefore, the following section discusses the research methodology used for investigating Thai project practitioners' risk management practice as well as their attitude towards PRM principle.

5.7 Interviews as a research method

There is no empirical study that has been done to date on the implementation of project risk management in Thai project organisations. Furthermore, the concept of

risk management in a project context appears to be an unfamiliar concept in the Thai construction industry. The primary purpose of the interviews is to investigate Thai project managers' understanding on project risks, their practical ways of managing risk and their perceptions towards the risk management process. Therefore, this study intends to begin with an exploration of the perceptions of project practitioners regarding underlying risks in a project context, managing risks and the PRM principle focusing on Thai project practitioners in the construction industry. In order to determine how PRM principle can be most effectively used in supporting the present project risk managerial practice of Thai project practitioners, a survey method is chosen because of its ability to gather opinions and assess how current Thai project practitioners understand and manage project risks.

Regarding to Oppenheim, [2004, p.67], the purpose of the exploratory interview is essentially heuristic. It is concerned with trying to understand how people think and feel about the topics of concern to the research. It can help the researcher to gain insight in the frame of reference of an interviewee [Patton, 1990]. The result from this stage would enable the researcher to find a way of introducing PRM to Thai senior managers. By gaining a broader understanding of Thai project practitioners' attitude towards risk and their risk management practice can the possibility of introducing PRM process be constructed. Generally, in-depth interview methods are utilised as the major component of research strategy because of the ability of interview techniques to obtain the "riches" data within the prescribed limits of the research. Interviews enable the researcher to control response environment and the order in which issues are discussed. Furthermore, the benefit was derived from the ability of the interview techniques to enable discussion of complex topics and thus provide "rich" data [Easterby-Smith, 1991].

The result from this stage would enable the researcher to find a way of introducing PRM to Thai senior managers. Only by understanding the acceptable level of these project practitioners can the possibility of introducing PRM techniques be formulated.

5.7.1 Semi-structured interviews

The qualitative research interview seeks to describe the meanings of central themes in the life world of the subject. The main task in interviewing is to understand the meaning of what the interviewees say. Interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic. The interview allows the researcher to have an opportunity to probe or ask follow up questions. In-depth interviews are also generally easier for respondents to express their opinion and impressions.

Interviews allow the researcher to acquire breadth and depth of responses from different sources. Semi-structured interviews allow flexibility in inquisition; the interviewer is able to intensify their inquiry in a situation where a particular respondent is able to offer more information. Furthermore, misinterpretation of questions will be reduced considerably as the subject can ask for more clarification of the questions or can recheck the interviewees understanding. In addition, the interview technique also provides additional related information on casual factors for certain patterns of behaviour.

In semi-structured interviews, an interviewer has a set of particular questions in advance, but is free to modify their order based upon her perception of what seems most appropriate in the context of the "conversation", can change the way they are worded, give explanations, leave out particular questions which seem inappropriate with a particular interviewee or include additional ones [Robson, 1993, p. 231].

5.7.2 Sample for interviews

It is generally agreed that project managers or project leaders are responsible for project risk management and an acceptance of PRM practice. The interviews were conducted with project management practitioners. The general purpose was to

illuminate the general views and opinions from the interviewees on the assessment of risk management familiarity. The main objective was to identify specific criteria of risk management practice from the managers' viewpoints that might affect successful implementation of PRM. The interviewees were selected from the directory of Engineering Institute of Thailand (EIT). The EIT is a respected organisation formed to support providing knowledge. The organisation has provided several seminars and published books and articles concerning all fields of engineering. The researcher's selection process began checking project practitioners who specialise in project management, especially in the construction industry. The general manager of the EIT played a vital role in the process. His knowledge about individual project practitioners based on their past experience and educational background helped the researcher to gain a list of 25 interviewees. However, the researcher ended up interviewing only 11 practitioners. These included academics, consultants, and contractors with experience in the construction industry. All of the interviewees have more than 15 years working experience. The educational level ranged from Ph.D, Masters Degrees and Bachelor degrees. Within this group of interviewees 10 of them obtained foreign education from the USA, UK, Australia and Singapore. (See table 5.3)

Careers	Ages	Education Backgrounds	Foreign Qualifications
Academics	55	Ph.D.	Yes
Contractor 1	45	Master	Yes
Contractor 2	47	PhD	Yes
Contractor 3	49	Master	Yes
Contractor 4	53	Bachelor	Yes
Contractor 5	56	Bachelor	Yes
Consultant 1	37	Master	Yes

Consultant 2	39	Master	Yes
Consultant 3	43	Master	Yes
Consultant 4	45	Master	
Consultant 5	53	Bachelor	Yes

Table 5.3 Interviewees' profile for interview method

The researcher began the interview process by contacting the respondents by telephone and later a brief summary of PRM and an outline of the questions were sent to the target participants by fax. It took more than three months for the researcher to complete all the interviews. This was due to the fact that during the conducting of the interviews, the Thai economy began to recover, as a result the construction industry started to buck up. Prior to the commencement of the interviews, the researcher stated in the introduction that a period of 45 minutes for an interview session was required, however, most of the interviews lasted for 75 minutes and occasionally 150 minutes but none took less than 45 minutes.

5.7.3 A discussion of interview protocol

The main objective of the interviews was to explore Thai project practitioners' attitudes towards risk and the PRM principle. The interview structure follows the logical and rational reasons for the employment of PRM practice. The results from the case study indicate that Thai culture permeate in project organisation and plays a significant role in determining project management performance. They also demonstrated that project managers or leaders were strong influential factors influencing the direction of risk management performance within the organisation.

Project managers play a vital role in risk management implementation process. They are basically responsible for risk management practice within their organisations. Their risk management practice is dependent upon their perception and attitude

towards risks. Furthermore, a development of risk management process should be based upon the recent risk management capability of the organisation. Hence, it is essential to investigate Thai project managers' attitude of Thai project practitioners towards project risks, their risk management practice and their views of PRM process. The researcher also extended these interviews with an explication of the cultural role in Thai project risk management practice.

The interview questions were separated into four main sections including risk perceptions, risk management practice, perception towards PRM and recommendation of PRM implementation for Thai project practitioners:

- How could you define risk?
- What are project risks?
- Who is responsible for project planning?
- How do you conduct project/ risk management?
- How do you monitor your project activities?
- Do you allow project members to solve problems when facing risk events?
- Has your company conducted "*Post mortem*" studies?
- What do you think about the PRM concept?
- In case, you had to implement the PRM concept, how would you do it?

The development of the questions used arose from considering the literature review highlighted namely PRM process and soft risk management practice. The interview questions were separated into four main sections including risk perceptions, risk management practice, perception towards PRM and recommendation of PRM implementation for Thai project practitioners:

Conceptual Understanding of Risk

The literature indicates that there are numerous definitions for risk and also recent trend for the focus to be towards the negative aspects of discipline (See section 2.3.1). In attempting to gain an insight to the interviewee's knowledge of the general field of risk management, the researcher hoped to gain information relating to the recognition of risk. The attitude and perception towards risk influence both risk management approaches and risk management practice (See section 3.6.2).

Project Risk Management practice: Tools and Techniques

There are numbers of tools and techniques available for use in risk management process (See section 2.4.2). Despite the evidence of procedures, the researcher wanted to obtain specific insight into what was actually carried out by Thai project practitioners and the knowledge of the current systems in place. How are risks identified and analysed, what are the steps followed or the tools used? Following identification of risk, the researcher also wanted to understand some aspects of mitigation, contingency strategies. The aim of this line of questioning was to ascertain if the risk identification process was effective and at the same time understand the skill level of Thai project practitioners.

Furthermore, addressing this issue the researcher hoped that he could ascertain the views as to the reasoning behind performing risk management. The researcher was trying to understand whom the respondents deemed responsible for the risk management within projects. Whatever the views of responsibilities, the researcher believed that understanding of responsibilities and roles was required to aid a planning for PRM implementation program.

The attitude of project practitioners towards PRM

At the same time the researcher was interested in the views on any benefits or down sides associated with risk management. In understanding these aspects, the

researcher could gain that the benefits could be highlighted aiding implementation and any downsides resulting in barriers addressed (See section, 3.5.2.1). The attitude of project practitioners towards PRM process is valuable to an introduction of PRM process in an organisation as one of the reasons of unpopularity of PRM process in project based industries is that project practitioners have several negative views about it.

The suggestion of PRM implementation in Thai project organisations

Regarding that the PRM concept is relatively new concept among Thai project practitioners. Therefore, there must be some potential obstacle factors concerning the implementation process of PRM process. It is by having some recommendations from Thai project practitioners, more effective ways to support PRM applications in Thailand can be discussed.

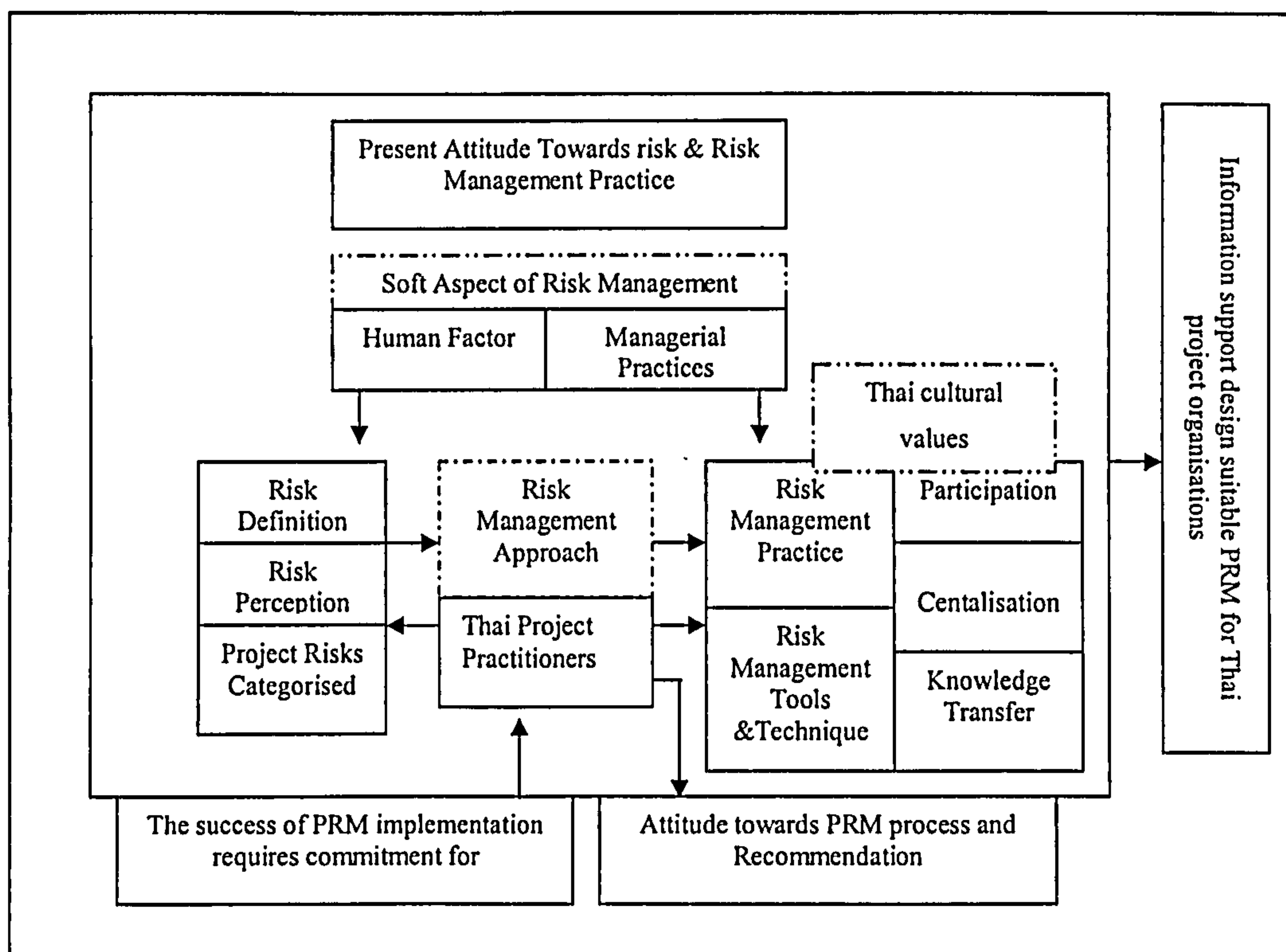


Figure 5.4 :Interviews: investigation themes

The first two questions are to understand how Thai project practitioners define risks and how they understand risks. The understanding of risk definition and the concept of risk affect significantly the risk management behaviour [Pablo, 1999 and Ritchie and Marshal, 1992]. Furthermore, the questions would also allow the researcher to understand how Thai project practitioners would deal with project risks and whether their underlying principle of risk management was either proactive or reactive. The third, fourth, fifth, sixth, seventh and eighth questions would allow the researcher to understand how Thai project practitioners conduct their risk management process. These would reflect a degree of interaction between project managers and their subordinates as well as information used to conduct risk analysis. The final question is a direct question to Thai project practitioners to give their ideas concerning negative and positive views of PRM practice. This is very crucial for an acceptance and survival of PRM process in Thai project organisations. (section 3.5.2) If Thai project practitioners see potential benefits of PRM there will be a very high chance that they will accept and attempt to employ the concept [Chadbourne, 1998]. The final question was to find out an appropriate pathway for Thai project managers to initiate their PRM practice.

Although a structured topic guide was employed, a particular aim was to encourage interviewees to give freely of their views on the issues as they experienced them. The broad topic areas were education and employment history, details of current employment, risk management within the business and understanding of PRM, and any suggestions for PRM adoption in Thailand. The interview questions were piloted to the Thai construction engineering lecturer from Kasetsart University and Thai project practitioners.

The interviews were conducted at each manager's workplace ranging from their company to construction sites. The interview discussion was focused on the risk perception and risk management practice of Thai project practitioners (systematic/subjective), the implication of the effect of Thai cultural values, the attitude towards PRM (the potential of PRM implementation), and their

recommendation for potential PRM initiatives. Questions as well as brief explanations concerning the subject were sent before hand mainly by fax and in some cases by mail. (See appendix 1) The researcher employed a simplified cognitive mapping [Hussay and Hussay, 1997], to analyse the collected data from the interviews. (See appendix 2)

5.8 Workshop (Focus Group)

The information from both previous research methods, the case study and the interviews, provided invaluable data to underpin the construction of the PRM implementation plan for Thai project organisations, as they contain vital elements at individual and organisational level. At individual level, the perceptions of the Thai practitioners are important, as they mostly have the ability to launch the implementation programme as they wish, while at the organisational level, the implication of Thai culture for the project organisation managerial practice is also important. However, the information above needed the provision of a focus group. The focus group is aimed at achieving an understanding of Thai managers' behaviour on PRM process.

Generally, focus groups are methods of systematically questioning several individuals simultaneously in formal and informal settings, wherein a moderator uses probing questions to obtain opinions and underlying thoughts [Denzin and Lincoln, 2000]. It is assumed that group interaction will be productive in widening the range of responses, activating forgotten details of experience, and releasing inhibitions that may otherwise discourage participants from disclosing information. According to Lamp [1994] a focus group interview has five central traits. It is (1) *"a small group of people (2) meeting in a non-threatening central location (3) to participate in an intensive and carefully planned discussion (4) conducted by a moderator (5) who focuses the interaction around discussion of predetermined questions"*.

In the focus group, group interaction is employed to generate data and as a source of data for analysis [Morgan, 1997]. Group forces or dynamics become an integral part of the procedure with participants engaged in discussion with each other rather than directing their comments solely to the moderator. Morgan [1997] also describes the benefits from participant interaction as synergism, snowballing, stimulation, security, and spontaneity. The advantage of focus groups is to bring out respondents' spontaneous reactions and ideas and let the facilitator observe group dynamics and organisational issues.

5.8.1 Workshop background

The workshop was a part of an ASEAN Executive Development Programme held in July 2003. The program aimed to introduce modern management concepts to the middle and senior management of the Electricity Generating Authority of Nations in the ASEAN-region. The programme was held by Thammasart University (Thai university). It was a fifteen-day intensive programme. Each session was the responsibility of different parties, who were mostly international speakers, invited from different countries. The risk management was one of several managerial practices provided in the programme. Risk Management topic was separated into two one-day sessions. The first one addressed the use of financial derivatives in the energy market and the second one addressed risk management in business planning. The researcher was involved with the latter session. The session was given by a multi-national company – EUREKA. It is a consulting company specialising in the Energy and IT industries. A group of five representatives from the company was responsible for the entire programme.

The session was a one-day programme giving explicit principles of risk management for business planning in the morning and during the entire afternoon a case study on Rathchaburi Electricity Generating Holding Plc. In the afternoon, the session began with a review on risk management at the strategic level for two hours. Then the participants were separated into a group of seven or eight syndicates and asked to perform risk identification and risk assessment. All groups had forty-five minutes to

perform both tasks. The information included a company profile and news concerning Rathchaburi Electricity Generating Holding Plc.: protests from local people, support from the government, and attitudes towards the potential profit of the company from experts. (See Appendix 3)

For the conducting of risk identification and risk assessment, the participants were given an example of risk profile separated into four main categories: business environment risks, operation risks, financial risks and information for decision making risks. Each group had a white flip chart to allow them to draw the RISK MATRIX map. Each group conducted brainstorming sessions intending to find a consensus of potential risk events and possible proactive plans to tackle each risk.

There were eighteen groups in the workshop; however the researcher was in charge of only three groups. The characteristics of each group are distinctive. Each group consisted of seven people. The first group consisted entirely of Thais, of which two participants were seniors, while the five remaining members were youngsters. The second group consisted entirely of Thai people with similar age range from forty to forty five. The final group was of mixed-nationality , which included four Thais, two Laotians and an Indonesian.

The researcher felt that the introduction about risk management is rather brief, specially regarding the clarification of risk definition, which should have been provided with more examples. The session also seemed to lack sufficient explanation concerning an implementation procedure of risk management process. The EURAKA team only provided an explanation concerning main phases of risk identification, risk assessment, risk response and risk monitoring. Furthermore, a discussion of both advantages and disadvantages of risk management tools and techniques should have been added to the session as well so that participants could attempt to apply risk management processes later on.

5.8.2 Data collection

Regarding the role of the researcher in the workshop, he acted as a facilitator, and applied the usage of participant observation, which was the primary data collection method. Participant observation is a straightforward technique, which allows the researcher to gain in-depth understanding of the subject being studied [Denzin and Lincoln, 2002]. When engaged in participant observation, the researcher collects information in and about a specific social location and event [Denzin, 1989, p. 158].

According to Smith [1998] participant observation allows the observer to learn and understand social interaction. Smith further states that social interaction is the continuous interplay and interpretation of meanings by individuals in groups. To acquire such knowledge and to identify the personal interrelationships within a group context would require regular contact time.

Denzin [1989, p.162] suggests that the role of an observer must be identified and maintained throughout the research programme. The researcher's primary role in the workshop was only to answer some questions resulting from the participants' readings of the risk management principle. The researcher did not provide any help or intervene with any groups. The whole programme was VDO recorded by a group of organisers, therefore the participants were familiar with themselves being recorded. Furthermore, the researcher also took field notes during the session. The researcher expected to observe two primary issues: the effect of Thai cultural values on the dynamic group thinking and Thai managers' familiarity towards uncertainty and probability theory.

5.9 Conclusion

This chapter has provided a discussion of the research methodologies employed in this research. The research design of this study is comprised of three research

methodologies: namely a single case study, survey and workshop. The single case study consisted of three data collection methods including documentation, semi-structured interview and direct observation. It was intended to investigate the effect of Thai culture on project organisation and how it affected managing project risks. The interviews were employed to understand the risk management practice of Thai project practitioners as well as to investigate a possibility of PRM implementation in Thailand. Finally, the workshop was to investigate the behaviour of Thai managers on PRM process.

Chapter 6: Case Study: Findings and Analysis

6.1 Introduction

The case study discussed in this chapter is concerned with managing a mega infrastructure project in Thailand. The NBIA Co. Ltd is an example of state owned enterprise acting as a project manager for infrastructure projects. However, it must be noted here that it is not common for Thailand to have such mega projects as the NBIA project. The NBIA Co. Ltd contains a very strong Thai culture within its management practices. This case study should not be thought of as a representative study of Thai project organisations in general. The issues relate not only to the practice of project management itself, but also to the dynamics of cultural aspects which are embedded in the managerial system and the national culture of the developing country.

This chapter will begin with a description of the case study, its project stakeholders and organisational structure. The first section intends to investigate the characteristics of Thai project organisation. The investigation is based on a single case study using three main data collection methods: interviews, observation and documentation. The selected case study is of NBIA Co. Ltd acting as a project manager of the New Bangkok International Airport project in Thailand. A scrutiny procedure will be based upon the framework of Hofstede discussed in chapter 4.

6.2 A case study: NBIA project

The following section is to provide first part will provide an explication of the New Bangkok International Airport project as well as an organisation (NBIA Co. Ltd) responsible for managing the project. This will include a background of the NBIA project, a discussion of NBIA project stakeholders, The NBIA organisation structure, and the last part of this section is to discuss about NBIA project risks and risk management.

6.2.1 The background to the NBIA project

The NBIA project is the new Bangkok international airport project. This airport is also known as Suvarnabhumi airport, which is the official name chosen by HM the King [NBIA, 2002]. It is the largest and also the costliest project in Thailand. An awareness of having a new international airport to support an increasing demand for air traffic in Thailand was formally initiated in 1960. The geographical advantage to the country, was to make the aviation hub of the South East Asia region. Most European flights to eastern Asia make a stopover in Bangkok, and so Thailand has first access to the European tourist market. Also, the nation is an ideal base for regional business distribution in a dynamic part of the world. The present Bangkok international airport is constrained by its physical condition, as it is located in the same area as the national air force. It was recommended that Thailand should establish its new commercial international airport by the year 1970 to support the gradually increasing air traffic [Phujudkarn, 1998]. However, bureaucratic management and political upheaval have disrupted approval of the project for forty years. The project is frequently cited as a prime example of poor economic planning and management of large infrastructure projects in the kingdom. The total investment cost of the airport is estimated at approximately \$ 2.9 billion dollars.

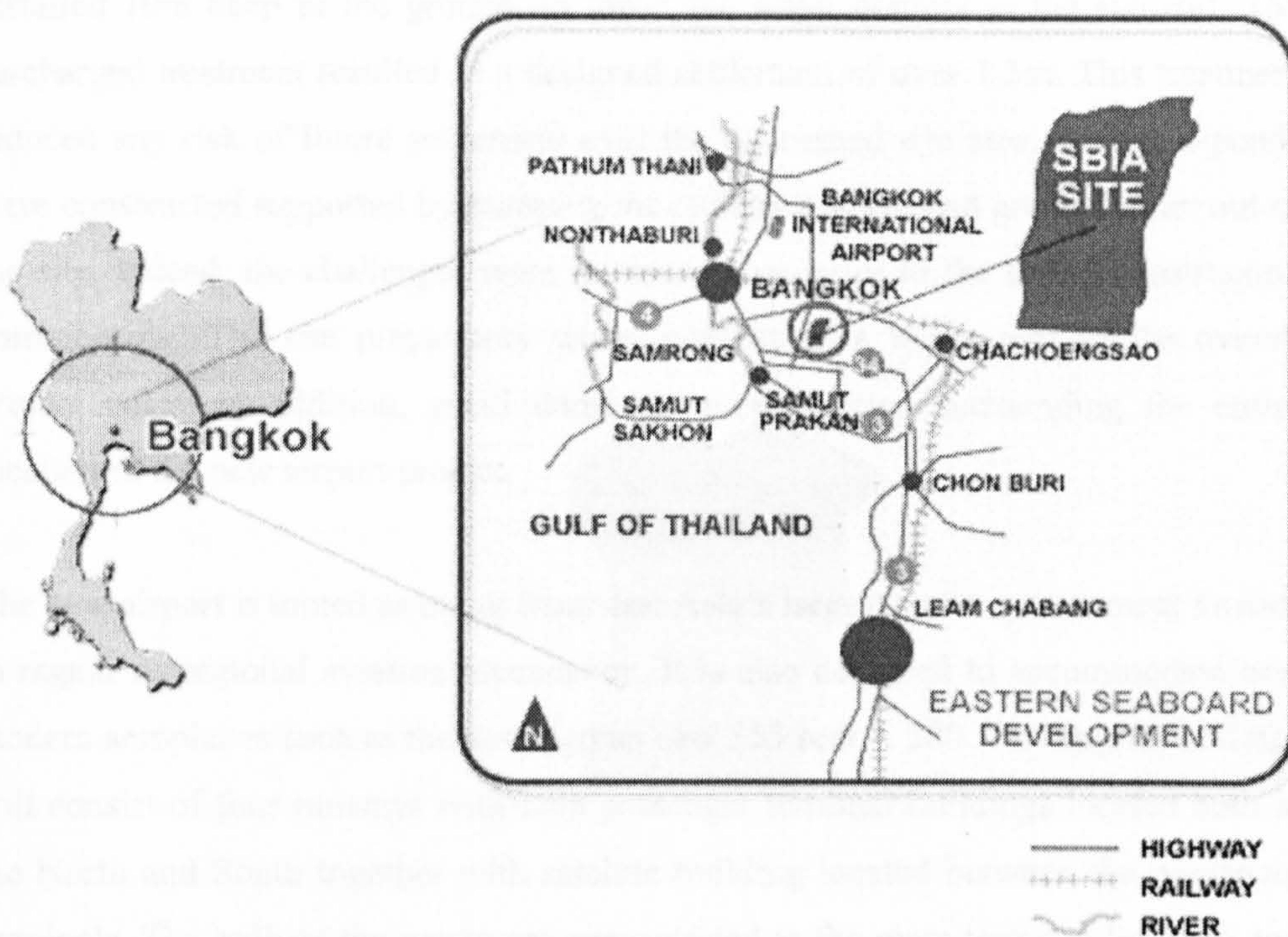


Figure 6.1: The location of NBIA project

The location at Samut Prakarn province, approximately 30 km east of Bangkok was selected due to its geographical advantage. The location is supportive to the expansion of industry development along the Eastern Seaboard sub-region, Leam-Chabang deep sea port.(see Figure 6.1) The site is approximately four kilometres in width and eight kilometres in length, with a total area of approximately 32 square kilometres. However, it must be noted here that the geographical advantage of the new airport location comes with a flood plain comprising nearly a thousand large and small ponds located between the Chao Phra Ya and Bang Pakon rivers. The location for the new airport is known by Thai people as “Nong Ngu Hao Swamp” or “Cobra Swamp”. The terrain is flat and close to the sea level. Unconsolidated sediments cover nearly the whole of the site and the topsoil consists for the most part of soft clay and mud to a depth of ten to twenty metres. The geological dimension caused project delay in the form of both planning argument and technical risks and large amount of budget reserve was spent on consolidating the soft ground. The problem

was tackled with a special ground improvement method called Fabricated Vertical Drains (FVD) to suppress the moisture of the soil. More than 10 million FVD were installed 10m deep in the ground, to lower the water content in the sub-soil. The surcharged treatment resulted in a designed settlement of over 1.5m. This treatment reduced any risk of future settlement over the concerned site area. Artificial ponds were constructed supported by pumping the collected storm and ground water out of the site. Indeed, the challenges were immense even prior to the actual construction commencing. The site preparatory works constituted a major part of the overall project costs. In addition, small dams were constructed surrounding the entire location of the new airport project.

The new airport is touted as being Southeast Asia's largest as the government intends to regain its regional aviation ascendancy. It is also designed to accommodate new modern aeroplanes such as the new Airbus new 555 seat A 380. The airport facilities will consist of four runways with twin passenger terminal buildings located both in the North and South together with satellite building located between the passenger terminals. The bulk of the works are concentrated in the main terminal building and concourse block. This building with a floor area of 500,000 square metres is a massive structure. The terminal design includes modern technology used for an enormous steel truss covering the building, and an artistic mixture of Thai culture used in the gardens and motifs for the interior. It is claimed to be the world's largest for a single terminal. Eight super trusses weighing 1,600 tons each support the spectacular roof. To lift such extra-heavy trusses to more than 30 m. was a complex task. The lifting operation for all super trusses was carried out successfully without any major accident or failure and at present the installation of secondary trusses is being carried out. The concourse block has a unique 5 point space frame of roof trusses, which were fabricated at a workshop about 100 km. from the site and were transported in large trailers. The erection at site can be compared to a huge jig-saw puzzle, the only difference being that individual truss elements weighed in excess of 15 tons and were transported piece by piece. The concourse block provides the airplane bays, where 7 wings accommodate 51 aircraft at the final parking lot, which

will be connected by air bridges and 69 remote parking bays for wide bodied aircrafts.

A host of other related works are being constructed simultaneously, including 132 m high air traffic control tower, runways, taxiways, aircraft maintenance facilities, airport information management systems, supporting infrastructure, utilities like power, water, sewage treatment, a central refrigeration plant, and an approach road system. For future rail links to Bangkok City, preparatory works for underground railway station are also being completed below the Main Terminal Building site.

The construction of the airport has been separated into two phases. At the completion of the first phase, the airport will be able to handle 30 million passengers with an ability to handle 76 flights per hour. The airport will also be able to handle 1.46 million tons of cargo and handle 51 aircraft stands and 24 remote parking bays for wide bodied aircraft. The capacity would then be increased to 45-50 million passengers per annum. After the second runway is complete, the airport will be expanded to its ultimate capacity phase to handle 112 flights per hour and accommodating 100 million passengers each year with the ability to handle 6.4 million tons of cargo per year and the 24 remote parking bays will be increased to 69 bays. (see figure: 6.2)

Recently, a main contractor of the project announced that it is likely that the project will be delayed for six months and is now expected to complete in April 2006 instead of September 2005 [The Nation, 2004].

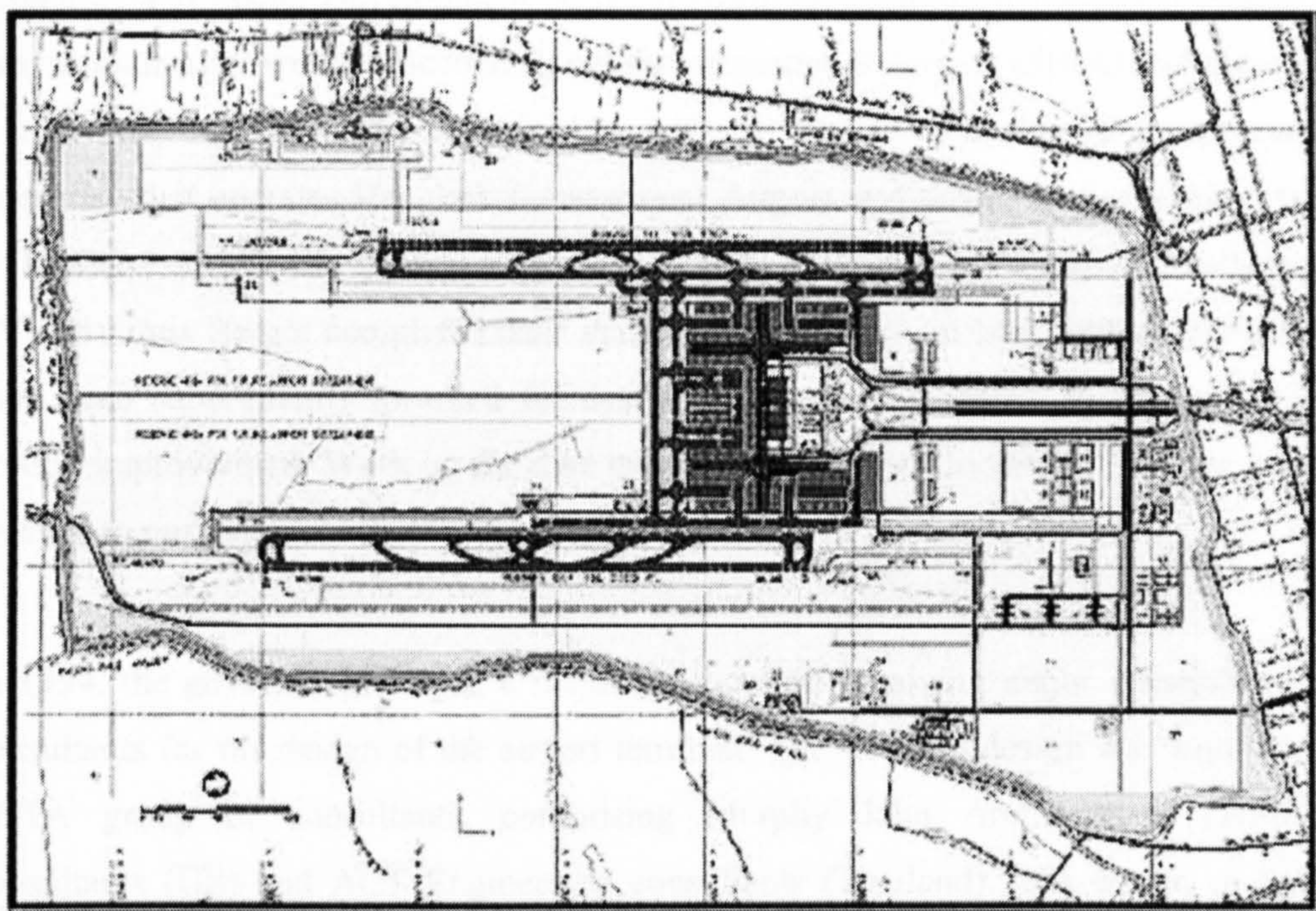


Figure 6.2: The layout of New Bangkok International Airport

6.2.2 The Journey of the NBIA project

The New Bangkok International Airport or Suvarnabhumi Airport as it is now known, has been in planning since 1960 as stated above, when the government of the day commissioned a master plan for the 1990 Bangkok Metropolis. The government finalised the purchase of 3,100 hectare at the “Cobra Swamp” in 1973. A land expropriation was initiated under the responsibility of the Civil Aviation Department and National Council Service. The process took twelve years to complete. The project looked set to take off but came one day short of being approved in 1973 when a popular student uprising succeeded in overthrowing the government and the project was shelved indefinitely.

During the early 1990’s, the Thai government decided to revive the project once again. The requirement for the new international airport was put in a national agenda with a release of the government’s five consecutive year plan by the National

Economic and Social Development body. In April 1991, the Prime Minister Anand Panyarachun approved the Second Bangkok International Airport (SBIA) and placed it under the control of the Airport Authority of Thailand (AAT) - the state run enterprise that operates Bangkok International Airport and other provincial airports in Thailand. Under the management of AAT, the Netherlands Airport Consultants BV and Louis Berger completed their master plan for SBIA in May 1993. Contracts have been subsequently awarded for designing systems to control floodwater and ground improvement. Work on the dike to prevent perennial flooding of the site was delayed to remove some 8,000 squatters.

In 1994, the government staged a major competition involving major international consultants for the design of the airport terminal. The winning design was from the MJTA group of consultants, comprising Murphy Jahn Architecture, TAMS consultants (US) and ACT Engineering consultants (Thailand). The design of the MJTA group later caused significant delay to the project. Several parties criticised the MJTA design for over budget specifications, demanding a very high maintenance costs and lacking Thai characteristics. An interest party consisting of the Thai Architects Association (under Royal Patronage), the International Aviation Council Association, and the GEC Consultancy Company was formed and pointed out the consequences of this design. The innovative structure – a dramatic 550,000 square meter steel and glass structure - of the passenger terminal as designed by MJTA was criticised as inappropriate for the Thai environment, the materials specified for the design were very modern and expensive, with high operational and maintenance costs, passenger safety, difficulties of construction and unrepresentative of Thai characteristics [NBIA, 2000, ARSA, 1997]. The AAT's inexperience of construction management was cited as a prime factor for future design problems. The terminal design took place in four phases: conceptual idea, an inception report, a preliminary design and a final design. AAT had received both the conceptual and the inception report without thoroughly studying and taking into account the suggestions from its consultant company and other concerned parties.

In early 1996, under the Banharn Silpa-Archa government, the New Bangkok International Airport Co. Ltd was formed to be responsible for the construction and operation of the international airport project. The government expected the schedule for the operation of its new airport to be by the year 2000. Unfortunately, during mid 1996, a new government was formed and the new prime minister Gen Chavalit Yongjaiyut planned to relocate the airport to another location – Bang Pu district. With the public suspicious of mismanagement by the Gen Chavalit government, his government was voted out of office in 1997. The construction of the airport was resumed again with a new deadline extended to 2004. However, with a economic crisis the government struggled for provide financial support for the project.

The project's lack of progress was exacerbated by the bidding prices to construct the passenger terminal and concourse complex. All bids were about 8 billion bath higher than the 45 billion bath budget that had been allocated. In an attempt to bring the price down, three measures were taken. The airport's designer Murphy Jahn Consortium were asked to modify the design to bring the price within the Bt45-billion budget, and the Japan Bank For International Cooperation, which was providing the 73-billion bath loan for construction work, was asked for assistance. In order to ease this situation, the MD of NBIA and his PMC consultancy team proposed an alternative design of the passenger terminal, using a design and build option. The design and build later become an argument for potential corruption. Eventually, the government decided to go ahead with a modification of the original design and reopen the bidding process again. The research first started into the NBIA Co. Ltd during this period of time. Under the new design, ITP joint venture was awarded to construct the airport terminal and concourse with a cost of 36.6 billion baht. The airport was now expected to finish in late 2004. The local leading contractor firm, Italian-Thai development was accused of bankruptcy. The construction of the project was later commenced in early 2002. At the present time, January 2005, the airport is still under construction and 75% completed. The delay seems to have extended until September 2006. However, this deadline is criticised for being too optimistic. Several sources have agreed that it is unlikely that the NBIA

project will meet its expected finish date. Representatives of IAAT and JBIC have recently pointed out that the airport needs two or three years to begin its operation.

The further delay has created several problems. According to the Airport Council International (ACI) in 1983 the existing Bangkok International Airport (BIA) was ranked 51st and later in 1996 was raised to 27th in the world for handling passengers. In 1991, cargo shipments at BIA was placed at 23rd in out of the 30 largest international airports and its rank was raised to 22nd in 1996. This rate outperformed both Thailand's neighbouring countries' international airports: Singapore and Hong Kong. To sustain its leading position, BIA conducted extensive development programmes to provide better quality service for its customers. However, serving both military and commercial concerns coupled with land development surrounding the airport has limited further expansion and development plans. These constraints affect dramatically the service quality of BIA compared with other airports in the Southeast Asia region. Bangkok International Airport has reached its capacity to handle 30 million passengers annually, and now serves around 40 million passengers. The ranking survey of ACI in 2001 also confirms a negative aspect of the BIA air traffic status. In terms of cargo Hong Kong is rated at 17th while Bangkok place's 21st. Measurement by numbers of passengers handled reveals that Bangkok is now below Hong Kong at 3rd, Singapore at 8th with Bangkok at 19th. Furthermore, the survey of airport and airport quality conducted by the Skytrax company for the year 2001 gives Hong Kong airport the first rank and Singapore the second while Bangkok is not even included in the top ten. The competitive environment has been one of the main critical concerns of Thai government. The growth in travel demand in the Southeast Asia region over the past several years has prompted new airport developments programmes in several countries including Korea, Hong Kong, and Malaysia, while major expansion programmes are underway in Singapore, Taiwan and the Philippines. Furthermore, the International Civil Aviation Organisation [ICAO, 2000] forecasts a future trend in passengers per kilometres (pax-km) for the period to 2010 in the Southeast Asia region of 7.0 percent, against the world average of 4.5 percent [Boeing, 2000]. This region will continue, over the decade as a whole to grow at a considerably higher rate than any other region.

The completion date of the project is crucial for Thailand to gain a chance of being the local region's aviation hub. The Thai government is also expecting that with the completion of the NBIA project, Thailand will become an air hub of the Southeast Asia region. However, with the continuous postponement of project completion date, this seems to be very unlikely. The long delay has already caused a few airlines to move their Asian airline centres from the present Bangkok International Airport to the Shangi International Airport of Singapore including British Airways. The long delay has also allowed neighbouring countries such as Singapore and Malaysia to better develop their potential to compete as rival regional aviation centres. Another concern involves the global airline alliances which have taken shape since 1997, which have begun to focus their strategies on the Southeast Asian airport hubs. This will possibly have a traffic diversion impact on a number of airports because the alliances will increasingly funnel previous point to point operations through their hubs. Airport competition for airline business will therefore be likely intensified, especially between the hub airports [Chan, 2000].

The late completion of the project will also affect its future operation as it was designed to handle 40 million passengers a years, but by the time it operates the number of passengers will likely be around 45 million a year, not to mention cargo handling ,which will definitely be increased [Business Day, 2003]. Furthermore, the PMC has stated that the delay will cost 2.5 million baht, around \$60,000 dollars daily. At the moment, overall construction of Suvarnabhumi Airport is 76.23 percent complete. The passenger terminal is 79.23 percent complete and the aircraft docking areas is 68.78 percent ready. The latest schedule of the project completion for the first phase of the NBIA project is in 2005 and the final phase is expected to be completed in the year 2006.

6.2.3 NBIA project stakeholders

The project stakeholder structure of the NBIA project consists of three levels: policy, management and operation. Stakeholders at the policy level provide an overall direction of management of the NBIA project. They consist of the government, the

Ministry of Transport and Communications, a Steering Committee and the Board of NBIA. The middle level includes parties concerning management of the project: project sponsors, NBIA Co. Ltd. and project consultant companies. The operational level embraces contractors and sub-contractors performing all construction activities allowed by the NBIA Co. Ltd.

The airport project as a national infrastructure project is directly under the responsibility of the national transportation organisation - the Ministry of Transport and Communications (MOTC). The MOTC's major roles and responsibilities cover transportation policy development, planning, service provision and regulation. These roles and responsibilities are exercised through constituent organisations of the MOTC, or through State Owned Enterprises (SOE's) over which the MOTC exercises general direction. The MOTC is divided into nine organisational components, one of which is the Department of Aviation. It is also responsible for thirteen state Enterprises, of which five are concerned with air transportation: Airport Authority of Thailand, Thai Airways International, Aeronautical Radio of Thailand Ltd, the Civil Aviation Training Center and the New Bangkok International Airport Co. Ltd. The MOCT plays a vital role in the success of the project as it controls all organisations concerning the administration and management of the NBIA planning, construction and future operation plan. It acts as a main decision maker for the operational policies of the new airport. The delays in making judgements of the MOTC have deferred the construction process of NBIA. The MOTC deferred its intention on running two airports or one airport. Hence, several activities had not been commenced.

A steering committee was established during 1997 by approval of the MOCT in order to accelerate the progress of the project by working in collaboration with the NBIA board as well as preparing for access transportation to the NBIA. The steering committee consists of the deputy prime minister, the minister of transport and communication and the representative from the national economic and social development board. The steering committee does not affect significantly the progress

of the project as it does not have authority to command but it rather stresses some crucial issues about the construction and operation of the airport.

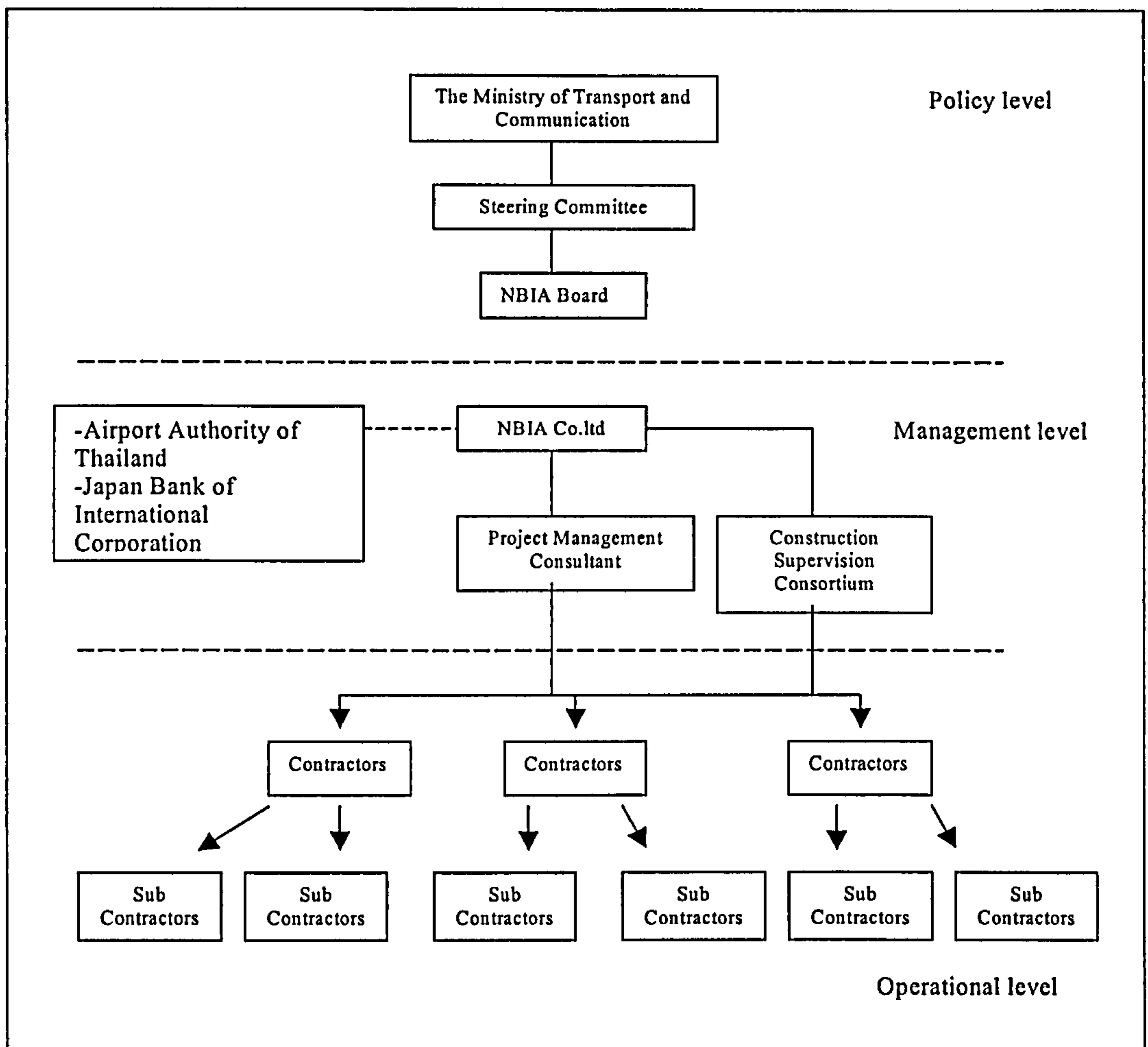


Figure 6.3: The stakeholders in the NBIA project

The NBIA board consists of 15 representatives from different concerned parties including AAT, Ministry of Finance, the Engineering Institute of Thailand and the Managing Director of NBIA Co. Ltd. The president of the board is normally the president of the AAT. However, there were some occasions when the president was appointed from other parties. It should also be noted here that at the present the secretary of MOCT is also responsible for acting as managing director of the NBIA as well as the chairman of the steering committee. The board plays a vital role in the decision-making process, however, the meeting of the board takes place only once a

month. As a result, several crucial activities cannot be solved responsively and on time.

At the middle level, there are three main groups of project stakeholders. The first group includes parties, which provide a financial support to the project. The initial total investment of the project was 125,000 million baht, which can be separated into equity of 50,000 million baht from AAT and MOTC and debt of 75,000 million baht (\$280 million) from JBIC and the government saving banks. JBIC has sponsored many infrastructure projects in Thailand: utilities, transportation, education and social development for many years. The loan from JBIC previously known as OECD is being expensed on several small projects, particularly on the terminal building and concourse 40, 000 million baht. The condition of JBIC is 2.5% interest with 7 years of debt, with a long term 30 year pay back period. The NBIA has to reveal all their financial strategies to the JBIC and all alternative plans on financial allocation of JBIC have to be consulted and get an approval from JBIC. JBIC has provided funding support for the airport project that adds up to approximately 60 percent of the entire funding for the airport. The total loan contribution JBIC has made so far up to the fifth stage is roughly 1 billion US dollars.

Outside of the AAT funded works and the loan from JBIC, there are a number of facilities that will be funded and built by separate agencies. These include the control tower and base building, Nav aids and Radar (Aero Thai), Air cargo, and GSE Maintenance (Thai Airways and TAGS), Flight Catering, car park, hotel, petrol station and a number of other support facilities. Further financial plans for the operation of the NBIA will be affected by the AAT privatisation. The AAT has now undertaken a privatisation plan in order to increase its financial capability. The privatisation plan is beginning to attract both domestic and foreign investors [Jones, 2002].

The NBIA Co. Ltd is the present project manager of the NBIA project. It was established intentionally to avoid political disruption. The organisation started its operation after a controversial design issue discussed earlier. The Project

Management Consultant group (PMC) is the second consultant for the NBIA project. PMC consists of a well-known Japanese consultant company - Pacific Consultant International, Roke and Associates Co., Ltd, Epsilon Co., Ltd and Asian Engineering Consultants Co.,Ltd. PMC began its work after the establishment of NBIA Co. Ltd. It is responsible for giving advice on technical issues and monitoring the project is progress. It acts as a project risk manager for the new airport project. Within this company, Monte Carlo Simulation is generally used in the company. It detects project problems and provides possible solutions for NBIA Co.Ltd. The relationship between PMC and NBIA Co. is not flexible. This creates an uncooperative management working style, hence the project operation is not productive. Monthly progress reports are provided regularly by the consultant company (PMC) to cover the progress of construction. These regular reports to the committee are also supposed to help in identifying any potential risks associated with the planning recommendations.

The construction progress is monitored by construction supervision consultants (CSC), which come from NBIA Co. Ltd staff. It should be noted here that CSC should actually include representatives from external parties. This party has conducted its activities for six months since the foundation process. This issue will later bring about an argument of the standard of the project construction. The present CSC was set up six months after the project had been conducted. Therefore, there had not been any inspections to the works prior the first six months.

The contractor for the passenger terminal building and concourse is one of the best-known companies in Thailand. ITO joint venture consists of Italian-Thai (Public Corporation), the Takenaka Corporation and the Obayashi Corporation. The ITO group won the bid for constructing the passenger terminal for the NBIA project. The selection of this consortium has been problematic. As the Italian-Thai development plc was announced as bankrupt in 2001. Therefore, it should be illegal for the company to conduct any business activities, however after signing contracts with the NBIA Co., Ltd the company is now working rather effectively.

6.2.4 The NBIA organisation structure

The NBIA Co, Ltd was established in April 1996 in order to manage the construction of the NBIA project. It is a state enterprise under the supervision of the Transport Ministry, with the Airport of Thailand Plc. and Ministry of Finance as its shareholders. NBIA Co. Ltd. began its operation during the inception design process of the terminal, which later caused significant delay in the completion date. The NBIA Co. Ltd is a small organisation consisting of around 155 members. Most members in the organisation are from several previous public bodies including the Communication Authority of Thailand, the Airport Authority of Thailand, The Industrial Estate Authority of Thailand and the Civil Aviation Authority of Thailand [Phujudkarn, 1999]. Only a small portion of employees came from a regular recruitment process. The structure of the organisation is rather simple containing three main departments. The first section is the administration, which is responsible for all contracts and agreements, law and regulations and human resource management. The second level is the economic and finance control which takes care of loan management and future business and revenue plans. Finally, the project and engineering department is responsible for overall project construction activities and maintenance plans for the airport [NBIA, 1996]. (see figure 6.4)

The NBIA organisation acts as a project manager with numerous organisations serving as consultants and contractors, and with different organisations handling design and construction functions. The NBIA organisation is the lead agency in the development of Suvarnabhumi airport. Its main role is to coordinate with governmental agencies and make decisions in accordance with PRM recommendations under the agreement of the NBIA board.

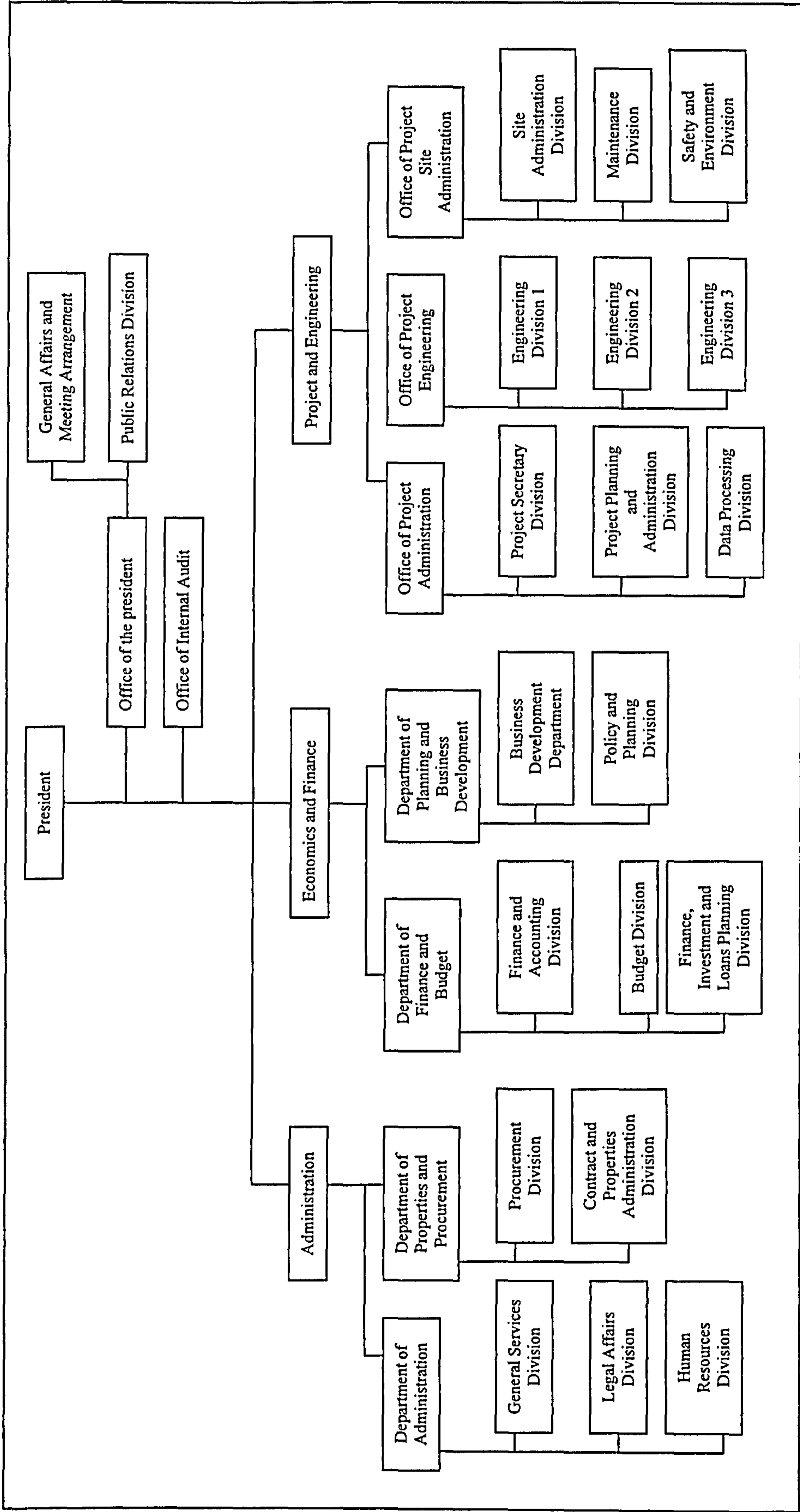


Figure 6.4: NBIA organisational structure

6.3 NBIA project risks and risk management

There are two main risk factors in the NBIA project: politic and NBIA Co.Ltd. There was consensus among interviewees that both political intervention and the managerial practice of NBIA caused tremendous delays for the project. They are politic and the management practice of NBIA Co. Ltd. Surprisingly, regarding the condition of the physical location and modern construction design of the airport project, the construction and technical issues are not the main concern for the NBIA project. *“The technical problems are solvable; nevertheless, the management and policy are the major concerns on the NBIA projects”*. [Engineering Today, 2002].

Political entanglement also creates a significant risk of organisation bureaucratic paralysis. Political infighting has sparked a series of management changes and caused contentious delays in the decision making process. Even so, it is inevitable for mega infrastructure projects to be intimately involved with government. *“For new infrastructure projects in developing countries, 90 percent is construction and 10 percent politics, but here in Bangkok, it is 99 percent politics”* [Bracken, 2004]. The Thai government always stresses the imperative of the completion of the airport project. But paradoxically, it is the main factor prolonging project achievement. Political intervention is clearly a dominant factor obstructing the progress of the project. Firstly, the changes of government directly affect the project planning and operation. Generally, after a new government is formed, the appointment of a new head of the NBIA follows promptly. Consequently, plans, reports and budgets which have already been prepared, on several occasions have to be changed to fulfil the new managing director’s policy. It is claimed that the replacement of the previous MD of the NBIA was caused by a change of government [Shawarnsilp, 2003]. In Thailand, political issues are controversial. Many projects are affected by political influence [Thongdumachart, 1982]. It could be said that the political issue in Thailand is a dominant factor which embraces the whole of public organisations and their management culture and style. Charoenpornpattana and Minoto [1999] state that political intervention in public works is a well-known characteristic of Thai culture. For instance, the route of the Second Stage Expressway was altered due to

political intervention. It was initially planned to reach Bangkok International Airport, but the plan was changed questioningly to terminate the route at Change Wattana road.

The NBIA project is under time pressure; it is considered as an emergency activity for the Thai government in the light of aviation market competitiveness and the declining service of the present international airport that threatens an immense national income. Under these circumstances the project delays need to be minimised at all costs. But, the acceleration of project progress is still very slow due to the bureaucratic nature of NBIA organisation. The management of the NBIA organisation is criticised as *"a good example of Thai managerial practice, which is not applicable for dealing with such a complicated and huge project as the NBIA project"* [Bangkok Post, 1999]. NBIA takes its organisational structure model from the government. Therefore, it has strong traditional characteristics and reflects national culture. With a small group of organisational members, NBIA seems to imply sophisticated dynamic organisational structure. However, a majority of NBIA members are from public and state owned enterprise. Hence, it is inevitable for the organisation to display strong characteristics of Thai managerial practice and hold very strong Thai cultural values. The consultant companies refer to the NBIA Co. Ltd as a typical Thai organisation with a strong bureaucratic management style. Such management style causes difficulties for the consultant companies. Most meetings have been delayed by a lack of preparation by the NBIA senior management. The board of NBIA had attempted to improve the management efficiency of the NBIA with the management consultant proposing that the NBIA should change their management structure in accordance with project environments. A matrix organisation redesign programme was recommended to the NBIA senior management. However, the proposal was faced with strong resistance from senior management within the organisation. It was pointed out that the matrix organisation caused many conflicts within the organisation. Especially, cross responsibilities and cross-departmental functions created conflict between senior management in the organisation.

The awareness of risk management for infrastructure projects in Thailand began when the government had to spend \$150 million dollars to a contractor company for the delay in operations due to contractual mismanagement on the Second Stage Expressway. With this huge mistake the government directed AAT Plc to establish a risk management department for the NBIA project. As a result, the risk management department was established in late 2002. Interestingly, the risk management department is located at the AAT Plc. headquarters which is 30 km away from the construction site. The risk management department director is the previous president of NBIA Co. Ltd. He is actually the only person who monitors risk management activities with the main task of checking the contract clauses in order to protect potential contractual disputes with contractors. The risk management director also gives his expert opinion and monitors the progress of the project.

The actual risk management activities in the NBIA project are conducted by the its consultant company (PMC). PMC is responsible for monitoring project risks and preparing risk management plans to deal with all possible adverse events in the project. The PMC provides a holistic view of the project management and monitors the operation of all contractors. The company employs many risk management tools and techniques. The risk management plans are documented and reported monthly to the NBIA organisation. A monthly report provides the current status of the project, presents problems and potential risks as well as risk management plans. It was mentioned above that the NBIA project is an emergency activity in the light of aviation market competitiveness and declining service of the present international airport. However, NBIA Co.Ltd has failed to make many urgent decisions proposed by PMC.

While PMC monitors the entire progress of the project, CSC performs quality control and quality assurance and deals with the construction site problems. The contractors are the risk taking bodies of the project. NBIA's sole responsibility is to make decisions concerning the issue proposed by both PMC and CSC.

The researcher had an opportunity to hold discussions with an engineer in the costing department of a major contractor company working on the construction of the NBIA terminal complex. The engineer had recently graduated with a Master Degree in Engineering from the University of Asian Institute Technology. The engineer had studied the PRM concept at the university and attempted to practise the concept. There were several issues concerning the difficulty of conducting a PRM process at his workplace. The problem was primarily concerned with project managers.

The costing department's work was basically to input project activities and estimate both time and cost for senior project managers. The software used was PREMABORA. In an attempt to improve a project planning and budgeting model, a form was designed. The simple triangulation distribution using Min Med and Max were sent to senior project managers via internal mail for their opinions. The forms were sent back one week later. The response was that no project managers would participate in the process. The responsive project managers normally put plus or minus 10% on average. The process was perceived as boring and time consuming, as some complained during break times. The engineer said that *"I have tried doing this for a few months until now; however, the forms have always been sent back in the same manner."*

There two primary reasons which the engineer thought affect the inputs gathering process. The engineer commented that *"I think the main problem is to make these people understand the concept of risk management techniques and let to them know how helpful this is. Another reason should be that these managers are always busy doing multiple tasks at the same time."* The insufficient human resources and the increasing availability of work during the economic recovery are the main factors obstructing the use of risk management techniques for the organisation as many engineers have changed their careers after the big economic crisis in 1997.

Regarding to the above discussion, quantitative analysis software is widely available on mega-construction projects. However, people who involve with risk analysis

process do not use it effectively. The risk management process would be useless if the information derived from the process is not used for decision making process. The contractor company demonstrated the inhibit factors concerning the application of risk analysis. These are lack of understanding about the concept and the project managers' time constraint. The next section is to provide a discussion concerning the effect of Thai cultural values on the NBIA project management practice.

6.4 A discussion of the NBIA organisation: Cultural Structure Analysis

The main intention for this study is to understand the managerial characteristics of Thai project organisations. Even though the national culture theory – Hofstede's dimensional values – has indicated some evidence that Thai cultural values affect project management practice. However, there has not been any evidence that these characteristics are inherent in Thai project organisations.

The key elements of analysis focused on social context of the Thai project organisation. Social context involves with both social actions and interaction between different groups of people and among the same group. These values are interact to each other as a complex web and difficult to separate them. It is a Thai social relationship which undermines the effectiveness of the working performance of NBIA. The following section will begin with an investigation of prevailing Thai cultural values in the NBIA organisation. The framework of the following analysis is based on Hofstede's dimensional values. These are: power distance, uncertainty avoidance, collectivism vs individualism, masculinity vs femininity and long-term and short-term orientation. The discussion also demonstrates the Thai cultural values which prevail within the NBIA organisation.

6.4.1 Thai cultural values and the NBIA project: power distance

The NBIA organisation inclines towards a high power distant dimension. It has superior-inferior power relationships constructed from an organisational structure where power and authoritative distance between managers and subordinates is

obvious. The power distance value is demonstrated in several aspects of management including a centralised decision making process and one-way communications [Hofstede, 1983 and Brown, 1995]. Swanbol and Jones [1990] state that the structural and political control of state owned enterprises creates difficulties in the top-level decision making process, as well as in day-to-day operations. This is prevalent in state owned enterprises. The power distance value is also demonstrated in several other ways including the relationship between superior and subordinates, the decision making process and the communication process. Hofstede [1991] argues that Thai culture is one with high power distance where there is considerable dependence on subordinates to bosses and where “subordinates respond by either preferring such dependence or rejecting it entirely.”

In the NBIA, there is evidence that interaction among non-equals does exist i.e. individuals of different hierarchical rank within the societal context. The power distance also refers to the importance of social status in the workplace as well. Holmes and Tangtongtavy [1995] state that social status is important for a Thai to know where his/her place in society is, and how to behave toward their senior. The inequality among organisation members can be observed by the formal communication between subordinates and their superiors. In line with this interpretation, each individual who participates in a specific communication situation will be ranked according to his respective hierarchical position in this particular situation. The communication behaviour was observed during the researcher conducted interviews with NBIA organisational members. The inferior always referred to their superior with their positions rather than by names. For instance, the researcher referred to the MD (previous) of NBIA by name (Dr. Somchet), but respondents referred to him as Managing Director. This situation also occurred when the researcher interviewed all subordinates. Interestingly, the acceptance of social status was not restricted to within the NBIA organisation, but also accepted by other project stakeholders who interact with the organisation as well. Interviewees from PMC as well as contractor also referred to members of NBIA by their positions.

Hierarchy considerations and associated communication patterns are strongly visible in the interaction between senior management and lower level management in the NBIA organisation. The communication between members is formal and normally, ranks and positions are stated all the time even in the general conversation. This finding is similar to Rohitratana [1997] who conducted case studies in Thai manufacturing companies.

However, in the NBIA organisation, the power distance did not just reflect the inequality between superiors and their subordinates. It was reflected with their co-workers as well. *For instance*, the secretaries of policy level management had higher power distance and required respect from secretaries of directors lower than their bosses. Those secretaries were also referred to as the secretary of the chairman etc. In accordance with the underlying hierarchal nature of interaction, respect for the differences in hierarchy among the participants is expected to be reconfirmed verbally and non-verbally in the face of seniors [Jiracheifpattana, 1997]. Hierarchy considerations and associated communication patterns are strongly visible in the interaction between senior management and lower level management in the NBIA organisation. It was obvious that there was a paternalistic relationship between bosses and subordinates. However, with such a small size of company, the senior management seem to be approachable. All project directors were approachable and open.

The NBIA Co.Ltd reflects social norm of Thai organisations which is to treat senior members with absolute respect and obedience. Their views and opinions are often accepted and their judgements are not to be publicly questioned. The gap between leaders and their subordinates is obvious.

Unquestionably, there is a deference to authority figures, which means that challenging authority or challenging through searching questions is uncomfortable.. Thansankit [2001] states that within Thai organisational culture, employees are seen as fearful of expressing non-conformity to bosses' ideas, and therefore reluctant to

make their views known. There is low participation from lower management in the decision making process.

There were chances for subordinates to participate and raise ideas, but it is claimed that final decisions always come from the upper level without acknowledgement of the lower levels. Furthermore, raising opinions can also create conflict with management.

"Sometimes, I have some suggestions about working improvement; however, I wouldn't want to raise my idea during the meeting, as I don't know what are they (superiors) going to respond. Furthermore, the meeting atmosphere is very formal. I felt very uncomfortable being in the meeting. The meetings here are completely different from my previous work place."(NBIA employee2)

Another reason for not raising ideas is

"Discussion with seniors must be careful as some suggestions may conflict with their opinions. It is safer to have the same line as senior management. Stating your opinion can cause a feeling of disrespect to the boss".(NBIA employee1)

"We don't know whether the proposed solutions will be helpful or not, but frequently, it seems that the senior management have their solutions in hand already. If I have different opinions with my boss then I have to make my point which can initiate argument" (NBIA employee3)

Redding [1993] states that with values of 'kreng-jai' and *criticism avoidance* limit the extent of accountability because there is no requirement for a decision to be logical or open to debate. This creates a lack of bottom up communication and a lack of use of information available to managers.

Communication with NBIA is a tedious and long process. It is entirely one-off communication where response from the senior management is slow. Hess [2001]

asserts that it is quite common in Thai organisations for the creation of highly centralised organisational structures to impede information flow and stifle initiative. With the rigid hierarchical structure of NBIA under circumstances which require rapid responses from the NBIA, a quick response is unlikely. Communication problems abound among: clients, PMC, CSC and contractors: in email, meetings, roles and responsibilities. Communication medium conforms to both formal and informal tools. Nevertheless, the formal letter is the most acceptable medium throughout the organisation. During urgent events or situations requiring quick responses, the best way to communicate with the senior management is via formal letter. Recommendations and requests have been asked for through the formal letter with at least three to four weeks of approval. Suggestions on solutions have to be conducted through a proper formal manner. It was pointed out that some solutions are not thought sufficiently valuable to the senior management:

"All decisions are proposed to the senior management in a formal manner, and silent response is common." (NBIA: Director1)

"PMC has recommended several comments to improve encounter problems in several aspects but there has not been any response at all from the NBIA towards these problems" (PMC2)

While the decision making process has suffered from a tedious, long decision making process, the situation is allowed to exist even though the committee has agreed with the requirements. The NBIA members of the committee do not feel comfortable with approving the requirements because being involved in the decision making process may bring them unwanted responsibility. Thansankit and Corbitt [2000] state that Thais are not familiar with making decisions. However, the committee often hung on, with the requirements usually being passed on to a steering committee for approval or to add more requirements. Inevitably, the process was delayed. More explanation of this issue is provided in the following section. The researcher also found that several requests had been repeatedly made for NBIA MD decisions in monthly reports published by PMC (Progressive Monthly Report July, August and September 2002).

The characteristics of leaders play a significant role in NBIA Co. Ltd., regarding 'father figure' roles. During the case study there was a replacement of the Managing Director of the NBIA organisation. The effect was that the characteristics of the new MD seemed to delay the progress of the NBIA project. The impact of this replacement was demonstrated by interviewees from PMC:

"The new MD is a totally typical SENIOR THAI, you know. In order to contact him, you have to wait for the right moment. He won't come to have a meeting with us. We went to see him about three times already, yet he never came out of his room." (PMC1)

A similar opinion was voiced by a NBIA director as well

"The new MD is very difficult to contact. I sent a request for a new computer almost two months ago. There has not been any reply from him". (NBIA Director 1)

This is not so surprising as the new NBIA managing director is a secretary of the Minister of Communication and Transportation. Having been in a Thai public organisation for a long time (35 years), it can be reasonably presumed that the new managing director has a strong character of Thai leadership and management style, which in turn affects the management performance at NBIA Co.Ltd.

Furthermore, there was an interesting case within the NBIA organisation, when a Director of Planning and Business Development attempted to employ quantitative risk analysis techniques. The change initiative in this department demonstrated that leadership plays a vital role in changing management process. The characteristic of high power distance society supported the software adoption programmes significantly. During the second visit to the department, the director decided to employ a Monte Carlo based software to conduct a financial model for an airport business plan. However, the work done by this department has been neglected as usual due to the rigid bureaucratic style of the organisation. The director has

proposed several financial plans to the MD, however, none of them has been responded to as yet.

The employment of the software demonstrated the high power distance values in the NBIA organisation. For the implementation of this software project, the director acted as a project leader and initiator. There are seven people in the department and only one of them can conduct a quantitative software analysis. The rest are not familiar with such mathematical models. One member in particular was assigned to work with the technical staff.

The director did not show any concern about potential problems with using this new software. He was so confident that everybody in the department would be willing to work with this new software:

"I don't see any problems with using this new software, the only problem facing us at the moment is to train other staff to understand how to use it. So, I don't have to rely only on one person. However, we are not in a hurry since nobody is checking the reports"(NBIA Director1)

There was also a welcome acceptance of the department member towards the use of risk management software as well. Even though, there were some problems concerning the application but no questions or arguments has so far never been raised.

*"I don't understand any of these complicated calculations, I am just writing a report and put graphs according to the director instructions."
(NBIA employeel)*

This case also confirms a characteristic high power distance in Thai culture. It also implies that change programmes can be initiated if the senior management have a strong commitment and resistance from subordinates is not a major issue for Thai organisations. However, the senior management must ensure that their subordinates have enough training and educational support. At the end of the research period, the quantitative analysis techniques in this department were still in action.

6.4.2 Thai cultural values in the NBIA project: Uncertainty Avoidance

Uncertainty avoidance refers to the extent to which the members of a culture feel threatened by uncertainty or unknown situations, hence organisation members tend to follow written rules and procedure [Hofstede, 1991]. NBIA employees display comfort with rules and procedures, for instance waiting for responses from senior management is considered to be a natural element of NBIA management:

"The formal process is very normal here. Everything has to be done step by step. It is slow but this is how it has been and how it is now."(NBIA employee1).

The NBIA members were not comfortable with making decisions. Therefore, making a decision about approving further requirement gathering or approving the requirements themselves was passed to upper managerial levels.

Bozeman and Kingsley [1998] assert that public sector managers are more risk averse than managers in the private sector, as the organisation has weak links between promotion and performance, and high level of involvement with elected officials tend to promote a safety first approach:

"Delays are being experienced because NBIA is falling behind with the procurement programme. Delays are being experienced because management decisions are either not being made or are being passed up to the Managing Director who comes in two days a week." (PMCI)

There was one case in particular, which was noted in a memorandum from the NBIA organisation. The researcher found this document at the Airport Authority of Thailand. An approval for hiring two employees was requested to a director of the human resources department. However, the issue was passed to the NBIA MD and

later sent to the NBIA board. It took about four months for the entire process to be completed.

6.4.3 Thai cultural values and the NBIA project: Collectivism vs Individualism

Thailand is characterised as collectivist society, where “people from birth onwards are integrated into strong cohesive in-groups” [Hofstede, 1983, Brown, 1995]. People are integrated into strong, cohesive in groups that continue throughout a lifetime to protect the individual in exchange for unquestioning loyalty. There seems to be a strong group cohesion in the NBIA organisation. As previously mentioned, the majority of NBIA members are from three main public agencies, and each group tends to be strongly in-group cohesive. These groups have been called three clans within the NBIA project [Phujadkarn, 1996]. The strong cohesiveness of particular groups can be observed by their physical locations. While there are only around 130 members of NBIA, there are three main buildings located next to each other with the MD’s office located furthest away from the PMC building. This cohesiveness was also observed in their social activities after working hours during drinking sessions, and lunch-times. Each groups had their own specific tables.

Within NBIA, in-group members have a strong influence on the operation of the project. Thai society constructs its reality as group or social interest rather than individual interests, and trust and relationships with others are the basis of the Thai culture [Thanasankit and Corbitt [2000]. Sorod [1991] noted that relationship-oriented behaviour in Thai society happens more commonly than work-oriented behaviour in Thai society and its organisation. NBIA Co. Ltd members work inter-dependently, however, with separated buildings delaying the both work flow and communication.

Typical centralised administrative style and a bureaucratic structure coupled with strong in-group cohesiveness creates a lack of co-ordination among project stakeholders. Generally, it is obvious that inter-governmental cooperation in Thailand is generally limited [Taguchi, 1998]. This applies even more to cases where

cooperation is established horizontally between government departments of equal status, rather than vertically between higher and lower levels. Furthermore, the party responsible for the plan is normally convinced that their plans and policies are the right ones.

A reluctance to engage in horizontal cooperation and the absence of basic inter-governmental communication among other airport administrations in the NBIA project pose a major threat to the future operation of the new airport. The operation of the new airport relies on several departments and units providing quality service to its customers and also offering security to their passengers; however, there is a lack of collaboration among them. Two main problems were pointed out during the seminar "Future of NBIA" [Seminar, 2002].

The contemporary airport is complex and the facilities required to support it are diverse, both in terms of differing levels of technical complexity and service provision. There are two main fronts of operation; aeronautical and non-aeronautical. Each requires the provision of different facilities [Wells and Young, 2003]. Both parts generate equal revenue for an airport. However, there is a general perception that the environmental problems at airports are primarily caused by aeronautical activities [ibid]. Secondly, as for NBIA's future operation, there seem to be several major problems concerning these activities. The poor co-ordination among airport parties was obvious. One problem concerns the immigration and custom system. The representative of the immigration office raised the issue concerning an information and communication system within the new airport. He stressed that there had been no discussion concerning the physical location, equipment used, or information system for the immigration system. Thai International Airways also complained about its exact location future location. Thai International Airways has to prepare several facilities to support their crews' accommodation, catering systems and others. But these issues have not been discussed with any authority from the NBIA or AAT. The problem was also pointed out by an Assistant Director of Airport Development who came to Thailand to provide suggestions about future operations in the new airport.

He said “*no advice had been given so far as we don’t know who to talk to*” [Airwise, 2002].

Actually, a lack of coordination between governmental agencies seems to be a common practice in Thailand. At one time in Bangkok, competing government agencies came up with several mass transit schemes with overlapping routes, resulting in stop-go policies and foundering private sectors deals [Bangkok Post, 1997].

The strong collectivist values also created “blamatisation” culture within the NBIA project [Smallman, 2002]. Regarding the soft ground condition of the project location, a delivery of loaded trucks for the construction generated rough patches and holes in the road connected to the construction site. Consequently, material transferred was delayed. The problem was claimed to be the responsibility of contractors, nevertheless it was the NBIA’s job to foresee the problem and provide support because the problem did not occur on the construction site. The road condition was getting worse every time the researcher visited, added to by the rainy season, but it did not seem that solutions would be provided. The problem was not solved until five months later.

6.4.4 Thai cultural values and the NBIA project: Femininity vs Masculinity

For feminine societies, taking care of others and quality of life are very important values. Hofstede [1983] states that a characteristic of feminine society is that the personal relationship is always more important than the organisational objective. Under a social construction with strong relationships, work relationships are more reflective of personal than organisational realities so there are no professional relationships [Redding, 1993]. In the NBIA organisation also, personal relationships are more important than the project objectives. The personal relationships do not only affect life at personal level within the NBIA Co. Ltd but also impinge on the relationships between NBIA Co Ltd and other organisations. The working effectiveness is dependent upon personal relationships with senior management to

advance the cause of work. While the group orientation affects the working performance within the organisation, it was obvious that positive relationship among project stakeholders can increase rapid communication and support from other organisations. The relationship between PMC and the NBIA organisation can be rather unfavourable.

"Relationship is very important here, if you want to get the work done effectively" (PMC1)

"The former president was alright, we got along quite well. However, with this new president we have to quickly establish a good relationship with him if we want to reach the project deadlines. It has been two months already after his replacement, but we have never had any meeting with him." (PMC2)

Relationships are very important within the NBIA organisation. The management performance is dependent upon a good relationship between one party and another. The relationship among members is discerned as group oriented, and the members tend to support the ones that have a close relationship with them first. As previously mentioned organisation members of the NBIA are from different governmental agencies, and these groups create their own small cohesive social communities. As Thai organisations tend to protect and support their group interests, the interactions with other groups have to be second priority. Consequently, in some cases urgent matters were kept waiting until the work within their group was cleared. It was pointed out that making good relationships among different groups would definitely increase management performance. However, this problem can be solved by introducing a new member to contact others. Even with the strong cohesiveness of NBIA members, they tend to treat others respectfully who do not yet really belong to other groups. One NBIA employee stated that:

"I was always sent out to talk with the construction department in the next building. They said that I am a new guy and if I talk to the people in that department nicely, they will do the job for me. It's so strange, but it

works. Because, normally we have to wait two-three days for their reply."(NBIA Employee3)

The use of coercion from top management can also increase cooperation among departments. Departments sometimes ignored a request from other departments if they had not been forced to respond. :

"With the previous MD, the work was running more smoothly. He always gives direct orders to specific departments." (NBIA Director2)

The problem with a relationship oriented system is that it can create nepotism. In the NBIA project there are several circumstances which confirm such favouritism. A member of the NBIA board hired his relatives to carry out interior design at a very expensive cost. A director employed a poor quality security company to monitor the NBIA construction site [Phujadkarn, 1996]. However, these issues occurred prior to the commencement of the project construction. A significant event which caused a major disruption to the project's progress involved the selection of a contractor company. Several parties criticised to the inappropriate choice of the contractor company as it was in a bankrupt state and could not conduct any business activities. Loahasomboon [1992] states that unfair contractor selection based on favouritism is rather common in Thailand. Ruktam [1981] also indicates a case study of nepotism in a Thai university, criticising that 'the relationship between an author or seminar presenter with the chancellor is a factor in the scrutiny to which the work is subjected.

Most of the employees in the NBIA organisation are not enthusiastic. During visits at NBIA Co. Ltd, the researcher observed that some organisational members were not working effectively. Some of them were sleeping, playing games and reading magazines. These behaviours were observed at the Office of Project Administration, Department of Properties and Procurement, and Office of Project Engineering. There are two main factors which affect the working motivation of the NBIA members. The first issue concerns the uncertain future status of the NBIA. NBIA members have a very low degree of commitment to the prosperity of the project

success. The completion of the airport is not the first priority of NBIA members especially subordinates. Once the Suvarnabhumi airport is completed, The AAT Plc will be responsible for the operation of the NBIA making NBIA Co Ltd a subsidiary [Privatisation plan, 2002]. After the completion of the new airport, the AAT and BIA will take responsibility for the operation of the Suvarnabhumi airport. This is a main concern of most organisation members as they are uncertain about their future careers. Furthermore, an incentive or reward system does not stimulate the NBIA employees. The completion of the project does not effect the income of the employees therefore, these employees are not as diligent as they might be and do not really concern themselves with the success of the airport project. This problem limits initiatives for change and improvement within the organisation.

However, this low motivation can be tackled by the senior management within each department. The director of each department plays a significant role in increasing the motivation level of their immediate subordinates as the employees work in response to their bosses. As one director pointed out:

"It is our job to stimulate our workers as you can see that some workers are not really working. They don't feel an obligation coming here to perform the best job. They just come here work to and go home. However, if we want them to work, we can push them to do anything. We have to utilise our resources." (NBIA director1)

6.4.5 Thai cultural values and the NBIA project: short-term orientation

This dimension is a profound influence for most Asian countries [Hofstede, 1993]. The NBIA project inclines toward short-term orientation and it has failed to prepare for future operations. NBIA Co will become a business unit of the AAT after construction of the airport is completed in 2005. A ministerial regulation passed in 1992 clearly stated AAT would be responsible for running the new airport. Making NBIA a subsidiary was in line with the plan for the state agency's privatisation in August [Bangkok Post, 2002]. The present government announced this plan informally. Nevertheless, most concerned parties are aware of the sudden changing

of such decisions as many plans have been reconsidered under each succeeding government. Several stakeholders opined during interviews that several plans and policies relating to the airport project should be stated properly and formally as these decisions affect the project operational plan and management:

"We already provided scenario plans for future airports operations: single airport, multiple airports to the government almost three years ago, but they have not made their decisions yet"(PMC 2)

"Unclear directions or plans of government have created several problems to the project. We need clear and solid policies from the government so that we can set our plans responsively." (AAT)

"The operational strategies have not been established yet since we don't actually know who will be in charge of this airport once it's completed." (NBIA Director 2)

"I think one of the main the problems comes straight from the government. There are several crucial issues that they haven't decided for instance who will really be responsible for this airport and what are they going to do with the present airport after the completion of this one." (PMC 1)

NBIA members embrace short-term orientation together with concern about the past. This example was pointed out from a contractual department:

"There was a big mistake concerning contractual arrangements. The officer failed to read the new contract terms as he thought that it would be the same as he did it before, however, it turned out to be different. We spent about one month sorting this problem. Luckily, the contractor was a foreign company and we told them that there was a misunderstanding about some terms and clauses". (NBIA employee 1)

As most of the parties always assume that they will work in the same way as they have done before. They neglect to read the contracts thoroughly which in turn affects the project performance.

This dimension also refers to what members within society think of future consequences in the future. The *Mai-Pen-Rai* (never mind) value affects significantly the completion schedule of the airport.

"We will not lose face, if the opening is postponed because we already have Dong Muang Airport", Mr. Srisook the NBIA chairman said.
[Bangkok Post, 2004]

"Thailand had already shown that big projects could be finished at the last minute", Mr. Suriya, Transport minister said.[Bangkok Post, 2004]

With the senior management having the Mai-pen-rai attitude, there is a possibility that the completion of the project will be postponed. This attitude was claimed also to affect completion of other projects. For instance, Niratpattanasai [2004a] points out that the Thai value "Mai Pen Rai", affects poor planning. He raised the example of the BTS Sky Train project. Thai people have a Mai Pen Rai attitude which can be translated as "...never mind, it's okay, don't worry about it."

6.5 Thai culture and NBIA project

The case study of the NBIA Co.Ltd demonstrates the implications of Thai cultural values for the project management of an infrastructure project. There are several Thai attributes which can deter risk management practice. High power distance creates a rigid hierarchical organisation structure with one off communication, autonomous decision making and stubborn patterns of social relationship. It is inevitable that the prevailing values of Thai culture must be considered during the PRM implementation process. It may seem that the characteristics of NBIA do not support the adoption of PRM, not to mention a risk management culture.

Nevertheless, there is one particularly important issue demonstrated by the case study. Leadership is crucial for a change management programme. Having high power distance, the subordinates can be directed towards their superior's objectives. In the contractor companies, engineers normally follow the senior management's

previous work. This also inhibits the use of new tools and techniques of PRM. The way Thai society constructs differences in organisational levels and seniority's responsible also for the use of PRM tools and techniques. This culture of respect and conflict avoidance discourages subordinates from independent thinking and discourages junior system analysts from trying to employ new tools and techniques.

While participatory approaches are often helpful to achieve outcomes of superior quality, especially in the case of the strategic planning process, introducing participate mechanisms needs to be well-time and should not be seen as an end in itself. In the NBIA organisation, the risk of a split up of the group was particularly a threat in the generally conflict-rich early phase of group formation. Moreover, while the subordinates choose to obey their superior's orders in order to avoid any difficulty, they act according to orders without necessarily understanding the reasons for their actions.

6.6 Conclusion

The case study of the NBIA project demonstrates the implication of Thai cultural values for the project management of a mega-infrastructure project. There are several Thai attributes which can deter risk management practice. High power distance creates a rigid hierarchical organisation structure with one off communication, centralised decision making and stubborn patterns of social relationship. It is inevitable that the prevailing values of Thai culture must be considered during the PRM implementation process. It may seem that the characteristics of NBIA do not support the adoption of PRM, not to mention a risk management culture.

Nevertheless, there is one particularly important issue demonstrated by the case study. The literature indicates that leadership is crucial for the success of PRM implementation programme. Having High power distance, the subordinates can be directed towards their superior's objectives. In the Department of Planning and Business Development, the member always carried out the task given from the director without questioning.

While participatory approaches are often helpful to achieve outcomes of superior quality, especially in the case of the planning process, introducing participate mechanisms needs to be well-time and should not be seen as en end in itself. In the NBIA Co.Ltd, the risk of a split up of the group was particularly a threat in the generally conflict-rich early phase of group formation. Moreover, while the subordinates choose to obey their superior's orders in order to avoid any difficulty, they act according to orders without necessarily understanding the reasons for their actions.

In conclusion, this chapter has provided evidence that Thai cultural values affect the management characteristics of the project organisation similar to the literature review has indicated. These values seem also to affect the implementation of PRM process. However, in order to gain a better understanding about management practice and risk management practice in Thailand. The views of project practitioners should be added as well. The next chapter will provide a discussion of findings from the interviews with Thai project practitioners.

Chapter 7 Interview Survey: Finding and Analysis

7.1 Introduction

This chapter describes the findings of the interviews carried out among eleven Thai project practitioners and attempts to highlight key issues from the interviewees. The findings consist of four main parts. The first part is concerned with the perception of Thai project managers towards risks. The second part provides a discussion of the risk management practice of Thai project managers. The third part analysis, will offer the opinions of Thai project practitioners on the PRM concept. This includes both the positive and negative thoughts of project practitioners towards the PRM process. While positive ideas about the PRM concept are a small proportion, several thoughts support negative views of the PRM process. The final part entails recommendations for PRM implementation in Thailand.

This section presents the main findings from the interview survey of 11 project practitioners, conducted during March – July 2003. The face to face interviews were conducted in order to follow up in greater depth on the main issues with practitioners. The interviewees include consultant, contractors, and academics. The survey sample was selected from the project practitioners who worked and lived in Bangkok. This is due to the fact that most huge infrastructure projects at the present time are conducted in the Bangkok area. On average the interviews with project practitioners lasted for 45 minutes but there was considerable variability in duration, with some being particularly short and hurried due to time restrictions dictated by the circumstances of respondents and others lasting one hour or more. Each interview was taped and transcribed afterwards. The interviews were analysed using cognitive mapping creating groups of ideas.

The following part will provide a discussion of interview findings presented with content analysed. The main purpose of the analysis was to organise the data in such a way that overall patterns would become clear.

7.2 Respondents profiles

The researcher conducted twelve interviews. All interviewees were aged around 45 – 56 years old and had experience in infrastructure projects for more than 15 years. These interviewees consisted of two academics, seven contractors and three consultants. Among these, both academics and one contractor hold doctoral degree qualifications. The rest of the respondents have master degrees, with only one holding a bachelor degree.

Following a summary profile of the main characteristics of interviews, the following reports firstly on the attitudes towards risk and uncertainty, project management behaviour with respect to managing project risks, and secondly, on the perception towards risk management behaviour. In the first case, issues investigated include the nature and extent of their awareness of project risks; the following section concerns the experiences of respondents with respect to managing risks in a project context.

7.3 The current level of understanding of project risks

The current level of risk awareness in Thailand is low. However, it is important to understand the “risk” in construction projects, as the understanding of risk leads to risk handling practices. This section will provide a discussion of risk definition in a Thai project construction context as well as attitude towards risks, the awareness of project uncertainty and the source of risks or uncertainty.

7.3.1 An understanding of risk definition

Risk is not a common term used among Thai project practitioners. It seems to be a strange word when put to the Thai construction industry. Most of the respondents hesitated to give a direct answer to their perception towards risk. In general, for Thai project practitioners risk seems to refer to future uncertainty, which cannot be controlled and they feel that they have to accept the consequences of their choices. Four of the respondents, gave an instant definition of risk. They referred to risk as the

notion of “gambling”, “investment”. One contractor referred to risk as *“a part of life that you have to deal with all the time and you may never know what would happen until the consequences occur”*.

In a project management context, risk is not a familiar term for Thai project practitioners. They prefer to call it a “PROBLEM” or “ISSUE”, which needs to be dealt with. They also accept that “problems” or “issues” as they refer to them are part of projects which cannot be avoided:

“Engineers know during their work that they will face some unpredictable circumstances. Risk in projects is always there. Risks in project context refer to normal problems which, project practitioners have to face.” (Contractor1)

“It is inevitable to manage any project without managing some sort of problems. One of the main parts of project management is to deal with problems.” (Contractor2)

“We are concerned about potential problems; it is definitely well recognised in engineering aspects. Engineers know that during their work they will have to face some unpredictable circumstances. Risks in projects are always there.”(Contractor4)

The strong connection of problem with project indicates the limitation of risk definition only to a negative effect. Most project managers refer to risks as negative events with a few discerning risk as loss and opportunity. Both contractors and consultants perceived risk as events which could adversely affect project objectives.

However, both parties also pointed out their concern with risk in relation to their own interests. While several contractors refer to risks as associated with cost, consultants associate risk with reputation damage. Interestingly, one project manager in particular stated that managing projects is *“taking risks to gain profits”*. By managing project risks effectively the contractor can gain high benefits. *“Of course, we know that managing projects is a risky business but if we don’t take risks we can’t gain any profit, right.”* (Contractor 5). Both academics also indicated that for project practitioners the term

risk normally referred to potential negative events rather the chance of potential positive events. This also leads to a reactive risk management approach which is widely employed by Thai project practitioners (see section 7.5.2).

The definition of risk obtained from respondents also portrayed their attitude towards risk. Consultants tend to be risk averse, while contractors have risk preference. These findings coincide with [Hillson, 1999, Uher and Toakley, 1999 and Akintoye and MacLoed 1997].

7.3.2 Thai project practitioners: project risk sources

The respondents defined risk sources differently. Young project practitioners both, contractors and consultants, classify risks regarding their origins. They enumerated a variety of risk sources. Most of them identified common sets of risks to project objectives: time, cost and specification etc, while some referred to more details including weather, the economy, politics, clients and technical issues and separated internal and external risks. They also concluded that internal risk is more controllable while external risks are out of their ability to manage. However, more experienced contractors included “*risk known*” and “*risk unknown*”, where unpredictable risks are the most difficult risk factors which concern Thai project managers.

One experienced project consultant pointed out there all different risks during throughout project life cycle. He provided several problems including the problem with unqualified engineers, lack of concentration of engineers, time constraints, inexperience and lack of knowledge of engineers and designers, and lack of co-ordination of project stakeholders. The implication of risk inter-dependence was also pointed out:

“Sometimes we have to employ the quickest solution which of course occasionally creates more risks in other areas.”(Consultant1)

All respondents agreed that there were significant risks with infrastructure projects in Thailand, Bangkok to be specific. For this study these involved external risks with bureaucratic systems of the government and lack of coordination among governmental agencies. One contractor gave an example as follows:

"During, working on the Bangkok Transport System owned by Bangkok Transportation Community Service, we have to deal with agencies responsible for different parts of the project. However, there is no responsible unit to take care of the project. We have to contact several parties: police, Bangkok Council, Water Facilities, Telecommunication Authority of Thailand etc...by ourselves during the pilling process for the sky train infrastructure. These parties were not notified to the upcoming projects. The contact process was long and done repeatedly, and it caused significant delay to the project."(Contractor 3)

7.3.3 The perception of project risks and controllability

There is generally an air of complacency towards risk affecting projects. Project practitioners understand and are familiar with change and uncertainty in the project environment. The attitudes towards managing and controlling are varied. With an awareness of uncertainty, most project practitioners tend to be cautious but rather over-confident with handling project uncertainty:

"We are in this business because we want to get some profits from managing projects. Managing projects is like other business. If you do it well, control and manage it effectively. You get profit. If you do it badly then you've lost your business."(Contractor 1)

Interestingly, there is one highly experienced contractor in particular who showed very high confidence about the ability of project plans and teams in controlling project activities. He stated that:

"Prior to, the project beginning, we have set everything up already. All the system is already in place. If we have a good system, then it is not easy that things will go wrong. We know exactly what we need to do about the project."(Contractor4)

It is actually rather prevalent to project practitioners to have high confidence towards managing and controlling projects. Having experience from managing numbers of projects encourage project practitioners to high a macho attitude [Hayes et al, 1986] towards controlling and managing project risks [Slovic,1997]. The high confidence results in project practitioners overlook explicit discussion about potential risks, hence managing project risks on an ad hoc basis.

7.4 Risk management practice and Thai culture

This section is to explore the current project management practice with respect to risk management. Within this section, the project manager's risk management practice, the principles used by Thai project practitioners for managing projects, their risk management practice, the decision making style and risk management techniques used will all be discussed

7.4.1 Project manager as project risk manager

Almost all respondents agreed that risk management is solely the responsibility of project managers. Project managers must be responsible for planning, managing, and ensuring a completion of the project. For Thai project practitioners, risk management is discerned as a common part of project management, and it is only a task for highly experienced project practitioners. This suggests that risk control is carried out as a part of the normal regular activities of project managers. Project managers must take the ultimate responsibility to manage project risks. Project managers must prepare themselves to deal with all circumstances that may occur.

One contractor stated a very strong argument as follows.

"It is our job and responsibility to provide planning and manage a project. If something bad happens and project failed. We will have to take responsible for the failures not the team. Furthermore, the inexperienced engineers are quite useless. Some of them don't even know how to read blueprints. Unless, they have worked for at least five years, otherwise their opinions are useless" (Contractor 4)

The project managers and probably a small group of engineers are responsible for providing project planning and solutions for project risks. Thai project managers do not normally take into consideration opinions or ideas from inexperienced engineers. The subordinates or inexperienced engineers are referred to as unqualified and lacking the knowledge to provide any supportive ideas to project managers.

Surprisingly, among these respondents, one consultant mentioned that risk management should be everyone's responsibility, but the role of subordinates is in reality limited to monitoring and informing the project manager only.

"We cannot really monitor everything. We need to use other members to help out monitoring the problems or potential problems for us. We need these members to provide a complete picture of the projects." (Consultant 4)

In Thailand, the reputation of project managers is acknowledged by their ability to deal with and solve project problems and individual project managers have their unique characteristics of project planning and managing and control (see section 7.6.3). Thai project practitioner's reputation it is the ability to deal with project risks that pressure the project managers. It is also pointed out in the literature that a key of project success is dependent upon project managers' experience and leadership [Cook – Davise and Arzymanow, 2003 and David, 1989] and individual project practitioner has different terminology and techniques for dealing with risks [Tar and Carr, 2000].

7.4.2 Risk Management Approach

The interviewees provided a clear cut distinction between the different concepts of proactive and reactive. Both proactive and reactive risk management strategies were pointed to by all project managers. There is a consensus on the proactive approach for risk management in infrastructure projects. The survey of Low and Chuvassiriporn [1997] also indicates that Thai construction project managers prefer to apply a proactive rather than reactive approach. Most respondents state that *“Prevention is better than cure”* is the preferred plan:

“We always take into consideration potential problems and constraints at the planning stage.” (Consultant 5)

“You cannot conduct a project management without concerning problems or issues /risk as you called. Especially, during the planning, we take into account some constraints as well as during the project life cycle.”(Consultant 4)

However, it seems that the proactive approach is limited to the planning stage with a reactive management approach carried out along the project life cycle. To tackle emerging project risks, project practitioners tend to employ a close monitoring system to keep track of negative signals from the construction, especially, for novel and modern projects. For instance a contractor gave his previous experience that:

“When I was younger and lacked experience, I was responsible for a huge high complex modern project. I had to stay at the construction site for the entire project and check construction every four hours”.
(Contractor 4)

Thai project practitioners believe that with a close monitoring process, an instantaneous response to project problems can be managed. Most Thai project managers, when faced with new a project, spend most of the time on the project site. The perfect way of managing problems on the project is to be close to the project all of the time. In some cases, where projects are truly unique and when project

managers do not have prior knowledge of the project, close monitoring is a duty which the project managers act upon. Normally, the project managers will live on the project and conduct evaluations of project organisation day and night.

7.4.3 Thai project practitioners' risk planning practice

For Thai project practitioners the conducting of project planning is done based on their experience gained from similar project undertaken in the past to assess subjective probability and decide on the likelihood of risk exposure and the outcomes. For Thai project practitioners risk premiums are in the form of contingencies or added margins to an estimate to cover unforeseen eventualities. The risk planning is done implicitly.

"We take into account all potential risks and "knock-out" a most likely cost, then we put some ten and fifteen percent for contingency. With our experience, we already know what is it going to be like for each activities. It is quite a simple process if you have experience enough. Young and inexperienced engineers cannot do it, as they cannot take into consideration all possible events." (Contractor 3)

With precautions to control risks, it appears that there is a higher level of risk awareness, however risk identification and risk assessment by Thai practitioners is done informally and implicitly. The project managers claimed that providing project planning is like conducting a simulation model within their head. They conduct project planning based on prior experience and managing the project using "*gut feeling*". While this is a common practice for general project practitioners regardless national difference [Baloi and Price, 2003], Chu and MacMurray, [1993] and Haley and Tan [1996] state that project managers in Thailand have a very high hands on experience, conceptual skills not analytical skills.

7.4.4 Risk management tools and techniques

Thai contractors are still familiar with “simple risk adjustment methods” – a deterministic approach, which is based on intuitive and subjective estimates. Project management tools and techniques which are widely used in Thailand during the feasibility phase include forecasting models and sensitivity analysis, PERT and CPM, IRR and NPV.

However, there are small numbers of project practitioners, especially consultants who are familiar with probability analysis including sensitivity analysis, basic probability analysis, decision tree analysis and Monte Carlo simulations. A few contractors claim that in their organisations there have been attempts to use more advance planning techniques which are covered by PRM process.

Consultants indicate that PRIMAVERA is the most popular software employed in medium and mega projects. Monte Carlo simulation is also used in medium and mega projects. Even though, such techniques are employed in the mega projects but their benefits seem to be limited to demonstrating the current progress of the project. These findings are similar to Akintoye and MacLeod, [1997], Tummala et al., [1997]. A research conducted by A Thai Construction Industry Foundation [Lortheeraphong, 2002] also indicates the similar result.

7.4.5 Information gathering

For Thai project practitioners, data or information used for planning is derived from their reliable sources, which is normally from their expert friends. This information can be concerned with potential markets, geographical problems, economic stability etc. The information source of Thai project practitioners is therefore different than those used in developed countries. Thai project managers are more prone to gather information from friends rather than based on any statistical data. Expert judgement is the most acceptable information for Thai project practitioners. It was claimed that statistical data in Thailand is not reliable, out of date and very difficult to obtain.

Therefore, the project practitioners tend to trust information from their friends and known experts:

“As you can see now, we are working on a bridge project where geographical location is unstable regarding the tide. We get the data concerning this problem from our friends, who knows some people in the National Statistical Institute. Asking him directly, is better. (Contractors 3)

One academic also stressed that:

“Information in our country is not reliable. This is due to several reasons. They manipulate the data to look good and attractive; sometimes the information is old and not observed from empirical findings. The best source of information is to be obtained direct from experts in particular fields. Because these people deal with problems everyday. (Academic 1)

Chu and McMurry [1993] concur in their findings that Asian managers do not normally rely on observed or published data. Their source of information is among friends and accessible experts. They prefer to get direct information from these sources as they believe that it is more reliable.

7.4.6 Centralised decision making style

The concept of empowerment does not resonate with Thai project practitioners. For Thai organisations, where the duty of the boss is to control, to empower employees would lead to chaos and business collapse. The decision making style tends toward centralisation. There is a big gap regarding the knowledge of the engineers and that of labour. Furthermore, subordinates do not like taking responsibility for their decisions:

“Well, I don’t think. My subordinates will not dare make any decisions without my consent. We normally deal with big projects. Each decision made is crucial and requires high responsibility. Especially, huge investment projects where each decision means money”. (Contractor 2)

Another interesting reason for the centralised decision making style is pointed out below:

"Even though, we are a public company, but we are doing a family business. Everything must follow the family interest"(Contractor3)

The decision making style of Thai project practitioners is also reflected in the characteristics of their business style, and the experience and knowledge gap between senior engineers, inexperienced engineers and labourers. Leading the contractor companies are mostly Chinese family corporations, and being a family business, these companies respect seniority and experience.

7.4.7 Tacit knowledge

There is no evidence of *"post mortem"* studies in Thailand. Project case studies have never been recorded in Thai project practitioners' organisations. Expert knowledge is invisibly tied up with project practitioners. Therefore, the knowledge of Thai project practitioners is "know-how" and the experience of individuals that is vital to the organisations and cannot be transferred. The primary reason is the time constraint. Most contractor companies have to handle many projects at the same time and, therefore they do not have enough time to spend on studying the previous project:

"The only information concerning previous projects was about cost and time estimates done by previous project practitioners."('Contractor2)

"The study of the project after its completion would take a lot of time. We don't normally have time. We normally work on several projects at the same time." (Contractor 4)

One academic claimed that it is a characteristic of Thai culture to not see the benefits of previous knowledge. Thai academics are also not interested in studying finished projects. They tend to study new, modern and especially controversial projects. Tacit knowledge cannot be transferred hence, lessons can not be learned from other people's experience. Therefore, it discourages risk management practice [McBriar et al., 2003].

7.4.8 Knowledge Transfer

In Thai construction industry, the use of documentation or explicit knowledge is rare. The project practitioners' excuse for not recording their experience in an explicit form is time constraint. The experience is generally transferred by small team or personal training. However, the group members are generally selected based on senior managers' preference. The selection process is tied up with trust and favouritism. Not all junior engineers and trainees are treated in the same way:

"We have to be sure that the trainees will stay with us. It is not worth teaching them everything and then they quit us and start working with our competitors". (Contractor 1)

"The selection of new trainees is normally based on their potential and their ability to communicate. You know, some of them are very hard to explain. I am not talkative as well. So I have to find someone who can get on with my personality." (Contractor 2)

"When I was a junior, I had to work with this company for almost eight years when my senior called me up to work with him. But some of my friends were trained two years before me. They said that I was too hard on people." (Contractor 4)

7.5 The perception of the PRM process

The primary objective of this section is to explore factors affecting PRM adoption in Thailand. This section provides a discussion of the perception of Thai project

practitioners on risk management. The section begins with the familiarity of Thai project practitioners with the PRM process. Negative and positive perceptions of PRM are portrayed. During the interviews, the researcher began the session by asking directly whether Thai project practitioners acknowledge the PRM process. Then the researcher spent five to fifteen minutes explaining the mechanism of the PRM process.

7.5.1 The perception of PRM

PRM is a new concept to project practitioners in Thailand. Low and Chuvassirinporn [1997] also state that risk management and quality control are enumerated as the least two important managerial aspects among ten managerial issues. Most project practitioners refer to risk management as financial risk management. One of the respondents links risk management directly to Quality control. Some respondents state that they have experienced risk management during the feasibility study phase:

“There is a requirement for a risk management document from the government. However, the report was done roughly and work was still accepted. There was no comment on the report from the government. The limit of time only ten days before tendering obstructed the real understanding of the risk management”. (Contractor3)

Risk management techniques are seen as advanced and unfamiliar calculations by project practitioners. Risk management is discerned as the work of a group of experts:

“These sort of quantitative techniques and simulation models are normally done by either universities or foreign consultant companies. We don't normally use them”.(Contractor 2)

The reasons provided by the project managers were particularly reflective of the services they provide to their clients: risk analysis of construction projects is seldom formally requested by clients – clients expect project management practice to be risk-

free, risk analysis in commercial terms is not always viable on projects, PRM is about people not scientific, lack of expertise etc. [Akintoye and MacLeod, 1997].

7.5.2 Potential benefits of PRM

There were only a few benefits pointed out in the interviews. However, The PRM process is considered to be a useful process providing significant benefits to the project stakeholders and project owners in terms of transparency. There were different ideas amongst respondents concerning the benefits of the PRM process:

Improve project planning: Contractors state that PRM should provide substantial support and improve project strategic planning. PRM is discerned by contractors as a means of providing project information from project members at different levels.

"It sounds like a very good concept. It will help us a lot in planning. It would provide abundant information. Hence better planning and control can be conducted." (Contractor2)

"I think the risk management process can increase information around the project activities." (Contractor 3)

Improve monitoring and management performance: Consultants have two views concerning benefits of PRM practice. The first is concerned with an improvement of contractors' management performance. The second involves with project clients' ability to transparently monitor their project through risk management documents.

"Personally, I think that the concept of PRM process will be very beneficial to constructors as they can provide proper plans for their conducting the project." (Consultant 3)

"If contractors can properly conduct PRM process, it would be great for project clients, as they can monitor every activities and decisions made through risk document" (Consultant 4)

Argument for parties to practice PRM process: Interestingly, while consultants state that PRM must be done by contractors to improve their managerial practice, the contractors state that it is the responsibility of consultants to conduct a risk management process in order to control the projects. While both parties discern the benefits of the PRM process, none of the respondents demonstrated any intention of employing the concept at least in the near future. As most project practitioners are not familiar with the PRM concept, it is sensible to say that the benefits of PRM are obscure to the project practitioners understanding its practice.

In conclusion, Thai project practitioners believe that the PRM process will be a very helpful concept to support their present project management practice. However, it seems to be too soon for the concept to be implemented in the Thai construction industry. The low understanding and lack of PRM practice also limits the short list of PRM processes used by Thai project practitioners [Tummala et al., 1997]

7.5.3 Negative thoughts

While there were several positive perceptions towards the PRM process, none of the contractors stated that they would implement the PRM concept within their organisation but not in the near future. They seem satisfied with their current systems and a common reason is their confidence in their existing management practice. There are several reasons for project practitioners not to implement PRM, including lack of familiarity, time constraints, knowledge, doubts about the techniques, the necessity of PRM process in small project sizes, most risks that are contractual and construction related are fairly subjective [Akintoye and MacLeod, 1997, Simister, 1994, Tummla et al., 1997, Uher and Toakley, 1999]. Regarding the application of PRM process, Thai project practitioners enumerated similar issues including time constraint, insufficient resources, expenditures, training and educational programmes. These were the inherent difficulties with PRM design and implementation. There were many negative opinions of the application of PRM from Thai project practitioners:

Time consuming: Most project management executives are preoccupied with market pressure. They do not have time to pay attention to an explicit risk management discussion. We do not have enough resources in both financial and human resources to conduct risk management. *“Risk management report is complicated; We don't have enough time and resource.”* The risk management process can burden the project managers' work. Akintoye and MacLeod [1997] say that that construction industry is constrained by time because construction production is mostly employed just-in-time for the client's production requirement. Several project practitioners stressed the effect of the recovery of the Thai economy to the construction industry:

“Time now is more crucial than ever, we have to take this opportunity to get as many works as possible. We have suffered for a long time. Many contractors have been out of work for almost five years. I don't think they would have enough time to do this sort of analysis.”(Contractor3)

A relevant issue to the economy is human resources. Our companies do not have sufficient engineers to conduct risk management.

“The economic crisis drove many engineers to seek new jobs. A lot of engineers we have now are inexperienced. They have not done much since they left their universities. Risk management requires both experience and quantitative skills. These people lack both.”(Contractor 4)

Expenditures: It also appears that there was reluctance in terms of financial expenditure to invest in a risk management process. The investment aspect concerns hiring foreign experts, and training the staffs:

“The PRM process will also require specialists to prepare a document. These people are normally foreigners or academics. These people are expensive to deal with. The compensation of risk management implementation is an increasing cost of the contractors.” (Contractor5)

"Training must be done under time constraint from an expert who is rather expensive for the cost. Furthermore, it needs a lot of practice to gain expertise on the subject".(Contractor3)

While foreigners are very expensive, the academics are very difficult to deal with. Furthermore, training must be done under time constraint from experts.

Language: One contractor raised an interesting issue concerning difficulty with language. Risk management principle is perceived as a Western concept which requires document preparation in English in order to avoid confusing mistranslation. Furthermore, it is essential for contractors to deal with foreigners under some circumstance. This is a primary difficulty for many contractors.

"Western managements are always confusing when they are interpreted in Thai. It would be better for management manual to be provided in English. Risk management should be very confusing for engineers as the word 'risk' is very confusing. People will understand differently."
(Contractor 5)

Potential conflict: It is believed that the participation style used for data gathering and discussion to finding consensus would create potential conflict among senior project managers.

"Conducting PRM process requires clarifications of decisions and discussion of many issues.. This will lead to long arguments as different project managers have different style and ways and method to solve their problems. It is not wise to criticise other project managers' management strategies. Because different managers have different strategies to manage their problems or risks" (Contractor2)

Occupation threatening: The risk management preparation is seen as dangerous for Thai contractors. It was pointed out that the project practitioners are not willing to conduct PRM process. They stated discussions of potential risks and managing risks

can threaten the project practitioner's competency. The tactical strategies in dealing with projects in Thailand are considered as powerful weapons for contractors to win bids. It was pointed out that the senior project practitioners are not willing to identify risks and provide risk management strategies as this threatens professional knowledge:

"The preparation of risk management documents will expose the risk management strategies of particular contractors. The divulgence of risk management will enhance their competitors to learn their risk management strategies; hence... they will lose their selling point. It is the risk management strategies that we use to gain advantages from other contractors. Individual contractors have their own style of managing different risks depending on their knowledge experience and connection with the project stakeholders."(Contractor 4)

Project practitioners are unwilling to give away knowledge to young and inexperienced project practitioners as long as they feel that they cannot trust them.

7.6 PRM implementation for Thai project organisations

The final section investigates respondents' opinion on how to initiate the PRM process in Thailand. It is agreed that the success of PRM implementation in Thailand will be a long journey. In order for the PRM process to be implemented, many issues need to be addressed including educational issues, and training. The respondents seem to agree that, PRM principle sounds very promising and can bring some benefits to construction project management in Thailand. However, to bring in the concept now is too early. There are several factors needed to be taken into account. The PRM practice must be derived from with the consultant company proposes to the owner. Consultants must propose to the government and the government must issue regulations.

7.6.1 The motivational factors for PRM application in Thailand

The demand for risk management process must come from the project owners. However, some contractors pointed out that PRM implementation must be derived from legislation. Additionally, some consultants also state the benefits of PRM must be promoted to contractors. However, its promotion will be a long process. Demonstration of PRM benefits must be proposed to the project managers or project owners. There are many issues recommended including that PRM is a support tool to increase project success. It should be seen as a supportive tool for project managers to win bids:

*"To propose PRM is to build awareness to the project stakeholders. This is important at the national level that project stakeholders have visions".
(Consultant 4)*

There is a consensus among project practitioners that the practice of PRM process must be kicked off by enforcement from the government. The best way is therefore, to make it law. This can also force commitment from senior management. It is very unlikely that the contractors will initiate the PRM process by themselves. The government should set a requirement for contractors to conduct a risk management document for medium and mega infrastructure projects:

"It is very unlikely that the contractors will initiate the PRM process to improve their working performance. However, if there is a force from government or perhaps new laws and regulations requiring a conducting PRM, then there is a high chance that PRM initiative can be practiced".(Contractor2)

Regarding to negative attitude of contractors towards PRM process, it is rather unlikely that contractors would be main players to employ the PRM process. Hence, it is essential to have enforcement from the government to drive the PRM process.

However, this would be more sensible to initiate the application of PRM process with mega-projects.

7.6.2 Standard and manual to provide procedure

It is essential to establish a standard manual of PRM for Thai project construction practitioners. It is important to establish a simple procedure that is easily understood. Within this, the most important concern is the definition of risk in a project context. Risk definition is criticised as the most ambiguous area and can lead to confusion. Interestingly, one project practitioner indicated that for the potential success of PRM adoption, the communication procedure must be done in English. He further stated that PRM documents should be written in English to avoid confusion to the readers.

For instance, the word 'risk' is rather confusing to project members. It was recommended that the word risk should be communicated carefully within a group of engineers but should not be allowed to be communicated through the entire project, as the word will generate *panic* in subordinates:

"The word risk is a very sensitive word for a lot of people. If the message about risk is sent out in a wrong way, people will get confused as they will be too much aware of management actions". (Contract 4)

7.6.3 Educational Issues and unqualified engineers

The most crucial issue cited in the interviews is education. It has been claimed that there are only a few experienced engineers while there is a large workload. The numbers of engineers in Thailand is limited in comparison with Korea and Japan. The main problem of the project management in Thailand is the education of engineers. In some contracting companies, it has been claimed that there are too few engineers, while the workload is far beyond the ability of the engineers to monitor it. In Thailand, there have been limits on the number of most engineers.

"The education is also a constraint to empowerment. It may be possible to implement the concept of risk management but it will be in a long term. New educated engineers are not really qualified, some of them are not able to read or understand the drawing designs. They have not been trained to think or to solve problems so they just wait for orders."(Consultant4)

"In Thailand, there is high requirement for qualified engineers. In comparison with Japan and Korea, Thailand has a small number of project engineers. Education is a vital factor inhibiting the use of formal PRM principle."(Consultant2)

7.6.4 Quality Control and Risk Management Departments

Contractors indicated that the initiation of the PRM process can be derived from a Quality System or Quality Control department. The possibility of the use of PRM is limited by educational problem. New students are unqualified to do the job. The most suitable human resources should come from Quality Control departments.

"If risk management is to be conducted, it should be QC department's responsibility because these people are the most familiar with this sort of techniques and they also do this kind of reports. (Contract3)

Consultants and academics recommended that the responsibility of risk management must depend on size and characteristics and organisation constraints. Consultants and academics tend to agree that risk management department should be established for huge and complex projects.

"I think, huge infrastructure projects require a risk management department to conduct risk management practice. They should coordinate with consultants and contracts. (Consultant 4)

According to Hayes et al. [1986] risk and uncertainty are part of the all construction work regardless of size of the project. In construction projects, it was claimed that

risk events or adverse events are known in advance, but their extent could often not be quantified. Anticipated events can be predicted but their likelihood and impact are hard to predict with any precision as no two construction projects are the same, this makes it important to identify risk sources for each project [Hayes et al, 1986 and Godfrey, 1996].

7.7 Conclusion

Thai project practitioners have recognised that risks are an overall part of construction projects. However, their risk identification is mainly limited to negative events. Thai project practitioners refer to risks as elements associated with project objectives. Project risks are discerned as common problems which project managers have to manage and the project managers' ability to manage and control risks reflects their reputation. Thai practitioners prefer a proactive management style; however their risk management practice is rather implicit. Close monitoring is a primary managerial practice when Thai project practitioners face modern and complex projects. The application of risk management software is widely acknowledged amongst consultants. However, only simple risk management techniques are commonly employed by contractors and systematic risk management practice is based on adding 15-35 percent contingency cost onto the estimated cost of a project. These findings are similar to several studies including Hayes et al., [1986], Simister, [1994] and Tummala et al. [1997].

The interviews also reflect the effect of Thai cultural values on project management practices. The project practitioners' bases of power include coercive, knowledge and persuasive power. It was cited that project managers value knowledge power which is derived from experience and education in construction project management. Thai project practitioners do not want to transfer their knowledge to others unless they feel comfortable or trust a person. This is due to the fact that sharing their knowledge means losing their competitive advantage.

The risk management concept is discerned as helpful to Thai project practitioners in providing them with information to support better planning and controlling.

However, Thailand is not quite ready to employ such a concept. Several crucial issues need to be addressed, for instance, a set manual must be prepared to avoid confusion. And, while PRM requires substantial support from team working, it seems to be problematic in Thailand as a lot of project managers are stand alone. In order to encourage a wide employment of PRM concept in Thailand, the government should provide the industry and project practitioners with a standard form of risk management practice.

The chapter has provided attitude of project managers towards risk, their risk perception, their project management practice, and their attitude towards PRM process. In the next chapter, a discussion of workshop findings will be provided. It will provide specifically a discussion of the effect of Thai cultural values on group based thinking approach and issues concerning risk discussion and risk assessment.

Chapter 8 Workshop: Findings and Analysis

8.1 Introduction

This chapter will provide a discussion of the workshop on risk management at a business and strategic level. The workshop described in this chapter is concerned with the effect of Thai cultural values on risk management. This chapter will begin with a brief discussion of the workshop. A description of participants in each group will be provided. The following section will provide a discussion of the effect of Thai cultural values towards the dynamic group thinking process, and risk communication. Furthermore, a discussion of Thai managers and uncertainty will be provided. This includes their familiarity towards uncertainty and probability theory, and analytical thinking. Finally, the attitude of the participants towards the risk management workshop will be discussed.

8.2 Background of the workshop

A workshop on “ASEAN Executive Development programmes” was held at Marriot Hotel, Hau Hin, Thailand between June 27- July7, 2003. The programme was arranged by Thamsart University. A business risk management workshop was a part of the intensive programme, as risk management has recently become an interesting issue to many public and private organisations. The risk management topic was one of other modern management practices in the programme. The Risk Management workshop aimed to encourage ASEAN executives to be familiar with risk management principles as well as its process.

The Risk management workshop began with a risk management expert from an international consultancy company – EUREKA presenting the concept of risk management and an example of business risk management in the morning. This was to provide participants with some basic idea about risk management principles.

During the afternoon, a brief revision of risk management was given and another example, in order to encourage all participants to be more familiar with risk management principles as well as its tools and techniques.

8.3 Workshop Arrangement

The definition of risk in the work was *“the chance of something happening that may impact on corporate objectives”*. This includes both hazards and opportunity outcomes of uncertainty. A risk register was also provided to all syndicates in the format of Risk Name – Risk Impacts – Significance / Likelihood – Risk Owner – Mitigation Strategy and risk matrix Significance and Likelihood. The company’s profile and risk profile consisted of Business Environment Risks, Operation risks, financial risks and information for decision making risks.

Participants were separated into groups of seven to eight people to conduct a risk management process for Ratchaburi Electricity plc com. The primary reason for selecting this case study was the fact that the organiser wanted the participants to work on something that they were already familiar with. Besides the Ratchaburi company had only recently been established and it was a controversial case as it is the first private electricity company in Thailand. There were altogether eighteen groups altogether. These groups were put into separated conference rooms. The groups were given forty five minutes to complete the task of conducting a risk management process and arranging a presentation.

There were six groups in each room. In order to provide a dynamic group working environment, the first three groups were located at one side and the other three groups were located at the other end of the room. The groups were arranged with round tables and flip charts and pens. This would allow privacy for each group. It was also convenient for facilitators to provide support and observe the behaviour of each group.

8.4 The role of the researcher

The researcher's role was known by participants as a representative from Thamsart University. The researcher was a part of an organising party. His role was to coordinate with international speakers as well as help out participants during the management sessions. He was already familiar with most of the syndicates as he spent around three days with them prior to the risk management workshop. During the risk management programme, the researcher's role involved coordinating with EUREKA staff and acting as a facilitator during the workshop. His role was only to give explanations on some ambiguous topics, but not to be involved with the discussions.

8.5 The characteristics of each groups

There were eighteen groups in the workshop; however the researcher was in charge of only three groups. The characteristics of these groups are different one to another. The group members played a vital role in the discussion of risk management. Each of the researcher's group consisted of seven people. The first group were all Thai and contained two senior participants and five others who were younger. The seniors were fifty five and fifty three years old, while the rest were around their early forties. Both seniors held very high positions – Deputy Governors of the Electricity Generating Authority of Thailand. The second group consisted of all Thai people also, but with similar ages ranging from forty to forty five. Three of the members graduated from the same universities and worked in the same office. The rest also held the same rank. The final group was very interesting as it consisted of mixed-nationalities including Thais, Laos and Indonesians. The members in the group also held similar ranks. The majority of participants had electrical engineering degrees with the exception of a few members who also held MBAs. There were only four people who did not have an engineering background out of the three groups.

8.6 The effect of Thai cultural values during the workshop

This section will provide a discussion of the effect of Thai culture towards group discussion and risk management practice. The groups mentioned above will be discussed in turn. The implication of Hofstede' dimensional values as well as Thai cultural values derived from the literature will be employed as a fundamental framework to analyse the findings.

8.6.1 Group 1: Influence of Seniority

This group had the most formal discussion process in comparison to the others. The other members in the group used formal words during the entire discussion process. The project members used formal words throughout the entire discussion. The characteristics of this group can be described as a lack of participation and decisiveness. Consensual decision making did not come from a lack of ease of communication. This can be explained through the power distance value. It has been suggested that high power distance can affect the relationship between superior – subordinates, the decision making and communication process [Hofstede, 1991]. The conversation of this group was short and effective with a whole list of business risks including customer demand, cash flow, economic, legal and regulation and political.

Being a high power distant society, the gap between senior management and subordinates is very high. The presence of senior people seemed to inhibited innovative discussion. The conversation was exclusively among the seniors with little participation from other members. The sets of risks were pointed out primarily by the two senior members. Neither of the senior members gave a lot of clarification concerning the chosen risks. This can be explained through the fact that for high power distance societies, the decision making process tends to be autocratic and paternalistic. During the discussion process, neither senior really asked for ideas from other members, they only asked for ideas when they had already listed out their own ideas. It is very unlikely that the other members would raise their own ideas during this discussion.

The proposed risks were accepted instantly without arguments. It has been suggested that power distant societies, put less value on participation [Gomez et al., 1999]. Furthermore, it has been suggested that the leadership style is generally paternalistic and autocratic, and there is an expectation that managers will have to provide solutions for their subordinates. The other participants did seem to be reluctant to talk in these circumstances; instead they seemed to be rather comfortable listening to the conversation between the two seniors. This can also be explained as a norm for Thai culture to listen and accept the ideas of superiors. For Thais, 'respect' to superiors is a norm. It is not appropriate to raise issues and argue with one's superior. It is not surprising that juniors are reluctant to exercise their initiative, to make recommendations or suggestions, or to contradict their senior. With a high respect to the superior, assertively challenging the authority of one's superior is out of the question, and the superior, in turn, is generally not interested in soliciting opinions from subordinates [Hofstede, 1991].

The group members treated the seniors with respect by using formal conversation and accepting their ideas without argument. The other members were in fact acting as secretaries, helping to write down the risks on the flip chart provided.

Actually, it seemed that the senior people already had their selected risks in mind. The seniors started the conversation with some ideas about risk events. One reason may be that they have very large experience. The senior managers must have the answer to all questions. For high power distance culture, superior is expected to have solutions for any problems, and in the Thai case, where senior managers are discerned as parental figures, they must be seen to be the fount of all knowledge by their junior employees.

8.6.2 Group 2: Colleagues and in-group cohesiveness

This group had a more relaxed and comfortable environment. Unlike the first group this group contained mainly people with the same ranks and similar ages. The discussion was very long. The conclusion of the set of risks was decided right at the

end of the session. The discussion was dynamic but rather ineffective in comparison with the others. The group members were more like friends than colleagues. The characteristics of this group according to Hofstede's dimensions can be defined as collectivism with a very high in-group cohesiveness.

Pornphitakpan [1999] suggests that Thais prefer to work within a group base and within groups only. Thais divide their society into two parts: in-group and out group sub cultures. Thais prefer to communicate with the in-group, believing that they share the same perspectives. Loyalty is expected between in group members. Thais may be uncooperative to out group people, whom they perceive as one-time contractors or complete strangers. While it has been stated that the avoidance of criticism improves the production of ideas, especially when a panel is composed of people of the same rank, however this is not the case for Thai managers. There were many risk issues raised within this group, however, there was not consensus. Eventually, all members tend to conform to the majority of the group.

There were some small arguments among members, but the arguments were mainly on clarification of risk cause and effects. Many questions were asked for clarification. However, with the same background, they tended to agree on the set of risks, but tended to lack a holistic view of the whole picture. Their risk events were concerned with operation; this also makes it easy to get a consensus on each risk events and on risk management strategies. Their risks included production, transmission and distribution.

An explanation of such a friendly environment may be due to the fact that the discussion was not taking place with the pressure of the working environment. This was probably the main reason for having a lot of arguments amongst the group members.

8.6.3 Group 3: Multi nationalities and communication context

This was probably the most effective working group of the three. In comparison to the previous groups mentioned above this group was the most active in terms of discussion. While the previous groups were very strong in social status, the mixed nationalities group seem to be a far more relaxed. This may be due to the fact that social status was dropped with regard to foreigners.

Even though the discussion was not completed as early as the first group, it seemed that all the project members agreed on the set of identified risks. The group members seem to be relaxed. The environment was quite friendly. There was support and argument during the discussion.

Furthermore, a discussion in English seemed to ease the problem of argument. While the Thai language is referred to high context, the English language is used to convey explicit and direct ideas. The use of the English language made the discussion shorter. This may be due to the lack of English proficiency among project members. However, Thai language is referred as indirect, implicit communication pattern prevail for reasons of face saving, criticism and refusals cannot be stated openly [Verluyten, 1997]. It has been suggested that a translation of uncertainties requires a precise and direct meaning [Ober, 1998], which requires the use of definitive language. With English language Thai people can state with (I don't know) or (I don't understand) straight forward. In comparison to the second the group, where the word *I don't know* or *I don't understand* never expressed.

8.7 The difficulty with the Risk Management concept

The previous section has demonstrated that Thai social values had a very strong influence on the group discussion. However, there were other factors than social constraints which affect the effectiveness of the risk management process for Thai managers. Thai managers have several problems with concepts of risk management

including unfamiliarity with uncertainty and probability. The following section will provide some difficulties relating to risk which emerged during the workshop.

8.7.1 The effect of the social aspect on risk perception

The knowledge and background of participants has a strong effect on their risk perception. It has been suggested that people understand risk differently, according to their knowledge and background [Richie and Marshall, 1997 and Pablo, 1992], and each group selects particular risks for attention and those risks are therefore “exaggerated” or “minimised” accordingly their moral acceptability [Covello and Johnson, 1987]. Each of the member’s group’s provided different set of risks. The first group’s risks mainly focused on the effect to the Ratchaburi company’s revenue. This is due to the fact that both senior members were in very high positions within the organisation and its well-being is probably their main concern. As for, the second group’s members engineering background, their risks were focused on operation and maintenance areas. The final group produced a wide range of risks. Their risks covered several aspect of the risk profile.

8.7.2 Characteristics of risk: Analytical thinking

During the discussions, it appeared that participants had difficulty identifying causes and effects. This was the most time consuming part of the process. During their discussions, most participants spent a lot of time constructing and clarifying causes, risk events and how these risks would affect the Ratchaburi Power plant. Most managers seemed to be confused by the characteristics of risk (see section 2.4). Particularly, group three which had most of their arguments concerning clarification of the causes and effects of each risk.

It can be argued that these managers are different from those project practitioners who deal with project risks all the time. These middle managers always work in a more stable environment. Hence, they are not normally affected by uncertainty as much as project managers. It has been suggested that a low level of risk perception

makes it difficult for the participants to understand the principle concept of risk management let alone risk management practice [Slovic, 1992]. Haley and Tan [1996] also assert that decision making process of South East Asian Executives is based on experience-based and intuitive which limits analytical thinking.

8.7.3 Risk Assessment: the understanding of likelihood and impact

During the workshop there was also a problem concerning with risk assessment. Most participants were not familiar with probability theory – the terms likelihood and impact. The researcher was asked for clarification from many participants. Surprisingly, even though some participants have engineering backgrounds, they seemed to have difficulty with the concept and meaning of likelihood and impact as well. They seemed to be unable to quantify the risks. They are not used to subjective probability. They normally referred to their previous experience to support their risk assessment. The difference of members' experience made the communication of risk assessment very difficult. The comparison of risks impact is the most problematic for managers. The participants found it very difficult to express their risk assessments. Even so, the Risk Matrix was very helpful to participants to compare their risks with others. However, justifications of risk assessment were very hard to make.

8.8 Conclusion

In conclusion, group thinking or brainstorming which is a crucial activity for the risk management process does not seem to fit in well with Thai culture. A group discussion under a Thai cultural atmosphere is very ineffective. Group thinking or brainstorming, in particular seem to be difficult since juniors' regard themselves as the inferiors in the organisation, and are unwilling to voice their opinions. The overly strong respect held towards senior managers seem to stifle debate and lead to a lack of multi-dimensional thinking, much to the detriment of Thai organisations and their risk prevention strategies. Furthermore, in-group cohesiveness while it seems to support an effective dynamic group thinking, actually causes unproductive discussion.

The risk management concept does not seem to straightforward to Thai managers. A discussion about risk is rather problematic issue for Thai managers. Thai managers have a lack of clarity and understanding of risks. Their description of risk or risk statement is ambiguous and ill-defined. Thai language – an implicit language – is perhaps another issue inhibiting effective risk communication since discussion about risk requires explicit and precise explanations. Furthermore, another problem is that Thai senior managers have difficulty with assessing risk: likelihood and impact of risks. This is due to the fact that Thai managers are not familiar with probability theory. The next chapter will provide a discussion of a propose PRM process for Thai project organisation. The PRM process for Thai project organisations will be designed based on empirical findings from the case study, the interviews as well as the workshop.

Chapter 9: Recommendations and conclusion

9.1 Introduction

The purpose of this chapter is to explicate the contribution of this thesis to the PRM debate. This chapter consists of nine parts including: the empirical findings, practical suggestions of PRM for Thai project organisations, a discussion of the change process in Thai context, risk management for large project organisations in Thailand, risk management training, macro encouragement to PRM practice, the implication of PRM implementation in other countries, the contribution to knowledge and limitation, and the impact on Thai research and future research. These areas reflect the importance of this piece of research to the development of an understanding of PRM implementation in developing countries.

9.2 The empirical findings

The following section provides a discussion of findings from the empirical research. The section is separated into two parts. The first part is concerned with the current practice of risk management in Thai construction industry; it provides a discussion concerning basic understanding of Thai project practitioners towards risk, risk management practice, their attitude towards the PRM process and their recommendations of PRM implementation in Thai project organisations. The second part is a discussion of the effect of Thai cultural values on managerial practices from the case study, interviews and workshop. All findings are grouped and linked to the research questions (See Appendix 4). Furthermore, these are used as underlying assumptions to develop and propose a PRM process for Thai organisations (See section 9.3).

9.2.1 Current Risk Management Practice in Thai Construction Industry

Risk management activities in Thailand are the sole responsibility of project managers and they are conducted in an implicit manner. Thai project managers recognise that projects are inherently risky, and managing risks is part of managing projects; however, the word 'Risk' is not an unfamiliar term to Thai project practitioners (See section 7.3.1). Thai project managers stress risk in term of the word "PROBLEM" or "ISSUE", hence, risk definition discerned by Thai project practitioners is related to the negative rather than positive aspect. The ways Thai project practitioners categorise project risks are varied, these include categorisations such as internal risks – external risks, knowns – unknowns, and predictable – unpredictable. Regardless of how they categorise risks, from their views, political and bureaucratic system are considered to be the most risky factors in Thailand, especially in mega-projects (See section 7.3.2).

Thai project managers prefer to apply a proactive rather than a reactive approach; however, in practice such proactive approaches are limited to the planning stage with a reactive management approach carried out along the project life cycle (See section 7.4.2). Unsurprisingly, Thai project practitioners' risk handling practice takes the form of contingencies or added margins as estimates to cover unforeseen eventualities. The risk management tools and techniques used are primarily simple risk adjustment methods, which are based on intuitive and subjective estimates. There are several quantitative analysis applications available but they are not used extensively (See section 7.4.4 and Section 6.3). Among Thai project practitioners, consultants tend to be more familiar with such software while contractors prefer more simple techniques.

The concept of PRM is discerned as relatively new to Thai project practitioners. Their understanding about the concept is that it is complicated and must be conducted by experts. Thai consultants are more familiar with risk management techniques than contractors. This is due to the fact that most of the consultants have some experience working with foreign consultancy companies (See section 7.5.1).

Risk management is perceived to be beneficial during the planning stage; nevertheless, there are several negative thoughts concerning an employment of a PRM concept in Thailand. These include time consumption, conflict of ideas, instigation panics among project members, language difficulties, potential conflicts, and the threat of job losses – knowledge/experience transfer (See section 7.5.3). With these negative aspects to the PRM application, it is rather unlikely that Thai project practitioners would attempt to implement the concept. Thai project practitioners suggested that in order to push PRM process into practice, it must be kicked off by a mandatory enforcement. For instance, with infrastructure projects, the governmental bodies can ask their contractors to perform PRM and submit it to them periodically. Similarly, all project owners and clients must also request their contractors to conduct risk management activities and inform them periodically. Moreover, educational support will be an essential driver to a wide acknowledgement of PRM. An amplification of the risk management concept and its benefits can incrementally increase the application of PRM. Educational institutions as well as relevant institutes should increase *'post mortem'* studies; this would enhance knowledge transfer as well as the capabilities of young and immature project practitioners (See section 7.6.3). Interestingly, in the interviews there were references to having a Thai PRM manual. This manual would be very helpful to Thai project practitioners as well as project clients and users. As for the practitioners they will know exactly what they have to do and the clients can expect a proper PRM report from the practitioners.

9.2.2 The effect of Thai culture on PRM practice

In Thailand, project managers are responsible for the entire process of risk management. The project managers are responsible for both project survival and project member well being (See section 7.4.1). The risk management planning is limited to experienced project managers. It is very unlikely that other project members would be involved during project planning. This tends to obstruct a participative working style. The separation between Thai project managers is not only by rank and responsibility.

Power distance significantly affects decision making process and the degree of delegation. It seems to be very unlikely at the present time that project managers would distribute decision making authority to their subordinates. The project managers presume that they have to be solely responsible and take account of all decisions. They assume that subordinates should not make major decisions. Project manager understand that letting subordinates make decisions can cause them trouble afterwards, they do not trust their subordinates with regard to their experience or knowledge. Senior management is respected by other project members and has much of the relevant knowledge. Lack of experience and knowledge is another factor which Thai project managers take into consideration when not taking other project members' ideas onboard (See section 7.4.1). Power distance does affect knowledge sharing within Thai organisations. In cultures where the power distance is high, persons in power will be very careful to maintain their image as knowledgeable and capable people worthy of their power; furthermore, knowledge is connected to power and provides advantages to a person's perceived competency (See section 7.5.3).

Furthermore, there is a contrast to findings from the case study and interviews that power distance obstructs a speedy communication. While in NBIA Co.Ltd, a formal style of communication exists (see section 6.4.1); such problem does not prevail as much in contractor companies. Contractors and consultants actually prefer a rapid communication style between project managers and workers. For them, speedy communication concerning project problems is crucial.

With **uncertainty avoidance**, also being part of Thai culture, it is quite difficult for project members to raise innovative ideas or propose solutions to tackle potential risks/problems. Uncertainty avoidance therefore discourages risk taking behaviour and limits long term planning practice. Uncertainty avoidance means that organisational members do not like change as change may bring conflict into the organisation. Project members also prefer to follow rules and guidelines established by senior management. The evidence from the case study demonstrates an extreme case of uncertainty avoidance, where one senior management made a mistake by

misunderstanding the contract, as it was presumed to be like the previous one (See section, 6.4.2).

While it is widely agreed, as found in the case study, that the right to make decisions must be derived from the social position within the company, the manager could make any decision and allow delegation if he wished to do so; however, the project members might not be willing to exercise this authority as they seem unwilling to take responsibility for their own decisions. Furthermore, Thai project members prefer not to be faced with conflict. This avoidance characteristic decreases the effectiveness of discussions regarding risk (See section 8.3.1).

A strong **collectivism** can cause significant problems to the PRM process, as for Thai people serving their immediate circle of members is the first priority. Thai project members feel threatened if something bad happens to their relationship with their colleagues or friends. Such high in-group cohesiveness can create a lack of coordination among departments and also a “blamatisation” culture [Smallman, 1999]. When problems or failures occur, they will look others to be responsible for the outcome (See section, 6.4.3).

While it seems that a strong in-group society would enhance group based thinking, this is not the case when in-group members have to share their ideas with people from the outside (See section 8.6.2).

If the underlying society is **feminine** the effect on PRM practice is significant. The major motivation for doing work of high quality in a society like Thailand’s is to please those to whom one is responsible and/or in-group members. The major emphasis is not placed on understanding the nature of tasks (See section 6.4.1). Furthermore, the working motivation has much more to do with good hierarchical relationships rather than with taking responsibility for one’s own work. Establishing positive relationships is imperative for working with Thai members (See section 6.4.4). By establishing trust and relations between parties, positive suggestions and effective communication can be achieved more successfully. Organisation members

work well to please each other rather than to get the job done well for its own sake. Trust and relationships also affect the knowledge transfer and training process. The findings from the survey indicate that Thai project managers select their trainers according to trust and their relationship with the members (See section 7.4.8). Relationships also influence career advancement. Senior project managers must trust their subordinate so that they can provide explicit advice and experience to their project members; therefore, enhancing their subordinate's ability. One of the key factors to providing this training would be the loyalty of the employee to remain with the company for the long term. This knowledge retention and transfer is essential to the competitiveness of the organisations (See section 8.6.2).

The **short-term orientation** affects the role of planning and dealing with uncertainty. Thai culture does not seem to encourage the value of long term orientation. First of all planning activity and decision making is located with senior management, hence the members of the organisations are lacking in practice of conducting long term planning. Furthermore, members of Thai organisations also prefer not to take decisions as they do not like to be responsible for the consequences of their decisions (See section, 6.4.2). Such risk taking behaviour discourages long-term orientation and the anticipative skills of project members. This would affect the implementation of PRM within an organisation. The findings from the workshop indicate that organisation members are not familiar with managing and coping with uncertainty; it is therefore difficult for the organisation to maintain an effective risk management practice. Thai organisational environments tend not to encourage risk discussion and risk awareness. At the senior management level, the Thai cultural value of 'mai-pen-rai' also supports short-term orientation. This Thai value also discourages the effect of uncertainty. The "mai-pen-rai" value is explained in section 4.7.1.6. and substantiated by the findings of section 6.4.5.

9.3 Practical Suggestions on PRM implementation Thai context

The literature review indicates that the effectiveness of PRM application is dependent upon organisational structure, behaviour and culture. Culture in particular

is the prime factor dominating the attitude of project members and organisation management practice. Moreover, cultures are unique and diverse as members in societies hold different values, assumptions and behave differently. This study is to attempt to implement the PRM practice into Thai project organisations, where values are different than those found in countries in which PRM is more developed and more widely employed. This study so far has demonstrated that there is a degree of difficulty if PRM process is to be practiced in Thai project organisations regarding its prevailing values. The following section is to provide a proposed PRM process for Thai project organisations taking into consideration of both the effect of Thai cultural values and the current of risk management practice in Thai construction industry. For Thai project organisations, in order to implement the PRM concept they must take the following factors into consideration: senior-junior relationships, in-group cohesiveness, trust and relationship, centralisation, rigid structures and bureaucracy, risk awareness, risk definition, lack of understanding about risk characteristics, and risk assessment difficulty. The proposal of PRM application for Thai project organisations is discussed as follows.

9.3.1 The introduction of risk management process

This section is to provide a discussion of the risk management process that should be initially practiced in Thailand. The suggestions made here are based on the fact that the PRM concept is seen as an unfamiliar concept among Thai project practitioners (See section, 7.5.1) and that Thai cultural values influence, or could influence, the effectiveness of the PRM process.

The goal of PRM is to support project management, planning and decision-making and to ensure that given objectives of scope, time and budget are achieved and support early problem recognition. The responsibility of a project manager is to investigate the risk affecting the project objectives described in the project definition so that predefined limits are not exceeded.

A number of phases in the PRM process should remain similar to those in section (2.4.2). The researcher proposes that the PRM process must be simple to use. The risk management process for Thai project organisations should follow the conventional risk management process – identification, assessment, response and monitoring; however, the researcher will provide a series of specific concepts and methods to make the constituents of the risk management process acceptable and easier to use for Thai project organisations.

The result from the interviews indicates that Thai project practitioners prefer proactive planning. Thai project practitioners seem to discern the benefits of the PRM concept as providing information to support planning; therefore, the PRM process should be started during the planning of the project, as project risks can be gathered to make an informed decision whether the project planning is worth starting at all. It is suggested that a preliminary risk analysis should therefore be performed before project planning. The PRM process should be conducted during project planning so that responses can be included in the project planning and the budget can be modified to account for responses and contingencies. It should be noted here that, thorough risk identification and assessment should take place during project planning when enough is known about the sequence of activities, schedules, budgets, etc. In addition, to better decisions, early risk management has also another advantage: the project team has not yet developed such a strong sense of ownership for the project allowing it to make better and more reliable risk analyses than it would at a later stage.

In order to support Thai project managers to conduct risk management properly, the following is a brief description of what information can be used. The first step in the risk management process is to define the project objectives. The project objectives can be defined in terms of project cost, time, quality and other objectives such as commercial or social objectives. It is preferred that instead of having project achievement objectives, milestone objectives should be defined in the project. This would ensure the risk is focused during the risk management process. At the same time, the basic assumptions of the project must be defined. These assumptions can be

based on the tender document or any sort of bid document provided by the client or based on company's guidelines for similar projects. These basic assumptions can be generated either by the tender team or generated at the beginning of risk identification. These assumptions should be refined during the tender stage discussion with the client/subcontractors and would achieve its final form after the award of the contract. The assumptions should be as descriptive as possible and the rationale behind the assumption must be recorded for the future use in the risk management process. For Thai project organisations, the PRM process should be conducted before the bidding process and the execution phase.

9.3.2 Clarification of Risk for Thai project organisations

In the Thai project context, the notion of risk is relatively new. It has been suggested that the concept of uncertainty should be limited to associate with negative events rather than positive outcomes. This is to avoid confusing Thai project practitioners. Arguably, this can limit a comprehensive risk management practice as it does not cover the potential positive effects of uncertainty. However, the definition can be changed to cover positive sides later when the PRM process has become more firmly established.

The term 'risk' is also not suggested to be used among project members, particularly with labourers. This is due to the fact that project members at lower level of the project organisation may be 'panic'. The word to be used amongst operational levels should be "issues" or "problems" (See Section, 7.3.1).

In order to have a clear understanding of the risk in the project, it is important that everyone is aware of and understands what is meant by the risks, uncertainty, issues and problems. The definition and descriptions of the term used as described below. The researcher would recommend a clarification of risk characteristic as follows:

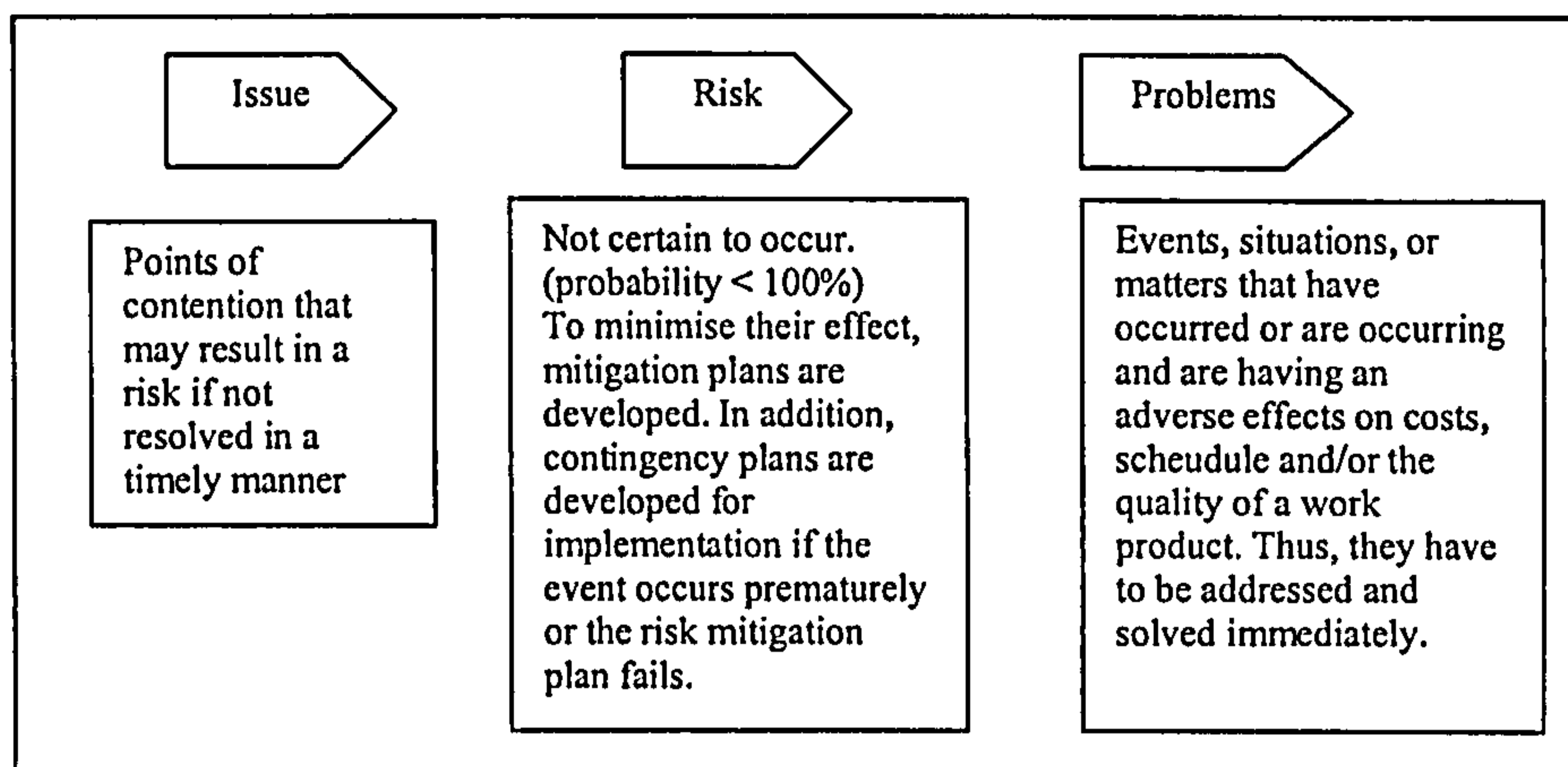


Figure 9.1 : Characteristic of risk for Thai project practitioners
Source: Noor, Joyner and Martin (2002)

By using these terms, the project members would not feel panic as they would discuss about similar things, and this introduces the word risk to them smoothly.

Risk Identification Phase

The identification process is the first step and getting this step correct is crucial for the success of the remainder. Even though there are several tools and techniques for risk identification, some tools may not be applicable for Thai project organisations. The selection of PRM tools and techniques must take Thai cultural values including, 'respect', 'face saving' and 'in-group cohesiveness' into consideration. These values affect significantly to an effectiveness of participative working style.

Checklist and prompt list seem to be effective for Thai project practitioners as it is convenient, simple, and easy to use. Furthermore, it is a tool that would not create conflict among Thai project members. However, risk categories must be developed by project manager to facilitate the categorisation of risks and to ensure that all aspects of risks have been considered. Generally, checklist consisting of high-level categories together with experienced people would ensure that all relevant risk types are considered. However, it is also useful for project managers to develop a structured list of risks use for their own projects. In order to help produce a

structured list of risks, a risk breakdown structure can be developed. Regarding the fact that Thai project practitioners categorise risk differently (See section 7.3.2), it would therefore be sensible to construct specific and appropriate risk categories for each project. This would allow the list of possible risks to be listed in accordance with the project managers' preference. To establish a risk breakdown structure, the generic risk breakdown structure by the Universal Risk Report of INCOSE RMWG [Hillson, 2002] can be used.

Interview seems to be an effective technique for gathering individuals' idea and experience. However, in Thai project context, there may be some obstacles which need to be considered. First of all, the project managers may not feel like giving information regarding to time constraint. Furthermore, an interviewer is also a prime factor determining the results of the interviews. For an effective interview the interviewer must be an outside expert who is allocated from the project managers to collect information rather than insider. This would encourage the project managers to express his or her ideas, feelings and experiences more comfortably.

Group based thinking approaches are the most effective and preferable among project organisations. Regarding to Thai cultural values, the method may not be effectively carried out in Thai project organisations. However, if Thai project managers would want to give an opportunity for open discussion, in order to capture wide range of potential project risks; some Thai values and norms are to be taken into consideration. The project managers should be concerned with *'face saving'* or criticism avoidance. Thais normally feel unwilling to criticise and argue with others' opinions in public because they do not want to take a risk. If a criticised idea is not accepted, the person who criticised it would *'lose face'* and feel embarrassed. Making a person *'lose face'* is an unacceptable perception in the Thai context. Moreover, in a meeting, the participants often include persons from various positions and statuses, and it is considered impolite and bad manners for an inferior to raise any ideas against a superior. With this value playing a role in the discussion, the outcome tends to be in favour of the person who dominates the discussion.

Therefore, the solution for getting information from participants is by means of the project manager talking to a small group of people in an informal manner. This will avoid a potential awkward environment. Moreover, the lower ranking person normally appreciates it when the person who holds a higher position pays attention to their opinion. This also increases the subordinates' morale as well as their enthusiasm. After getting information from each of the participants, the project manager should arrange a meeting with all participants to form a conclusion.

At the outset of the discussion, the project manager should not introduce his own ideas as this may block others' willingness to talk and reveal their true opinions. An applied version of Nominal Group Technique could be used as the brainstorming method. All project team members should bring the risks of the lines they represent into the team. These could be posted on a board anonymously and discussed openly. The discussions should be kept at a reasonable level of detail in the project team to facilitate communication and at the same time keep everyone involved in the conversation. In order to increase an effectiveness of the process, a facilitator may be helpful. The facilitator should be an expert who understands the industry.

Alternatively, the operation review and peer review are similar to brainstorming but with much more structured and focused manner. An operation review and peer review can be done in the form of a Small Group Activity; however, the selection of the group must be done with care. Regarding to the Thai characteristic of 'in-group cohesiveness' (See section, 8.6.2), a small group discussion can be effective if the group consists of members from the same functions and ages. The undertaking of this activity must be in a formal manner to give direction and keep discussions focussed on the issues.

Regarding that the term 'risk' is an unfamiliar to Thai project practitioners. Therefore, it is perhaps essential to have a semantic discipline of how risks should be expressed during group discussions. A semantic discipline is necessary as ill-described statements on risks can lead to lack of clarity on the risk consequently leading to wrong decisions. Semantic of describing risk are listed in the below table:

Start sentence with	Complete sentence with
There is a risk that	Describing the adverse event or series of event
The risk is caused by	Identifying the generic cause area and describing the specific source
The direct impact of the risk occurring will be	Describing the direct impact in terms of the adverse effect on the objectives of the work area in which the risk occurs
If the risk occurs, the (strategic) action will involve	Outline the strategic action that will have to be taken for that risk
The recovered impact on the project objectives will be	Describing the impact on the objective when they action is taken. This would usually be different action dependent on the success or failure of the (Strategic) action.

Table 9.1: Semantic discipline for risk

Source: Moore, Fearon and Alcock (2001)

It must be noted here that the use of influence diagrams may be useful to determine the inter relationship between the risks in the project. As in a project, risk can be interdependent on each other and can have a snow ball effect. To understand the complete impact of risk in the project, it is important to determine the outcome of a risk and how the outcome affects other areas of the risk; however, such techniques may not be familiar to Thai project practitioners. Furthermore, in order to construct influence diagrams time is important. Such tool may be more useful and helpful to Thai consultants as they can exhibit the problems within the project to project clients.

Risk Assessment Process

Following the identification of risk, the next step is the assessment of the risk. Risk assessment process consists of the following sub-processes: assessment, and ranking.

On the basis of the literature study, in addition to risk impact and probability, time criticality and controllability of the risk must be discussed during risk assessment.

The assessment of risk can be done either qualitatively or quantitatively. For quantitative assessment of risk, three factors are necessary – probability of occurrence of the risk, the severity of impact of the risk and the manageability of the risk. The impact of the risk is through qualitative judgement backed by previous experience and knowledge. The figure representing the impact of the risk is always uncertain and would depend upon the several other factors that may be affecting the risk.

In the risk assessment phase, predefined scales for impact and probability can be utilised, together with probability impact matrices. Probability-impact matrices could help the assessment process by depicting the distribution of assessed risks. This can facilitate the understanding of how risky the project is and also force assessments to be realistic: if there are no risks in the most extreme classes, either the assessments have not been truthful or the scale definitions are deficient. Range estimates should be allowed for representing uncertainty of the assessment if necessary. The P-I matrix is a simple tool to provide visibility of risk in terms of impact, and probability. The P-I matrix can be divided into zones to help identify the risk that requires priority.

The graphs below shows an example of Boston Square, P-I.

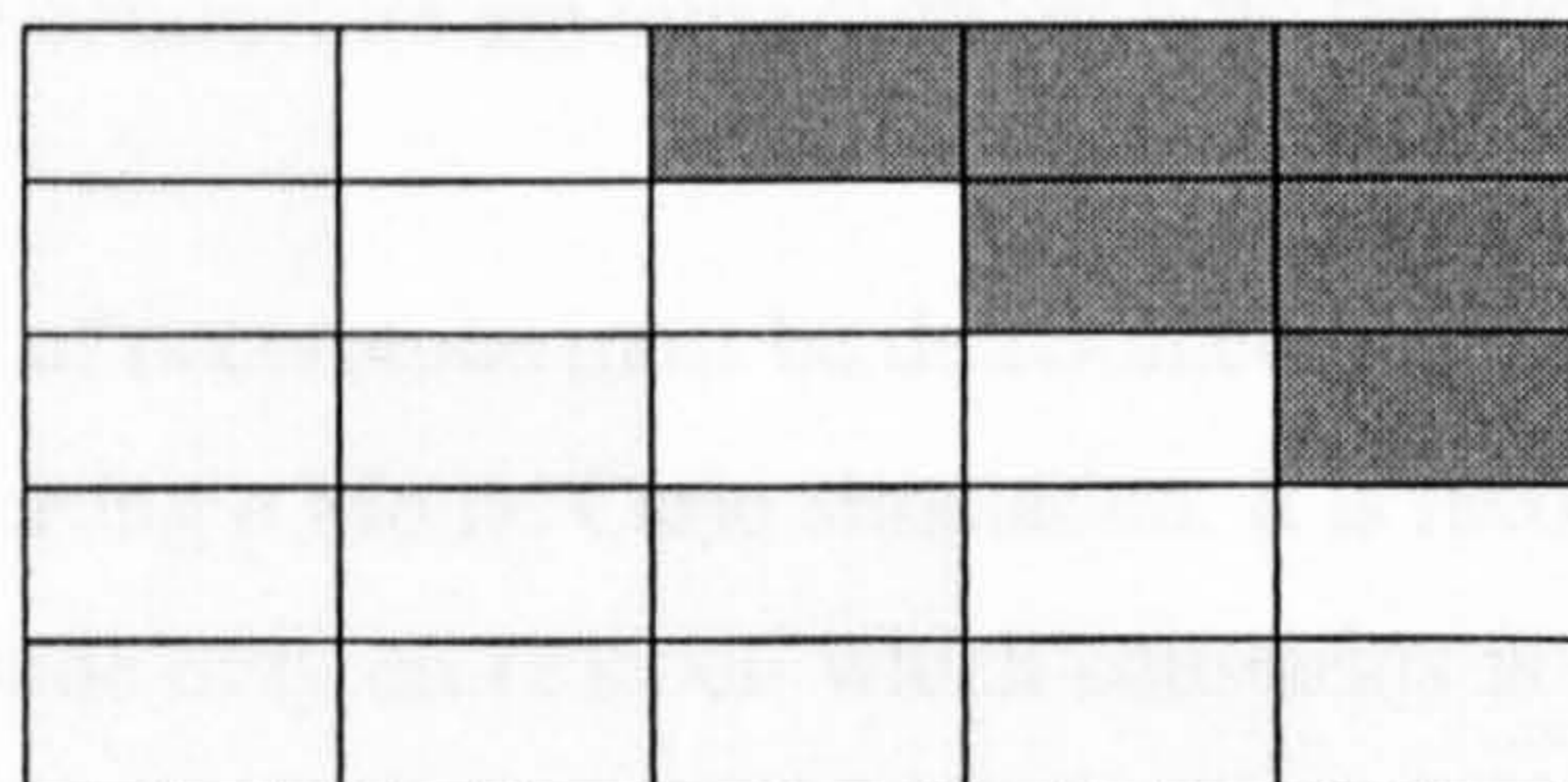


Figure 9.2: P-I Diagrams

In case of qualitative assessment of risks, the probability should be expressed either in terms of Most Likely, Very Likely, Likely, Unlikely and Very Unlikely or a scale of 1-5. Furthermore, each scale should be defined and a verbal description of the impact should also be provided. The researcher, personally, believes that adding colour on the matrix will be very useful for Thai project practitioners to understand how critical the risks are. Many Thai senior managers are not familiar with the concept of probability (Section, 8.7.3); therefore, it would be helpful for them to see and discuss explicitly how critical the risks are.

As suggested in the literature review, qualitative estimates could be the starting point for risk assessment; however, they cause significant limitations for discussions about risks. First, risk assessments of different projects are not comparable directly. Second, an aggregate value for how risky a project is cannot be assigned. An output of risk assessment should be the risk list completed with impact, probability, time-criticality and controllability assessments.

It is advised that the project of probability of occurrence and the impact must not be used for ranking of the risks. This is because, risks are dependent upon of both factors – probability of occurrence and impact and ranking must consider both these factors separately. The factor upon which the risk depends also contributes towards the ranking process. Another way could be the use of an **Influence diagram** to find out which of the risks are more important than the others. This qualitative approach helps by providing a holistic view of the risks; however, as discussed in the previous section, this tool could be more suitable for consultants' usage rather than contractors at least until the contractors are more familiar with the PRM concept.

The probability of occurrence must be determined through consensus among the risk assessors or by using a Monte Carlo simulation. It is recommended that Monte Carlo simulation be done only on risks on which consensus is not reached among the risk assessors, or if the risks are critical. Quantitative techniques should be used for risks where the risk assessors are certain of the impact and probability of occurrence; however, it must be noted that not all the risks can be expressed in quantitative terms

and more qualitative assessment of the risk needs to be adopted. In Thai project construction, quantitative analysis software is widely available (See section, 6.3.7.8 and section, 7.4.4); however, the applications seem not to be used extensively.

Furthermore, assessment of time-criticality is also important during risk assessment process especially, mega construction projects, because of the long-time frame of the project. There may be risks that can materialise only during certain activities later in the project life cycle. It would be more effective to concentrate on the urgent risks first. The timing of risk and when the project could be affected should be determined in order not to spend resources on avoiding risks that cannot be affected at that stage.

Risk Response Plan

Following identification, assessment and ranking, the response strategy for the risk in the project need to be developed. The aim of the response planning for risks is to allow for proactive management rather than waiting for the risk to occur and then reacting the situation. The following demonstrates the type of strategies that can be adopted for risks and the tools that can be used for better visibility of the strategies.

Most risk response strategies fall into four categories: risk avoidance, risk transfer, risk mitigation, risk acceptance. The definition of the terms is mentioned below:

- risk avoidance: risk avoidance entails developing strategies that seek to eliminate the risk event so that it no longer impacts the project objectives

- risk transfer: risk transfer implies ensuring that a third party (client or subcontractor) will take the ownership of the risk event either fully or partially.

- risk mitigation: risk mitigation is the strategy to reduce either the probability of occurrence, reduce the impact of risk or reduce both probability and impact of risk simultaneously

- risk acceptance: risk acceptance means that the organisation recognises the risk cannot be dealt with by any of the above strategies and plans ways to reduce the impact in the event the risk occurs. Acceptance can be “passive” if the impact is of minor importance, whereas acceptance can be “active” if the impact needs to be

reduced and contingency plans needs to be developed to reduce the overall impact to an acceptable level.

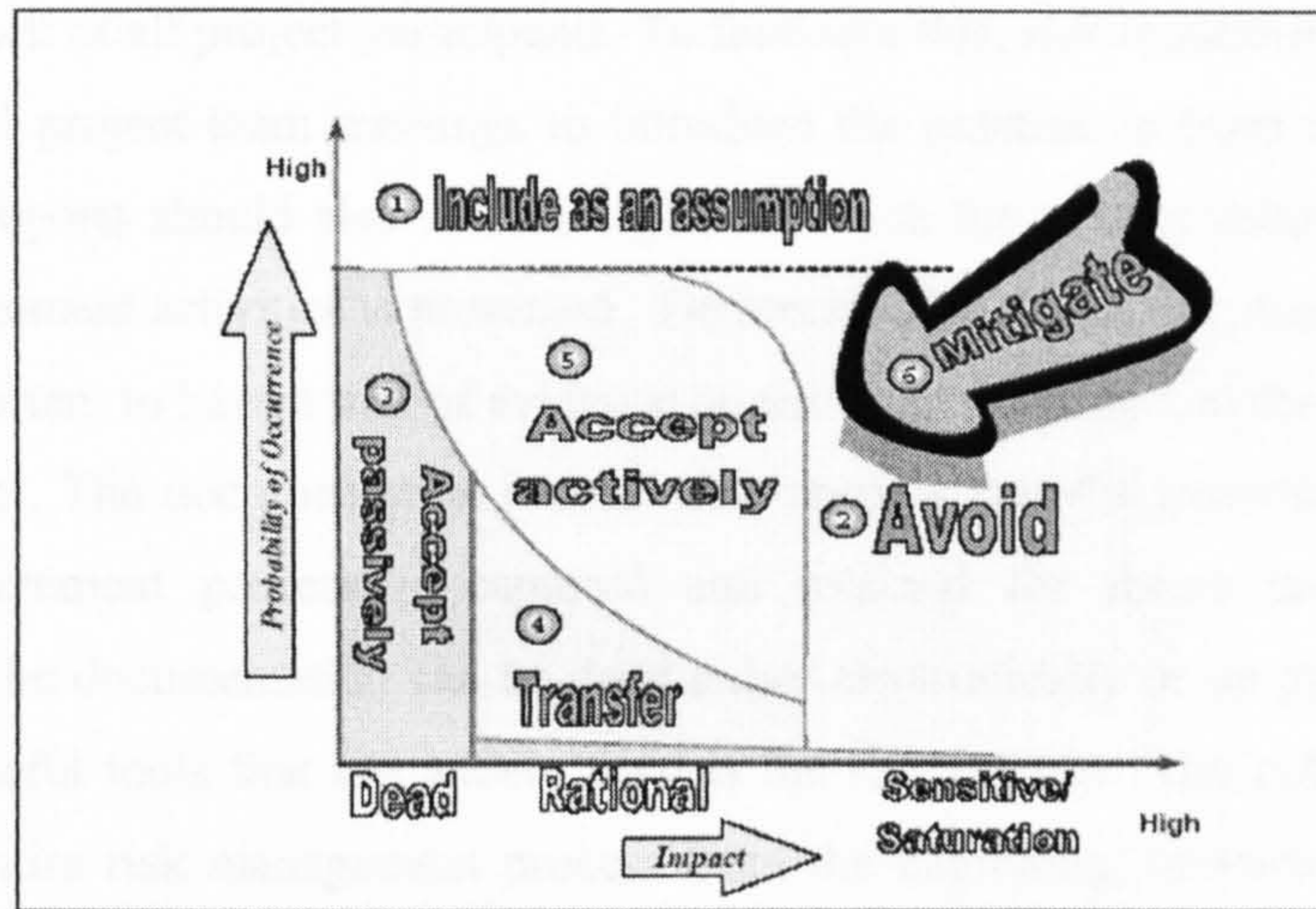


Figure 9.3: Example of Risk Response Chart
Source : Piney [2002]

The risk response charts are similar to the P-I charts but provide better visibility to the response strategy and to develop the boundaries for the above strategies for the portfolio of risks in the project (See figure 9.3). The Risk Response Charts can also be used to monitor the movement of the risks after the strategy has been adopted. This would help in determining whether the risk strategy has been adopted and has met its objective. The result can then be transferred into the Boston Grids for easier understanding and clarity.

It must be noted that the boundaries for the response strategies would vary from project to project and can be refined during the course of the project. It must be realised that every risk or opportunity response plan/action has a cost attached to it. While developing the response plans, it is important to determine the cost associated with the response action and the same must be taken into consideration to determine the type of response strategy suitable for those risks.

Monitoring and Control

Monitoring and control should be an ongoing process by its nature and incorporated in everyday work of all project participants. To facilitate this, risk monitoring should be a part of all project team meetings to introduce the practice to team members. Standard risk reports should also include a part in which the current status of risks and risk management activities is presented. Documentation of the risk management process is important to have a trail of evidence on the understanding and the rationale behind the risks. The documentation process also ensures that the knowledge from the risk management process is captured and retained for future use in the organisation. The documentation can be done either electronically or on paper. One of the most useful tools that are widely used is the risk register. The risk register captures the entire risk management process from the beginning; however, it only captures risk as an independent entity and does not show the linkage between risks.

Present Situations										
ID	Project Progress (Activities)			Problems		Proposed solutions			Schedule	
1										
2										
3										
Potential Planning										
ID	Risk Description	Issues (Risk Source)	Risk Impact (probability)	Impact (Verbal)	Probability	Risk Categories	Time Criticality	Response Action	Schedule	Risk Status
1										
2										
3										

Table 9.2 : A Proposed Risk Register for Thai project organisations

Regarding that Thai project members are not familiar with the term risk, the researcher would like to propose that the risk report (risk register) should include problem and risk sections separately. Such distinctions should encourage project members to learn and understand the term risk as well as encourage long term oriented thinking. The researcher believes that the problems section should be put in a risk registry form used in Thai project organisations, this would be to encourage Thai project members to distinguish between project risks and problems.

The prior discussions in this section are not to argue that the general process of PRM should be changed; however, it is rather concerned with the avoidance of the resistance that may occur during the undertaking of a PRM process. The intention

was to provide a simple process, a fundamental terminology for risk discussion and a list of the tools and methods that should be used in Thai project organisations. The change management process is as important as the PRM process itself, this is discussed in the following section.

9.4 A Change Process towards PRM: Thai context

The most important issue to the success of PRM implementation is to encourage organisation members to commit to the PRM implementation programme; this is a crucial element for the long term survival of the PRM process. In a Thai context, the commitment of leaders is the main driver for the PRM practice within the organisation.

The role of project manager gains more significance than that of the project members in a Thai context because the influence of Thai values emphasise on social hierarchy. The project leader plays an important role in moving the project forward and providing adequate support and facilities. Thais believe more in the person rather than the ability of the system.

There is a strong concept of Thai social hierarchy which plays a significant role in determining the working practice of people in Thai organisations and several other cultural values cannot be ignored. The concept of superior and inferior where superior refers to senior and inferior refers to sub-ordinates and the concept of a group relationship are very important to changes in management programmes in Thai organisations; therefore, the PRM implementation leader must contain a balance of both power and a good relationship with his subordinates.

For Thai organisations, the leadership group can effectively control or alter organisational direction, as there is a strong top-down management structure. Thai organisations have a more centralised perspective as the type of structure and level of authority committed to the subsidiaries tend to be less extensive. A top down approach is obviously suitable for changing management programmes in Thai project

organisations. Leadership for change is also vital for influencing change effectively. It is through the use of power influence that it is possible to make changes or implementation of PRM practice. Regarding the strong power distance in Thai society, any potential resistance from subordinates can be overcome; however, the leaders must also learn to compromise and be more supportive to their subordinates. As their members may follow their initiative without truly understanding about the underlying principle of the PRM concept and practice; hence, the outcome of a change programme will be fruitless.

In order to achieve a risk management culture [Hillson, 1999], it is important that project members must increase their risk awareness. Risk awareness, basically, relies upon risk communication and past experience. There are several Thai values which discourage risk communication; for instance, the 'superior –inferior' relationship, face saving and conflict avoidance. The strong 'in-group' cohesiveness, however, can support risk discussion among group members. The researcher feels that a discussion of risks and risk management should be separated into two levels. The first group is senior management who have to select risk management strategies. The second is at lower levels, where project members discuss potential risks and propose the risk management plans to their superiors.

9.5 Risk Management for large project organisation in Thailand

This section is to provide a discussion about the role of risk management in a large construction project in Thailand. Since a PRM process is normally discerned as suitable for large and complex projects it would therefore be useful to discuss some possible process of PRM practice in such projects.

Thai project organisations should exploit the benefits of high power distance. The responsible department for risk management practice within the organisation should be established right under the project manager. For Thai mega project organisations, risk management should be supported from a central level to the sub-projects, and the risks kept in check on a centralised level. As Thai culture has high power

distance and collectivism, the characteristics of a risk management department, for mega infrastructure projects, should be centralised with representatives from all departments being members. Within the risk management team, there must also be external risk management experts to guide and provide support for risk management practice. Furthermore, external experts or consultants can ease the tension of social interaction.

The risk department must be discerned as a supportive team to a project manager. This would provide accessibility and collaboration from other departments (See figure 9.4). The social construction of authority and acceptance of responsibility in organisations in Thailand reflects the hierarchical nature of the society and especially the construction of responsibility at senior level. Furthermore, functional hierarchies are more suitable than project teams in a Thai environment. The risk management department should be more approachable and welcome to discuss with consultant and contractor companies. This will increase communication and information from external sources to the project managers. The issue of establishing good relationships can be eased by having the risk management department contact other parties rather than have contact based on the project manager's availability.

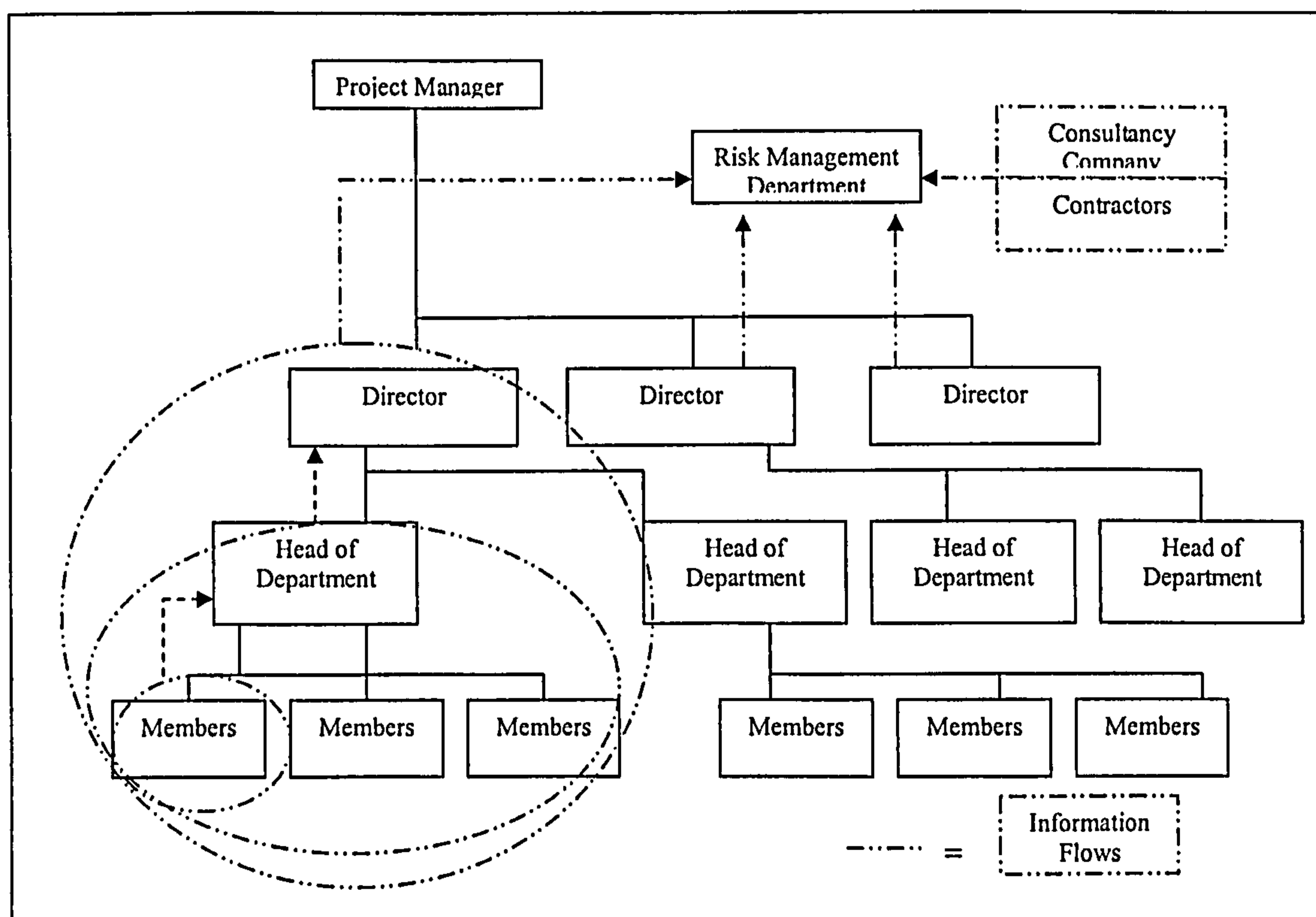


Figure 9.4 : Risk management department for Thai mega project organisations

The risk communication should flow from the bottom up to until it reaches risk management department. Within each group/ department/sub-departments members must take responsibility to identify risks and responsible parties should assess risk and propose risk management strategies. High power distance in the form of rigid hierarchies and high 'in-group' cohesiveness, where members from one class are likely to keep themselves segregated from members of another class. Furthermore, with high power distance, the person who is in charge distances himself from subordinates by paying less attention to what they do. Group discussion processes can provide precise risks under their control. This is to avoid time consuming discussion among the organisation's members and criticism avoidance, i.e. face saving behaviour. Furthermore, this will increase risk awareness among project teams; therefore increasing a proactive working style among project members as opposed to waiting until risk occurs.

9.6 Risk Management Training

Training is another crucial factor in the PRM implementation process. Given that the responsibility of the implementation project is spread throughout the project members, the training scheme should involve all members of the project team. Training should be arranged by the Risk management department and the head of the relevant departments. The combination of both will give a better result for training in a Thai context, because the Risk Management department staffs are knowledgeable about the risk management system, and the head of a particular department is a specialist in the concepts of the relevant modules that would be implemented in their own area.

The training must begin with the senior management first. The training at senior management must be of a high standard with external risk management consultancy training. Having external specialists can ease the potential arguments between participants and provide opportunities for senior management in other departments to raise questions. The senior management would feel less fear of losing face with external experts, as risk management is perceived as an alien subject for Thai

practitioners. The training session should be conducted providing English and Thai documentation to avoid confusion about the concept.

More detailed training should later be conducted by the risk management department for the project staff. Managers should be involved in training sessions in order to develop risk management skills in both technical and managerial issues. This idea is strongly recommended in a Thai context due to the emphasis on persons rather than the system mentioned earlier. Managers can understand the real feelings as well as the attitudes of their staffs. Moreover, this can build trust between managers and staff. When this happens, the users trust and feel close to the manager.

9.7 External Encouraging and Support

The previous section has provided a discussion of the PRM process for Thai project organisations; taking into consideration Thai cultural values; however, in order for PRM to be utilised in Thailand there are still several issues which need to be addressed. Since PRM is a relatively new concept for Thai project practitioners, it is rather unlikely that Thai project practitioners would employ the concept; furthermore, Thai cultural values also inhibit an effectiveness of the PRM process. These issues need to be supported by external factors. The following provides a discussion of some issues which can support and encourage the application of PRM practice in Thailand.

9.7.1 Drivers for pursuing PRM: national level

In order to promote PRM application, it is imperative to raise an awareness of risk management at a national level. Government has a vital role in the development of the industry, as it does not only regulate the construction activities but also is an active and major participant in the activities of the industry. The requirement from the government for contractors to conduct a proper risk management practice will play a significant role in stimulating widespread practice of PRM in Thailand. Project clients can also increase an employment of PRM practice in Thailand. The

project owners should ask their contractors to submit the risk management report periodically, for instance during bidding and execution phase.

Along with promoting the importance of PRM principles at the national level, the construction industry must pay more attention to development and research to improve the project management performance within Thailand.

9.7.2 The requirement for a project management institute

In the Thai construction industry, the knowledge transfer is quite problematic since most project managers do not want to share or disperse their knowledge to others as knowledge is considered to be a crucial element for positions and career advancement (See section, 7.5.3). Additionally, the knowledge is only for those who have a good relationship with the project manager (See section, 7.4.8). A strong in-group and cohesiveness can be used to explain a difficulty in knowledge transfer. Power distance also inhibits distribution of knowledge. Power means having knowledge; the senior and experienced keep their knowledge to maintain high respect from their subordinated.

It seems that the learning process is very difficult to conduct at a micro level as project practitioners are not willing to give their knowledge away unless they do belong to their 'in-group'. Nevertheless, '*post mortem*' studies can be conducted at a higher level. There are several institutions which can support and sponsor such activity including the Engineering Institution of Thailand, the Construction Institution of Thailand and many universities. This can be done in a form of collaboration with universities. The academics and interest groups within professional bodies should encourage '*post mortem*' studies as well as the application of PRM practice. It should be expected that this will be an immediate panacea, but it is a move in the right direction to re-engineer the industry.

9.8 The summarisation of PRM application for Thai project organisations

An appropriate PRM application for Thai project organisations should include the factors previously mentioned in this Chapter. For instance, a definition of risk, which would be related to issue and problem, should be included in any documentation regarding the application of a PRM process in Thailand, as Thai project practitioners are not used to the term risk in project context (See section, 9.2.1). The provision of visible tools to support risk communication is also crucial to enhance the Thai project members' ability to discuss possible risks effectively. Probability theory is a foreign concept to Thai senior management; therefore having visible tools like P-I matrices and a risk response chart are helpful to the risk assessment and risk response process (See section 9.3.2).

The design of a risk management document must take into consideration of the clarification of 'risk' and 'problem', this is to decrease confusion of Thai project members in discussing about present problems or issues and potential risks or future negative uncertain events. Thai cultural values which can render a traditional risk management process inapplicable, including senior-inferior relationship, face saving, in-group cohesiveness must be taken into consideration to support selection appropriate PRM tools and techniques used in Thai project organisations. Moreover, these cultural values play a significant role in change management programme in Thai project organisations (See section 9.3.2).

The success of PRM implementation is dependent upon encouraging risk awareness within an organisation. In order to effectively creating risk awareness culture within a Thai organisation, the senior management must be more supportive to their members in terms of education and training (See section 9.6). Risk communication must be separated into two main groups regarding their ranks and in-group members (See section, 9.4 and 9.5).

9.9 The implications for PRM implementation in other cultural contexts

Thai values also have some similarities to many other Asia countries. For instance, the concept of 'face' was mentioned in a Japanese social context by Nakane[1970] cited in Michael [1977], even though this concept was employed differently from the Thai context. Workers are also prohibited from direct communication with someone who is at a higher level than his boss. Any such contact between workers and senior people not directly in the work unit causes a loss of face for the boss. Hwang [1987] studied the Chinese cultural context and concludes that the frequent exchange of gifts and favours is a way of maintaining face and showing off power. Swierczek [1994] also emphasises the concept of 'face' in Asian cultures in general. Face is a measure of social value. It is indicative of how a person fits into the society, a demonstration of being civilised.

Apart from the concept of 'face', network building or relationship building is also emphasised in Eastern cultures. As well as building and maintaining relationships like Thais, the Chinese also have a traditional concept known as 'guanxi'. This term refers to special relationships two persons have with each other. Pye [1992] states that this concept can be best translated as friendship with implications of a continual exchange of favours. When 'guanxi' links two persons of unequal rank or social status, the weaker side usually expects more help than he or she can reciprocate in equal terms. Such unequal exchange reflects the Confucian principle of family cohesion, in which family ties demand mutual assistance [Alston, 1989].

According to Engardio [1995], it could be claimed that one of the primary influences within Eastern culture is Confucianism. Confucius lived approximately 2500 years ago, and this teaching of the importance of society, the group, and hierarchical relationships within a society has endured through the ages. Furthermore, the religions such as Buddhism and Taoism, the primary religions of Eastern cultures, place similar emphasis on the importance of the group in society [Dollinger, 1988]. These may be one of the reasons that influence most Eastern values to lead in almost the same direction.

The similarities of cultural values among Asian countries can influence the implementation procedure of the PRM process. Although, the precise manner of future study will not be the same as in the Thai context, at least to some extent this research provides a guideline for taking into account the importance of cultural values in other contexts than Thai. This research is an example of pointing out an attempt to understand and interpret the contribution of local cultural values to the achievement of success in PRM implementation. Local values from different contexts will be added to build up an appropriate framework for each country. This research will support, reinforce, extend and develop other areas of research.

9.10 Contribution to knowledge and limitations

The final section summarises the results of this research study in terms of its contribution to knowledge. It is proposed that the research makes a worthwhile contribution to knowledge on both theoretical and practical aspects. The literature review of PRM has mentioned the importance of cultural values in supporting the success of the adoption programme. Nevertheless, there is no evidence of any studies discussing explicitly how cultural values can affect the PRM implementation process.

Previously there were no known studies of the overall picture of PRM in Thailand, the proposed framework, developed during this study, provides insight and an overview of the development of project risk management in Thai organisations. Social context and social process and Thai values were brought together to illustrate how and why Thai project organisations differed in management practice from other countries who invented the PRM practice. While this thesis has demonstrated an example of the effect of cultural values on project management practices, it also implies that the development of a PRM adoption plan should be based on Thai cultural values.

This research is a pioneering work in employing national cultural values to support PRM implementation programmes in the South East Asia region, where national

cultural values are relatively alike. Furthermore, the framework can also be useful to Thai organisations in terms of practical PRM development. An organisation intending to embark on or progress in its PRM, can examine its status against the framework in order to commence, or improve a particular aspect that is found to be unsatisfactory.

9.11 The Implications of Thai research in Thailand

There are two main problems concerning the implementing of PRM into Thai organisations. The first one is a shortage of competent and experienced managers who can be effective as project risk managers in a pure project, and the second great difficulty is in obtaining sufficient commitment from high level officials in order to provide their project managers with adequate resources and/or authority to be effective.

The fact of being a Thai researcher conducting research into a Thai organisation can be regarded as a benefit. Firstly, the researcher is already familiar with Thai social values, which can help him to blend in with Thai senior management quite smoothly. Furthermore, the language barrier is lessened as it is the research's mother tongue. In terms of language, understanding Thai is a real advantage for this research as the several terms concerning PRM concept were discerned as alien words, which required explicit explanation and examples. When translating several terms and sentences from English to Thai, the researcher found that the descriptions were rather ambiguous and confusing to Thai project practitioners. The word "RISK" in particular was the most contentious during the interviews and workshop.

The thesis argues that an effective risk management process relies on cultural values of organisations. The tools and techniques by themselves will not deliver successful projects if they run counter to cultural and work values. To minimise adverse political interference, the project team has to "*sell the benefit*" of the project to powerful hierarchies, who in turn become sources of support. Access and

maintenance of relationships to key decision makers in the political hierarchy are critical for managerial success in developing countries.

There is an urgent need for empirical work to formalise a project risk management framework for developing countries, confirm which tools and techniques of the present project risk management orthodoxy work, which ones do not and why, and to articulate effective indigenous approaches to project management in Thailand.

9.12 Future Research

The PRM concept is in its infancy phase. It is hoped that this study will contribute by providing a foundation of knowledge on PRM in a Thai context, and encourage Thai academics and practitioners to be increasingly interested in this research area. As this research has covered a wide-range of project risk management issues, recommendations for further research arising out of it are numerous. This research mainly focuses on social and cultural issues related to PRM implementation projects in Thai organisations. The framework was set up by blending local values (Thai culture) into a socio-organisational approach in order to view and analyse social actions and interaction for formulating an appropriate PRM implementation framework for Thai project organisations. There are several areas worth pointing out to further explore.

First and foremost, it is imperative to further validate the PRM framework proposed in this study. This study is the first attempt to analyse and discuss cultural influence on PRM implementation in Thailand. This implies a need to empirically test the framework in a number of scenarios, for instance in a number of companies of the same type, size, areas. Further studies can bring about a better framework for PRM implementation in Thailand.

The implementation approach taking into account cultural analysis can be employed when studying project organisation in different industries, it is not limited only to the construction organisations as discussed in this research. This is due to the fact that

many factors such as the educational background of the organisations' members, social status and associated upbringings are rooted within the particular national culture. The benefits of using an approach similar to that identified in this study can be used for identification of hidden causes of managerial behaviour and interaction of members in other organisations. Seeking cooperation between countries in the same region to obtain primary data for a comparative study of national PRM practice development could be carried out to confirm the proposed model of PRM in developing countries. This will provide a useful perspective for practitioners, especially in multinational companies, to apply in their organisations.

In conclusion, this research is not only limited to using the national culture approach to view the implementation of PRM in project organisations in Thailand, but it can also be recommended to view the implementation of other management practice.

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APPENDIX 1

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Room 892
Department of Management Science
The University of Strathclyde
Glasgow
UK

Date:

Dear Mr.

Subject: An Interview

My name is Mr. Poomporn Thamsatitdej. I am a studying a doctoral degree in Management Science Department of Management Science at the University of Strathclyde. I am researching on an application of Project Risk Management for Thai construction industry. The overall aim of this research is to obtain empirical evidence to assist in understanding and describing the factors affecting successful design and implementation of Project Risk Management on Thai project organisations.

I was suggested from the manager of Engineering Institute of Thailand that you are highly experienced and are an expert in managing and controlling infrastructure projects.

I hope that you can share you invaluable experience and contribute towards understanding the critical success factors in implementing risk management process for Thai project organisations.

The interview section will last approximately 45 minutes. I have also enclosed a brief explanation of the PRM concept and the main questions for the interview.

You may be assured of complete confidentiality.

Yours truly,

Poomporn Thamsatitdej.

The effect of cultural difference on Project Risk Management practice: A Thai cultural analysis

- Objectives:
- to understand the project management practice of Thai project practitioners
 - to understand the practical context of Thai project practitioners' risk management
 - to investigate possibility of PRM implementation in Thai project organisations

Abstract

This study aims to gain an understanding on the methodology used in design an appropriate PRM process and application in Thai project organisations. The popularity of PRM concept is increasing in developed countries such as the USA, UK and Australia, because of its benefits. However, in developing countries such as Thailand, Singapore and Malaysia the concept seems to be relatively new. Particularly, in Thailand there is no published evidence concerning the study of this subject. The findings of this investigation do not only contribute to an improvement of Thai project management practice but also enhance an understanding of applying Western management concepts for Thailand.

It is important to note here that an implementation of Western management practice in countries, where their culture and management practices are different, requires a degree of adjustment to the cultural and managerial context relevant to specific countries. The PRM concept contains several managerial values which may not be suitable for Thai project management practice. The following questions are designed to elicit further information on Thai project risk management practice.

List of questions for the interview:

- How could you define risk?
- What are project risks?
- Who is responsible for project planning?
- How do you conduct project/ risk management plans?
- How do you monitor your project activities?
- Do you allow project members to solve problems when facing risk events?
- Has your company conducted "Post mortem" studies?
- What do you think about the PRM concept?
- If you had to implement the PRM concept, how would you do it?

Room 892.

Department of Management Science

The University of Strathclyde

Glasgow, UK

โทรศัพท์ : 01-771-8966

วันที่ 16 มิถุนายน พ.ศ. 2546

เรียน คุณ ธวัชชัย สุทธิประภา

เรื่อง ขอความอนุเคราะห์ทำการสัมภาษณ์

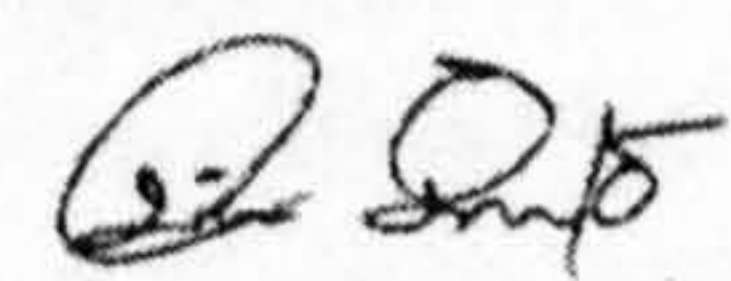
ข้าพเจ้า นายภูมิพร ธรรมสถิตย์เดช นักเรียนปริญญาเอกชั้นปีที่ 3 โคชทุนรัฐบาล (สำนักงาน ก.พ.) ประจำปี พ.ศ. 2542 จบปริญญาตรี สาขา การเงินและการลงทุน ปริญญาโท สาขาวิจัยเชิงปฏิบัติการ (Operational Research) และ กำลังทำปริญญาเอกในสาขาวิชาเดียวกัน ในหัวข้อ การประยุกต์ใช้แนวความคิด และ ระบบการจัดการความเสี่ยงของการบริหาร โครงการก่อสร้างเข้ากับองค์การที่ดำเนินการและบริหารงานก่อสร้างในประเทศไทย

เนื่องด้วยข้าพเจ้าได้รับการแนะนำจาก คุณ ไกร คังสง่า กรรมการผู้จัดการ บริษัท พีระมิด อินเตอร์เนชั่นแนล คอร์ปอเรชั่น จำกัด ว่าท่านมีประสบการณ์ และ ความเชี่ยวชาญทางด้านการจัดการ ดำเนินงาน และบริหาร การก่อสร้างของโครงการก่อสร้าง ซึ่งจะเป็นอย่างยิ่งต้องงานวิจัยนี้

ในการนี้จึงใคร่ขอความอนุเคราะห์ขอนัดสัมภาษณ์ เป็นระยะเวลาประมาณ 45 นาที เพื่อใช้เป็นข้อมูล ประกอบการจัดทำวิทยานิพนธ์ในหัวข้อดังกล่าวให้เป็นไปอย่างสมบูรณ์ ทั้งนี้ข้าพเจ้าได้แนบ บทนำของวิทยานิพนธ์ และ คำถามที่จะใช้ในการสัมภาษณ์มาด้วย

จึงเรียนมาเพื่อขอความอนุเคราะห์

ด้วยความเคารพอย่างสูง



(นายภูมิพร ธรรมสถิตย์เดช)

บทคัดย่อวิทยานิพนธ์

โดย นายภูมิพร ธรรมสถิตย์เดช นักศึกษาปริญญาเอก ชั้นปีที่ 3

The University of Strathclyde

เรื่อง การประยุกต์ใช้แนวความคิดในการจัดการความเสี่ยงของโครงการกับองค์กรไทย
(กรณีศึกษา โครงการก่อสร้างสนามบินสุวรรณภูมิ)

จุดประสงค์

วิทยานิพนธ์ฉบับนี้ เป็นการพยายามที่จะศึกษาการนำแนวความคิดที่ในการจัดการความเสี่ยงของโครงการ ที่ขณะนี้ได้รับความนิยมในกลุ่มประเทศที่มีการมีการพัฒนาการใช้การบริหารงานโครงการ เช่น อังกฤษ อเมริกา และ ออสเตรเลีย เนื่องจากแนวความคิดนี้ สามารถช่วยเพิ่มโอกาสในการบริหาร และ การจัดการโครงการ ให้สำเร็จไปตามแผนงานที่ได้วางเอาไว้ มาปรับใช้กับองค์กรไทย อย่างไรก็ตาม ทฤษฎีหรือแนวความคิดนี้ ยังถือว่าเป็นสิ่งใหม่เมื่อเปรียบเทียบกับแนวความคิดทางด้าน การจัดการและควบคุมคุณภาพ ซึ่งเริ่มมีการใช้อย่างแพร่หลายมากขึ้นในหลายประเทศ สำหรับในประเทศไทยนั้นยังไม่มีการทำวิจัยเกี่ยวกับแนวความคิดทางนี้ ดังนั้น การทำการวิจัยในเรื่องนี้ นอกจากจะเป็นการแสวงหาวิธีหรือกระบวนการในการพัฒนาองค์กรไทยให้มีศักยภาพที่สูงขึ้นแล้ว ยังเป็นการ พัฒนารูปแบบ และแนวทางในการประยุกต์ใช้แนวความคิด ในการจัดการความเสี่ยงของโครงการนี้ด้วย

แนวทางการดำเนินการวิจัย

งานวิจัยชิ้นนี้เริ่มต้นด้วยการศึกษาถึง ลักษณะ, กระบวนการ และ วิธีการและแบบแผนการประยุกต์ใช้แนวความคิดในการจัดการความเสี่ยง เพื่อพัฒนาความเข้าใจถึงวิธีการและแนวทางการปรับตัวขององค์กร ในการที่จะนำแนวความคิดนี้มาใช้ได้อย่างมีประสิทธิภาพและทำให้เกิดประสิทธิผล เนื่องจากหลักการและวิธีคิด ของการดำเนินการบริหารและการจัดการของความเสี่ยงของโครงการนั้น ถูกคิดริเริ่มมาโดยกลุ่มประเทศที่พัฒนาแล้ว ซึ่งมีความเหมาะสมกับลักษณะการบริหาร และการดำเนินการที่แตกต่างจากการบริหารงานขององค์กรในประเทศไทย ดังนั้นแล้วขั้นตอนต่อไปคือการศึกษาลักษณะการบริหาร และการจัดการขององค์กรไทย เพื่อที่จะนำมาเปรียบเทียบกับหลักการและแนวทางการจัดการความเสี่ยงของโครงการ การเปรียบเทียบนี้ จะทำให้เกิดความเข้าใจถึงความจำเป็น และวิธีการที่จะพัฒนาและปรับเปลี่ยนองค์กรไทย ให้มีความสอดคล้องกับหลักการ และวิธีการปฏิบัติตามแนวความคิดของการจัดการความเสี่ยงของโครงการ ในส่วนของการการวิจัยเชิงปฏิบัติ นั้น วิธีกรณีศึกษา (Yin, 1994) ถูกเลือกมาเพื่อใช้ในการวิเคราะห์ การบริหารและดำเนินการจัดการโครงการของ บริษัท ท่าอากาศยานกรุงเทพฯสาขาลแห่งใหม่ จำกัด ซึ่งเป็นองค์กรที่ทำหน้าที่ควบคุมการบริหารและจัดการ

โครงการก่อสร้าง สนามบินสุวรรณภูมิ ขณะนี้การวิจัยกำลังอยู่ในขั้นตอนของ การเก็บข้อมูลเพิ่มเติมพร้อมทั้งวิเคราะห์ และพัฒนาโครงการประยุกต์ใช้ ขั้นสุดท้าย

เนื้อหาของวิทยานิพนธ์

การจัดการโครงการให้เสร็จตามวัตถุประสงค์หลัก คือ ตามกำหนดระยะเวลา ในงบประมาณที่กำหนด และ ตามมาตรฐานที่ตั้งไว้นั้น เป็นสิ่งที่ ผู้ประกอบการและผู้จัดการโครงการมุ่งหวังและต้องการมากที่สุด (Turner, 1993) อย่างไรก็ตาม ในความเป็นจริงนั้นมีโครงการเป็นจำนวนมากที่ ไม่สามารถสร้างเสร็จได้ตามที่คาดหวังเอาไว้ ความไม่สามารถที่จะควบคุมโครงการให้เสร็จสิ้นได้ตามที่คาดการณ์นั้น ส่งผลกระทบต่อบุคคลหลายฝ่าย ไม่ว่าจะเป็น เจ้าของโครงการ, ผู้ควบคุมโครงการ และ รวมไปถึงจนถึงผู้จะใช้ประโยชน์จากโครงการด้วย (Kerzner, 2000) ความล้มเหลวของการดำเนินโครงการให้เสร็จไปตามเป้าหมายนั้น สามารถพูดได้ว่า เป็นความผิดพลาดในการดำเนินงานให้ตรงตามแผนที่กำหนดไว้ หรือมีการที่ดำเนินงานอย่างไม่รัดกุม (Morris, 1994) โดยปกติแล้ว การควบคุมและดำเนินการบริหารโครงการ มักจะเผชิญกับเหตุการณ์ที่ทำให้แผนการดำเนินงานเดิมที่วางเอาไว้ต้องเปลี่ยนแปลงไป เหตุการณ์หรือสถานการณ์ที่ส่งผลกระทบต่อการทำงานนี้ เรียกว่า “ความเสี่ยง” นั่นเอง (Chapman and Ward, 1996) ความเสี่ยง นี้ อาจเกิดได้จากหลายสาเหตุ เช่น สภาพอากาศที่ไม่อำนวยต่อการดำเนินงาน, สภาพของเศรษฐกิจที่เปลี่ยนแปลง, การเปลี่ยนแปลงของข้อกำหนดและกฎหมาย และ ระบบการขนส่งวัสดุของการก่อสร้างที่ไม่แน่นอน (Project Management Institute, 2000)

แนวความคิดใน “การจัดการความเสี่ยงของโครงการ” มีหลักเกณฑ์ ที่มุ่งเน้นให้องค์กรคำนึงถึงเหตุการณ์ที่น่าจะส่งผลกระทบต่อการทำงาน และการวางแผนที่จัดการกับเหตุการณ์ หรือ ความเสี่ยงเหล่านั้น และท้ายที่สุด คือ การปรับเปลี่ยนแผนการดำเนินงานใหม่ ให้สอดคล้องกับผลกระทบของความเสี่ยงนั้น อย่างเหมาะสมที่สุด (Chapman et al., 1991) กระบวนการจัดการความเสี่ยงโดยส่วนมากแล้วจะประกอบไปด้วย สี่ ขั้นตอน หลัก คือ กระบวนการบ่งชี้ความเสี่ยง, กระบวนการประเมินความเสี่ยง, กระบวนการจัดการความเสี่ยง และ กระบวนการติดตามผล (Association of Project Management, 2000)

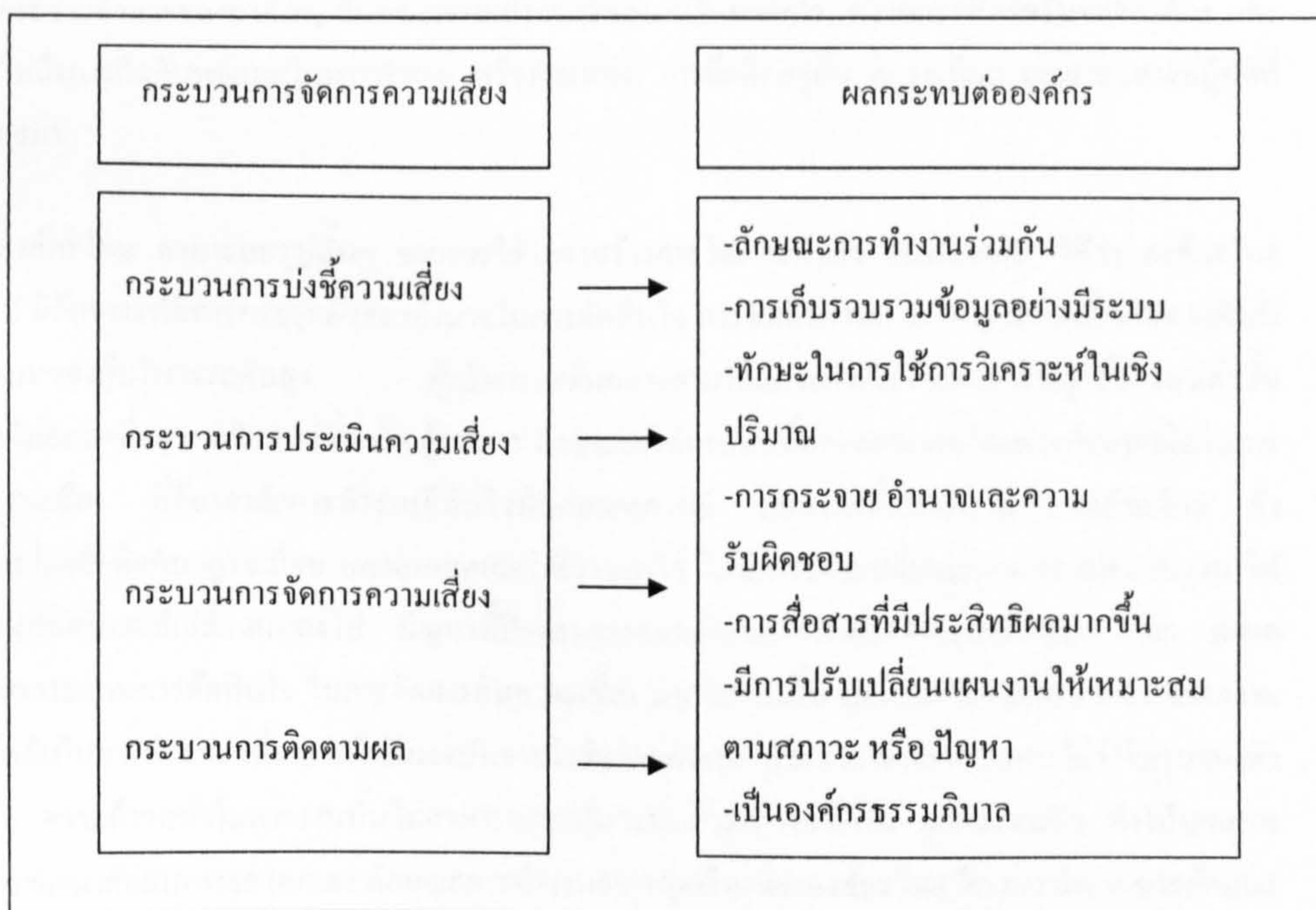
กระบวนการบ่งชี้ความเสี่ยง คือ การระดมความคิด ของผู้ที่เกี่ยวข้องในการดำเนินการของ โครงการ พร้อมทั้งเก็บรวบรวมข้อมูลข่าวสารที่เกี่ยวข้อง เพื่อที่จะใช้ในการค้นหา ความเสี่ยง ที่น่าจะส่งผลกระทบต่อแผนการดำเนินการจัดการโครงการ และ วิธีการดำเนินงานที่ได้วางเอาไว้

กระบวนการประเมินความเสี่ยง เป็น กระบวนการที่มีความเกี่ยวข้องกับการใช้ทฤษฎีความน่าจะเป็น โดยทำการประเมินความน่าจะเป็น ของโอกาสที่ความเสี่ยงจะเกิดขึ้น และ ความรุนแรงของผลกระทบของความเสี่ยงนั้นต่อการดำเนินงาน

กระบวนการจัดการความเสี่ยง ประกอบไปด้วย สอง ส่วนหลักๆ ส่วนแรกเป็นการวางแผนที่เหมาะสม เพื่อนำมาใช้จัดการกับความเสี่ยงที่ถูกประเมินไว้แล้ว ขั้นตอนต่อมา เป็นส่วนที่เกี่ยวข้องกับการนำแผนที่วางไว้ไปปฏิบัติใช้ตามวิธีการ และ ระยะเวลาที่ได้กำหนดไว้

กระบวนการติดตามผล เกี่ยวข้องกับ การวัดประสิทธิภาพของแผนที่น่าไปจัดการกับความเสี่ยง โดยตัววัดผลในรูปของต้นทุน และ ระยะเวลาที่โครงการสามารถ ดำเนินได้ตามเป้าหมาย

ประโยชน์ในภาพรวมของการจัดการความเสี่ยงดังที่ได้กล่าวมาแล้ว คือ การมีส่วนร่วมอย่างมากในการเพิ่มโอกาสให้โครงการถูกดำเนินไปตามแผนที่และวัตถุประสงค์ที่ได้วางเอาไว้ อย่างไรก็ดี การปฏิบัติตามกระบวนการจัดการความเสี่ยงนั้น ระบบการทำงานขององค์กรจะถูกผลักดันให้มีประสิทธิภาพมากขึ้น (แผนภาพที่ 1) องค์กรจะถูกผลักดัน ให้เป็นองค์กรที่มีลักษณะเป็นองค์กรธรรมาภิบาล (Arto, 1997) เนื่องจากการจัดการความเสี่ยงนั้นจำเป็นต้องอย่างยิ่งที่จะต้องอาศัยการทำงานร่วมกันของสมาชิกทุกคนในองค์กร โดยเฉพาะผู้บริหารระดับกลาง และระดับสูงจะต้องเข้าใจในแผนนโยบาย และระบบการทำงานในหน่วยงานอื่นๆ เพื่อที่จะเพิ่มพูนความเข้าใจ และสามารถค้นหาความเสี่ยงที่จะส่งผลกระทบต่อการทำงานขององค์กรโดยรวม (Ward, 1999)



แผนภาพที่ 1 : แสดงผลกระทบของกระบวนการจัดการความเสี่ยงต่อลักษณะการทำงานขององค์กร

การที่เข้าใจถึงการทำงานในส่วนอื่นๆขององค์กร และ ช่วยกันวางแนวทางในการแก้ปัญหาต่อความเสี่ยงนั้น จะช่วยให้การแก้ปัญหาอย่างไม่เป็นธรรมหรือไม่โปร่งใสลดน้อยลง ในขณะที่เดียวกันจัดการกับความเสี่ยงนั้น ขึ้นอยู่กับ การได้รับข้อมูลข่าวสารที่รวดเร็วและถูกต้อง (Grey,1995) พร้อมทั้งต้องอาศัยการลงมือปฏิบัติอย่างรวดเร็ว (Courtney, 2000) ดังนั้นแล้วองค์กรจะต้องมีความพร้อมในส่วนของการจัดระบบข้อมูลและระบบการสื่อสารภายในที่จะตอบสนองต่อ การจัดการความเสี่ยงได้อย่างทันท่วงที เนื่องจาก ความเสี่ยงเหล่านี้ต้องถูกจัดการโดยเร็วที่สุด เพื่อไม่ให้เกิดผลกระทบต่อการทำงาน ดังนั้นแล้วเพื่อการทำงานที่รวดเร็ว อำนาจในการตัดสินใจจะต้องถูกกระจายลงไปในส่วนล่างขององค์กรอย่างเหมาะสม

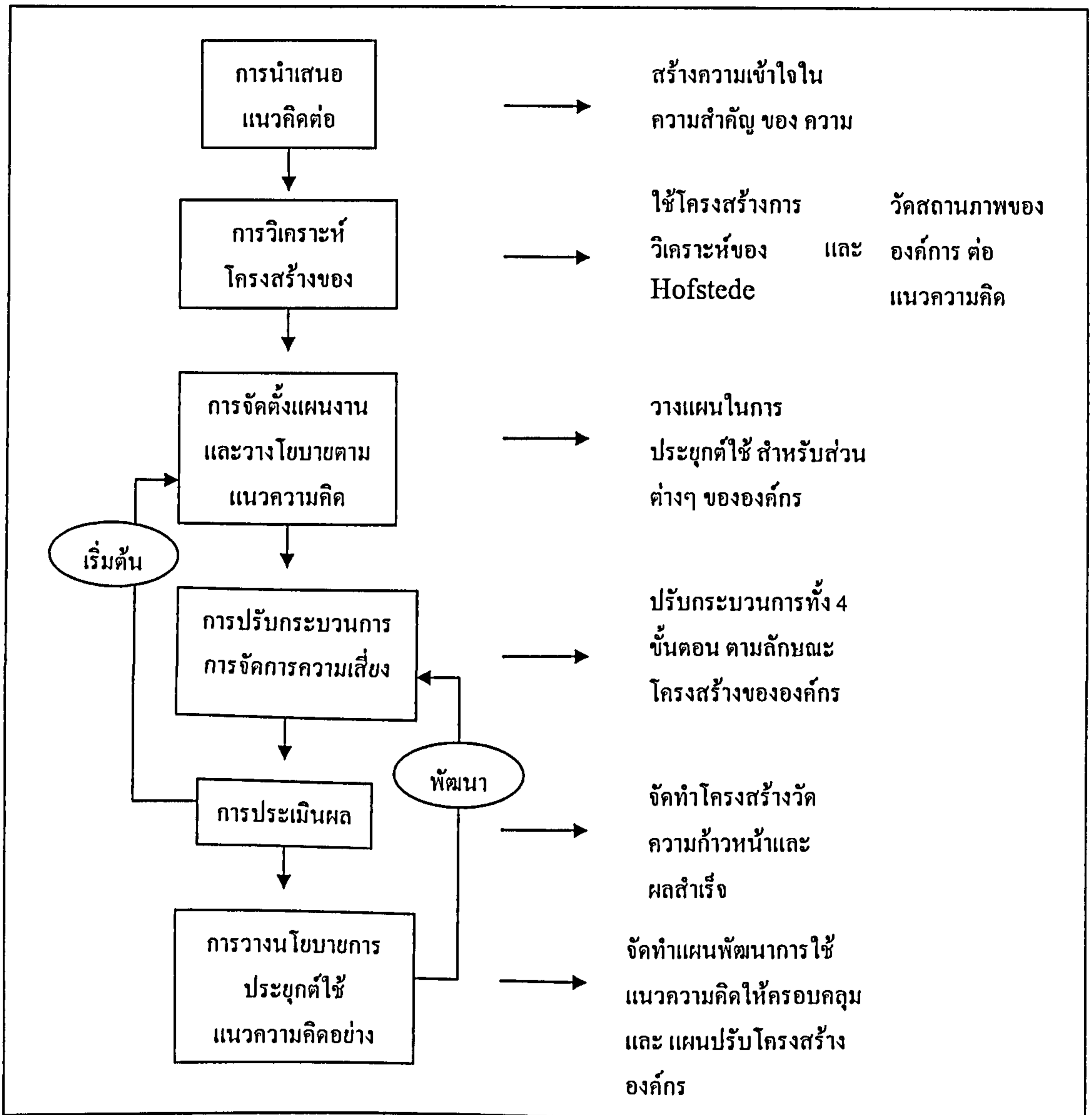
เมื่อเข้าใจและรู้ถึงหลักการและกระบวนการจัดการความเสี่ยงแล้ว ก่อนที่จะนำแนวความคิดและหลักการนี้มาประยุกต์ใช้นั้น จะต้องทำ การวิเคราะห์ลักษณะขององค์กร เสียก่อน เพื่อที่จะได้วางแผนที่เหมาะสมในการประยุกต์แนวความคิด การจัดการความเสี่ยง และ ปรับกระบวนการจัดการความเสี่ยง ให้เหมาะสมกับสภาวะและลักษณะการทำงานขององค์กร แนวคิดของวัฒนธรรมองค์กร ถูกนำมาใช้เพื่อช่วยในการอธิบายลักษณะขององค์กร โดยทำให้เข้าถึงปัจจัยที่กระตุ้นระบบและวิธีการทำงานขององค์กร (del Cano and de la Cruz, 1998) โครงสร้างการวิเคราะห์ลักษณะองค์กรของ Hofstede (1980, 1991) ถูกนำมาประยุกต์ใช้ เพื่อเป็นแนวทางในการวิเคราะห์ลักษณะขององค์กรไทย แม้ว่าโครงสร้างการวิเคราะห์ของ Hofstede นั้นจะถูกใช้แพร่หลายในการเปรียบเทียบลักษณะองค์กรที่แตกต่างกันในระดับประเทศ (Sinha and Kao, 1988) อย่างไรก็ตาม ปัจจัยที่ใช้ในโครงสร้างการวิเคราะห์นี้ ก็ถูกนำมาใช้ในเป็นแนวทางของการวิเคราะห์ลักษณะองค์กรโดยทั่วไปเช่นกัน ในประเทศไทยเอง ก็มีการนำโครงสร้างนี้มาประยุกต์ใช้ในการทำวิจัยเกี่ยวกับองค์กรเป็นจำนวนมาก (Manochlarumol, 1999) ลักษณะที่สำคัญของโครงสร้างการวิเคราะห์นี้ มุ่งเน้นไปที่การอธิบาย ลักษณะของการกระจายอำนาจขององค์กร, ลักษณะความสัมพันธ์ของคนในองค์กร, ความกระตือรือร้นขององค์กร และ อาจรวมไปถึงการกีดกันทางเพศในการทำงาน หรือตำแหน่ง, การยึดติดอยู่กับ กฎระเบียบ และแนวทางปฏิบัติที่ ทำกันเรื่อยมา

ลักษณะองค์กรไทย สามารถสรุปสั้นๆ จากการใช้โครงสร้างการวิเคราะห์ของ Hofstede ได้ว่า องค์กรไทย โดยทั่วไป มีลักษณะที่มีการกระจุกตัวของอำนาจในการตัดสินใจ การดำเนินงานส่วนใหญ่ มักจะเป็นไปตามคำสั่ง และรูปแบบของผู้บริหารระดับสูง ผู้บริหารระดับกลางลงมา ก็มักจะดำเนินงานเฉพาะที่ถูกสั่งลงมาเท่านั้น เนื่องจากไม่อยากเสียความสัมพันธ์ที่ดี กับ ผู้บริหาร ลักษณะองค์กรแบบนี้ส่งผลกระทบต่อโดยตรงกับแนวคิดในการจัดการความเสี่ยง ที่ต้องอาศัยการทำงานที่ฉับไวทันต่อเหตุการณ์ นอกจากนี้การทำงานขององค์กรไทย ยัง ดำเนินการโดยยึดติดกับกฎระเบียบ และแบบแผนเก่าที่วางเอาไว้ ไม่มีการปรับเปลี่ยนแนวทางการดำเนินงาน ให้สอดคล้องกับสภาวะที่เปลี่ยนแปลงไป ปัญหานี้ปิดกั้นแนวความคิดของการวินิจฉัยวิเคราะห์ปัญหา และ ส่งผลกระทบต่อกระบวนการตัดสินใจ ในการจัดการกับความเสี่ยง มากไปกว่านั้น บุคลากรในองค์กรไทยยัง ขาดความกระตือรือร้นในการทำงาน เนื่องจากไม่มีแรงบันดาลใจในการทำงาน นโยบายให้ผลตอบแทนไม่อยู่ในรูปของตัวเงิน หรือ ความก้าวหน้าในการทำงานนั้นไม่สามารถกระตุ้นระบบการทำงานที่ดีได้ ผลกระทบคือ ทำให้บุคลากร ละเลยการพัฒนาศักยภาพของตนเอง ลักษณะการทำงานอย่างสุดท้าย ขององค์กรไทย คือ การทำงานขาดลักษณะการทำงานที่ร่วมกัน เนื่องจาก ความกังวลในเรื่องความขัดแย้งในการออกความคิดเห็นระหว่างเพื่อนร่วมงานและผู้บริหาร ปัญหานี้ปิดกั้น การระดมความคิดที่ จะช่วยกันเสาะหาความเสี่ยงที่จะเกิดขึ้นกับการดำเนินงาน อย่างไรก็ตาม ด้ปัญหาเหล่านี้ส่งผลกระทบต่อที่สำคัญที่สุดต่อการนำเอา แนวความคิดในการจัดการความเสี่ยงมาประยุกต์ใช้ นั่นคือการที่องค์กรไทยไม่ได้ ตระหนักถึง ความเสี่ยงที่จะเกิดขึ้นกับการดำเนินงานและการจัดการ โครงการ

ในส่วนสุดท้ายของบทคัดย่อนี้ เป็นการอธิบายถึง รูปแบบโครงสร้าง การนำเอาแนวความคิดการจัดการความเสี่ยงของโครงการไปประยุกต์ใช้กับองค์กรไทย แนวความคิดหลักสำหรับโครงสร้างนี้ คือ การปรับเปลี่ยนองค์กรอย่างค่อยเป็นค่อยไป (Ansoff and McDonald, 1990) เนื่องจากโดยปรกติแล้วองค์กรมักจะไม่ยอมรับแนวความคิด หรือ วิธีการทำงานแบบใหม่โดยเฉพาะองค์กรไทย ซึ่งมีลักษณะที่ยากต่อการยอมรับแนวความคิดการจัดการความเสี่ยงของโครงการ ดังที่ได้กล่าวมาแล้วข้างต้น การนำแนวความคิดนี้มาไปประยุกต์ใช้ จะต้องคำนึงถึงโครงสร้างและลักษณะการทำงานขององค์กรเป็นหลัก หลังจากนั้น ก็พยายามนำกระบวนการจัดการ

ความเสี่ยงไปสอดแทรก หรือปรับใช้กับลักษณะการทำงานเดิมขององค์กร โดยพยายามให้เกิดผลกระทบ ต่อ ลักษณะการทำงานเดิมขององค์กรที่มีอยู่น้อยที่สุด หลังจากที้องค์กรมีการประยุกต์ใช้แนวความคิดนี้ในระยะเวลา หนึ่งแล้ว พร้อมทั้งส่งผลการปฏิบัติการที่ดีตามที่ได้อาคตามาเอาไว้ หลังจากนั้นจะทำการปรับสภาพโครงสร้าง และ ลักษณะการทำงานพร้อมทั้งแนวความคิดในการทำงานขององค์กร ให้สอดคล้องกับแนวคิด ของการจัดการ ความเสี่ยงมากขึ้น จนกระทั่ง องค์กรนั้น กลายเป็น องค์กรที่มีการจัดการ และการดำเนินงานโดยคำนึงการจัดการ ความเสี่ยง และ ใช้กระบวนการจัดการความเสี่ยงกับการดำเนินงานทุกประเภทและทุกส่วนของการทำงาน

กระบวนการ นำแนวความคิดทางด้านการจัดการความเสี่ยงของโครงการ นั้นประกอบไปด้วย รายละเอียด มากมาย อย่างไรก็ตาม ขั้นตอนที่สำคัญ สำหรับประยุกต์ใช้แนวความคิดนี้ ถูกสรุปอยู่ในแผนภาพที่ 2 ในการเริ่มต้น ของกระบวนการ สิ่งสำคัญที่สุด คือการนำเสนอแนวความคิด ต่อผู้บริหารระดับกลางและสูงขององค์กร เพื่อ องค์กรจะได้เข้าใจถึงความสำคัญ และปัญหาของความเสี่ยงที่ส่งผลกระทบต่อการทำงาน พร้อมทั้งอธิบาย กระบวนการจัดการความเสี่ยง และประโยชน์ที่องค์กรจะได้รับจากการนำแนวความคิดนี้มาใช้ ขั้นตอนต่อไปจะ ดำเนินไปอย่าง สัมฤทธิ์ผล หรือไม่ ขึ้นอยู่กับการทำให้ผู้บริหารเหล่านี้ เนื่องจากว่า หากไม่ได้รับความ ร่วมมือ และสนับสนุนจากผู้บริหารแล้วอย่างจริงจัง แล้วการประยุกต์ใช้ แนวความคิดนี้ก็ไม้อาจสำเร็จไปได้



แผนภาพที่ 2 : กระบวนการประยุกต์ใช้แนวความคิดการจัดการความเสี่ยงของโครงการสำหรับองค์กรไทย

หลังจากได้รับความเห็นชอบจากผู้บริหารแล้ว ก่อนที่จะวางแผนการประยุกต์ใช้ สิ่งสำคัญที่ต้องทำ คือ การวิเคราะห์ลักษณะการทำงานขององค์กร และ วัดสถานะภาพ ขององค์กรว่ามีระดับ การใช้แนวความคิดในการจัดการความเสี่ยงระดับไหน เพราะในบางครั้ง องค์กร อาจจะไม่ได้ตระหนักว่าการดำเนินงานขององค์กรนั้น มีการใช้แนวความคิดของ การจัดการความเสี่ยงอยู่บ้างแล้ว ผลของการวัดระดับการใช้แนวความคิดในการจัดการความเสี่ยงภายในองค์กร จะช่วย ให้การวางแผน และปรับนโยบายเป็นไปอย่างมีประสิทธิภาพมากขึ้น โดยปรับให้สอดคล้องตามส่วนงานและแผนที่เกี่ยวข้อง ให้มีการประสานงานโดยผ่านกระบวนการและการใช้แนวความคิดนี้มากขึ้น แผนและนโยบายนั้น จะรวมถึง การวางแผนกระตุ้นการใช้แนวความคิดในการจัดการความเสี่ยง, การพัฒนาบุคลากร, การสรรหาอุปกรณ์เครื่องใช้สำหรับการดำเนินงาน, จัดสรรกำลังคน และ ระบบการวัดความก้าวหน้าในการประยุกต์ใช้ด้วย อย่างไรก็ตาม นโยบายนี้จะสำเร็จได้ก็ต้องอาศัย การปรับ วิธีการ และ เทคนิค

ในการกระบวนการของการจัดการความเสี่ยงที่กล่าวไว้ข้างต้น ให้สอดคล้องกับวิธีการดำเนินงานขององค์กรที่กำลังปฏิบัติอยู่ และขีดความสามารถของบุคลากรที่อยู่ในองค์กร การประเมินผลจะต้องเป็นไปตาม นโยบายที่ตั้งเอาไว้ ทั้งในด้านระยะเวลา และประสิทธิภาพของการดำเนินงาน ถ้าผลการประเมิน แสดงว่า องค์กรมีพัฒนาการอย่างดี ในการนำเอาแนวความคิดการจัดการความเสี่ยงมาใช้ ขั้นตอนต่อไปเป็นการวางแผน เพื่อที่จะพัฒนาระดับการดำเนินการและวิธีการจัดการความเสี่ยงให้มีประสิทธิภาพมากขึ้น ในขั้นตอนนี้ ก็จะรวมกลับไปถึงการปรับเปลี่ยนกระบวนการจัดการความเสี่ยงให้มีความสอดคล้องกับ สักยภาพขององค์กรซึ่ง ได้ผ่านการพัฒนาและคุ้นเคยกับการจัดการความเสี่ยงมาแล้ว อย่างไรก็ตาม หากว่าผลของการประเมินการดำเนินการประยุกต์ใช้แนวความเสี่ยงในช่วงแรกนั้นไม่เกิดประสิทธิผลตามที่ต้องการ แผนและนโยบาย จะต้องถูกปรับเปลี่ยนใหม่ ให้สอดคล้องกับ องค์กรมากขึ้น โดยตรวจสอบดูจากผลของการประเมินการดำเนินงาน ว่ามีส่วนใดที่ต้องการการปรับเปลี่ยนและพัฒนา

บทสรุป

การวิจัยนี้ เป็นเพียงแต่การเสนอแนะ แนวทางการนำแนวความคิดของการจัดการความเสี่ยงของโครงการมาประยุกต์ใช้กับองค์กรไทยเท่านั้น มิได้มีการนำไปปฏิบัติกับองค์กรอย่างเป็นทางการ ทั้งนี้ เนื่องจากข้อจำกัดทางด้านอำนาจในการดำเนินการขององค์กร ที่ถูกเลือกมาใช้ในการวิจัย อย่างไรก็ตาม แนวความคิดของโครงสร้างการประยุกต์ใช้การจัดการความเสี่ยงของโครงการนี้ที่ใช้เสนอนี้ จะถูกทดสอบโดยการ สัมภาษณ์ถึงความเป็นไปได้ สำหรับการนำไปใช้กับองค์กร ผลของงานวิจัยนี้น่าจะเป็นการเสนอแนวทางในการปรับเปลี่ยนโครงสร้างและลักษณะการดำเนินการขององค์กรไทย ต่อแนวความคิดในการจัดการความเสี่ยง และ เป็นการช่วยพัฒนารูปแบบ และโครงสร้างของการประยุกต์ใช้แนวความคิดนี้ได้ในระดับหนึ่งด้วย

APPENDIX 2

INSTRUCTIONS TO THE SYNDICATES (GROUPS)

RISK MANAGEMENT CASE STUDY

10.30 – 11.15

- Break into 7-8 syndicates (groups) and perform a risk assessment
- Agree on a representative of the group for presentation
- Use the list of risks on page 7 of case study as a guideline
- Group discussion to identify risks, their impact and mitigation strategies
- Complete the risk matrix on page 8 of the case study
- Plot the risks identified on the chart on page 9 of the case study
- No documents needs to be handed in

11.15 – 11.45

- 5-10 minute presentations by 4-5 random syndicates

11.45 – 12.00

- Group wide feedback and discussions

STRATEGIC BUSINESS PLANNING CASE STUDY

14.30 – 16:00

- Break into 7-8 syndicates (groups)
- As a team of executives, you have to analyse 5 strategic options
- Each syndicate is allowed to submit up to 2 questions in writing for clarification

17.30

- The answers of the all questions are given to all syndicates

17.30 - 18.15

- Each syndicate finalises their choice of strategic option (for the business plan)
- Pick a syndicate leader and allocate roles and responsibilities
- Syndicates inform facilitators about choice of options, and team responsibilities

18.15 – 20.00

- Develop strategic business plan for the chosen strategic option
- Prepare PowerPoint presentation

20.00-20.45

- 10-minute presentation of 4-5 randomly selected syndicates

20.45 – 21.00

- *Wrapping up and Group wide feedback*
- *Personal action planning*

Risk Management Case Study

Ratchaburi Electricity Generating Holding PCL

COMPANY BACKGROUND

Ratchaburi Electricity Generating Holding PCL is, a holding company set up on March 7, 2000 with registered and paid-up share capital of Baht 14,500 million, committed to investing in its wholly-own subsidiaries i.e. Ratchaburi Electricity Generating Co., Ltd. and Ratchaburi Energy Co., Ltd. The Holding company's main income is dividends from its subsidiary, Ratchaburi Electricity Generating Co., Ltd.

SUBSIDIARIES

1. Ratchaburi Electricity Generating Co., Ltd.

Ratchaburi Electricity Generating Co., Ltd. was set up on March 20, 2000 with a registered capital of Baht 18,275 million for electricity generating business. The power plants occupy an area of 2,158 Rai covering 3 districts in Ratchaburi province. The modern technology power plants with total value of Baht 60,700 million use natural gas from Yadana and Yetakun from Myanmar as their primary fuel.

The plants comprise of:

1. Two Thermal Power Plant Units with an installed capacity of 735 megawatts each and the total capacity of 1,470 megawatts, were transferred from EGAT on October 31, 2000. Natural gas is the primary fuel whereas fuel oil is the secondary source.
2. Three Combined Cycle Power Plant Blocks with an installed capacity of 725 megawatts each and the total capacity of 2,175 megawatts use natural gas as their primary fuel and diesel as secondary. Blocks 1 and 2 were transferred from EGAT on April 18, 2002, and Block 3 on November 1, 2002.

Currently Ratchaburi Electricity Generating Co., Ltd. is the largest independent power producer in Thailand with a total installed capacity of 3,645 megawatts or 14 percent of the country's total installed capacity.

2. Ratchaburi Energy Co., Ltd.

Ratchaburi Energy Co., Ltd. was set up on September 4, 2001 with registered capital of Baht 190 million. Its primary objective is to study and invest in projects according to the Company's plan with emphasis on electricity generating business and increasing shareholders value.

On October 15, 2001, EGAT and the Company submitted project proposals to the Energy Conservation Fund for obtaining a support for the 3 projects namely Pasak Chonlasit Dam in Lopburi Province, Chao Phraya Dam in Chainat Province and Khlong Tha Dan Dam in Nakhon Nayok Province (as described in Table below), and on March 21, 2002 the Fund approved in principle to financially support the projects by Baht 0.20 per unit of electricity generate under the condition of public participation from the communities living within the distance of 10 kilometres from the projects.

Revenue Structure of the Company and its Subsidiaries

The basic income of Ratchaburi Electricity Generating Co., Ltd. can be grouped into two main parts.

1) Availability Payment (AP)

Availability payments have been arranged to cover all fixed costs and operating expenses, such as fixed operating and maintenance costs, selling and administrative expenses, debt servicing, and return on investments for shareholders. These availability payments are subjected to the power plants availability to generate power according to the order of EGAT, whether dispatch is made or not.

2) Energy Payment (EP)

Energy payments are paid monthly to compensate Ratchaburi Electricity Generating Co., Ltd. for the net amount of electricity generated and transmitted to EGAT. These payments consist of two main parts:

1. Fuel payments.
2. Variable operating and maintenance payments.

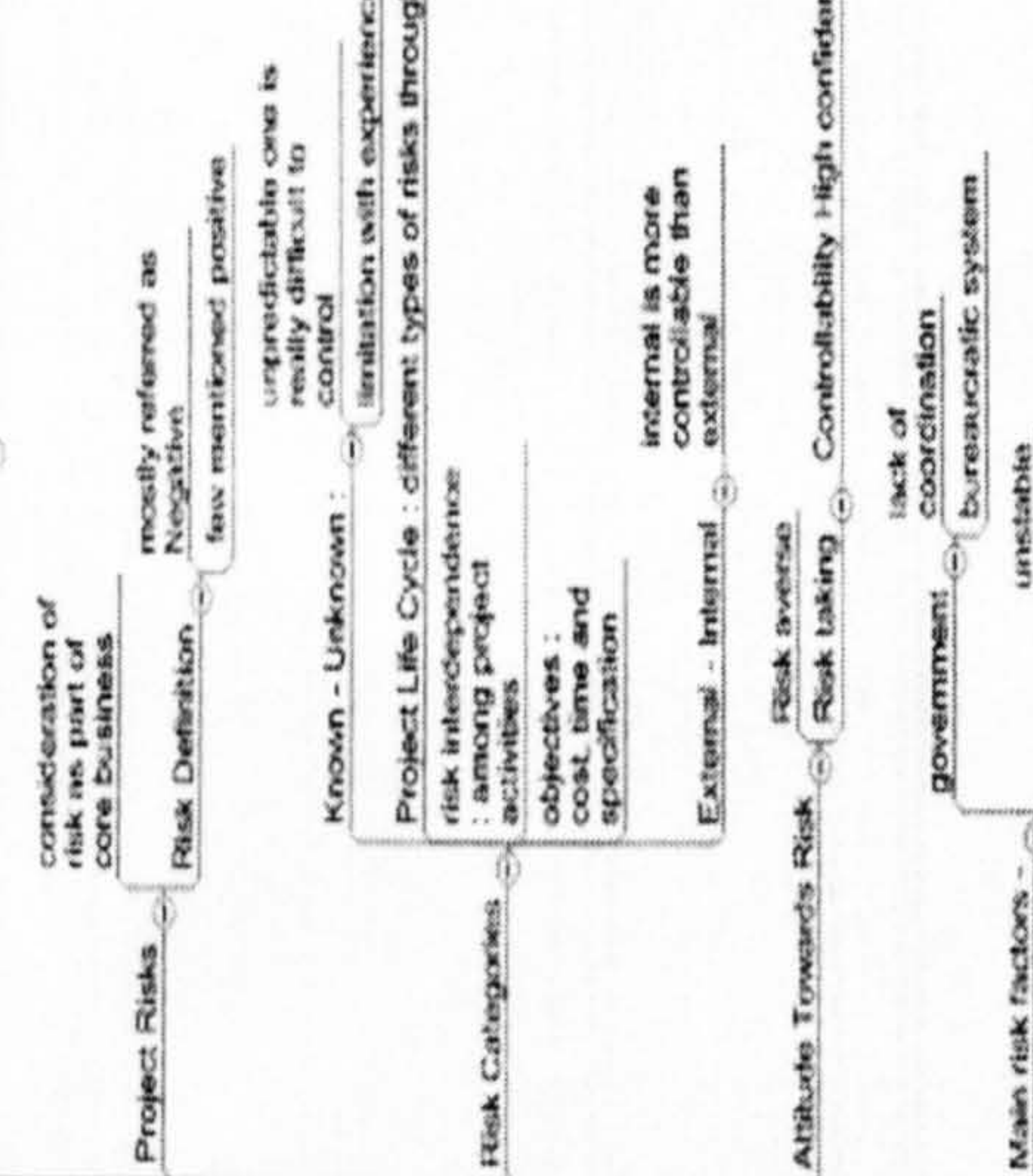
Type of Revenue	Company	Company's Shareholding (%)	Revenue 2002		Revenue 2001		Revenue 2000	
			Million Baht	%	Million Baht	%	Million Baht	%
Electricity Sales - Availability Payment (AP) - Energy Payment (EP)	Ratchaburi Electricity Generating Co., Ltd.	100%	9,360.022	33.24	6,444.079	35.97	876.761	31.34
			18,133.195	64.41	10,978.618	61.29	1,887.663	67.47
Interest Income	Ratchaburi Electricity Generating Holding PCL		25.971	0.09	21.136	0.12	16.332	0.58
	Ratchaburi Electricity Generating Co., Ltd.	100%	148.480	0.53	105.883	0.59	15.295	0.55
	Ratchaburi Energy Co., Ltd.	100%	0.238	-	0.091	-	-	-
Compensation for late transfer of Combined Cycle Power Plant	Ratchaburi Electricity Generating Co., Ltd.	100%	322.302	1.14	353.720	1.97	-	-
Compensation for combustion system improvement of power plants	Ratchaburi Electricity Generating Co., Ltd.	100%	132.110	0.47	-	-	-	-
Others	Ratchaburi Electricity Generating Holding PCL		0.019	-	0.193	-	-	-
	Ratchaburi Electricity Generating Co., Ltd.	100%	32.525	0.12	10.581	0.06	1.544	0.06
Total Revenue			28,154.862	100.00	17,914.301	100.00	2,797.595	100.00

APPENDIX 3

Summary of findings from interviews with Thai project practitioners

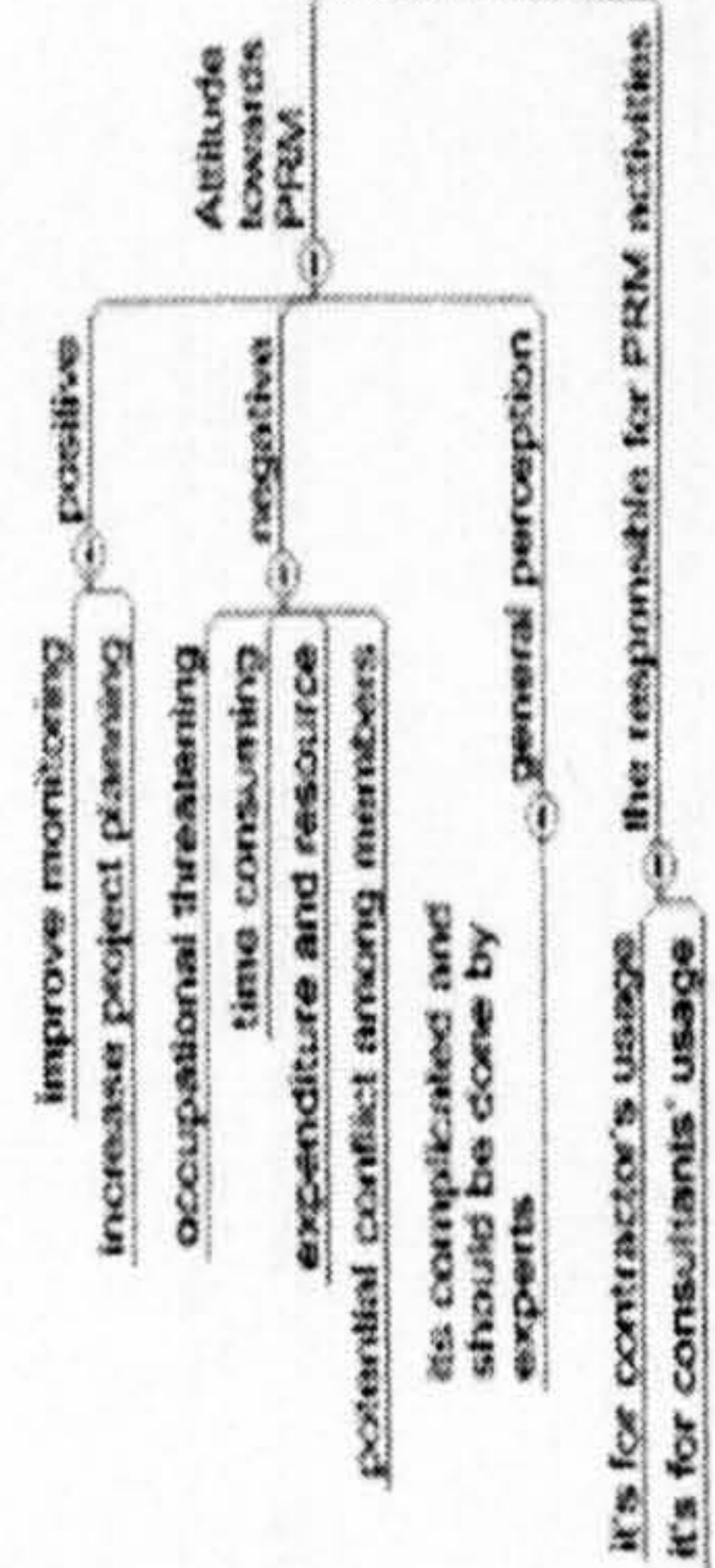
Current Understand About Risk

Risk is not commonly used among Thai project practitioners. PROBLEMS & ISSUES are generally known

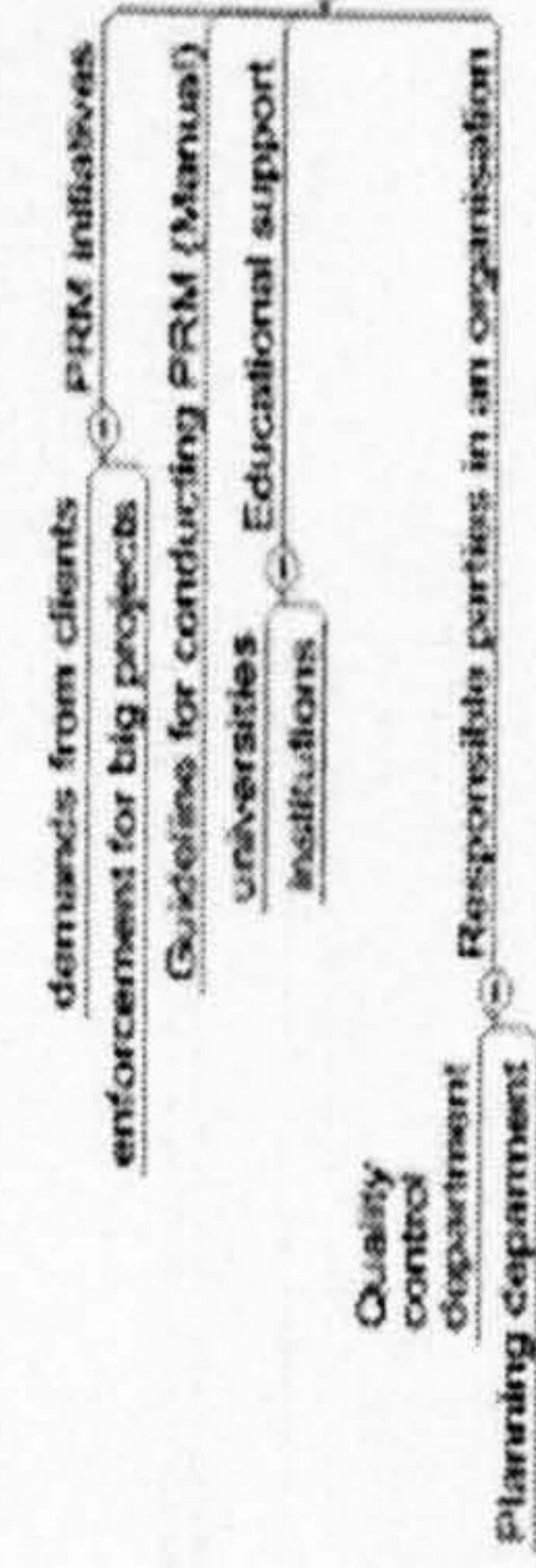


Thai RM Practice

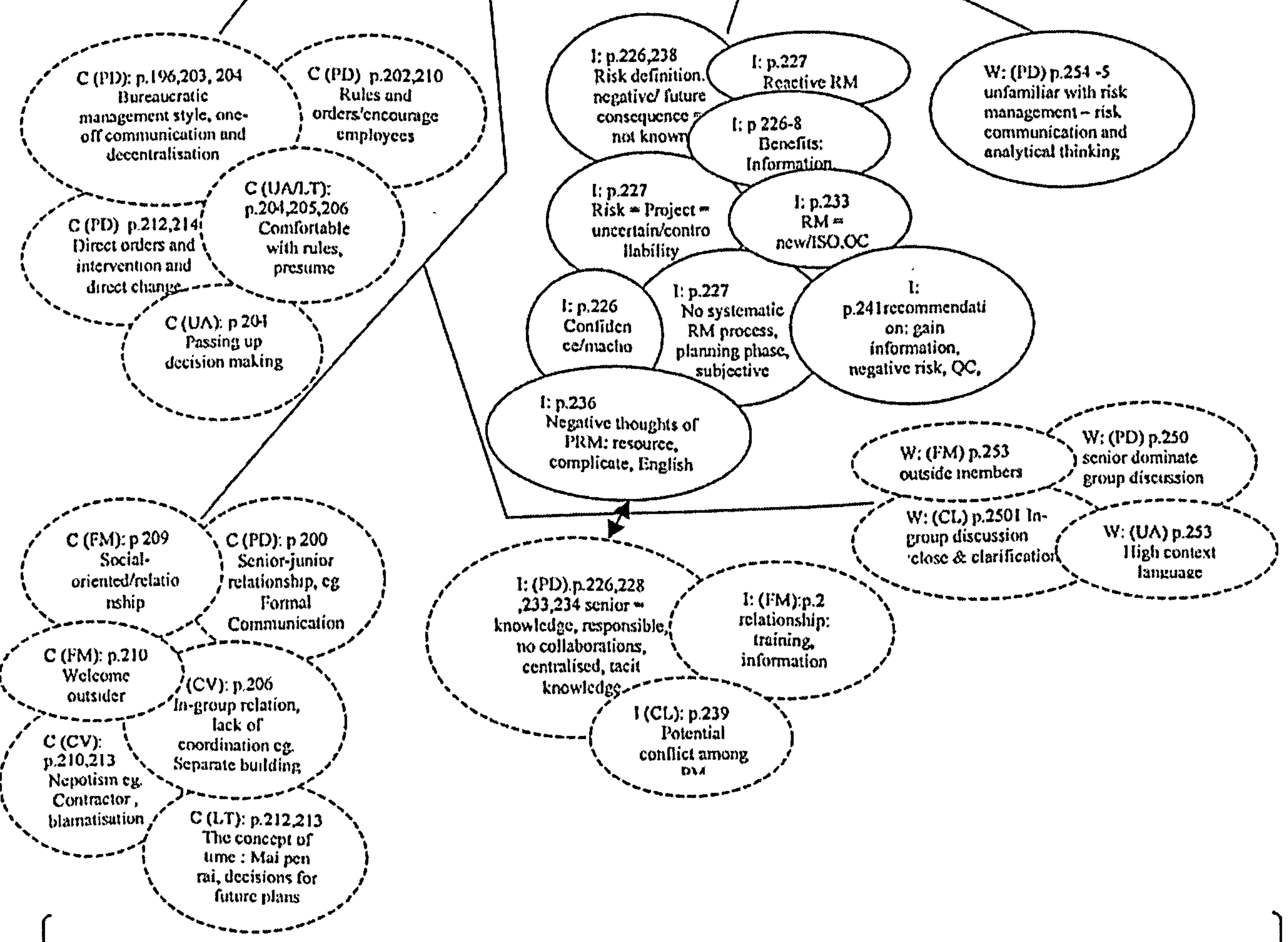
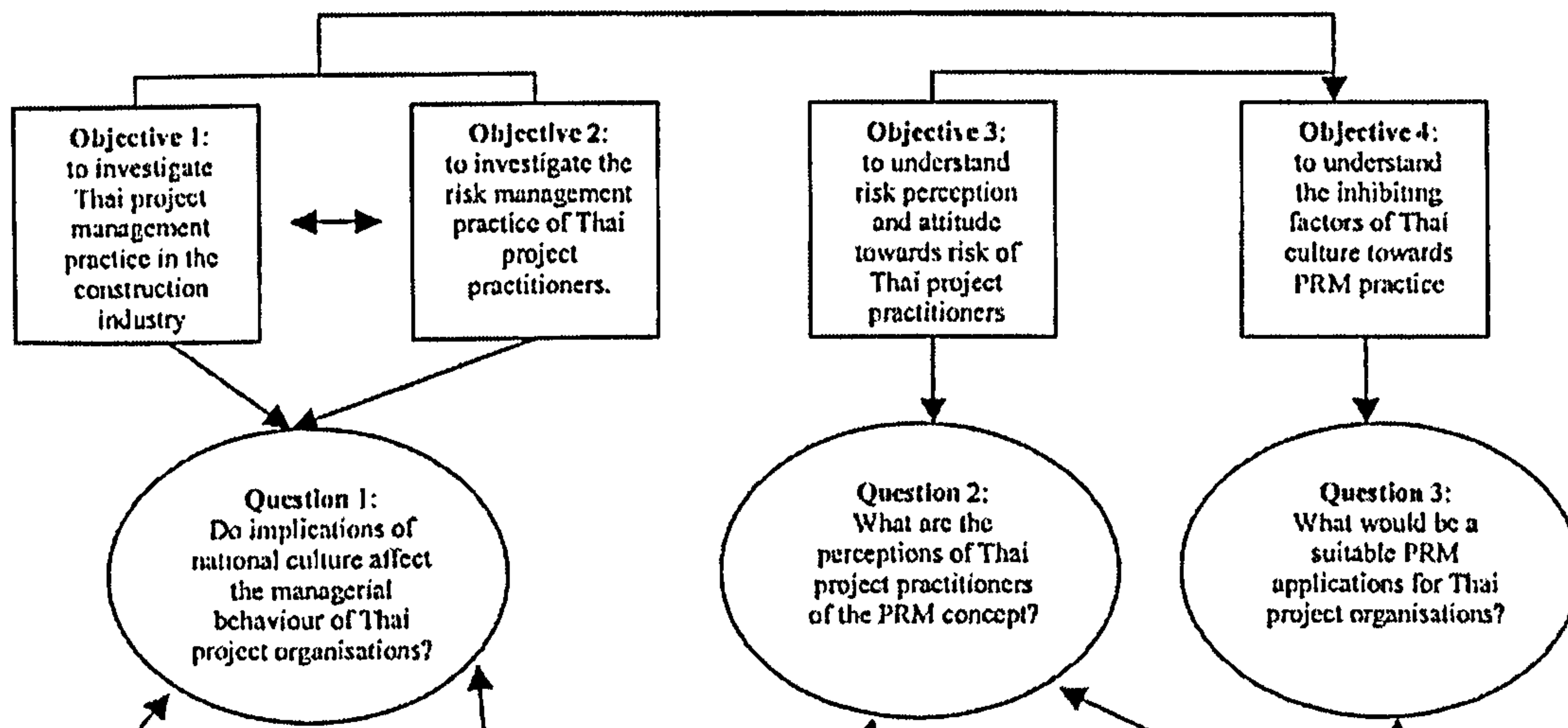
Perception of PRM process



suggestions for PRM implementation



APPENDIX 4



Recommendation for PRM in Thailand taking into account Thai cultural values & RM practice:

At macro level: 1. Initiate PRM programme by Project owners, Government- mandatory and legislative (I) 2. Increase explicit knowledge and improve education: University and Involved institutes (I).

At micro level: 1. Engaging PM – benefit of PRM in providing information (I) 2. Top-down change management programme (C,I) 3. PRM training programme : senior with expert (C, I) 4. Risk department in mega projects: centralised, maintain authority and power (C) 5. Risk gathering information : one way communication with in-group/sub-in group avoid horizontal engagement (C,W) 6. Risk terminology: begin with negative aspect: avoid panic and increase forward thinking/potential problems (I) 7. Risk assessment: Risk Matrix (W) 8. Risk Identification: Avoid group discussion use risk register – risk template (W, C).

C: A Case Study, I: Exploratory Interviews, W: Workshop, PD: Power Distance, UA: Uncertainty Avoidance, FM: Femininity CL: Collectivism, LT: Long-term oriented