

УПРАВЛЕНИЕ НА РИСКА
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RISK MANAGEMENT
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Received: 16.01.2017, Accepted: 20.02.2017

Abstract

Risk management is an art as much as a science. It reflects not only the quantification of risks through risk measurement but also a more profound and concrete understanding of the nature of risk. Risk management is the systematic application of management policies, procedures and practices to the tasks of establishing the context, identifying, analysing, assessing, treating, monitoring and communicating.

The risk management process can be broken down into two interrelated phases, risk assessment and risk control. Risk identification is the act of identifying negative and positive risks that impact an objective. It is an iterative process that, with each cycle, can contribute progressively to organisational improvement by providing management with a greater insight into risks and their impact.

Keywords: risk, risk management, risk identification & risk assessment

JEL Codes: M10, G31

1. Introduction

Risk management is the process of identifying, assessing and controlling threats to an organization's capital and earnings. These threats, or risks, could stem from a wide variety of sources, including financial uncertainty, threats from project failures (at any phase in design, development, production, or

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sustainment life-cycles), legal liabilities, strategic management errors, accidents and natural disasters.

Risk management is the identification, assessment, and prioritization of risks (defined in ISO 31000 as the effect of uncertainty on objectives) followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.

Risk management involves understanding, analysing and addressing risk to make sure organisations achieve their objectives. So it must be proportionate to the complexity and type of organisation involved. Enterprise risk management (ERM) is an integrated and joined up approach to managing risk across an organisation and its extended networks.

Because risk is inherent in everything we do, the type of roles undertaken by risk professionals are incredibly diverse. They include roles in insurance, business continuity, health and safety, corporate governance, engineering, planning and financial services.

In risk evaluation, a key role is played by risk attitude (i.e. whether the decision-maker is risk averse, risk neutral or risk seeking), which, despite involving factors that can be objectively captured such as assets and income, largely depends on subjective factors that need to be understood as they influence individuals' attitude to the risk concerned. The resources available for managing risk are finite and so the aim is to achieve an optimum response to risk, prioritised in accordance with an evaluation of the risks. Risk is unavoidable, and every organisation needs to take action to manage risk in a way which it can justify to a level which is tolerable. The amount of risk which is judged to be tolerable and justifiable is the "risk appetite". A key criterion in selecting the appropriate technique is that its resource requirement should not exceed the extent of risk mitigation obtained through its implementation.

Risk management standards have been developed by several organizations, including the National Institute of Standards and Technology and the ISO. These standards are designed to help organizations identify specific threats, assess unique vulnerabilities to determine their risk, identify ways to reduce these risks and then implement risk reduction efforts according to organizational strategy.

2. Methodology

To achieve the object of this paper, the risk management data has been collected. At first, information is mostly from websites, books, journals, etc. Also, a lot of facts and data from foreign recent risk management literature are taken into consideration.

3. Literature review

The publication of numerous articles, working papers, and books has marked the unparalleled advances in risk management. Mehr and Hedges (1962) defined risk as uncertainty regarding a loss. Following this definition, the authors clearly distinguished between the two elements of risk: uncertainty and loss. “The concept of risk is as old as mankind” (Garaczi, 2013), yet arguably the role of risk became significantly more prominent in late modernity. Bernstein (1998) goes as far as to say that the mastery of risk defines the boundary between modern times and the past. This is a sound argument even though the further we look back in time, the greater the exposure of (pre)modern societies to hazards (Dessewffy, 2002). According to Renn (1992), a prerequisite for the existence of risk is uncertainty, i.e. that future is not predetermined but is dependent on present human activities. Bernstein (1998) argues for the non-existence of absolute certainty, claiming that one can never be certain of anything, since the mass of available information is either inaccurate or incomplete. Consequently, uncertainty is a necessary and constant element of life.

D’Arcy (2001) has postulated that the origin of risk management was developed by group of innovative insurance professors i.e. Robert I. Mehr and Bob Hedges in 1950s. In the 1963s, the first risk management text entitled —Risk Management and the Business Enterprise, was published. The objective of risk management at that time was to maximize the productive efficiency of the enterprise. At that time, risk management was specifically focused on pure risks and speculative risks.

In the 1970s, when Organization of Petroleum Exporting Countries (OPEC) decided to reduce production in order to increase the price, financial risk management became an interesting issue highlighted by firms because the

increment in oil price has affected the instability in exchange rates and inflation rate (D'Arcy, 2001; Skipper & Kwon, 2007).

Embrechts, Frey, and McNeil (2005) emphasized the application of quantitative methods to risk management. Crouhy, Galai, and Mark (2001, 2006) are two solid risk management references for practitioners working at international banks with special attention given to the regulatory framework. Jorion (2007) gave an overview of the practice of risk management through information on banking regulations, a careful analysis of financial disasters, and an analysis of risk management pitfalls. He also made a strong case for the use of value-at-risk-based risk measurement and illustrated several applications and refinements of the value-at-risk methodology. Finally, Bernstein (1998) is another key reference. This masterpiece gives a vibrant account of the history of the concept of risk from antiquity to modern days.

In the 1990s, the use of financial tools such as forwards and futures are widely practiced in the United States. In addition, pressure from shareholders and stakeholders to take more action rather than buying insurance to fight against uncertain loss or financial crisis, influenced managers to mitigate risks more proactively. It demanded managers to retrieve better risk information and risk management techniques. During this time, risk management was closely related to financial, operational and strategic risks, not only hazard risks (Skipper & Kwon, 2007). Hazard risk refers to any source that may cause harm or adverse effects such as equipment lose due to natural disasters.

There are several risks that can be divided into different types according to how its realization will have impacts on the activity of organization and its environment. For example and according to Harland (Harland et al, 2003) risk can be divided on:

- Strategic risk: affects business strategy implementation.
- Operations risk: affects a firm's internal ability to produce and supply goods/services.
- Supply risk: adversely affects inward flow of any type of resource to enable operations to take place.
- Customer risk: affects likelihood of customers placing orders, grouped with factors such as product obsolescence in product/market risk.
- Asset impairment risk: reduces utilization of an asset and can arise when the ability of the asset to generate income is reduced.

- Competitive risk: affects a firm's ability to differentiate its products/services from its competitors.
- Reputation risk: erodes value of whole business due to loss of confidence.
- Financial risk: exposes a firm to potential loss through changes in financial markets, can also occur when specific debtor's defaults.
- Fiscal risk: arises through changes in taxation.
- Regulatory risk: exposes the firm with changes in regulations affecting the firm's business such as environmental regulation.
- Legal risk: exposes the firm to litigation with action arising from customers, suppliers, shareholders or employees.

In the logistic and based on the literature review, all of these risks may have one of three possible origins: 1. organizational, 2. network relations and 3. external environmental.

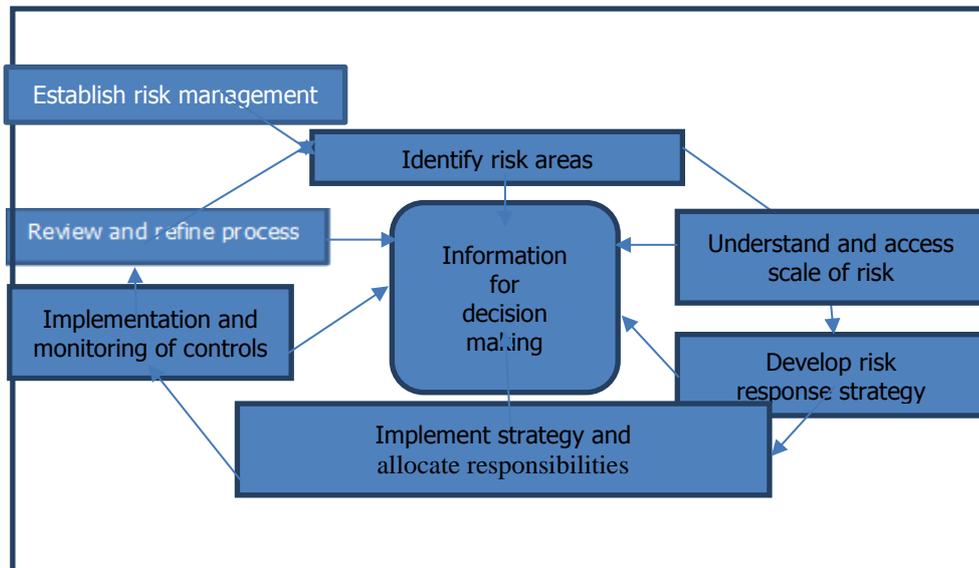
The measurement of risk is at the confluence of the theory of economics, the statistics of actuarial sciences, and the mathematics of modern probability theory. From a probabilistic perspective, Szegö (2002) presented an excellent overview of risk measures and their development, as well as a critique of the value-at-risk methodology.

Albrecht (2004) provided a concise overview of risk measures from an actuarial perspective and with a particular emphasis on relative risk measures. Föllmer and Schied (2004) offered mathematical insights into risk measures and their link to modern finance and pricing theories.

4. Risk management framework

Organizations face many different types of risks, but they can all be managed using a common framework. The framework summarized in this section therefore directly applies to risk management, and provides a context for subsequent sections that (a) outline the different types of financial and non-financial risks, and (b) explain how financial and non-financial risks may be identified and assessed before implementing appropriate strategies and control systems.

Figure 1. The Risk Management Cycle



Source: Risk Management: A Guide to Good Practice, CIMA, 2002

Based on the cycle illustrated in Figure 1, the core elements of a financial risk management system are:

- Risk identification and assessment;
- Development of a risk response;
- Implementation of a risk control strategy and the associated control mechanisms;
- Review of risk exposures and repetition of the cycle.

The current operating environment is demanding a more integrated risk management approach (see Bolvin et al. 2007 and Treasury Board of Canada 2001). It is no longer sufficient to manage risk at the individual activity level or in functional silos. Thus, integrated risk management is defined as a continuous, proactive and systematic process to understand, manage and communicate risk from an organization-wide perspective. It is about making strategic decisions that contribute to the achievement of an organization's overall corporate objectives.

The ISO recommended the following target areas, or principles, should be part of the overall risk management process:

- The process should create value for the organization;
- It should be an integral part of the overall organizational process;
- It should factor into the company's overall decision-making process;
- It must explicitly address any uncertainty;
- It should be systematic and structured;
- It should be based on the best available information;
- It should be tailored to the project;
- It must take into account human factors, including potential errors;
- It should be transparent and all-inclusive;
- It should be adaptable to change;
- It should be continuously monitored and improved upon.

The ISO standards and others like it have been developed worldwide to help organizations systematically implement risk management best practices. The ultimate goal for these standards is to establish common frameworks and processes to effectively implement risk management strategies.

From a decision-making perspective, integrated risk management typically involves the establishment of hierarchical limit systems and risk management committees to help to determine the setting and allocation of limits. Integrated risk management strives for the optimal balance at the corporate level.

5. Risk identification and assessment

Understanding the nature of a risk is a precondition for a good response. Identifying risks is the first step in building the organisation's risk profile. Risk identification is the act of identifying negative and positive risks that impact an objective. There is no single right way to document an organisation's risk profile, but documentation is critical to effective management of risk. Not identifying risks can have drastic, costly, and even deadly consequences.

Risk identification needs to be methodical, and to address the organization's main activities and their associated risks. Risk identification may be carried out via questionnaires, surveys, brainstorming sessions, or a range of other techniques such as incident investigation, auditing, root cause analysis, or

interviews. The aim is to use staff expertise to identify and describe all the potential risks to which the organization may be exposed.

The identification of risk can be separated into two distinct phases. There is:

- Initial risk identification (for an organisation which has not previously identified its risks in a structured way, or for a new organisation, or perhaps for a new project or activity within an organisation), and there is;
- Continuous risk identification which is necessary to identify new risks which did not previously arise, changes in existing risks, or risks which did exist ceasing to be relevant to the organisation (this should be a routine element of the conduct of business).

After risks have been identified and enumerated, the next step is risk analysis. Through risk analysis, we transform the risks that were identified into decision-making information. In turn, each risk is considered and a judgment made about the probability and the seriousness of the risk. Risk analysis is a process that helps you identify and manage potential problems that could undermine key business initiatives or projects.

Risk analysis can be complex, as you'll need to draw on detailed information such as project plans, financial data, security protocols, marketing forecasts, and other relevant information. However, it's an essential planning tool, and one that could save time, money, and reputations.

The risk management process involves both internal and external analysis. The first part of the process involves identifying and prioritizing the risks facing an organization and understanding their relevance. It may be necessary to examine the organization and its products, management, customers, suppliers, competitors, pricing, industry trends, balance sheet structure, and position in the industry. It is also necessary to consider stakeholders and their objectives and tolerance for risk.

Once a clear understanding of the risks emerges, appropriate strategies can be implemented in conjunction with risk management policy. For example, it might be possible to change where and how business is done, thereby reducing the organization's exposure and risk. Alternatively, existing exposures may be managed with derivatives. Another strategy for managing risk is to accept all risks and the possibility of losses.

Investors use a variety of tactics to ascertain risk. In some cases, they look at the average return of an investment, and they find its average standard deviation over the same time period. Then, they apply a bell curve to that number, which dictates that the expected return of the investment is likely to be one standard deviation from the average two-thirds of the time and two standard deviations from the average deviation 95% of the time. This helps investors evaluate risk numerically. If they believe that they can tolerate the risk, financially and emotionally, they invest.

Some types of risk lend themselves to a numerical diagnosis – particularly financial risk. For other risks - for example reputational risk - a much more subjective view is all that is possible. In this sense risk assessment is more of an art than a science. It will be necessary, however, to develop some framework for assessing risks. The assessment should draw as much as possible on unbiased independent evidence, consider the perspectives of the whole range of stakeholders affected by the risk, and avoid confusing objective assessment of the risk with judgement about the acceptability of the risk.

Measurement is a key aspect of policy and risk management. Risk measurement provides an estimation of potential losses. Unfortunately, potential losses cannot be quantified with certainty—losses can only be quantified with certainty once they are realized. More sophisticated risk management tools have been developed in recent decades. These include models for estimating value-at-risk, volatility, probability of default, exposure at default and loss given default. A landmark event in the history of risk management was the development of the Black Scholes Merton Option Pricing Model in 1973. Thanks to better understanding of various domains, quantitative models and the availability of computing power, it has become possible to quantify risk to a large extent.

Many organizations use a value-at-risk or similar composite number as a single, all-encompassing measure of risk. The intent of such a composite is to provide management and the board with adequate information and to improve decision making. However, there are weaknesses with such an approach that should be understood by management, the board, and decision makers. The VaR can be defined as the maximum likely loss on a position or portfolio at a specified probability level (known as the confidence level) over a specified horizon or holding period.

6. Conclusion

The risk management policy is a framework that allows an organization to grow by building decision-making processes instead of treating each decision independently. Risk management is an activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources. The focus of good risk management is the identification and treatment of those risks in accordance with the organisation's risk appetite.

Risk management includes the fundamental steps of risk identification and analysis. The method of risk analysis will depend on whether the situation at hand is a 'mass phenomenon'. Risk analysis is supposed to predict future events and actions without the knowledge of those intentions. It is critical to consider an organization's risk profile in the development of a risk management policy, since risk profile will affect its risk tolerance and appropriate strategies. The ISO 31000 principles provide frameworks for risk management process improvements that can be used by companies, regardless of the organization's size or target sector.

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