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Strategic Risk Management with an Illustrative Case Study

Kameswari Peddada

JBIET, Hyderabad, T.S.
E-mail: thuppal2000@yahoo.com

Abstract—*The business environment, in which organizations function, pose many uncertainties to them. The uncertainties arise from events or scenarios, which are either internal or external to those organizations. Some of the uncertainties have the potential to cause loss of value for the organizations and hence are recognized as risks, while others present opportunities for enhancing their business value. The risks vary in terms of their source, magnitude, probability and impact. Some risks threaten an organization's very existence or survival, some others threaten its core strategic objectives (hence termed strategic risks), while others are not so devastating. All organizations, big or small, have to face risks and manage them efficiently and effectively to preserve and enhance their value to stakeholders. A strategic risk management process should be designed, implemented and executed as part of an overall management programmme to manage risk exposure successfully and not allow any deviations from fulfillment of the organizational objectives. The present study is based on secondary data and it involves an extensive study of literature to learn about the concept of strategic risk management, to ascertain its relationship and role in the overall enterprise risk management, to learn about its adaptation at different organizations and to draw valid inferences, which are universally applicable, on the implementation of strategic risk management with an illustrative case study.*

Keywords*: Enterprise Risk Management, Risks, Strategic Objectives, Strategic Risk Management*

1. INTRODUCTION

Business Risk implies uncertainty of profit or danger of loss from events arising from unforeseen occurrences in the future. As per the International Organization for Standardization (ISO), risk is the effect of uncertainty on objectives.

Risk Management (RM) is the identification, assessment and prioritization of risks followed by coordinated and economic application of resources to minimize, monitor and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities with the objective of safeguarding the business goals of an endeavour from uncertainties.

In the aftermath of the financial crisis, executives and their boards realized that ad hoc risk management is no longer tolerable and that current processes may be inadequate in today's rapidly evolving business world. Managing risk effectively has always been a touchstone of the most successful companies. But in today's risk-filled business environment, it can be hard for executives to be confident of their plans and strategies playing out as expected. A big reason is that strategic risks can strike more quickly than ever before, hastened by rapid-fire business trends and techno-innovations like social media, mobiles and big data. Companies that fall behind on the innovation curve may quickly fall prey to innovation's evil twin – disruption. The two key aspects of the relationship between risk and strategy are: (1) understanding the organization's strategic risks and the related risk management processes, and (2) understanding how risk is considered and embedded in the organization's strategy setting and performance measurement processes. These two areas not only deserve the attention of boards, but also fit closely with one of the primary responsibilities of the board — risk oversight..Strategic risk management (SRM) thus becomes a high priority for many executives.

Varieties of Risks

Business risks may occur in different forms depending on the nature and size of the business. Depending on origin business risks can be classified into:

1. Internal Risks

They may arise from events within the organization, called endogenous variables. They can be controlled, and hence occupy much of board room attention. They include financial and operational risks.

2. External Risks

They arise from events outside the organization, called exogenous variables. They can't be controlled and hence are ignored by boards. They include compliance (hazard) and strategic risks.

Depending on type risks can be classified into:

1. Compliance or Hazard Risks: Relate to legal and regulatory compliance

2. Strategic Risks: Risks that affect or are created by an organization's business strategy and strategic objectives

3. Operational Risks: Major risks that affect an organization's ability to execute its strategic plan

4. Financial Risks: Include financial reporting, valuation, market, liquidity, and credit risks

The hazard and operational risks can be categorized as "Pure Risks" and financial and strategic risks, as "Speculative Risks". The classifications of risk are only general and do not cover all the risks faced by an organization. Each organization should develop its own classifications that best suit its need for assessing and treating risks.

Source: Sharpening SRM by Price Waterhouse & Coopers

Fig. 1: Risk Quadrant

2. PRINCIPLES OF RISK MANAGEMENT

The principles of risk management (RM) as per ISO are:

- Resources expended should be less than the consequence of inaction. The gain should exceed the pain!
- An integral part of organizational processes
- Part of decision making process
- Addressing uncertainty and assumptions
- A systematic and structured process
- Based on the best available information
- Tailorable
- Human factors taken into account
- Transparent and inclusive
- Dynamic, iterative and responsive to change
- Continual improvement and enhancement
- Continual or periodical re-assessment

3. RISK MANAGEMENT PROCESS

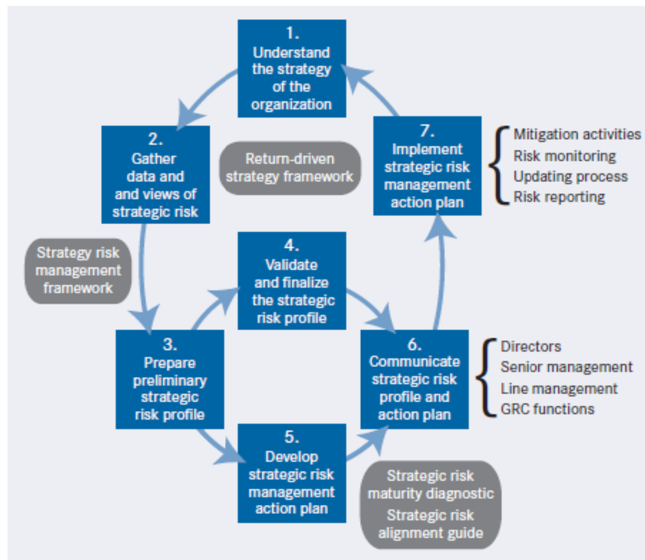
As per ISO, steps in RM process are:

1. Establishing the Context:
It involves 1. identification of risk in a selected domain of interest, 2. Planning, 3. Mapping out the social scope of RM, the identity & objectives of stakeholders, basis for evaluation of risks and constraints, 4. Defining activity framework and agenda for identification, 5. Developing analysis of risks involved and 6. Mitigation with available technological, human and organizational resources.

2. Identification

It involves 1. Source Analysis: whether internal or external, 2. Problem Analysis. There are different methods of risk identification and the method chosen depends on the culture, industry practices and compliance requirement. Risk identification method may be objective based, scenario based, taxonomy based (from a list of possible sources), common-risk check-list or risk-charting (a risk matrix combining above approaches with listing of resources, threats and modifying factors).

3. Assessment



Source: Harvard Law School Forum On Corporate Governance & Financial Regulation

Fig. 2: Strategic Risks & Related RM Processes

Each identified risk is assessed as to the potential severity of impact (difficult in intangible assets) and probability of occurrence (difficult with no statistical information for each risk). Quantification may vary from being simple to impossible, where it is critical to make the best educated decision in prioritizing the risks. One such quantification attempt is to construct tables and arrive at a risk rating:

Table 1: Likelihood Scale

Level	Likelihood	Description
4	Very likely	Happens more than once a year in this industry
3	Likely	Happens about once a year in this industry

2	Unlikely	Happens every 10 years or more in this industry
1	Very unlikely	Has only happened once in this industry

Table 2: Consequences Scale

Level	Consequence	Description
4	Severe	Financial losses greater than $50,000
3	High	Financial losses between $10,000 and $50,000
2	Moderate	Financial losses between $1000 and $10,000
1	Low	Financial losses less than $1000

Table 3: Risk Rating

Risk rating	Description	Action
12-16	Severe	Needs immediate corrective action
8-12	High	Needs corrective action within 1 month
4-8	Moderate	Needs corrective action within 3 months
1-4	Low	Does not currently require corrective action

Source: Publication (2015) of Queensland Government, Australia

The other widely accepted formula for risk quantification is "Composite Risk Index" = impact of Risk Event X Probability of Occurrence. Impact can be assessed on a scale of 1 to 5, where 1 = Minimum Impact and 5 = Maximum Impact, usually in terms of financial loss. The probability of occurrence can be assessed on a scale of 1 to 5, 1 = very low probability and 5 = very high probability. These 1 to 5 scales are arbitrary and depend on decisions of assessment experts. The composite risk index can take values ranging from 1 to 25. This range can be sub-divided into 3 sub-ranges of low (1 to 8), medium (9 to 16) and high (17 to 25). Since risk magnitude is quite variable and depends on several factors (like changes in procedures, technology, schedules, budgets, market conditions, political environment or others), it is absolutely necessary to periodically re-assess risks and intensify or relax mitigation measures as necessary. Another formula, the Courtney Formula, for presenting risk assessment in financial terms was designed by Robert Courtney Jr. (IBM, 1970). It was accepted as the official risk analysis method for all US Governmental agencies. It involves a cost-benefit analysis by comparing the annual loss expectancy with security control implementation costs.

4. Risk Mitigation Options

The various options available for risk mitigation, as per US Department of Defense acronym 'ACAT', are:

A.) Avoidance: It means not performing an activity that could carry risk. This option entails losing out on potential gains, unless the risk is too high.

B.) Control: It involves reducing the severity of loss or likelihood of loss.

C.) Accept: A viable strategy for small risks, where the cost of insuring against the risk would be greater over time than the total losses sustained. All risks that are not avoided or transferred are accepted by default. It includes risks that are so large that they either cannot be insured against or the premiums would be prohibitive.

D.) Transfer: Risk of loss is minimized by transferring or sharing loss through out-sourcing or insurance.

5. Risk Management Plans

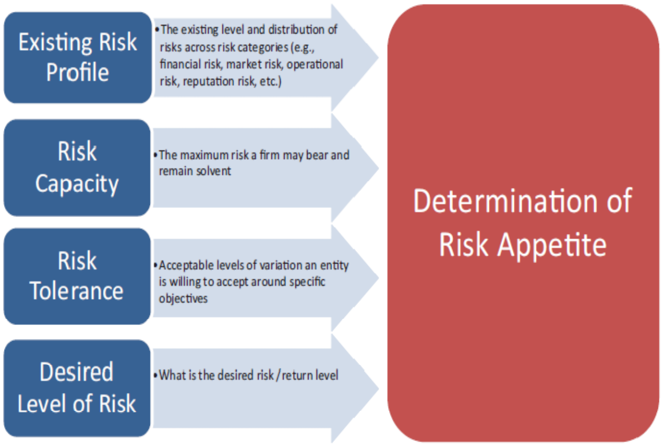
- Appropriate control measures suggested for each risk
- Risk mitigation approval by appropriate management level
- Schedule for control implementation with personal responsibility for actions
- Implementation of the plan methods for mitigating risks through different options
- Update the plan with practice, experience and actual losses and with decisions on the risks faced from the latest information.
- Reasons for review and evaluation of plan: a.) to evaluate applicability & effectiveness of previously selected control measures, and b.) to identify possible risk level changes in the business environment

4. ENTERPRISE RISK MANAGEMENT

In the wake of high-profile corporate failures in the early 2000's Enterprise Risk Management has emerged (ERM). Business developments over the past 0-15 years, like globalization, supply chain innovation, outsourcing & strategic alliances, have given it an urgency. It represented an attempt to manage enterprise-wide risks in an integrated fashion.

Committee of Sponsoring Organization (COSO) of the Treadway Commission has defined ERM (September, 2004) as: "A process effected by an entity's board of directors, managers and other personnel *applied in strategy setting across the enterprise *designed to identify potential events affecting the entity and manage risk to be within the risk appetite *to provide reasonable assurance regarding the achievement of entity's objectives".

5. RISK APPETITE OF AN ORGANIZATION



Source: Strengthening Enterprise Risk Management for Strategic Advantage by COSO

Fig. 3: Risk Appetite- Elements & Determination

Management often benefits from describing its risk appetite within each of its main categories of risk. Articulation of risk appetite will provide clarity over the risks the entity is willing to assume and allows consistent communications regarding strategy and risk management to different stakeholders and to employees throughout an organization. It sets the boundaries for the entity, linking strategy setting, target setting, and risk management processes. Having open discussions between senior management and the board of directors around risk appetite will help to avoid surprises and will form the basis for the development of strategies and objectives in the context of strengthened entity-wide risk management processes.

6. STRATEGIC RISK MANAGEMENT

Strategic risks are uncertainties and opportunities embedded in an organization's strategies, which cause risks that are most consequential to the organization's ability to execute its strategies and achieve its business objectives and can ultimately affect shareholder value or the viability of the organization. Strategic Risk Management (SRM) is an organization's response to strategic risks and involves a clear understanding of corporate strategy, the risks in adopting it, the quantum of risk the business is prepared to take to deliver on strategic objectives, and the risks in executing it. SRM can be defined as the process of identifying, assessing and managing the risk factors in the organization's business strategy, including taking swift action when risk is actually realized. It involves evaluating how a wide range of possible events and scenarios will affect the strategy and its execution and the ultimate impact on the company's value. SRM, a primary component and foundation of ERM, requires the organization to define tolerable levels of risk as a guide for strategic decision making. It should be a continual process to be embedded in strategy setting and strategy execution. It uses metrics to continuously monitor and manage risk.

While conventional ERM techniques have done a reasonable job in identifying and mitigating financial and operational risks, it is the management of strategic risk factors that will have the greatest impact on an organization's ability to realize its strategic objectives. A survey by board members of PWC (Price, Waterhouse & Coopers) on the gaps in RM & need for greater integration with strategic management has revealed 3 major concerns: 1. The current RM frameworks are not giving the level of protection needed, 2. Rapid increase in escalation of 'catastrophic' risks and contagion, and 3. spending on current RM processes not cost-effective. For integrating effective risk considerations into strategic objectives for execution, PWC recommended a consideration of: 1. A good understanding of the strategy with its key elements, like intent, drivers and context of delivery, 2. Board's key focus on broader consideration of types of risks faced enabling a better strategy to respond to them, 3. Scenario analysis with board input to encourage management to consider a range of scenarios with significant adverse consequences and help to ensure consideration of a wider breadth of risk impacts than is currently the case, and 4. Creating common metrics for risk and performance for management to define priorities of RM activities and to focus on more relevant risks to stakeholders and the board.

A global survey of strategic risk management practices at more than 300 companies around the world was done by Deloitte & Forbes Insights in 2013 for a better understanding of managing strategic risks (both current & future). Focus areas of the survey included the alignment of strategy and risk, monitoring strategic investments, and emerging views of strategic risk management. The key findings of the survey were:

- SRM being accorded a higher priority & change of approach by most companies
- More & more companies are integrating SRM into their overall business strategy & planning processes successfully.
- SRM is accorded Chief Executive / Board level priority in most.
- Reputation risk is now the biggest concern due to rise of social media
- Emerging technology is having a major impact on business & risk landscape
- Human capital & innovation shall be shortly the top strategic assets for business investment

Standard & Poor, a globally renowned rating agency, has faced criticism of its credit ratings as inadequately reflecting risk. It announced plans in 2008 to enhance its rating process for nonfinancial companies to include a review of their ERM programmes with focus on 1. SRM and 2. Risk Culture & Governance. As per S&P, an organization's SRM should include:

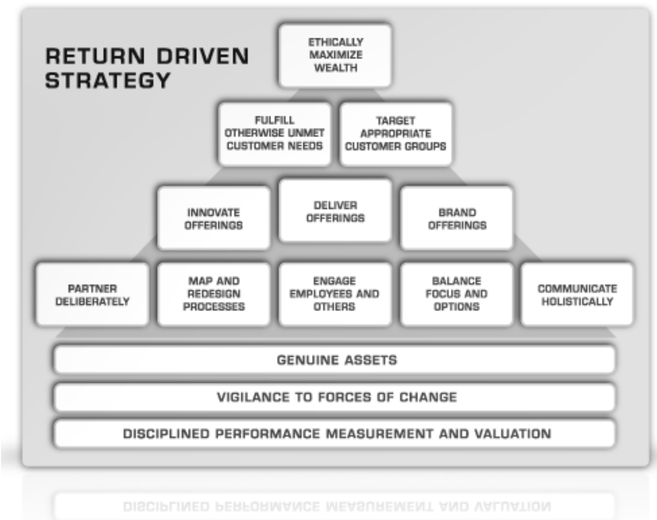
*Management's view of top risks faced with frequency of update of such lists

*Understanding influence of risk sensitivity on liability & financing decisions

*Role of SRM in strategic decision making

Framework for SRM

Return Driven Performance Framework developed by Mark L Frigo & Joel Litman describe types of business strategy & activities to drive superior & sustainable performance. It is composed of 11 core tenets and 3 foundations forming a hierarchy of interrelated activities to be performed for superior performance.



Source: Kellstadt School of Business, DePaul University Publication

Fig. 4: Return Driven Strategy Framework to Evaluate Range of Strategic Risks Faced by a Company

The companies in most major industries and regions around the world are managing SRM more effectively & for making more confident decisions to create greater business value. While the traditional RM focused only on preserving the business value, SRM shall thus give them a decisive edge.

Kaplan- Norton Strategy Execution Model

It is Kaplan & Norton's 6 stage closed loop management system that provides useful platform for a systematic approach to SRM integrating with overall management. The 6 stages are: 1. Develop the Strategy, 2. Translate the Strategy, 3. Align the Organization, 4. Plan Operations, 5. Monitor & Learn 6. Test & Adapt.

Guidelines for SRM

The SRM Lab at the Centre for Strategy, Execution & Valuation, DePaul University, Chicago, USA, has provided a list of the best SRM practices:

- Communication & sharing of information across business & risk functions- and externally
- Breaking down of RM silos
- Strategic risks - Identification & quantification
- SR assessment a part of strategy development, strategic plans and strategic objectives
- Monitoring and managing risk through entity's performance measurement & management system
- Accounting for SR & embed it within the strategic plan & its management process
- Use of common language of risk throughout organization
- Making SRM a continual process
- Development of key risk indicators to monitor company's risk profile

7. LIMITATIONS OF OVEREMPHASIS ON RISK MANAGEMENT

- Completion of a project or even getting it started may get delayed, if waiting for completion of RM process.
- Risk can be measured, whereas uncertainty can't be.
- Improper risk assessment & prioritization lead to wastage of time and unprofitable diversion of resources for unlikely risks.
- Subjectivity & inconsistency in qualitative risk assessment.
- Primary justification for a formal risk assessment process is legal and bureaucratic.

8. CONCLUSIONS

Successful companies are able replicate their success on new products and in new markets. The underlying reasons appear to be:

- They have a template for dealing risk, which is an advantage over their competitors.
- Successful risk taking implies that they should expand exposure to upside risk while reducing the potential for downside risk.
- The essence of risk management is not avoiding or eliminating risk, but deciding which risks to exploit, which ones to let pass through to investors and which ones to avoid or hedge.
- Though higher risk taking in the aggregate leads to higher returns, there is also enough evidence to the contrary. Firms should be careful about which risk they expose themselves to.
- To exploit risk, an organization needs to have an edge over its competitors, and there are five possible sources of such an edge:

1. Timely and reliable information in a crisis to be able to map out a superior plan of action in response
2. Speed of response to the risk

3. Experience of weathering similar crises in the past in terms of institutional memories and individual experiences
4. Resources in terms of access to capital markets or large cash balances, superior technology and better trained personnel
5. Firms with more operating, production or financial flexibility built into their responses as a result of choices made in earlier periods will be able to adjust better than their more rigid compatriots.

Structure and culture of an organization encouraging good risk taking possess the following attributes:

- Interests of decision makers well aligned with interests of owners of a firm
- Corporate governance favouring good risk taking
- Firms seeking out and retaining effective risk takers with supporting compensation structures

For organizations early in SRM, the 7 keys to success (as per 2011 COSO Thought Leadership Paper) are:

1. Support from the top is a necessity
2. Build ERM using incremental steps
3. Focus first on a small number of top risks
4. Leverage existing resources
5. Build on existing risk management activities
6. Embed ERM into the business fabric of the organization
7. Provide ongoing ERM updates and continuing education for directors and senior management

In whatever way the board decides to proceed, their leadership, direction, and overall oversight will be critical to the success of a strategic risk management process.

9. CASE STUDY: SRM OF A SUPPLY CHAIN RISK

Managing the supply chain may be an operational activity, but for major mobile phone manufacturing companies, like Nokia and Ericsson, supply chain strategy needs to be linked to the overall strategy of the organization. In March, 2000 a lightning bolt struck a Philips Semiconductor Plant at Albuquerque in New Mexico, USA, causing a minor fire. The Plant was manufacturing chips for both Nokia and Ericsson. What appeared to be a minor value chain disruption, which was expected to last a week, turned out to be a disruption lasting months with significant impact on production.

Nokia has recognized the problem with parts supply even before information on disruption at the Philips Plant. It had plans for alternative supply of parts. It acted promptly once it determined the impact of supply disruption leading to inability to produce 4 million hand-sets amounting to 5% of its sales at the time. It survived the crisis with minor setbacks.

Ericsson, in contrast, has acted slowly, and it had no alternative sourcing options. By the time the magnitude of the problem was realized, it had nowhere else to go for several key parts with no alternative plans in such contingencies. The strategy adopted by it to cut costs in mid-1990's has simplified the supply chain, but weakened its supply backup. Besides this failure the employees did not communicate the importance of the event soon enough. The major causes for its exiting the phone headset production market in 2001 appear to be underestimation of the risk of supply chain disruption and inability to manage the problem with adequate planning.

Lessons from the Contrasting Strategies against Supply Chain Risk

- Linking the potential effects of supply chain disruptions to revenue and earnings to prioritize and manage risk.
- Building the necessary levels of redundancy and backup and maintain supply chain intelligence and relationships.
- Continuous monitoring of supply chain performance measures to quickly identify problems and to take counter-measures.
- Sharing of information and fostering of communication at the first instance of a problem.

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