The ERM Framework of Risk Appetite: Risk Appetite Assessment Framework and Implementation Program for an Organization

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Abstract

The objectives of enterprise risk management (ERM) are to have robust, updated, firmwide risk and value-centric framework, guidelines, processes, and models to enable discussion, analysis, decision making, and implementation in an organization at all levels. To fulfill enterprise risk objectives at the strategy and operation levels, the organization needs to have a robust risk appetite framework model in place. This paper reports the output of in-house research on an emerging area of risk management and global implementation best practices. This paper intends to provide readers with details of implementation of risk appetite definition and assessment across an organization. It provides the conceptual background of risk management, a risk appetite framework-based model developed by the author, implementation, and global best practices of a risk appetite assessment, part of an ERM program, across an organization. The paper identifies the challenges and exceptions in the risk appetite assessment with an approach to manage it effectively, and helps organizations with cost-benefit (CB) analysis and gives an illustrative case study. In the CB analysis, we have provided the approach to conduct a CB analysis that may lead to more informative and objective decisions on the risk appetite implementation program. The case study also helps the reader to identify the issues, infer the messages, provide the missing links, seek the appropriate missing information, and apply the risk appetite framework-based model suggested here to perform their own risk appetite assessment. This will provide readers with a practical approach to implement a risk appetite assessment program across an organization.

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1. Introduction

Comprehensive and detailed orientation beyond a leaf level is the hallmark of a robust enterprise risk management (ERM) framework and its implementation. It would not be possible to have an ERM program without having a framework in place, which leads us to the required launch platform to assess risk appetite and to implement the program in an organization.

We provide here a brief description of an ERM program and its implementation along with high-level ERM implementation process maps. We do not provide further details on ERM programs and will move on to the risk appetite framework, definition, and assessment. The objectives of the paper are to define, assess, and implement the risk appetite definition program.

1.1. The Enterprise Risk Challenges of an Organization

An enterprise may face challenges in defining an ERM objective, framework, and program implementation and the risk appetite in their organization. Based on our risk appetite research, implementation, and best practices, the key challenges an enterprise may face are the following:

- How to effectively manage the uncertainties about future growth plan, decision impact, competitor reaction, unexpected and expected business loss, and other losses on a continuum basis
- How to be compliant with ever changing development in external regulation, risk policy and model, and governance and to be a value creator
- How to effectively manage and mitigate deviation from a laid-out plan, performance, and processes leading to risk and value loss—both financial and nonfinancial
- How to define ERM objectives
- How to define risk appetite for an enterprise and business unit, line of business, products, etc.
- How to get a coherent definition of risk appetite and gain traction of business units leading to establishing enterprise risk appetite
- How to develop an ERM framework and implementation program in an organization with global best practices and research input

1.2. How Do We Meet Enterprise Risk Challenges, Leading to Definition of Risk Appetite and an ERM Program, Effectively?

While the ERM implementation is a “top-down” approach, the framework comes into shape as we move along the value chain of an organization from the “end customers” and suppliers to the “executive management.” So essentially the “bottom-up” framework approach directs us to understand the business model and then moves us on to ERM implementation.

There are five stages of an ERM program:

- Defining the need for ERM
- ERM objectives and executive management agreement with ERM objectives
- ERM program framework and risk appetite framework—the *practitioner ERM framework REF™*
- Risk appetite assessment and
- ERM program implementation, management, and review.

We will be providing a description of all the stages for having the necessary understanding and clarity about ERM and its road map in an organization in another ERM consulting paper.

2. The Enterprise Risk Appetite Framework

Risk appetite is part of the ERM program and a precursor to ERM assessment, and so we will discuss briefly the ERM program and its implementation along with high-level ERM implementation process maps. We will then move on to the risk appetite framework, definition, and assessment.

2.1. The ERM Framework

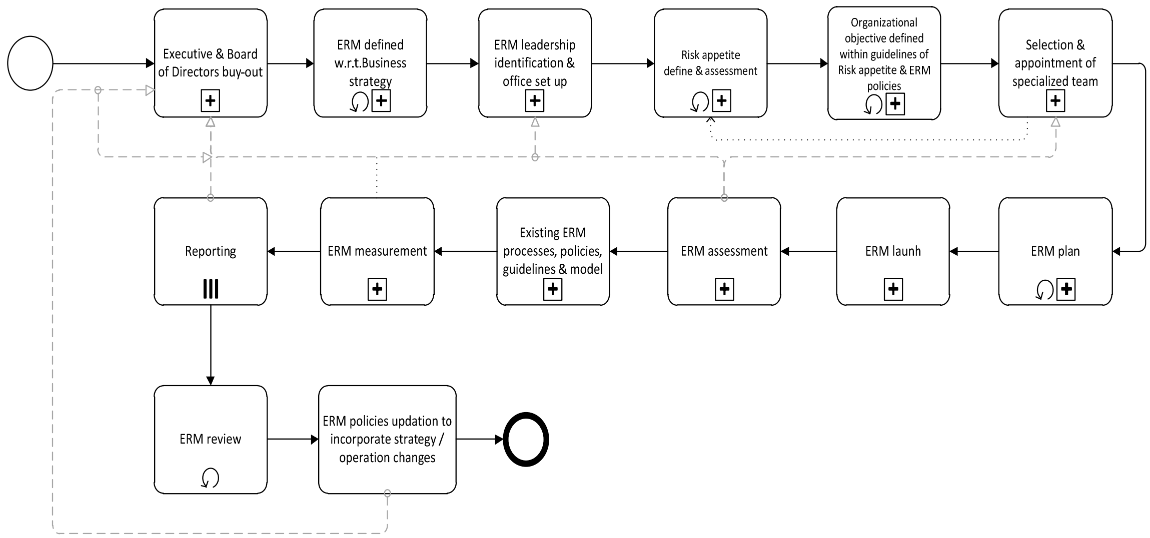
In an ERM-compliant organization, business strategy, operation, and implementation involve working within the defined ERM framework. The objective of the ERM program is to deliver the organization, both the financial and the nonfinancial sector, the defined and stated ERM framework and implementation.

2.2. ERM Program Implementation Plan

A high-level implementation road map provides planning, organizing, assessment, execution, and review of an ERM program across the business, covering all stakeholders, employees, external regulation, and internal compliance. This ERM implementation is based on the *practitioner ERM framework*, and ERM implementation is the end-to-end multiple processes and work flows to reach the end objectives of ERM program.

The ERM implementation plan shown in Figure 1 describes the implementation of the ERM program across an organization and is based on the proposed ERM framework and program.

Figure 1: ERM Implementation Plan



Once we have the executive management's and directors' buy-in, the directors and top management teams move on to define and assess the risk appetite of an organization.

We will not write further on ERM because the objective of this paper is to define the risk appetite and to perform an assessment of it. We will also provide an implementation plan for its assessment across an organization.

2.3. Defining the Enterprise Risk Appetite Framework

The framework is the conceptualized, practical, hands-on model of the enterprise risk objectives leading to assessment and implementation of the risk appetite and ERM program across the breadth and depth of an organization, with respect to business strategy and operations, to meet the stakeholders' goals and customers' satisfaction. The ERM program rests on the two pillars of (1) the executive management and board of directors and (2) employees and stakeholders of an organization. Figure 2 highlights the concept of the enterprise risk appetite framework, which forms the first stage toward ERM implementation.

Figure 2: Enterprise Risk Appetite Framework

The required metrics to define the risk appetite framework are risk capital/capital adequacy, liquidity (i.e., financing ability in all scenarios), risk sustenance, strategy and growth rate, operations, external factors, expected return, and profitability. In subsequent diagrams below, the metrics are covered in detail and are part of the discovery process to define and quantify the appetite to take risk.

3. How to Achieve the Enterprise Risk Appetite Assessment and Its Implementation: The Program Implementation Guide

Once we the ERM strategy is set at the executive management and board of directors levels, top management would involve various stakeholders in brainstorming sessions to define the company's risk appetite. This is the most critical process of the assessment. Achieving this requires a top-down approach and a matrix communication structure in an organization. Risk appetite definition and assessment means the end-to-end multiple processes and work-flows needed to reach the end objectives of phases I, II, and III of the ERM program.

3.1. Risk Appetite: First Step toward ERM Implementation

Multiple factors and scenarios have to be dealt with in the beginning, at the base level, to achieve the goal that the appetite to take risk should be clearly defined and understood with respect to business strategy. The strategy and goals with various scenarios causing risk for an enterprise need to be identified and undergo stress testing along with the possible financial and nonfinancial impact.

3.2. Deriving Risk Appetite with the Help of the ERM Framework REF™

Determination of risk appetite is the output of the brainstorming and discussion sessions with various stakeholders and the executive management, board of directors, and external consultants. The stakeholders come from from executive management, board of directors, financial and regulatory teams, operations, sales, and marketing.

There are multiple metrics such as leadership, business strategy, operation, and ERM objectives that help in defining an organization's appetite to take risk. Once the business's risk appetite is defined, the implementation of risk appetite requires incorporating it in the ERM objectives. In this top-down model, the feedback is taken across an organization from sales, operation, delivery, technology, etc., before finalizing the risk appetite definition. It is very important to remember that risk appetite is dynamic and may change over time.

The critical part of the framework is the first step in phase III, which involves first defining the appetite to take risk and next quantifying it so that it can be implemented across the business. This is a top-down model and needs the same approach for implementation.

Three tasks of an ERM program need to be taken into consideration and should be evaluated simultaneously with four metrics to assess risk appetite:

- Task 1—EM and BOD: Organization strategy
- Task 2—Leadership
- Task 3—ERM objectives

The graphic at right elaborates the four metrics that would be part of defining and quantifying the appetite to take risk. Please make yourself familiar with the diagram before moving ahead as we will be extensively discussing the components of graphic to reach the goal.

Coming back to three tasks of a ERM framework, the three critical tasks require multiple activities, such as brainstorming sessions, workshops, survey, and interviews to be carried out in a phased and sequence manner to achieve the desired state. The desired state here is the ability to assess "business risk appetite" with the help of four metrics.

The various phases leading to risk appetite are ERM objectives followed by leadership and management and board of directors buy-out. This triggers the whole exercise to assess the appetite to take risk across an organization and leads to its incorporation in the ERM objectives.

3.3. Assessing Risk Appetite of an Enterprise: The Three-Phase Approach

The following phases may be followed to define and quantify risk appetite:

Phase I—The processes to determine risk appetite

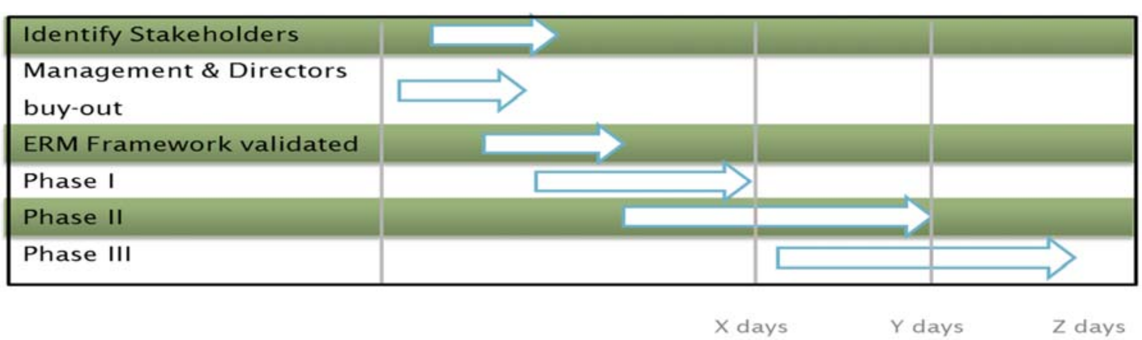
Phase II—Defining the company's objectives followed by the objectives of enterprise risk and defining the end goal of risk appetite—that is, how much risk to take, how frequently to take risk, and which product, line of business, business unit, or services to constitute what percentage of risk; in other words, all these areas would have their own risk objectives and their risk appetite defined within the overall enterprise risk appetite

Phase III—The various activities to be performed to quantify the qualitative metrics of an organization.

We will now elaborate on the activities and processes of all three phases in detail to help an organization in its risk appetite implementation.

Before we move to phase I, we suggest you make yourself familiar with the example of the GANTT chart shown in Figure 3, which provides the implementation plan for the assessment.

Figure 3: Assessment Implementation Plan



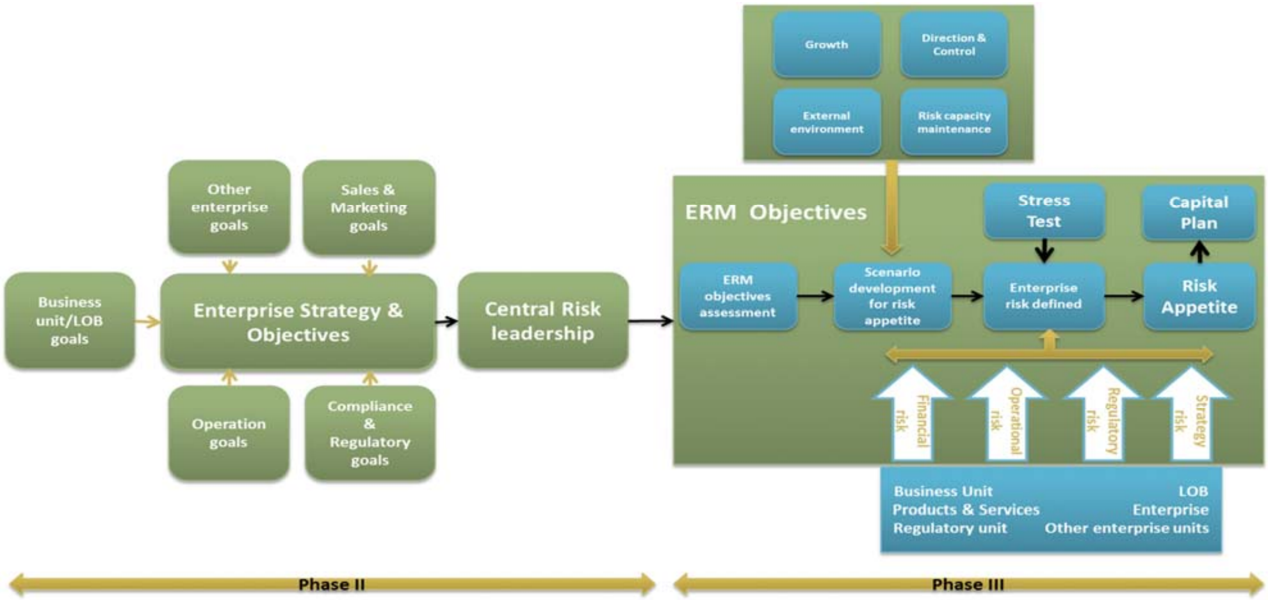
3.3.1. Phase I

In the first phase, executive management and the board of directors provide a launch pad for the ERM program in an organization. Their buy-out and agreement to the ERM program is necessary before one can move ahead to the next step.

The three tasks mentioned above would be performed in a sequential manner to achieve the objective. Task 1 and task 3 will be performed sequentially in phase I and phase II, and task 2 will run in parallel with task 1 in phase I. The reason for running task 2 in parallel is to have a central risk leader in place to be in sync with the entire exercise to provide guidance and leadership to the team. At the end of task 3, the risk appetite will be defined and quantified, and it will be communicated to all stakeholders.

Figure 4 provides the end-to-end processes to achieve the desired goal of all the business units, lines of businesses, etc., that lead to the enterprise risk appetite. The figure covers phases II and III along with the risk assessment and quantification of enterprise risk.

Figure 4: End-to-End Processes Leading to Enterprise Risk Assessment



3.3.2. Phase II

Here we provide leaf-level details of tasks 1 and 2 of phase I that need to be performed in achieving risk appetite assessment:

Task 1—Executive Management and Board of Directors

- Mission and Growth
  1. Mission statement for the next three years
  2. Company growth—divisions, units, subsidiaries, lines of business, etc.—sales projections, price projections, service projections, revenue projections, and profit margin projections
- Market and Products and Services
  1. External scenario—existing markets, new markets; product and service portfolio—existing and new; competitors; regulations; local governance—sovereign, legal; geographical spread and limitations; geological limitations and risk

2. Internal resources—financial, people, technology, processes

3. Projected growth rate for existing markets, new markets, product and service portfolio both existing and new, market share

4. R&D

- Regulation and Compliance

1. External regulation such as Basel III, FSA, SEC, MIFID, SOX, G20, Dodd-Frank, etc.

2. Internal compliance fulfillment such as policies and standards

- High-Level ERM Objective Buyout

1. ERM program presented

2. Feedback incorporated and ERM program signoff

Task 2—Leadership

- ERM Leader Identified

1. ERM central leader identified/chief risk officer (CRO)

- ERM Leadership Oversight

1. Roles and responsibilities

2. Reporting template and format

3. Communication: structure, timeline, exceptions, approval, governance, policy

- Guidance and Development of ERM Policies, Risk Capital Leading to Risk Appetite Definition

1. Based on task 1, the first three points help in the development of ERM policies, standards, models, regulatory compliance, and internal guidelines. Input from the various teams on the operational risk, financial risk, strategy risk, and external risk would be incorporated, and that leads to risk capital, regulatory and economic capital, and risk culture

2. Stakeholders review, approval, and sign off

3. Final documentation

4. Risk capital, regulatory, and economic capital defined and risk culture documented and

5. Risk appetite defined, based on point 1 above, and communicated to all stakeholders, key persons, sales, trades, and transactions, etc., operations, and regulation

All subtasks under the three tasks linked to four metrics and in turn lead us to the defining risk appetite—the end objective of step 2—task 3 of phase 3.

Before moving forward we first need to understand how the four metrics are linked to the three tasks and subtasks. Determining risk appetite requires understanding the impact and applications of the four metrics and their traceability to the three tasks.

The four metrics of the risk appetite are the following:

Internal

- Strategy, direction, and visibility
- Growth rate, return and profitability, operation, and control
- Risk capacity and maintenance—capital adequacy and risk capital, risk sustenance, and liquidity

External

- Environment of the organization where it operates—industry, economy, geospecific, sovereignity, and country

The matrix table (Table 1) provides the traceability link to tasks 1–3 with the four metrics of the risk appetite of an enterprise. This example will help an organization achieve the goal with the help of three elaborated tasks.

To summarize, before moving further, Figure 5 provides a view of the methodology to achieve an enterprise’s risk appetite assessment. We will cover stress tests and capital plans in the next section.

Table 1

Matrix Table 1

Task	Subtask	Four Metrics of Risk Appetite			
		Growth, Operation and Control, Return and Profitability	ERM Goals, Risk Capital and Sustenance, Liquidity	Strategy, Direction, and Visibility	External Environment
Executive management and Board of Directors	Mission and growth rate				
	Market and product and services				✓
	Regulation and compliance				✓
	High-level ERM objective buyout				
Leadership	ERM leader				
	ERM leader oversight				
	Guidance and development of ERM policies, risk capital, etc., leading to risk appetite definition				
ERM objectives	Development and implementation of practices to reach the required level of risk capital and capital sustenance including regulatory and economic capital,				✓

	leading to risk appetite measurement Follow the defined approach in task 3 to assess enterprise risk appetite				

The matrix table provides the comprehensive traceability of task, subtasks, and metrics to perform the various activities to determine the risk appetite.

3.3.3. Phase III: Step 1

Now we will cover the activities to be performed in the implementation process to arrive at the risk appetite of an enterprise. The next matrix table (Table 2) provides the activities to be performed for tasks 1, 2, and 3 and subtasks to assess in defining risk appetite. This practical matrix table will help you implement it directly in your organization.

Table 2

Matrix Table 2

Task	Subtask	Activities			
		Survey /Com.	Brainstorming	Interview	Workshop
Executive management and Board of Directors	Mission and growth rate		✓		
	Market and product/services				
	Regulation and compliance and define ops and control				
	High-level ERM objective buy-out				
Leadership	ERM leader		✓		
	ERM leader oversight		✓		
	Guidance and development of ERM program		✓		

ERM objectives	Development and implementation of practices to reach the required level of risk capital, capital sustenance including regulator and /economic capital Follow the defined approach in task 3 to assess enterprise risk appetite and perform operations and controls				

With the help of this matrix, the activities are planned and executed seamlessly and simultaneously to assess an organization’s risk appetite.

We now provide leaf-level details of various tasks and subtasks of task 3 of phase III that need to be performed in determining risk appetite:

Task 3—ERM objectives leading to risk appetite determination

- Development and implementation of practices to reach the required level of risk capital and capital sustenance including regulatory and economic capital
    1. Brainstorming, surveys and interviews, and workshops with all stakeholders
    2. Existing risk capital, sustenance, and regulatory and economic capital review that includes operational risk, financial risk, strategy risk, and external risk
- How to determine the enterprise risk appetite—we may follow the following approach:
    - The enterprise risk appetite assessment process is communicated to all stakeholders and key persons—sales, trades, transactions, lines of business, business units, operations and finance, risk model teams, and regulatory units—to gain traction and assess their respective risk appetite

- The “stress test and capital planning” metrics in step 2 would be taken into consideration before the enterprise risk appetite is finally determined in its totality
- This exercise leads to quantification of enterprise risk appetite—based on task 2 and with the input from ERM program team of risk assessment and measurement, who provide their input on the operational risk, financial risk, regulatory capital, strategy risk, and external risk.
  - Final review of new capital requirements and sign-off

3.3.4. The Assessment Methodology

We suggest the following methodology to assess and quantify the enterprise risk appetite. This exercise leads to quantification of the enterprise risk appetite with input from the ERM program team of risk assessment and measurement, who provide their input on the operational risk, financial risk, regulatory capital, strategy risk, and external risk. They may employ a “causal model,” “rating model,” or “other assessment model” to work out the enterprise risk capital. However, it is important to note that the regulatory requirements are a necessary assessment for “financial risk” and “operational risk,” and an enterprise needs to meet those requirements. Similarly, the assessment methodology such as the “causal method” and/or “rating method”/“other assessment methods” is necessary for an enterprise to assess any “external risk” and “strategy risk.”

The additional assessments such as the “causal method,” “rating method,” or “other assessment methods” would provide an enterprise with the required input on the risk quantification for all risks.

Table 3 adds clarity to the points mentioned above and helps an enterprise select a risk appetite assessment methodology based on the fitness and mandatory requirements.

Table 3

Risk Assessment

Risk Classification	External Risk	Strategy Risk	Operational Risk	Financial Risk
	Causal method, rating method,	Causal method, rating method,	Regulatory requirements	Regulatory requirements

Risk appetite assessment methodology	other assessment methods, etc.	other assessment methods, etc.	(mandatory assessment)	(mandatory assessment)
			Causal method, rating method, other assessment methods, etc.	Causal method, rating method, other assessment methods etc.

We need to understand that the assessment is dynamic and requires regular updating and refinement over time. Also, we need to understand that unit, lines of business, and product risk appetites are not a direct subset of enterprise risk appetite.

3.3.5. Step 2

The impact of a stress test and capital plan and its incorporation into a risk appetite assessment is the critical phase of the assessment.

The following stress scenario may be developed to stress test the intermediate output of an assessment exercise of an enterprise before finalization:

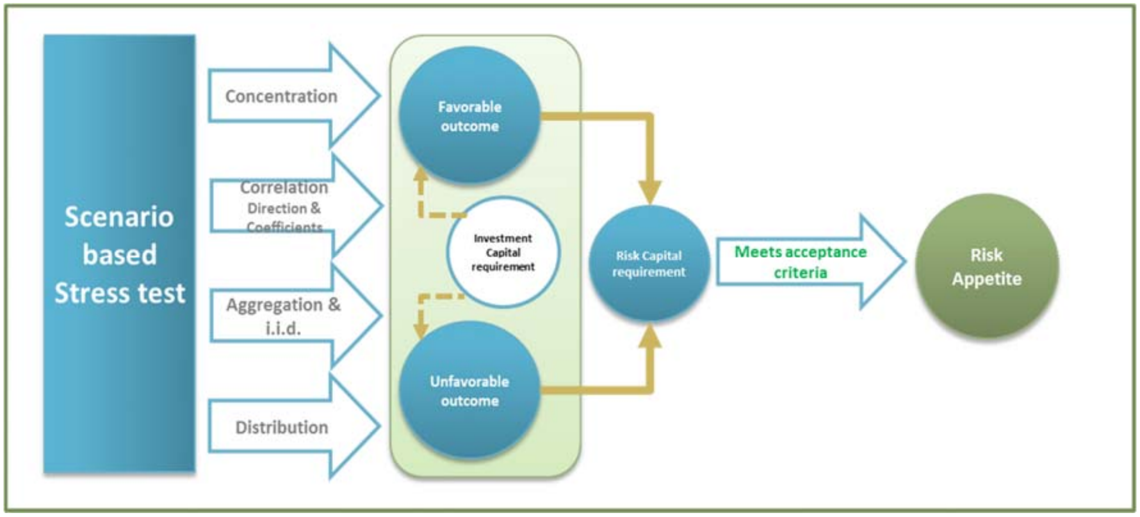
- External to organization—Macroeconomic and geographical factors lead to external risk
- Internal to organization—Strategy risk, financial risk, liquidity risk and operational risk
- External to organization—Sovereign risk and systemic risk

Before we conduct a stress test, the following capital planning metrics need to be evaluated and incorporated in all stress tests:

Unfavorable outcome
Favorable outcome
One favorable scenario for a business unit may lead to an unfavorable scenario for another business unit and vice versa
The correlation effect—direction and coefficient
Concentration risk
Aggregation and i.i.d.
Distribution

Figure 6 provides clarity on the stress test assessment methodology leading to risk appetite determination.

Figure 6: Stress Test Assessment Methodology



Stress testing would provide the capital requirements for various scenarios. Once the various scenarios (mutually exclusive and/or independent) are analyzed and shortlisted on the merit of case, the vectors and metrics are qualified to the next level for capital treatment. A capital plan to handle effectively the various stress scenarios would be put in place to keep the enterprise afloat. Once the vectors and metrics are quantified, the enterprise would come out with the level of capital required for sustenance over a period of time.

3.4. The Challenges and Exceptions Management

Now let us look at the challenges and exceptions of risk appetite implementation in an organization and their effective mitigation and management.

Challenges and exceptions management includes the following:

- Selection of ownership, their responsibilities, and authority and administration rights
- Personnel allocation, retention, and focus, since many of the stakeholders would be carrying out the exercise as their secondary role and responsibility
- Conceptual understanding of the subject matter on various risks such as financial risk, operational risk, strategy risk, and external risk
- Documenting risk assessment and measurement requires conceptual clarity, hands-on experience, knowledge, and skill. The right interview/discussion communication skills to carry out the assessment and measurement are a necessity.

- Scenario development exercise is critical and the most important part of building the risk appetite capital. Once done, the next step would be to define the probability and the severity. The first challenge here is to develop the credible scenario, and the next challenge is assigning probability to the scenario. The challenges are how to decide on the credible case scenario, avoid duplication with other unseen scenarios developed by other stakeholders and the correlation among them, assign a probability to the scenario and decide the probability distribution, and get all the stakeholders on the same page and to sign off. Finalizing the credible worst case/spikes scenario, both upside and downside, is the most important step in the definition of risk appetite.
- Helping stakeholders identify the proactive key risk indicators and drivers is a challenging exercise and would need industry experienced, trained resources to lead the exercise in shortlisting the key risks, not all risks, to be part of ERM
- Many key risks, more so in operational risk, are interrelated to other key risks, and the risk of spillover and double counting exists
- Risk correlation may not be possible to identify for all quantified risks
- It is easy to say that risks should be value creators as governance, and policy changes are always easier said than done. The challenge here is to incorporate the processes and limits to RAPM/RAROC/performance measurement. This will lead to risk capital and capital adequacy at an organizational level—a part of risk appetite determination.
- The global best practices and research input in conducting the exercise are the key to successful execution.
- There are operational challenges of multiple teams working simultaneously on risk assessment and measurement, from documentation and final review leading to sign-off. These challenges may require exceptions management to be in place to handle these effectively. These may include coordination, schedules, time management, getting the right stakeholders in time, etc., and may not provide an easy alternative. This may lead to bottlenecks and can put spikes in the interdependent exercise.

Stakeholder agreement may be achieved through brainstorming and workshops with the help of consultants working alongside internal staff or line managers. This will help them to be on the same page.

We need to remember that individual and company risks are not i.i.d., and hence at the time of applying a filter, the availability of the right stakeholders is paramount for successful documentation.

Choosing within an organization may not bring in the right people and focus to perform this job, and hence appointing a consulting company to bring the right kind of team members and leaders may be important. Outsourcing the major, long-term, subject-based, and critical parts of the enterprise risk appetite framework and program implementation (maybe 70–90 percent) to the external consultant would help in dealing with the many challenges mentioned above, including understanding and documenting the “causal model,” “FMEA and rating model,” etc. The external consultant or outsourced company would also give the process direction, provide training to all internal team leaders and members, take ownership of the overall responsibility, and deliver per the client mandate. The team would comprise members and leaders from the outsourcing company and from the client.

Stakeholder agreement on SM and the content of documents and bringing them together on the same page is one operational challenge that needs to be handled regularly.

Although the awareness of exceptions built into the project plan and anticipated, the frequency and type of exception, that is, exception itself, are not known beforehand to any team. To handle exceptions, team members would communicate to their respective leaders, in an agreed-to format, the exceptions and the cause-effect relationships, if any.

4. The Cost-Benefit Analysis

Analyzing the costs and benefits of the proposed ERM risk appetite framework and methodology is vague at the outset and may be arbitrary to the client and audience, that is, the enterprise management team and directors. We have created an approach to conduct a cost-benefit analysis, one that may lead to a more informative and objective (based on facts and figures) solution.

At the strategy level:

Before Implementation	**After Implementation**
Absence of or **Poorly** Defined **Risk** Appetite Framework	Robust, Well-Defined Risk Appetite Framework
Cost	

• Redundancy cost, resource **and infrastructure cost, and consulting cost** (paid to consulting company) • Inadequate or more risk capital may lead to capital sourcing cost as the input from the operational risk, financial risk, strategy risk, and external risk is inadequate	• One-time cost of framework and implementation paid to consulting company and no regular cost • Required capital to provide coverage of expected loss, unexpected loss, and systemic loss
Growth and Revenue	
• Underachieving business growth though business potential exists • Overachieving business growth without having required risk capital • Vague, abstract, and incomplete ERM objectives lead to the absence of a top-down approach. This may hinder the business growth, control, and direction and inflict capital loss. • It also leads to lack of clarity, performance measures, risk capital sustenance model, and approach to positions, transactions, or new business with respect to risk objectives and appetite.	• Reduced surprise risk event leading to capital protection. Capital loss is planned excluding the 1% tail risk. • Robust, updated, and well-defined risk appetite framework, a part of ERM objectives, leading to growth, control and mitigation, and direction. Performance measures such as RAPM/RAROC for transactions, deals, trades, etc., for all business units. • Provides clarity on risk aggregation and risk diversification. Also provides answers to the selection of corporate level risk and return, i.e., what risk and how much risk to be taken from which unit, line of business, etc., and the corresponding return.

At the operations level:

Before Implementation	After Implementation
Absence of or **Poorly** Defined **Risk** Appetite Framework	Robust Well-Defined Risk Appetite Framework
Cost	

• Resource and infrastructure cost, business opportunity cost and consulting cost—mostly operational risk, external risk, and financial risk consulting • Litigation and lawsuit expenses • Permanent resources cost for regular reviews, updates, and reporting	• No regular charges at the operation level and consulting level. The opportunity cost is minimized. • Reduced litigation and lawsuit expenses • No permanent resource burden in payroll and reduced risk management required at the unit level
Growth and Revenue	
• Incomplete and poorly defined risk objectives and poorly defined risk appetite leading to: • Inadequate safeguarding mechanisms • Incomplete and poorly defined business risk capital models or policies at the unit level, i.e., higher or lower than required risk capital for expected and unexpected losses, such as tail risk loss of 1% performance, overachievement, or underachievement of business target at unit level	• Robust, updated, and well-defined risk appetite framework, a part of ERM objectives, at the management and director level • Adequate safeguarding mechanisms • Performance achievement as per plan and performance and transactions and sales audit • Risk loss are mapped and monitored against expected loss, unexpected loss, and systemic loss • Helps in performing simulation

5. Illustrative Case Study

The XYZ Organization wants to move ahead and implement the ERM program in the defined timeframe. They are in the asset management and investment banking business and have operations in multiple countries. They have multiple business units, subsidiary and sibling organizations listed and registered in multiple countries, and have a matrix reporting structure. All parts of the company report to the parent organization for performance evaluation, monitoring, and control and financing. There is regional control, country-specific, to handle regulation and compliance and operations.

It intends to comprehensively cover its all subsidiary arms and multiple business entities in various countries of operations. A few innovative financial products have been introduced in some of the operating countries with expectations of the higher return and being the provider of innovative financial solutions to the clients and customers.

They have identified teams from various business units to deliver on an ERM program timeline.

The organization has risk management in place for some units and subsidiaries that handle financial and operational risk, but it is in bits and pieces, island in approach, incomprehensive, and without any defined framework. They have adopted risk management because they have grown products, services, and operations in multiple countries and are starting from zero in having a framework-based comprehensive ERM program across the organization. They need to start from scratch and develop the framework and the ERM program for their organization. Their accepted financial and operational tail risks are shown in Figure 7.

Figure 7: Accepted Financial and Operational Tail Risks for XYZ Organization

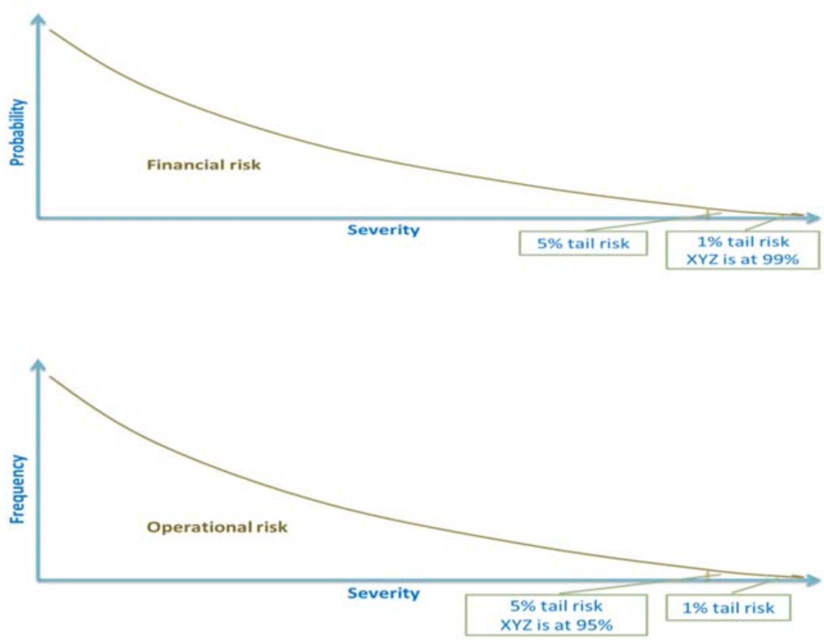


Figure 8 provides the latest figures for the XYZ Organization on the required risk capital to have capital adequacy for covering various tail risk positions.

Figure 8: Required Risk Capital to Have Capital Adequacy for Covering Tail Risk Positions

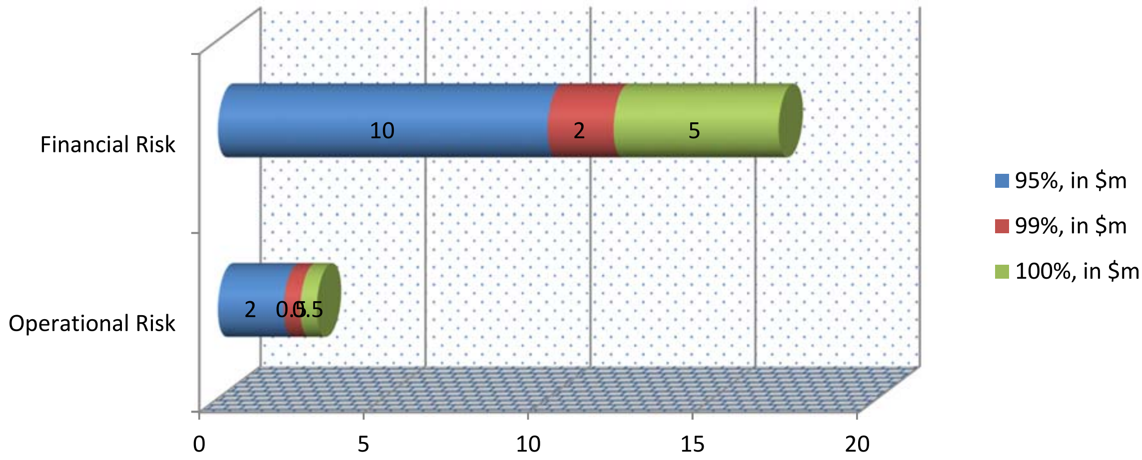
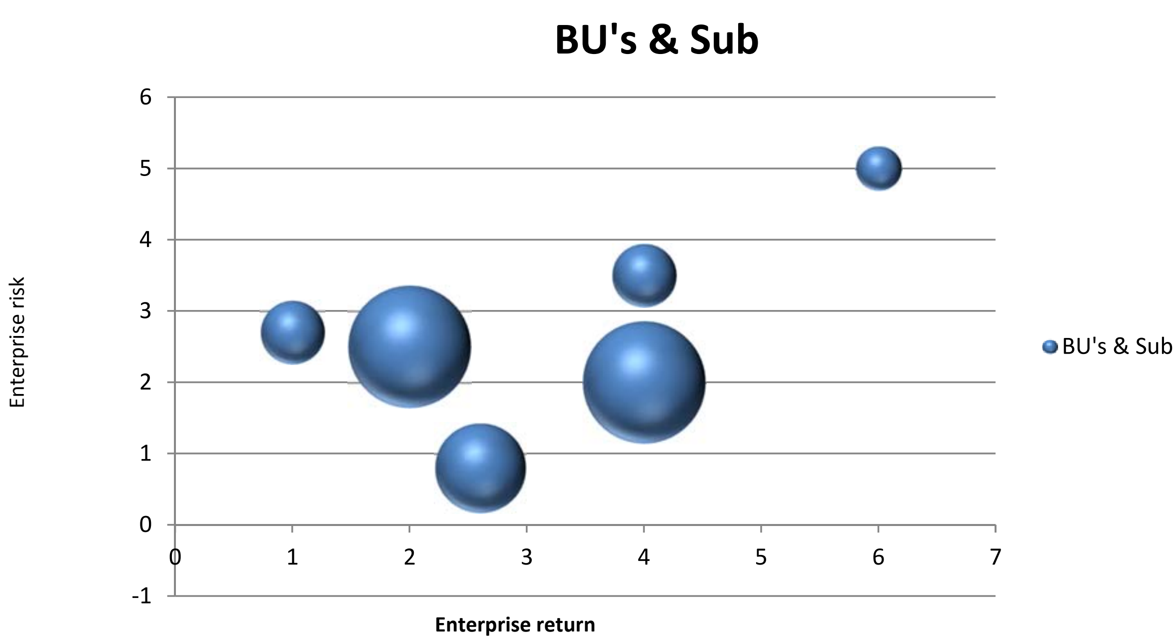


Figure 9 highlights the enterprise risk and return with respect to the size of the business in multiple business units and subsidiaries across the globe. This chart depicts the three-dimensional aspect of the enterprise business unit with "enterprise return" as the first dimension, "enterprise risk" as the second dimension, and "enterprise size" as the third dimension.

Figure 9: Three-Dimensional View of Enterprise Risk and Return



The XYZ Organization needs help in developing the ERM framework and program and then implementing it across an organization in all countries of operations.

What needs to be done to have an ERM program in place?

- **Introduce ERM concepts, applications, the disadvantages of not having an ERM program, and its benefits**
- **Get management and directors buy-out**
- **Carry out due diligence of existing landscape—IT and functional**
- *High-level ERM framework design and high-level ERM implementation plan*
- Identify stakeholders and update them on determining the company's risk appetite
- High-level risk appetite implementation schedule and plan
- Detailed ERM risk appetite framework and program design
- Detailed risk appetite implementation project plan
- Quantify the various risks using a standard model and approach
- *Take the enterprise risk loss data for all business units, subsidiaries, etc., with probabilities*
- *Data should cover operational risk, financial risk, regulatory risk, strategy risk, and external risk*
- *Perform ABC analysis of risk return*
- *Perform risk, return, and business unit size analysis in three dimensions*
- *Perform tail risk analysis*
- *Identify key risks*
- Educate employees and stakeholders,
- Perform impact analysis with respect to existing risk appetite plan and any other plan
- Design new model and guidelines, design processes, and work flows
- Get sign-off from the management and stakeholders
- Implement risk appetite program and prepare comprehensive documentation
- Perform final dry run, validation, and testing
- *Freeze capital requirements across multiple business units, etc., in all countries*
- Design reporting format and dashboard and get sign-off

Bold points represent common steps performed in a ERM framework and program and risk appetite program. Italicized points represent steps performed in both the ERM framework and program and the risk appetite program. Other points represent steps performed primarily in the risk appetite program.