

White Paper



Enterprise Risk Management

From the boardroom to shop floor

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Introduction

Enterprise Risk Management (ERM) has been hotly debated in many boardrooms in the last few years. Many companies have moved from a silo-based approach to a holistic approach for ERM. Companies realize that better capital management through increased predictability and lower volatility are the key factors contributing to shareholder value.

Global economic and industrial developments have changed the risk profile of insurance companies. They have realized the importance of a risk-sensitive system in managing scarce capital. To deploy scarce capital effectively and to maximize economic value, they need to move towards risk-based capital wherein the company's capital requirements are based on the risks that it faces. Regulatory changes have also compelled insurance companies to move towards risk-adjusted return.

The merits of moving from an individual risk exposure model to an integrated risk model are well established. However, the biggest stumbling block in ERM has been the difficulty in translating the plans on the drawing board to reality.

Drawing on experience in the insurance industry, this paper discusses:

- Implementation challenges for ERM
- An approach to realization of ERM goals
- Suggestions for implementation

Why is implementation a challenge?

ERM calls for a change in the way risk is perceived and managed. It, hence, poses all the challenges of a major organizational change initiative. Further, developing the right organizational model is in itself a daunting task.

Key issues that impede implementation:

- ERM objectives not aligned to corporate objectives: Often, ERM objectives are not synchronized with corporate and organizational objectives. This jeopardizes the initiative or creates friction among groups or individuals.
- Insufficient commitment from top management: Implementation of ERM is a big initiative requiring whole-hearted support from the top management.
- Inadequate conceptualization of ERM model: Creating an appropriate ERM model and adapting it to the company's goals are critical activities in the initiative. An inadequate or inappropriate model will not yield the expected business benefits and may even render the whole initiative 'under-par'.
- Poor decision support / inadequate tools and systems for statistical analysis: An integrated risk management environment –the end product of an ERM implementation – requires efficient statistical and analytical tools to support informed decision-making. Unavailability of such tools may make the implementation sub-optimal.
- Cultural mismatch: As discussed earlier, ERM has all the challenges of change management. Insurance companies have traditionally adopted a 'silo' approach. For example, a traditional claims manager would never club claims risk exposure with risk of investment returns.

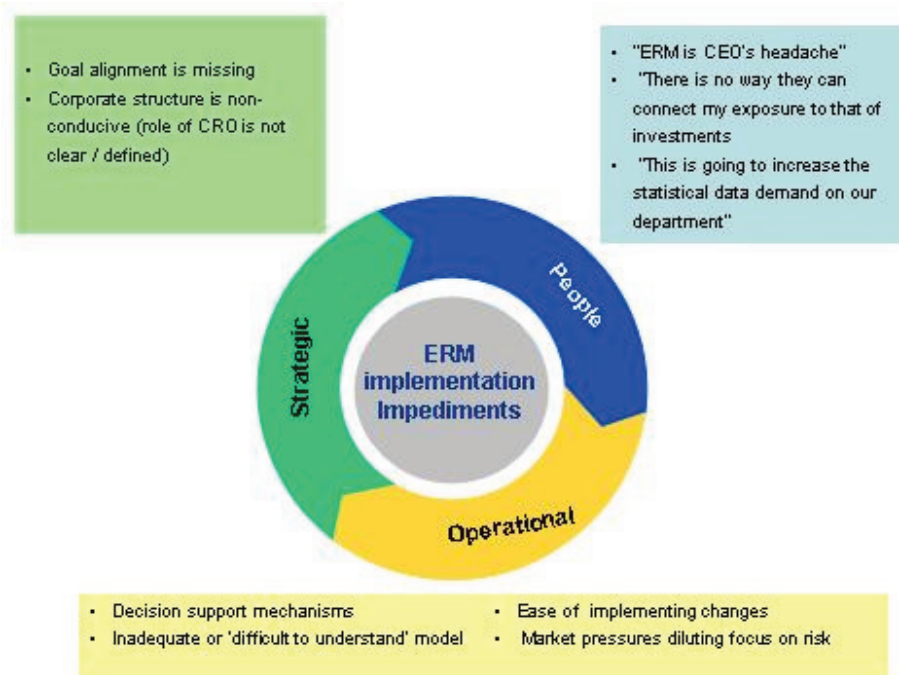


Fig 1: ERM implementation impediments

In addition, insurance company regulations in some countries constraint effective implementation of ERM strategies.

A structured approach to implementation

The key to successful implementation of ERM is a structured approach. A random approach to ERM can raise major issues while restructuring the Risk Philosophy of an organization.

The model given below can be used to develop a framework for adoption of ERM. It is a generic model, the components of which can be tuned and customized to suit the needs of an organization.

'As-Is' analysis

Thorough understanding of the organization's present approach to risk is the first step in migrating to ERM. The risk appetite of the organization and its philosophy of risk must be studied. The threshold of risk tolerance must also be looked at.

The key focus areas in As-Is analysis are methodology, tools, environment, exposures and impact.

- View of the exposures and impact: The primary focus of As-Is analysis is on key exposures and their impact on organizational goals. The analysis must study all exposures independently and also look at the combined impact of co-related risks. The analysis should render a clear picture of the potential impact of exposures on organizational goals.
- Risk management methodology: The existing risk management methodology indicates an organization's approach to risk. Hence, this is one of the first aspects to be considered while approaching ERM. In organizations where the methodology and approach are not well articulated and documented, several tools ranging from surveys to workshops will have to be utilized to get a clear picture.
- Tools used for risk management: Stock-taking of the tools used for risk management and their effectiveness helps study the approach of the organization and provides indicators for optimal re-use in the new ERM environment. Risk management tools are indicators of trust worthy sources of data and point to the organizational culture and disposition of people towards risk.
- Cultural aspects: An organization is what its people are. That is why analysis and understanding of culture is an important element of As-Is analysis. However, culture is not a tangible and measurable dimension. Importance of risk in the performance metrics of units and individuals, risk related records, processes and policies related to risk, care and detail in risk related communication, etc are some surrogate indicators.

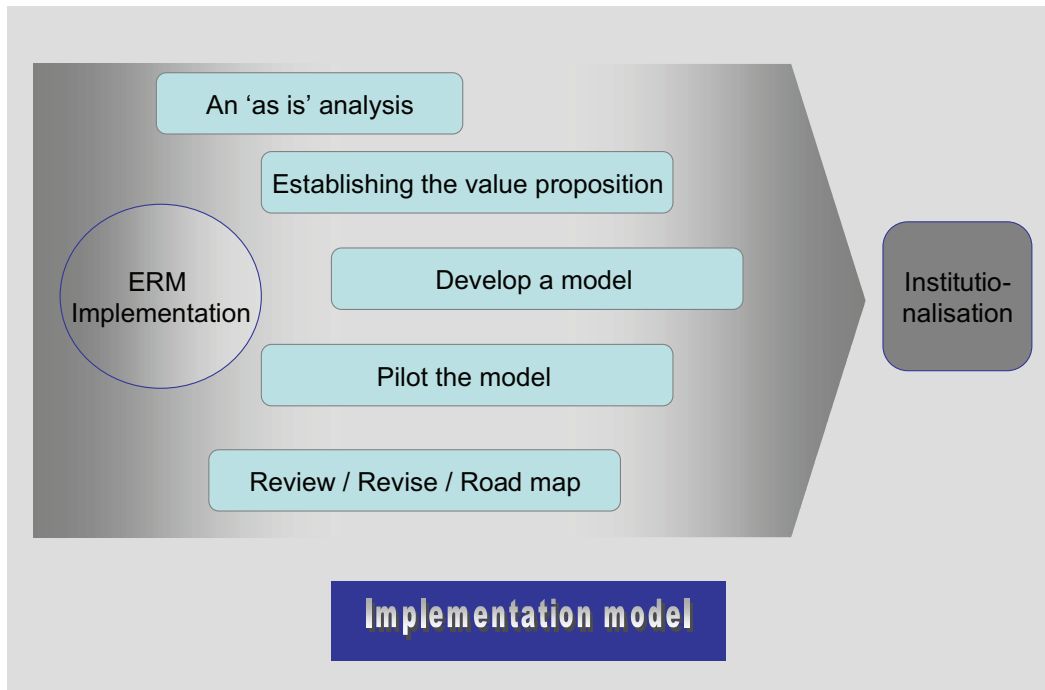


Fig 2: Implementation Model

Contextual fit

The next step is establishment of the value proposition of ERM in the context of the organization. It should cover the business and financial advantages that the organization draws from the revised approach to risk management

Sometimes, value propositions are established at the industry level and regulations facilitate implementation. Solvency II regulations related to Risk-Based Capital approach to solvency evaluation is an example. Risk-Based Capital approach mandates cumulating multiple risk exposures, thereby facilitating an integrated risk approach.

Develop a model

One of the biggest challenges on the ERM journey is designing an appropriate model. ERM models are still evolving and need to be customized to fit an organization. Most insurers may need a hybrid model since the risks to be assessed may range from well-quantified to those beyond mathematical models.

The key aspects to be considered while creating a model are:

Model attribute	Relevance
Robustness	<ul style="list-style-type: none"> Scalability across multiple domains Ability to stand the test of time Consistent performance
Suitability	<ul style="list-style-type: none"> Match complexity of operations Address key exposures adequately
Changes needed	<ul style="list-style-type: none"> Minimum change requirements Easy to implement changes
Cultural fit	<ul style="list-style-type: none"> Acceptable to people

Risk Models – Need to go beyond traditional insurance roles

Insurance companies have, over a period of time, developed robust modeling techniques for standard risks like underwriting risk and market risks (interest rate risk, credit risk). However, many non-standard risks must be considered while modeling risks at the enterprise-level — technology risk, employee attrition risk, fraud risk, etc. Developing models to assess nonstandard risks continues to be a challenge for the industry.

Models can be deterministic, i.e; based on a set of specific assumptions about the future, or stochastic to accommodate the random nature of some parameters.

Another area of concern to modelers is assessment of the combined impact of risks on multiple dimensions. For example, an event like 9/11 could impact market risks, underwriting risks and employee risks. Developing correlation between multiple impacts in such cases is a tough task. It calls for analysis of the “cross-risk” effect.

In cases where the variability of parameters is high, insurance companies need to evaluate the aggregate effect of various scenarios. This requires “simulation-based” ERM modeling. For example, even if there is an excess of assets over liabilities, there may be a possibility for insolvency that may not be identified by deterministic modeling. A stochastic model is required for this purpose.

There could be other scenarios that may lead to severe financial difficulties. Making provisions for “worst-case” scenarios means ‘larger than necessary’ provisions, which may not always be the most capital efficient options. Stochastic models are a better in such cases.

The salient features of the deterministic and stochastic models can be combined effectively. Variables whose performance are largely unknown and carry a large risk can be modeled stochastically, while variables that are simpler can be modeled deterministically. For example, general insurance claims can be modeled in three ways:

1. Number of claims can be modeled stochastically and associated mean claim cost deterministically
2. Deterministic expected number of claims with stochastic actual number of claims
3. Both claim amount number are stochastic

Pilot the model

Successful implementation of any change requires buy-in from all stakeholders. An effective way of winning stakeholders confidence is by running a pilot and proving the concept before a largescale implementation. The main advantages of adopting a ‘pilot’ based approach are:

- Implementation will not be ‘big bang’. The organization sees the pilot before committing in full.
- Allows refinement of the program. Mid-course correction of a full blown implementation is difficult, if not impossible.
- Pilots make implementation ‘incremental’. It allows people to come to terms with the change, and is more acceptable from the people perspective.
- Communication is more effective. It is more demonstrative than documents and communication fliers.

The pilot, however, should be done very carefully to ensure that :

- The concept is established well
- Stakeholders get a good feel of the initiative
- Results can be extrapolated to the organization

Monitor the experience

The objective of the pilot is to have a ‘proof of concept’ before a full blown implementation is set in motion. Hence, the pilot should be followed by analysis of results, revision of approach and model if needed, and creation of the roadmap. The evaluators must intelligently project the experience of the pilot to the complete implementation and check if the approach, model or any other aspect needs alteration. The pilot also helps ‘buy-in’ from stakeholders.

Institutionalize ERM

The last stage in implementation of ERM is institutionalization — the transition to the steady state. It entails different steps to successfully integrate the ERM philosophy with the organizational culture. The key elements of this phase are:

- Communication plan: Developing communication plans to ensure that the organizational layers are aware of the program as well as its key drivers, features and benefits
- Governance model: Refining the governance model to yield the required control and guidance for the program
- Systems & technology: The existing systems may need to be changed and new technology tools introduced
- Re-sourcing plan
- Risk measurements, metrics, reporting, etc need to be documented and shared at the appropriate levels to facilitate free flow of information

Technology as an enabler – The “ADR model”

Implementation calls for integration of information, its analysis, and communication to key stakeholders. Technology is a key element of this process.

From the technology perspective, implementation has three layers – data, calculation and reporting. This maps to the Assimilation, Diagnosis and Reporting layers of the ADR model.

Assimilation/Data challenges: The data needed for ERM is spread across various systems in a typical insurance company. Also, there may be multiple sources for the same data. Distilling relevant, quality data is a challenge. There are many tools for data modeling, scrubbing, extracting, cleansing, tuning, integrating and transforming data.

Diagnosis/Calculations: The diagnosis phase involves using risk models to analyze the current status and create futuristic scenarios. Most models involve complex formulae and large volumes of data that require technology support. Technology has made stochastic modeling feasible. It enables the use of Monte Carlo simulation techniques that involve numerous models to generate a single set of output distributions.

Reporting: A typical ERM scenario involves a large number of reporting requirements for monitoring and decision-making. Flexibility for dynamic report creation is also essential. A robust reporting tool is required to handle these challenges.

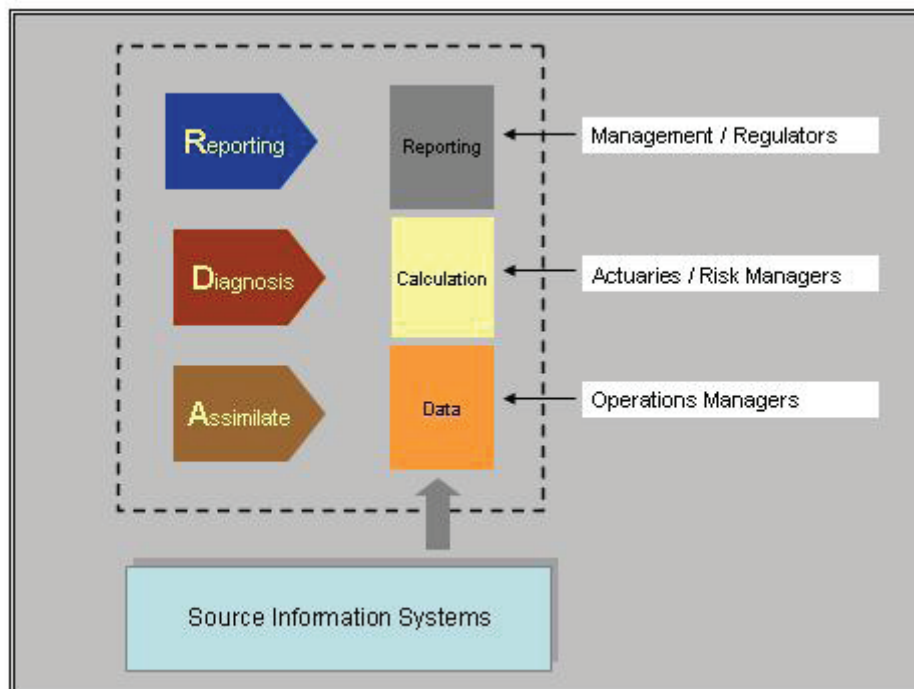


Fig 3: ADR model

COSO framework – A comparison

What is COSO’s approach to ERM?

The Committee of Sponsoring Organizations of the Treadway Commission, better known as COSO, developed an integrated framework for ERM. This framework defines eight components for ERM:

1. Internal Environment	2. Objective Setting
3. Event Identification	4. Risk Assessment
5. Risk Response	6. Control Activities
7. Information and Communication	8. Monitoring

In the Executive Summary of *Enterprise Risk Management – Integrated Framework*, it suggests relating these eight components to the four objectives viz. strategic, operational, reporting and compliance. The third dimension of relationship is with the units of the business entity. The framework aims to create a focused risk management approach by building on three dimensions of an entity — components, objectives and units. It also aims to provide a basis for developing an effective ERM model for an organization.

Relevance of components to ERM implementation

Internal environment: This is the trigger point for the implementation thought process. Commencing with the risk approach or philosophy of the organization, this step defines the basic game plan for the implementation. Factors like risk appetite, ethics and values constitute the foundation of the plan.

Objective setting: After deciding the ground rules, the next step is to define the risk related objectives of the organization and related strategic goals. For the implementation to be effective, the goals and objectives must flow through the hierarchy of the organization. Different organizations adopt different methods for the goals and objectives flow, but they must be effectively communicated through the supervisors/managers.

Event identification: This component focuses on identifying the internal and external events that affect the achievement of the strategic objectives and goals of the organization. The critical element is identifying multiple factors and inter-linkages from an impact perspective.

Risk assessment: The next logical step is to understand the impact of the identified events on the objectives. Assessment requires employment of multiple qualitative and quantitative methods as appropriate to the risk.

Risk response: Focuses on evaluating responses and rating them on the scale of risk tolerance. The effectiveness of the response in addressing the impact of the risk on the objectives and a cost-benefit analysis are essential for selection of responses.

Control activities: Institutionalizing risk responses is critical to the successful implementation of ERM. This component focuses on the laying out policies and procedures that ensure that the defined responses are operational.

Information and Communication: Policies, procedures, roles and responsibilities should be articulated and communicated through the length and breadth of the organization to ensure that the envisaged risk response is achieved.

Monitoring: The operational effectiveness of ERM is gauged by constant monitoring. It provides vital inputs for review and modification of other elements.

Mapping the proposed implementation framework to COSO elements:

The following diagram is a mapping of the proposed framework of the COSO components. It helps benchmark the framework against COSO methodology and facilitates dovetailing this approach with the COSO methodology.

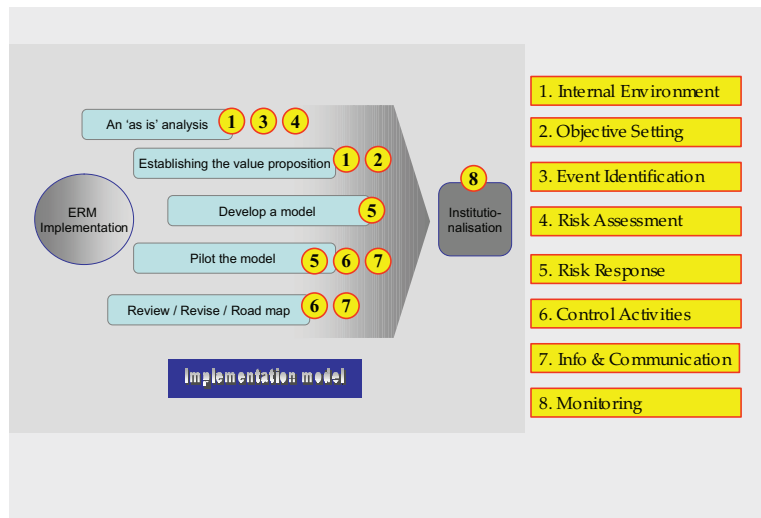


Fig 4: Mapping to COSO elements

This mapping confirms the COSO framework's view that elements are not necessarily sequential, but are multi-directional.

An impact perspective

The visible impact of an implementation is usually not uniform. During the kick-start and acceleration phases, the impact may be visible and felt only internally, whereas it gains external visibility when the transformation is in steady state.

The table below shows some visible indicators that may be noticed during different phases of sERM implementation.

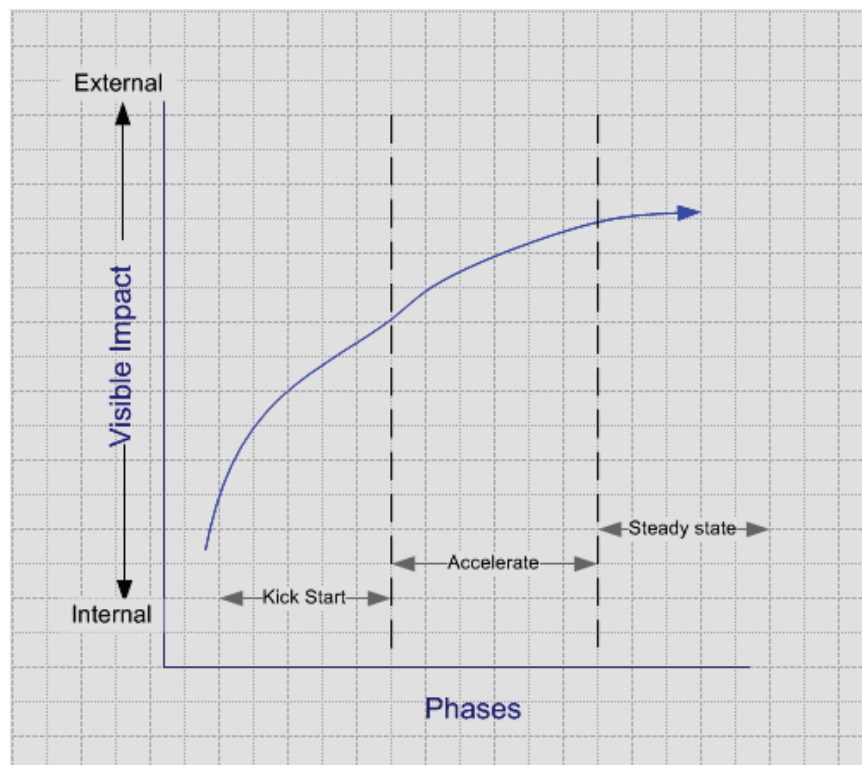


Fig 5: Visible impact in different phases

Kick-start	Accelerate	Steady State
<ul style="list-style-type: none"> • Compliance • Risk driven decisions • Improved communications on risk • Initiatives to create awareness of integrated risk approach 	<ul style="list-style-type: none"> • Better utilization of capital • External communications on risk management • Safeguard shareholder value 	<ul style="list-style-type: none"> • Improving shareholder value • Improving governance

Monitoring impact helps access success of the initiative. Indicators that are not in sync with the phase can alert the management. Though it may not always signify a problem, it will definitely warrant a review.

CRO's dashboard

All ERM implementations require regular tracking of progress to anticipate issues and proactively adopt remedial measures. The five dimensions to be monitored are:

- People and roles
- Policies and communication
- Models and methodologies
- Systems and data
- Results and rewards

The Program Manager for implementation and the CRO must be regularly updated on the activities, concerns, issues and remedial action taken on these dimensions.

Conclusion

Since the value of an integrated approach to risk is undisputed, the concept of ERM will soon roll out from the boardrooms to shop floors. ERM is a large change management initiative that needs to be handled carefully and in a structured way.

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