

Title: A proposed approach for implementing enterprise risk management in road organizations.

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1. Introduction

Traditionally, Risk Management (RM) was aimed at protecting the organization's value by being applied in selected risk areas primarily those related to finance, insurance operations and internal controls. Its focus was on the physical and financial, the so-called tangible assets, such as land, infrastructure, equipment, cash and receivables to name a few.

Nowadays, organizations increasingly attribute importance to the integrated management of risks thus recognizing the implications that their interrelated nature may create for the organization. Still, the integration of RM practice across an entire organization may be perceived as challenging and overly expensive, sometimes with unclear benefits. It is important at this point to clarify the differences between Enterprise Risk Management (ERM) and the traditionally applied RM as aforementioned.

ERM redefines and elevates the RM value proposition from a tactical level to a strategic level aiming at protecting as well as enhancing the organization's value by also considering opportunities, not only threats. It follows a portfolio view of risks and considers both tangible and intangible assets. Intangible assets include assets that may be customer-related (e.g. customers, channels, affiliates), employee/supplier-related (e.g. suppliers, partners, employees) and organizational assets such as leadership, innovation, reputation, values, knowledge, systems and processes. It aspires at being both a strategy-setting and a RM tool applied across the organization, at all levels and types, to all sources of risk in support of the strategic objectives while considering both external and internal factors.

Instilling a RM culture and practice across an entire organization may best be accomplished through a gradual and progressive process in which, learned experience during the implementation is further used to promote both the risk management culture and the practice that top management aims at establishing. We propose a five-step approach we believe that

could accomplish such implementation of an ERM framework to an entire organization by also providing relevant concepts and tools. **Figure 1** summarizes the proposed approach.

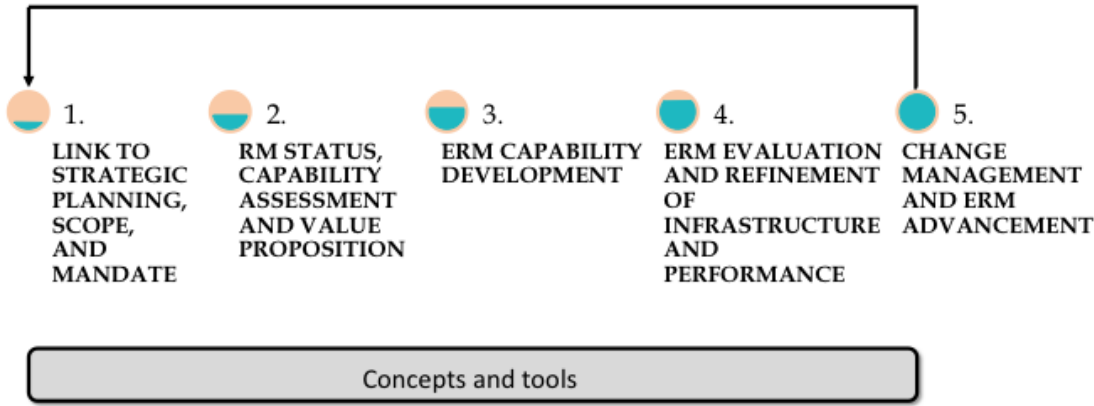


Figure 1. ERM implementation roadmap

2. Considerations for ERM implementation

Under the ERM, the RM scope (i.e. enterprise-wide) and application are much broader. ERM recognizes that successful organizations or companies must take on risks when seizing opportunities and thus proactive behavior is expected. The risk management is a process-driven activity that is determined and agreed at the strategic level. Next, the proposed five major ERM implementation steps are analyzed.

2.1. Step 1: Link to strategy, planning, scope and mandate

Step 1 aims at establishing the necessary link for ERM to strategy planning so that the organization’s strategic objectives are effectively supported. It consists of two sub-steps, 1A and 1B (**Figure 2**).

In sub-step 1A, the ERM’s vision and scope are defined in relation to the strategy of the organization and its strategic objectives. The internal and external environments are identified by using foresight methods (e.g. expert panels, SWOT, PESTEL, scenario analysis, etc.), that provide a systematic way for identifying potential changes, future trends, risk drivers, threats and opportunities. The risk champion or person responsible for implementing ERM (e.g. Chief Risk Officer or CRO) across the enterprise is identified, a brief risk management policy is elaborated, and metrics for measuring the success of the ERM practice are also proposed.

Sub-step 1B consists of forming the ERM team which should also comprise members of the strategic planning team, and providing the team with the necessary clear mandate from the top management for proceeding with the ERM implementation planning. Initially, ERM may be considered as a project. Lines of accountability, responsibility, and communication protocols are also defined.

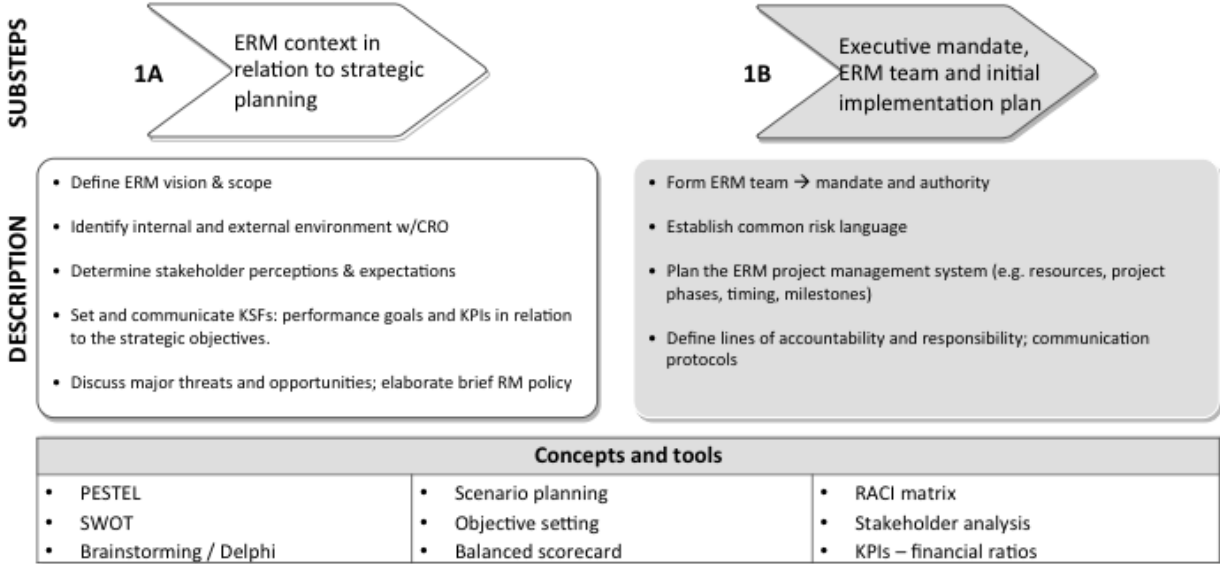


Figure 2. Step 1 – link to strategy, planning, scope and mandate

2.2. Step 2: RM status, capability assessment and value proposition

Top management may be reluctant to commit further resources to RM unless they clearly see the benefit from doing so. Thus, step 2 aims at assessing the status of the current RM practice and delivering a value proposition for further improvement. It consists of two sub-steps, 2A and 2B (Figure 3).

Sub-step 2A involves scanning and assessing the existing RM capabilities to produce an organization-wide portfolio view and an initial prioritization of risks.

Sub-step 2B aims at identifying the needs for improving the existing RM practice for selected key risks and producing a relevant vision. It also aims at appropriately supporting key business processes for delivering a successful ERM practice based on cost and benefit considerations that are endorsed by the strategic planning team and the Board.

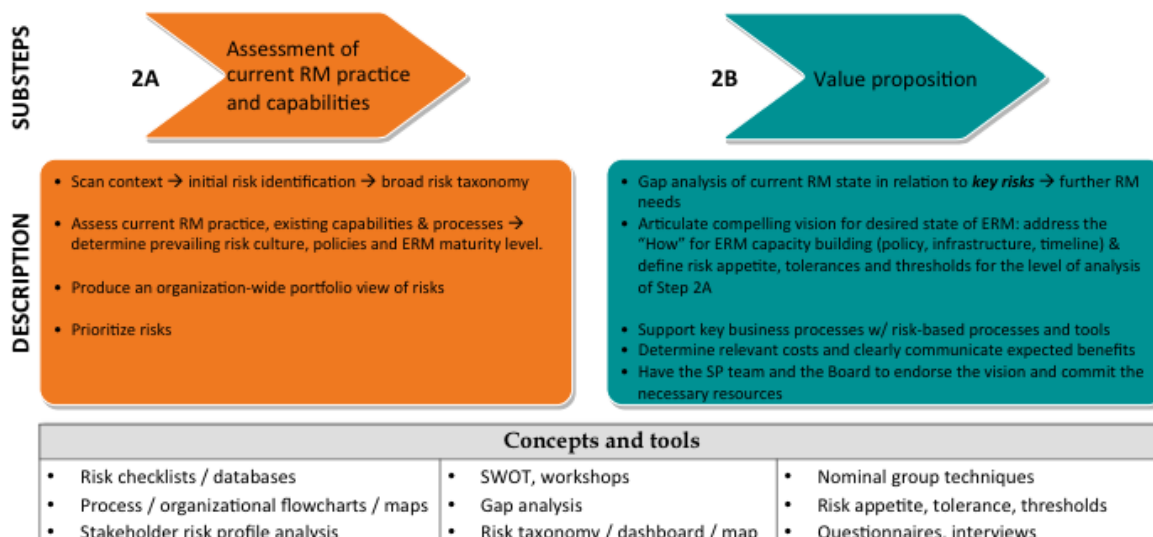


Figure 3. Step 2 – RM status, capability assessment and value proposition

2.3. Step 3: ERM capability development

Step 3 aims at advancing the ERM maturity level for the selected key risks based on prioritization, cost-benefit, and risk-return considerations, as determined in Step 2. It consists of two sub-steps, 3A and 3B (**Figure 4**).

Sub-step 3A aims at detailing the RM architecture (i.e. roles, accountabilities, responsibilities, communication and reporting) and the initial RM policy with the appropriate protocols for the integration of the RM process across the organization. The appropriate ERM structure should result from this RM process.

Sub-step 3B identifies the ERM context and refines the RM process by integrating detailed risk assessments and existing management processes. This sub-step concludes by developing the risk registers with response actions that are reviewed and approved by the risk owners.

2.4. Step 4: ERM evaluation and refinement of infrastructure and performance

Step 4 aims at evaluating the developed infrastructure capability for the selected key risks and develop a strategy for refining it. It consists of two sub-steps, 4A and 4B (**Figure 5**).

Sub-step 4A aims at assessing the status of ERM and providing assurance that the relevant procedures are efficient, understood, and followed by staff. Appropriate key risk drivers (KRDs), key control indicators (KCI), key risk indicators (KRI), and key performance indicators (KPI) are established.

Step 4B aims at closing the gap between the current and the desired status of ERM by adding the necessary **depth** to the existing ERM infrastructure.

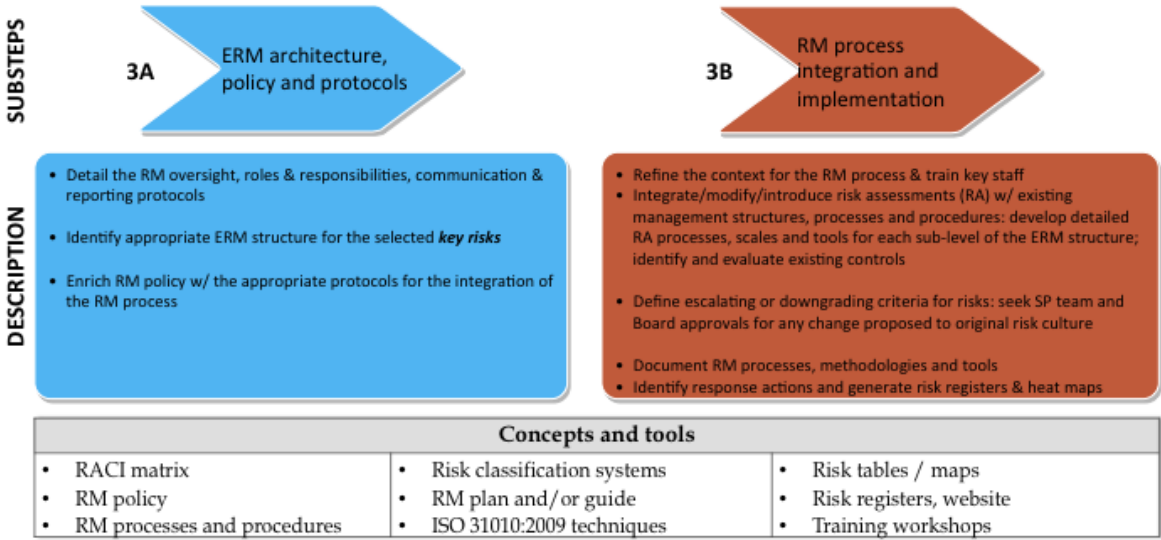


Figure 4. Step 3 – ERM capability development

2.5. Step 5: Change management and ERM advancement

Step 5 consists of documenting the lessons learned and advancing the ERM maturity level of the organization. This is accomplished by adding the necessary **depth and breadth** to the process, and by possibly including additional key risks. The details of step 5 are shown in **Figure 6**.

3. Short summary and recommendations

A stepwise approach has been presented for a gradual ERM implementation and commitment of resources. Implementation of ERM may be deemed as overly challenging and expensive by top management. It does not have to. It must be kept simple and not overly complicated. Top management must lead the endeavor and be genuinely committed.

Further research should aim at identifying appropriate methodologies and valuation metrics that relate to the effectiveness of ERM performance in achieving the organization’s strategic objectives and thus demonstrate the related benefits.

The interested reader is encouraged to access the deliverable of cycle 2016-19 PIARC’s Technical Committee TC A.3 on Risk Management for obtaining a more comprehensive view on the matter with selected examples from good international practice once it is released.

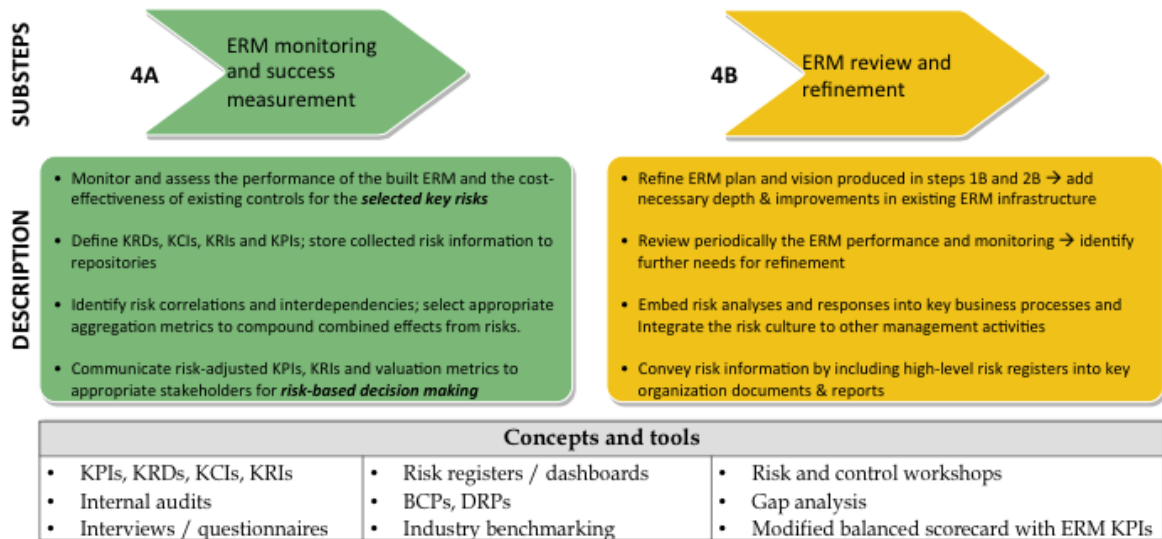


Figure 5. Step 4 – ERM evaluation and refinement of infrastructure and performance

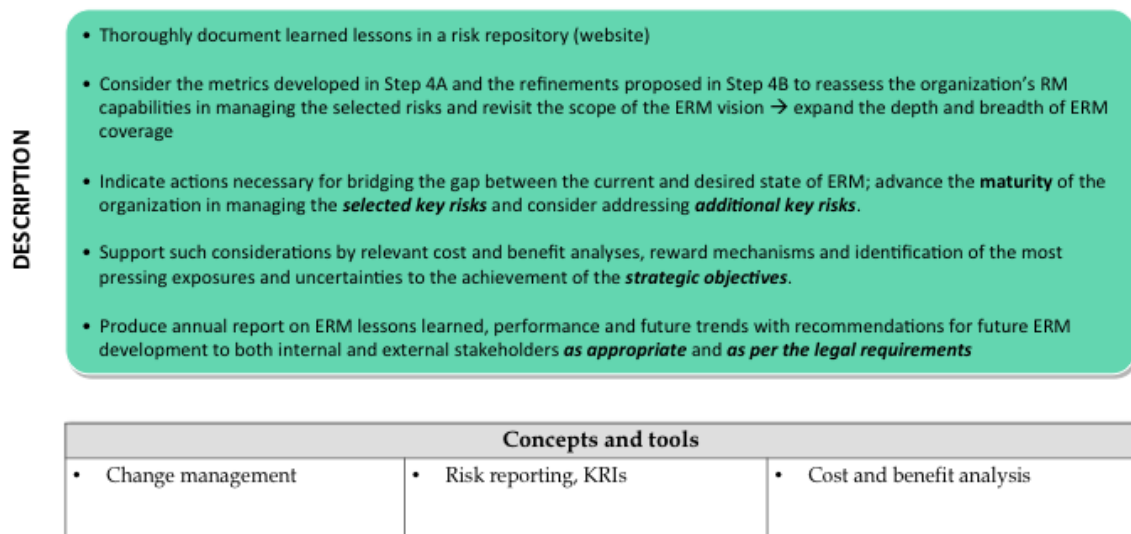


Figure 6. Step 5 – Change management and ERM advancement