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**Integration of Risk Management Into Strategic Planning:
A New Comprehensive Approach**

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Integration of Risk Management Into Strategic Planning: A New Comprehensive Approach¹

Isabela Ribeiro Damaso Maia² and George Montgomery Machado Chaves³

Abstract

Companies are exposed to a variety of risks related to the development and implementation of their business strategy. There is an extensive amount of literature about enterprise risk management (ERM), yet it is still possible to find a new opportunity to analyze how different kinds of risk information can be objectively considered by senior management to enhance corporate governance and strengthen sound decision-making processes.

Strategy formulation is the main part of the strategic planning process. A robust ERM framework must provide relevant risk information for decision-makers so as to reduce the possibility of selecting a mistaken strategy or overlooking an important one. Most common strategic planning tools do not even take risk into account, which worsens the situation.

Subsequently, it is time to identify and measure strategic risks. They can leverage, hinder or prevent the fulfillment of the strategic objectives. Risk management may also support the development of institutional actions so as to increase the likelihood of reaching expected results. Furthermore, strategic risks should be monitored through key risk indicators to allow the identification of conditions that could lead to a risk event.

This paper aims to introduce a new comprehensive model that integrates risk management into strategic planning. A number of risk tools, improvements to be made by risk managers and a practical application of the model are presented to make possible the establishment and deployment of an effective strategy by the organization.

1. Introduction

Following the 2008 global financial crisis, enterprise risk management (ERM) has emerged as a critical issue in the most varied sectors of industry organizations. The risk division and its professionals are now assuming more responsibilities and being recognized and compensated for their contributions to companies.

Although risk management, generally speaking, may still be an ongoing process in institutions, it has moved out of a reactive or panic-driven mode to become more predictive and proactive. Siloed approaches are being abandoned in favor of more collaborative, holistic and integrated assessments or frameworks (Winokur 2012).

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The risk unit now assumes a more strategic role in organizations. It is increasingly being recognized as a guidance provider on the path ahead, mitigating critical risks and allowing companies to grow sustainably in the long term.

The risk assessment process aims to provide decision-makers and responsible parties with an enhanced understanding of risks that could affect the achievement of objectives, as well as the adequacy and effectiveness of current controls. The output of the risk assessment process is an input to the organization's decision-making process (IEC 2009).

To reinforce the importance of risk management, a 2003–12 study by Deloitte (2012) regarding the largest global public companies points out that 73 percent of the root causes for dramatic losses were derived from strategic risks, followed by financial (17 percent) and operational (10 percent) risks. Also, empirical evaluations showed firms that have implemented ERM enjoy, on average, 16.5 percent premium in market valuation (Hoyt and Liebenberg 2011; Lam and Quinn 2014).

According to a study presented by Deloitte (2013), strategic risks are risks that affect or are created by an organization's business strategy and strategic objectives. Financial risks include areas such as financial reporting, valuation, market, liquidity and credit risks. Operational risks are major risks that affect an organization's ability to execute its strategic plan.

Frigo and Anderson (2011) define strategic risk management as

a process for identifying, assessing and managing risks and uncertainties, affected by internal and external events or scenarios, that could inhibit an organization's ability to achieve its strategy and strategic objectives with the ultimate goal of creating and protecting shareholder and stakeholder value.

During the strategic planning process, according to Lam (2015), the most popular tools do not even take risk into account. Unfortunately, this flaw can lead either to the selection of a mistaken strategy or to the absence of a strategy important to business success. Thus, for purposes of this work, strategic risks are also shown as those related to the creation of the business strategy and the set of strategic objectives, therefore called **pre-strategy risks**.

To ensure a more effective decision-making process through the use of relevant risk information, this paper aims to present a comprehensive model that integrates risk management into strategic planning.

This paper also details some risk analysis and how their results can be used in the strategic planning process. The following topics will be discussed:

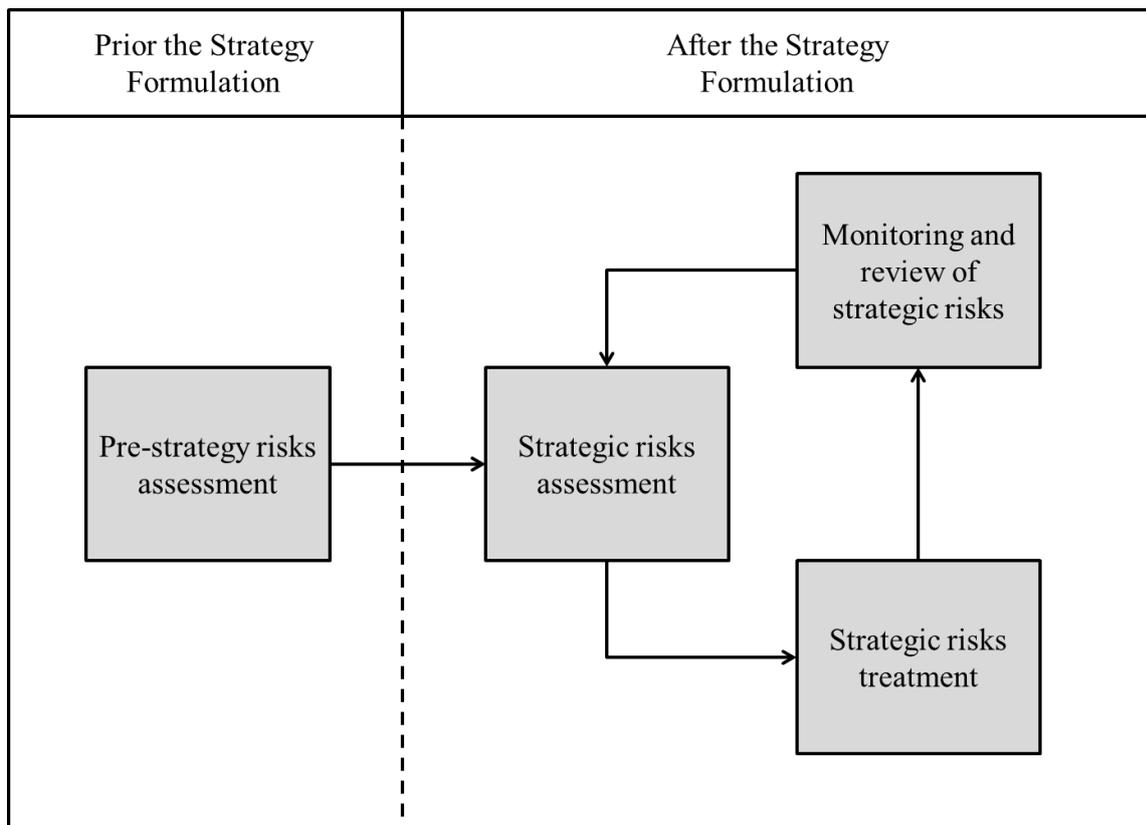
- How to apply risk concept and risk information to strategy formulation and strategic objectives (pre-strategy risks)
- How to identify, measure and validate strategic risks
- Possible strategic risk treatments
- How to increase the success probability of treatment actions during the strategy implementation
- How to monitor and review strategic risks

2. The Model

The framework of risk management integration into strategic planning is shown in Figure 1. To facilitate the analysis, the model can be divided into two main steps: prior and after strategy formulation.

Prior to strategy formulation, risk management should assess pre-strategy risks. After the definition of business strategy and strategic objectives, strategic risks must be assessed, treated, monitored and reviewed by the staff responsible for each process. The second step should happen periodically during the strategic cycle, as long as the business strategy does not change.

Figure 1. Framework of Integration of Risk Management Into Strategic Planning



2.1. Prior to Strategy Formulation (Pre-Strategy Risks)

The definition of strategy deserves attention in order to avoid the selection of a mistaken strategy or the absence of a strategy important to business success.

In general, regardless of the strategic planning method, at this stage organizations evaluate their internal and external environments. This evaluation is achieved by the identification of strengths, weaknesses, opportunities and threats, a process known as SWOT analysis, to determine where to concentrate new initiatives. The time duration of the strategic cycle is considered in this analysis. Afterward, other tools, such as Kaplan and Norton's balanced scorecard and Porter's five forces model, can also be used to analyze more deeply each new initiative.

The use of standard planning tools, according to Lam (2015), only generates an expected value for each initiative, regardless of the distribution of outcomes around that value. For instance, regarding the balanced scorecard, Kaplan has acknowledged that risk methodology was not highlighted in his and Norton’s work (Kaplan 2009). Therefore, the uncertainty inherent to these tools is a major flaw to be treated.

To solve this issue, uncertainties identified in SWOT analysis, that is, threats and opportunities, have to be measured, generating the pre-strategy risks. Gathering opportunities is important as it will allow managers to consider them in the strategy and/or objective-setting processes through plan formulation so as to seize them (COSO 2004). The measurement process can be done, for example, through quantification of impact intensities to the organization’s business and their associated probabilities. Thus, it is possible to obtain the distribution of outcomes for each pre-strategy risk.

However, even with SWOT analysis, some relevant threats or opportunities may not be identified. Therefore, to give more consistency to this process, risks already known by the organization should also be considered.

According to IEC (2009), there are different tools and techniques that can be applied to assess risks in an organization. Risks can be assessed at organizational and departmental levels, and for projects, individual activities or specific risks.

After mapping out the various internal and external risks, the first challenge is to select those risks that really can affect the business of the institution. To work out this problem, the strategic impact of each risk needs to be measured. The strategic impact scale shown in Table 1 can be used. Thus, it will be easier to know the impact to the company’s business if some risk event takes place. In this case, risks with strategic impact greater than or equal to 3 must be selected.

Table 1. Strategic Impact Scale

Level	Strategic Impact
1	Insignificant impact
2	Risk events impact on the delivery of a product or service in such a way that harms the achievement of process goals
3	Risk events impact on the delivery of a product or service in such a way that harms the achievement of strategic objectives
4	Risk events impact on the delivery of a product or service in such a way that harms the achievement of the organization’s vision
5	Risk events impact on the delivery of a product or service in such a way that harms the achievement of the organization’s mission

Besides using the strategic impact on the selection of relevant risks to the business of the organization, other kinds of impacts may also be considered, for instance, reputational, financial and compliance. Another important factor to be considered in this analysis is the probability of each risk.

The risk management unit is able to develop an integrated analysis, as it thoroughly understands the risks of each part of the organization. The relevant risks should be prioritized to compose the SWOT analysis on those risks—correlated or interdependent—that permeate various departments.

The importance of these risks to an organization can be found in a study published by Deloitte (2012). This study revealed that 75 percent of major loss events in public companies, from 2003 to 2012, occurred due to interdependent risks.

2.2. After Strategy Formulation

After defining the business strategy and new strategic objectives, the need to identify risks that may hinder or prevent the achievement of these goals arises. These risks will be called risks with negative impact.

Unlike the ordinary vision that treats risk only as a hassle to be solved, it is proposed to consider risk also in the sense of compensating risks with negative impact or leveraging a strategic objective, thus representing an opportunity. When this type of risk is under analysis, it will be called risks with positive impact.

After the strategic risk assessment, risk owners should decide how to treat the risks. In addition, risk management should monitor, if possible, the identified risks behavior through key risk indicators (KRIs).

2.2.1. Strategic Risks Assessment

The set of strengths, weaknesses, threats and opportunities to the business of the institution, already mapped, are indeed internal and external factors that bring uncertainty to whether and when the institution may reach or exceed its goals. The effect of these uncertainties on the strategic objectives is called strategic risk. Thus, this information can be used to perform an initial mapping of strategic risks.

To facilitate the risk identification process and the results' analysis, risks can be categorized by strategic topics, such as economic, budget and others. The categorization adopted by the organization may vary according to its business nature.

To validate risks initially identified and map out new strategic risks, it is of the utmost importance to organize meetings with board members and/or senior executives and staff directly responsible for conducting the strategy of the institution. It is recommended that these meetings be based on the defined strategic objectives, that is, each meeting should focus on only one strategic objective. The technique, to be used in the process of collecting new risks, can be, for example, scenario analysis for each strategic topic.

The measurement of strategic risks, and its validation, should occur during those meetings. Each strategic risk should be assigned at least one consequence level of an event (impact), for instance, the expected impact, and its associated probability, considering the evaluated strategic cycle. As a suggestion, impact scales of risks with negative and positive impacts are shown in Table 2.

Table 2. Risks With Negative and Positive Impacts Scales

Level	Impact	
	Negative	Positive
1	The achievement of a strategic objective is affected; nevertheless, the organization is already prepared if a risk event occurs	It contributes to the achievement of a strategic objective; nevertheless, organizational efforts to take advantage of a risk event are demanded
2	The achievement of the mission or future vision is affected; nevertheless, the organization is already prepared if a risk event occurs	It contributes to the achievement of the mission or future vision; nevertheless, organizational efforts to take advantage of a risk event are demanded
3	The achievement of a strategic objective is affected; furthermore, organizational efforts are demanded to face the risk consequences	It contributes to the achievement of a strategic objective; furthermore, the organization is already prepared if a risk event occurs
4	The achievement of the mission or future vision is affected; furthermore, organizational efforts are demanded to face the risk consequences	It contributes to the achievement of the mission or future vision; furthermore, the organization is already prepared if a risk event occurs

After concluding risk identification, risk measurement and risk validation with senior management, all risks must be arranged in consequence/probability matrices. Each matrix can be built based on the strategic objectives, which will provide a risk profile for each objective.

According to IEC (2009), a consequence/probability matrix aims to combine qualitative or semi-quantitative ratings of consequence and probability to produce a level of risk or risk rating. The format of the matrix and settings applied to it depend on the context in which it is used. It is important that a proper design is used for each circumstance.

As the objective is to represent in a single matrix risks with negative and positive impacts, it is necessary to relate two impact scales with only one probability scale. Therefore, it is suggested to use the matrix shown in Figure 2, which will be called the **dual risk matrix**.

Figure 2. Dual Risk Matrix Template

		Risks									
Probability	4									4	Probability
	3									3	
	2									2	
	1									1	
		4	3	2	1	1	2	3	4		
		Negative impact				Positive impact					

2.2.2. Strategic Risks Treatment

The colored areas of the dual risk matrix, presented in the previous item, may indicate suggestions of treatment prioritization, which should be established by the senior management.

According to PMI (2013), there are several strategies available to treat risks. One or more strategies that have higher probability of effectiveness must be chosen for each risk.

The following treatment strategies are applied to risks with negative impact:

- **Avoid.** Remove completely the probability of the risk occurrence
- **Transfer.** Transfer, totally or partially, the impact of risk to third parties, together with its responsibility
- **Mitigate.** Reduce the probability and/or impact of risk within acceptable limits
- **Accept.** Actively, establishing contingency plans in preparation to risk events; passively, risks will be treated only when they occur

Prevention and mitigation strategies are good for critical and high-impact risks. On the other hand, transfer and acceptance strategies are better to less-critical and low-impact risks (PMI 2013).

With respect to risks with positive impact, the following treatment strategies are known:

- **Explore.** Ensure the risk occurrence so as to take advantage of its benefits
- **Share.** Transfer, fully or partially, the risk property to a third party that has greater ability to explore it
- **Improve.** Increase the likelihood and/or the risk impact
- **Accept.** Take advantage if the risk occurs, without pursuing it actively

When the risk impact indicates that the institution is prepared in case of the occurrence of a risk event, it is suggested to accept or transfer risks with negative impact and explore or accept risks with positive impact. This is regardless of the degree of effect to the organization’s strategy—the mission, vision or strategic objective—and can be done through current working processes or through prevention or contingency plans.

On the other hand, when organizational efforts are demanded to face a negative event or to take advantage of a positive one, it is suggested to mitigate or eliminate risks with negative impact and to share or improve risks with positive impact.

It should be noted that treatment strategies presented in each region of the matrix shown in Figure 3 are just suggestions and other treatment options can also be considered.

Figure 3. Suggested Treatment Strategies Distribution in the Dual Risk Matrix

		Risks									
Probability	4	Mitigate Eliminate	Accept Transfer		Share Improve		Explore Accept		4	Probability	
	3								3		
	2	Mitigate Eliminate	Accept Transfer		Share Improve		Explore Accept		2		
	1								1		
		4	3	2	1	1	2	3	4		
		Negative impact				Positive impact					

After defining an appropriate risk treatment, it is time to reduce the uncertainties regarding the success of the treatments that require organization’s efforts. Not just inaction but also a possible interruption of an ongoing action can create negative effects to the company. Before implementing a strategic action, it is proposed to measure its degree of strategic alignment and the associated success probability. Based on the example of a strategic alignment scale presented in Table 3, this parameter may vary according to the intended deliveries to the company strategy.

Table 3. Strategic Alignment Scale

Level	Strategic Alignment
1	The action contributes minimally to the achievement of the expected strategic objective(s); it is suggested to review the action
2	The action contributes partially to the achievement of the expected strategic objective(s); it is suggested to implement other actions to achieve fully the objective(s)
3	The action contributes significantly to the achievement of the expected strategic objective(s)
4	The action reaches or surpasses the expected strategic objective(s); other actions are not required

To evaluate the success probability, those responsible for the action should consider risks that can positively or negatively influence progress, such as, for example, political will or resource limitations. Furthermore, the probability level must be consistent with the chosen degree of strategic alignment.

After finalizing the measurement procedures, actions must be arranged in matrices, one matrix for each strategic risk of the organization. This tool will be called a **decision matrix**, as represented in Figure 4.

Figure 4. Decision Matrix Template

Success probability	4				
	3				
	2				
	1				
		1	2	3	4
		Strategic alignment			

The main goal of this tool is to assess the risk level of each strategic action proposal in the organization. Decision matrix regions may indicate, for instance, the recommendation rating regarding the implementation of the actions: green—high; yellow—moderate; red—low.

The classification of actions in the various regions of the array allows the decision-maker to choose with more objectivity the strategic actions that, if implemented, could contribute more to the achievement of the strategic objectives of the institution, and with a higher success probability. Other criteria can also be considered for the choice of actions, such as the degree of delivery benefits.

2.2.3. Monitoring and Review of Strategic Risks

After the implementation of the most appropriate actions to treat strategic risks and to achieve the strategic objectives set by the senior management, it is important to monitor strategic risks and review them periodically.

The preventive data monitoring associated with events of strategic risk allows the organization to identify the existence of conditions that could lead to a risk event. In this way, at least one KRI for each strategic risk should be assigned, if it is feasible.

The review of strategic risks must be made periodically, as there may be changes in the organization’s internal and external environments. Risks may be reviewed in the same manner as the strategic risk assessment process, described in Section 2.2.1.

Regardless of the periodic process, another factor that may demand risk review is the behavior of the KRIs, as this allows the organization to stay ahead of potential problems. This process can be accomplished through the study of trends and alarm triggers.

After the review of strategic risks, the organization has the opportunity to decide about the maintenance, the changing of a selected treatment strategy or even the elimination of a risk.

3. Practical Application of the Model

3.1. Definition of Strategic Objective Based on Risk Information Analysis

In the first stage of the model, the main goal is to gather the pre-strategy risks. Independently of the SWOT analysis, the organization already has much risk information that can add value to the business strategy formulation. One type of risk that can be considered in this analysis is operational.

Ideally, the only risks, correlated or interdependent, to be considered are those that may affect the ability of the organization to execute its strategies and achieve its business objectives. Some examples of relevant risks to which an organization can be exposed include:

- **Resource allocation.** Misuse of risk information
- **Information technology and communication (IT&C).** Failure to meet development demands of critical systems
- **Human resources.** Insufficient number of employees, high turnover rate
- **Governance.** Lack of fluidity in the coordination, integration and communication among business units
- **Procurement.** Failure or absence of risk assessment

Considering these risks, it is possible to create the following strategic objective: “Improve, through the use of integrated risk information, the organization’s structure, management, governance and internal communication.”

3.2. Strategic Risks Assessment

After the formulation of the new strategy, the need to know the strategic risks that harm (negative impact) or facilitate (positive impact) the achievement of the new strategic objectives arises.

Considering the strategic objective as mentioned in Section 3.1, examples of the following strategic risks, listed in tables 4 and 5, can be identified.

Table 4. Risks with Negative Impact

ID	Risk Name	Impact	Probability
1	Sudden reduction in headcount	3	3
2	Limited budget for funding corporate projects	3	2

Table 5. Risks with Positive Impact

ID	Risk Name	Impact	Probability
3	Use of technological innovations to improve working processes	2	3
4	Rise of new risk analysis demands	3	3

After identifying and measuring risks, all can be arranged in a dual risk matrix, as shown in Figure 5.

Figure 5. Dual Risk Matrix of the Strategic Objective

		Risks									
Probability	4									4	Probability
	3		ID 1				ID 3	ID 4		3	
	2		ID 2							2	
	1									1	
		4	3	2	1	1	2	3	4		
		Negative impact				Positive impact					

3.3. Strategic Risks Treatment Examples

During the planning stage of the actions, to treat the risks, it is recommended to assess the strategic alignment levels and the success probability of each action. Regarding the ID 1 risk, for instance, the mitigation actions listed in Table 6 may be proposed and arranged later in the decision matrix shown in Figure 6.

Table 6. Examples of Mitigation Actions Related to the Risk “Sudden Reduction in Headcount”

ID	Strategic Action	Strategic Alignment	Success Probability
A	Hiring of personnel	2	1
B	Restructuring and staff training	3	2
C	Process automation	3	3

Figure 6. Decision Matrix of Actions Related to the Risk “Sudden Reduction In Headcount”

Success probability	4				
	3			ID C	
	2			ID B	
	1		ID A		
		1	2	3	4
		Strategic alignment			

Based only on the decision matrix of actions, if at least moderate recommendation actions would be considered to be implemented, actions C and B respectively could be implemented. On the other hand, action A could be discarded due to its low recommendation. The selection of actions may vary accordingly to the available resources at the company.

3.4. Key Risk Indicators Examples

According to Ariane Chappelle Consulting Ltd. (2014), so as to monitor the risk of a sudden reduction in headcount in an organization (ID 1), the following KRIs examples can be used:

- **Bad pay.** Pay gap compared to market rate
- **Bad boss.** Results of 360 review or satisfaction/engagement survey
- **Info concentration.** Key staff without trained alternate

The “bad pay” and “bad boss” indicators refer to the risk likelihood, while the “info concentration” indicator refers to the impact intensity of the risk to the organization.

4. Conclusion

As noted earlier, most of the heavy losses in the market value of the largest global public companies are caused by events of strategic risk. To this result, the following possible causes can be inferred: failure to integrate risk management into strategic planning, ineffective strategic risk management and/or a non-risk-oriented business strategy.

To integrate risk management into strategic planning, the risk unit must be able to ensure that information of strategic risk is current, complete and reliable. For this purpose, robust procedures of risk assessment, treatment and monitoring were presented in this paper, including a practical sample application.

Regarding the strategic risk treatment, an innovative tool was presented: the **decision matrix**. It allows the measurement of the risk level for each strategic action. Risk rating is essential to promote a more objective selection of strategic actions by the decision-makers. Strategic actions that contribute the most for the achievement of strategic objectives of the institution with greater success likelihood must be prioritized.

Suitable monitoring of strategic risks, through key risk indicators, enables the organization to foresee potential problems. If the risk tolerance tends to exceed expected levels, alarms can be triggered. Thus, organizations have the opportunity to review the treatment strategy given to the risk, which in the end improves financial performance.

To add value to the creation of the business strategy and to the set of strategic objectives, increasing the chance of selecting a better strategy, it is not enough to know the threats and opportunities. These uncertainties must be measured, which generate the pre-strategy risks. Knowledge of these risks will allow senior management to allocate their limited organizational resources in a more objective way.

Therefore, the model presented in this paper not only shows how risk management can be integrated into strategic planning, but also presents a number of tools and improvements to be implemented by the risk officers to enhance the organization’s ERM program.

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