

Integration of Risk Management into Strategic Planning: A New Comprehensive Approach

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2016 Enterprise Risk Management Symposium

April 2016

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Abstract

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Companies are exposed to a variety of risks related to the development and implementation of the business strategy. In spite of the extensive amount of literature about enterprise risk management - ERM, it is possible to observe an opportunity to analyze how different kinds of risk information can be objectively considered by senior management in order to enhance corporate governance and have 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 takers so as to reduce the possibility of selecting a mistaken strategy or the absence of 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 the expected results. Furthermore, strategic risks should be monitored through key risk indicators in order to allow the identification of conditions that could lead to a risk event.

Therefore, this paper aims to introduce a new comprehensive model which 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 in order to make possible the establishment and deployment of an effective strategy by the organization.

Keywords: strategic risks, enterprise risk management, strategy, corporate governance, strategic planning.

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1. Introduction

As a result of the 2008 global financial crisis, Enterprise Risk Management (ERM) emerges as a critical issue in the most varied sectors of industry organizations. Risk area 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).

Risk area 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.

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/FDIS 31010 2009).

To reinforce the importance of risk management, a study by (Deloitte 2012) regarding the largest global public companies, from 2003 to 2012, points out that 73% of the root causes for dramatic losses were derived from strategic risks, followed by

financial (17%) and operational (10%) risks. Besides that, empirical evaluations showed that firms that have implemented ERM enjoy, on average, a 16.5% 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.

Regarding strategic risk management, Mark Frigo and Richard Anderson define it 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 (Frigo and Anderson 2011).

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 an important strategy 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**.

So, in order to ensure more effectiveness to the decision-making process of an organization 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 Exhibit 1. So, as 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. Then, 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.

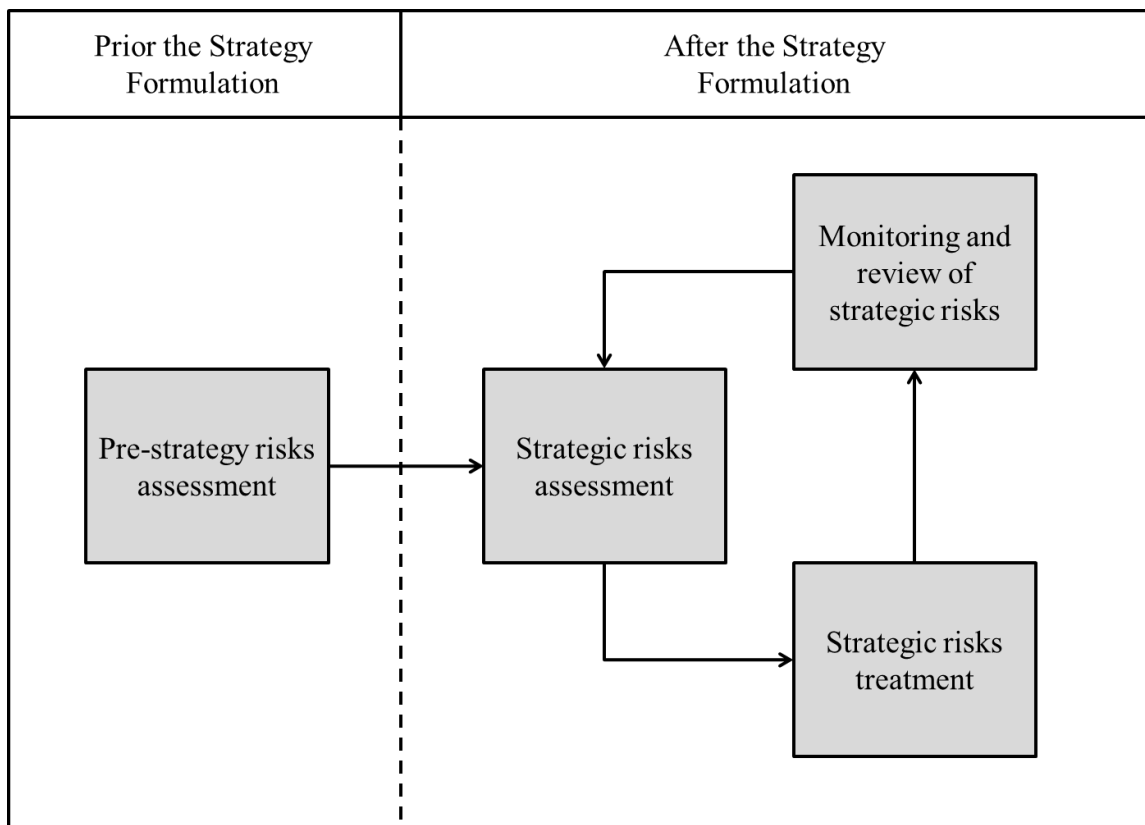


Exhibit 1: Framework of integration of risk management into strategic planning.

2.1. Prior the Strategy Formulation (Pre-strategy risks)

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

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

The use of standard planning tools, according to (Lam 2015), only generates an expected value for each initiative, regardless the distribution of outcomes around that value. For instance, regarding the Balanced Scorecard, Kaplan has acknowledged that risk methodology was not highlighted in David Norton's and his 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, i.e., threats and opportunities, have to be measured, generating the pre-strategy risks. To gather opportunities is also important as it will allow managers to consider them in the strategy and/or objective-setting processes through plans 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 the performing of a specific process to the preparation of a 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/FDIS 31010 2009), there are different tools and techniques that can be applied to assess risks in an organization. Risks can be assessed at an organizational level, at a departmental level, 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 level to the company's business if some risk event takes place. In this case, risks which strategic impact is 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.

Risk management area is able to develop an integrated analysis, as it thoroughly understands the risks of each part of the organization. Among the relevant risks, it is suggested to be prioritized to compose the SWOT analysis those risks that permeate various departments, i.e., correlated or interdependent risks.

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

2.2. After the Strategy Formulation

After the definition of 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 negative risks.

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 negative risks or leveraging a strategic objective, thus representing an opportunity. When this type of risk is under analysis, the risks will be called positive risks.

After the strategic risk assessment, risk owners should decide how to treat the risks, both negative and positive 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.

In order 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, staff directly responsible for conducting the strategy of the institution. It is recommended that these meetings should be based on the defined strategic objectives, i.e., 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. For each strategic risk should be chosen 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 negative and positive risks are shown in Table 2.

Table 2. Negative and positive risks impact 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 in order 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 in order 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/FDIS 31010 2009), a consequence/probability matrix aims to combine qualitative or semi-quantitative ratings of consequence and probability in order 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 the negative and positive risks, it is necessary to relate two impact scales with only one probability scale. Therefore, it is suggested the use of the matrix shown in Exhibit 2, which will be called **dual risk matrix**.

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

Exhibit 2. Dual risk matrix template.

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 (PMBOK® Guide 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 negative risks:

- 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 (PMBOK® Guide 2013).

With respect to positive risks, 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, regardless the degree of effect to the organization's strategy, i.e., the mission, vision or strategic objective, points out that the institution is prepared in case of occurrence of a risk event, whether through current working processes, either through prevention or contingency plans, it is suggested to accept or transfer the negative risks, and explore or accept the positive risks.

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

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

		Negative risks				Positive 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					

Exhibit 3. A suggestion of treatment strategies distribution in the dual risk matrix.

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. So, 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 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 in order 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, the responsible for the action should consider risks that can influence positively or negatively its 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 ending up measurement procedures, actions must be arranged in matrices, one matrix for each strategic objective of the organization. This tool will be called **decision matrix**, as represented in Exhibit 4.

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

Exhibit 4. Decision matrix template.

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 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 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, it must be designed at least one KRI for each strategic risk, 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 of the strategic risk assessment process, described above in the item 2.2.1.

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

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 many risk information which can add value to the business strategy formulation. One type of risk that can be considered in this analysis is the operational risk.

From all risks, correlated or interdependent ones, ideally are to be considered only those which may affect the ability of the organization to execute their strategies and achieve their business objectives. Some examples of relevant risks to which an organization can be exposed to are listed below:

- Resource allocation: misuse of risk information;
- IT&C risks: failure to meet development demands of critical systems;
- HR risk: 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 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) or facilitate (positive) the achievement of the new strategic objectives arises.

Considering the strategic objective 'Improve, through the use of integrated risk information, the structure, management, governance and internal communication', as mentioned in item 3.1, it can be identified, for example, the following strategic risks, listed in Table 4 and Table 5 :

Table 4. Negative risks.

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

Table 5. Positive risks.

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

Finally, after identifying and measuring risks, all of them can be arranged in a dual risk matrix, as shown in Exhibit 5:

		Negative risks				Positive 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					

Exhibit 5. Dual risk matrix of the strategic objective: Improve, through the use of integrated risk information, structure, management, governance and internal communication.

3.3. Strategic Risks Treatment Examples

During the planning stage of the actions, in order 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 Exhibit 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

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

Exhibit 6. Decision matrix of actions related to the risk: ‘Sudden reduction in headcount’.

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 Chapelle 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, of 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 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, risk area 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 their financial performance.

In order 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 in order to enhance the organization's ERM program.

Acknowledgements

We gratefully acknowledge the comments received by Paulo Mauricio Fonseca de Cacella and José Luiz Barros Fernandes, which helped to improve the paper. We also thank the members of the Non-Financial Risk Division of the Banco Central do Brasil.

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