

NEGOTIATION SUPPORTED THROUGH RISK ASSESSMENT

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Abstract: In organizations, decision-making processes usually require great effort in solving conflicts. These disagreements are generally time-consuming and jeopardize negotiations. Thus, negotiation planning is the key factor to balance negotiator's expectations and reach an agreement. In this scenario, risk management tools play an important role in identifying possibly controversial points of view. This paper aims at presenting software which supports negotiation through risk assessment. The proposed software, named RisNeg presents mechanisms which are able to identify, analyze, respond to, monitor, and control negotiation risks. RisNeg also provides mechanisms to indicate the chances of achieving agreement. Therefore, the use of such software may minimize the conflicts in the decision-making process.

1 INTRODUCTION

The globalization process has brought profound transformations for the organizations. This new environment has been characterized by uncertainty, competition, gradually shorter project life cycles, as well as superior requirements for quality, cost reduction, and resources.

This scenario significantly influences the organization processes and social relations. It is also possible to observe large transformations in some corporative strategies. These strategies have been analyzed through the lenses of negotiation, attempting to legitimize the agreements and to manage conflicts thoroughly, which has varied the platforms considered for the preparation of the negotiation.

Negotiation can be defined as a decision-making process involving two or more parts that cannot take decisions independently (Kersten, 2002). As all decision-making processes, negotiation is directly related to risk assessment and can be more productive if risks are considered not only as threats, but also as opportunities.

Thus, the correct management of risks makes it possible to lead a negotiation in a structured and pro-

active way, introducing strategies that may prevent, control, and mitigate the risks that can lead to negotiation failure. However, many organizations are still developing their strategies and projects without using risk management in their negotiations.

In this context, this article aims at presenting a proposal of a negotiation management strategy through the use of risk management methodologies.

2 RISK IN NEGOTIATIONS

Although the perception of risk in some negotiations is more significant, risk is an element found in all negotiations, no matter their nature (Bartlett, 2004).

Schneider (2007) states that the difference between risk and uncertainty is how much knowledge on a particular fact one has. In a negotiation, it is difficult to know precisely the entire context, mainly in relation to the background of the other party (or parties) involved.

In Duzert, Paula and Souza (2006), the authors present some indicators to evaluate the negotiation. For them, risk is an element that can be considered through the evaluation of the parties involved and

must be analyzed taking into consideration the different perceptions and reactions to them.

According to Bernstein (1997), any decision related with risk involves two elements that are non-separable but distinct in their nature: the objective facts and the subjective vision of what will be lost or gained with the decision. As in a negotiation, the objective facts and the subjective vision of risks can be perceived in different forms by the parties involved.

However, it is necessary to approach a strategy to facilitate this subjective vision of the risk or to approach, at maximum potential, the perception of the risk in the real scenario. In this context, the use of a systemizing process of risk management in the negotiations can be considered.

As claimed by Ward & Chapman (1994), risk management can be understood as the use of human, material, financial and technological resources in a preventive way to try to reduce potential threats and to intensify the probability of opportunities.

In this article, PMBOK (2004) was used as a reference because it contains a significant set of phases and tools to support risk management in project's environment: Risk Identification, Risk Analysis, Response Plan and Monitoring & Control.

Risk identification involves the activities that try to identify, organize, and classify the risks. Risk identification must be an iterative process because new risks can be identified at any time. Once identified, risks need to be evaluated, with the prioritizing of key risk elements for future attention and action (PMBOK, 2004). This involves the activities of qualitative and quantitative analysis for each risk identified.

Quantitative analysis uses mathematical models to simulate and prioritize risks according to their probability of impact, while qualitative analysis evaluates, through numerical data and probability, the eventual consequences each risk poses.

According to Grinstein (2003), risk quantification can give the negotiator a general view of the situation in relation to negotiation risks, which are prioritized according to their impacts and probability of occurrence. In addition, costs and duration values may be established and, in this stage, the list of risks is again brought up to date to have all main negotiation threats and opportunities well prioritized.

Strategy development is the stage where the mapping of the strategies and actions to increase the opportunities and reduce threats take place, through appropriate answers for both. The reactions to threats could be: hindering, transferring or reducing

the threats while responding to the opportunities could be: exploring, sharing or developing the chances to make their occurrence possible (Hillson, 2007).

The Monitoring and Control step attempts to guarantee that the risk management plan is followed and sets the risks under control. It must be a continuous and iterative process.

Derived from these steps, a software prototype was developed to manage risks in negotiations.

3 RISNEG – A SYSTEM TO MANAGE RISK IN NEGOTIATIONS

In this paper, the goal of computational proposal is to present a tool to make the management of negotiation risks easier. Based on the survey of potential risks, the proposed software will suggest some metrics parameters to evaluate major threats and opportunities as well as the reactions priority for each risk.

3.1 Identifying Threats and Opportunities

Identification is the first step in risk management. In RisNeg, two types of risk can be stored: threats and opportunities. Threats are incidents which impair the negotiation, while Opportunities are events which dig up unexpected gains. The analysis of these risks, if there is any, takes their possible causes and effects into consideration.

As a quantification measurement, the negotiator needs to indicate the probability and the impact for all stored risk elements. Based on this data, the system calculates the Expected Value (EV), calculated through the multiplication of probability by impact ($EV = \text{probability} \times \text{impact}$).

Probability and impact measurement are specific points which can generate disagreements because it is difficult to guess a value without enough experience. However, through accumulating negotiations, the history on stored data may gradually minimize the risk for normalized values. Hence, even if EV seems to display less precision at first sight, the values indicated are essential for future metric comparisons.

As Constantino (2006) says, tools such as the Monte Carlo Analysis can also assist in this measurement, especially if there are inconsistencies found in the first estimates.

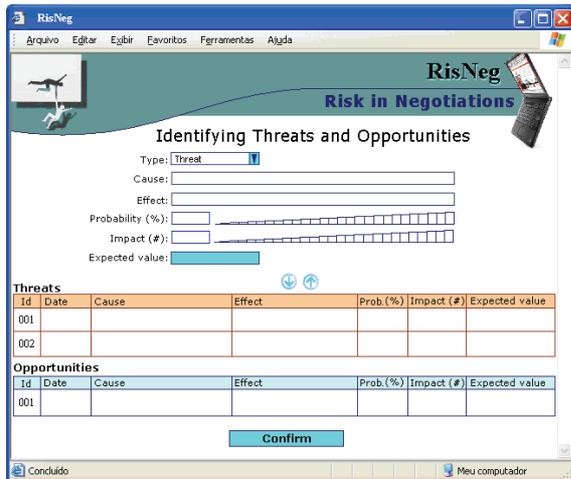


Figure 1: Identifying Threats and Opportunities.

As shown in Figure 1, the fields for Probability and Impact can be set either manually or by clicking in the gauge graphs near each field. In this case, even an inexperienced negotiator may have the graphical perception of impact and possible probability sizes.

Once these values are defined, the EV for each registered risk is calculated. After identification, the main risks make up the initial EV visualization.

3.2 Initial Expected Value

After the initial risk identification, RisNeg consolidates the identified events, separating them into threats and opportunities. As shown in Figure 2, the software presents a diagram containing the threats and probabilities that may influence the real agreement possibility. These values represent a sum regardless of the risk reactions.

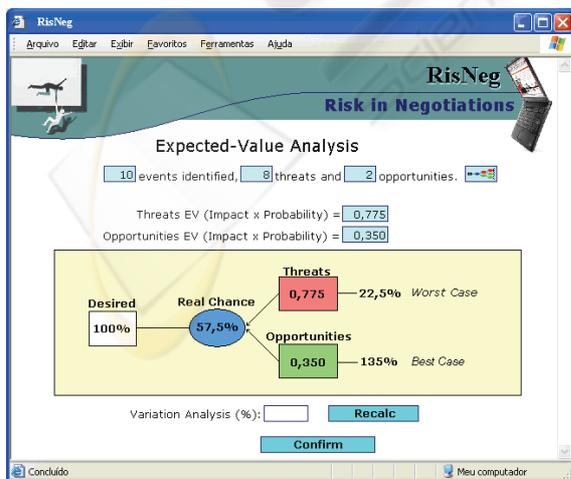


Figure 2: Expected-Value Analysis.

After the threats and opportunities Expected Values (EV Threats and EV Opportunities) are calculated, the system can show the Initial Real Chance and the Best and Worst Case Values.

This summary allows the negotiator to visualize the quantified impacts. Then, the negotiator will be able to prepare the negotiation strategy. At first, the RisNeg allows recalculations through the “Variation Analysis” field which guarantees high flexibility for the measured data.

Figure 2 illustrates a summarized analysis considering the threats and opportunities Expected Values. Based on the graph, the negotiator can study the real chances of agreement, the threat and opportunity effects, and the worst and best negotiation cases.

It is important to observe that the software still allows many risk measurement identification rounds. In each round, the Expected Value is assessed and, the more rounds there are, the more accurate the negotiation Expected Value is. In this case, the software user must indicate the relevance (between 0 and 100) for each round and the software will calculate the agreement probability according to previous negotiation rounds.

3.3 Responses

After risk identification and expected value analysis, for each proposal reaction, the negotiator can measure the reaction qualitative cost (concession) and the new probabilities and impacts.

For the threats, there are two types of response: i) prevention, where the negotiator tries to mitigate or eliminate the risk and ii) contingency, which represents the response to be implemented if the risk event occurs.

Opportunities deserve two types of action: i) search, in which the negotiator will attempt to maximize the likelihood of opportunity and ii) during the opportunity, which corresponds to the actions taken if the opportunity occurs.

Once action and reaction to risks have been planned and executed, threat risks tend to decrease and opportunity risks tend to increase. This enables the updating of the EV Real Chance. This analysis is important because the negotiator can verify if the action / reaction contingencies are close to or over the risk expected value.

3.4 Post-Reaction Expected Value

Figure 3 shows an overview of the calculated expected values, considering the new impacts after

the risk actions and reaction. Moreover, the RisNeg presents the EV variations in relation to negotiation strategies such as assuming positive and negative risks; responding only to threats; assuming the threat from risks and executing actions to search for opportunities; and disregarding actions and reactions.

Thus, the RisNeg calculates the likelihood for agreement. Figure 3 shows an example of the best agreement chance that happened when the negotiator neglected actions to increase opportunities while reacting strongly to threats, reducing their impact. This signals that the negotiator is using his concessions only to mitigate the threats and he does not want to jeopardize grants based on opportunities.

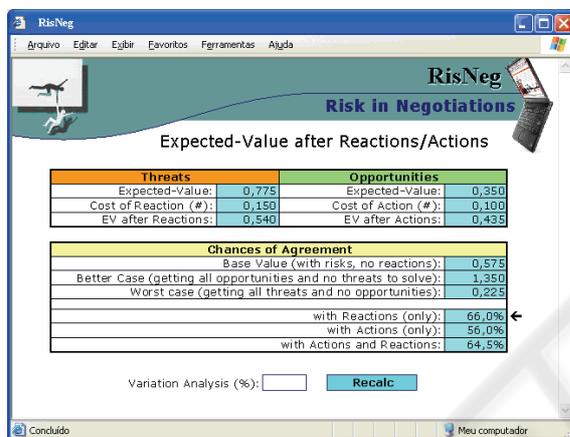


Figure 3: Information after reactions and actions.

Based on this analysis, it is possible to reserve contingency concessions for the negotiation. It is important to note that the success of these initiatives is directly proportional to the capacity of the negotiator in quantifying and evaluating his expectations and goals. Furthermore, the negotiator should be able to observe and quantify the most important items according to the counterpart's point of view.

4 CONCLUSIONS

Negotiations, in general, are subject to various types of risks. As previously discussed, a risk can be negative or positive and should be identified during the negotiation preparation due to the necessity of having an actual view of the negotiation context.

This work aims at addressing the negotiation through the prism of project management in an attempt to develop a strategy to facilitate negotiation

risk identification and quantification, inferring suggested probabilities and impacts.

Although it seems to be difficult for many people to quantify the attributes of negotiation, quantification is a key factor to identify what priority in the negotiation is. The proposed system would easily accept the allocation of values from simulation tools such as Monte Carlo. A further alternative would be to use monetary values, which can be very intuitive since most negotiations have financial aspects.

Thus, at the end of the risk identification and response process, the negotiator will be closer to the strategic objectives to be achieved, which significantly increases the chances of success.

As an example of the evolution of the tool, the goal is to examine other approaches to supplement the RisNeg software, such as the inference of Knowledge Management and Data Warehousing to observe the negotiation and risk background. Furthermore, the expectation is that the tool can automatically suggest adjustments in the probability and impact parameters as well as present the list of successful reactions.

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