

# Chapter 42

## A Project Risk Management Methodology Developed for an Electrical Portuguese Organization

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### ABSTRACT

*This chapter resulted from an action-research undertaken on a Portuguese electric energy organization – EDP Distribution. The research aimed to develop, propose and implement a risk management methodology to integrate in the project management (PM) practices of an ongoing project. The methodology implemented allowed the project team to initiate systematized risk management practices through a simple structure, easy to apply, and with a degree of complexity compatible with the effort that the PM team could initially engage. It is expected that the proposed methodology signaled the initiation of the project risk management (PRM) process standardization in the EDP Distribution organization.*

### INTRODUCTION

Project risk management (PRM) has the purpose to identify and prioritize risks that are likely to occur, providing guidance information for the risks response, and monitor and control the project risks, by increasing the probability and impact of occurrence of positive events (opportunities) and decreasing the probability and impact of occurrence of negative events (threats) of the project (Borge, 2002; PMI, 2013). It assures that most of the problems are discovered early enough so the recovery of their occurrence does not affect the project schedule or budgeting (Tamak & Bindal, 2013), improving the project control and lighten the decision-making process (Alhawari, Karadsheh, Talet, & Mansour, 2012; Leung, Rao Tum-mala, & Chuah, 1998; Marcelino-Sádaba, Pérez-Ezcurdia, Echeverría Lazcano, & Villanueva, 2013).

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Over time some studies were published to determine the state of PRM in organizations. A study from Leung, Rao Tumala and Chuah (1998) reveals that risk management approaches are not widely accepted in PM, having as majors limitations: 1) time involvement required to use risk management approaches (due to the process of identification and assessing risks); 2) difficulty in obtaining input estimates and assessment of risk probabilities; 3) human/organizational resistance to change; 4) difficulty in understanding and interpreting outcomes of risk management processes; and 5) finding available risk management methods. Although these limitations detection was the result of a study undertaken sixteen years ago, it is perceived by the researchers experience that they are still valid.

Leung et al. (1998), using a survey from three industries, also concluded that formal risk management approaches can provide useful insights for project management and provide information that may improve the quality of investment decisions.

Elkington and Smallman (2000) conducted a study in a British utilities company to assess their project risk profiles. Based on the effects of risk, the authors developed a framework that might explain project success by 1) assessing the different kinds of project's risks to measure the amount of risk management undertaken by a project manager, creating questionnaire's sections to business risks, procurement risks, management risks and technical risks; 2) assessing how and when the project manager applied risk management processes during the project; and 3) determining the project managers' knowledge of risk management and their attitude towards it. In Elkington and Smallman (2000) study, a total of 10 of 20 questionnaires were responded completely by the invited project managers. They identified that the most successful projects undertook more risk management practices than the others. They also perceived that the earlier risk management is initiated, the more successful a project is. Therefore, they concluded that PRM is essential for the project's success.

Raz and Michael (2000), also through a survey, identified the tools and techniques most used by project managers, during the PRM process. Elkington and Smallman (2000) realized that the tools of the risk control group are perceived by project managers as low contributors for project success. These findings may be explained as a consequence of the management culture: project managers might be willing to invest time and effort in the earlier phases of risk management, which are carried out along with other project planning activities, and with the evolution of the project they become busier and are subject to resource constraints and time pressures, consequently neglecting the risk control phase, using the tools sporadically or not at all.

Ibbs and Kwak (2000), during a research conducted to assess PM maturity, found that the risk management was the area of PM with the lowest maturity qualification, with 2.95 from a 1 to 5 scale. This result shows that most organizations neglect this PM area, by applying little effort on risk management approaches. Elkington and Smallman (2000) also concluded, through interviews, that conducting risk management reactively is far less effective than conducting it proactively, and is much more effective to conduct a risk management assessment and develop contingency actions before the project start.

More recently, a worldwide study conducted by Fernandes, Ward and Araújo (2014) to ascertain the most useful PM practices, of a group of 68 tools and techniques, found that the project areas of knowledge of risk, scope, time and communication and integration assumed a high relevance among the most useful PM practices. Each one of these knowledge areas has at least three PM practices on the top 20 of the list of 68 assessed. For instance, under the risk management practices were identified: 'risk identification', 'risk response plan' and 'qualitative risk analysis'. With these results we can comprehend an evolution, on the point of view of the organizations, of the risk management approaches embedded on PM. However, a study about the PM maturity in Portuguese organizations presented by Silva, Tereso,

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