Chapter 2

Project Management and Maturity in Complex Engineering Projects

ABSTRACT

In this chapter, the authors present the main concept of project management and its influence on maturity within complex engineering projects. From the concepts of project management, the authors propose a model that will be discussed in the next chapters. Analyzing the main structure of the most applicable methodologies of the market today, they identify the minimum core that would be desired in companies with complex projects in order to ensure a better implementation of the portfolio. Project management is a pillar of support so that organizations can minimize their risks in investments, expansions, and operational improvements. As a result, companies are starting to rely on project management methodologies as a way to make their investments effective.

INTRODUCTION

PMBOK - Project Management Body of Knowledge - (2009) or Project Management Guide defines a project as a temporary effort undertaken to create a unique product, service or result. This way, project management appears as a pillar of support so that organizations can minimize their risks in investments, expansions and operational improvements. As a result, companies...
are starting to rely on project management methodologies as a way to make their investments effective.

According to IPA - Independent Project Analysis - (2004), using FEL - Front-End Loading - its methodology for project management, is possible for the company to detail the scope of the project in order to achieve its objectives business.

The situation of project management becomes more complex when we think, for example, of large investments such as those in the mining industry. For example, in Brazil, according to the survey conducted by IBRAM - Brazilian Mining Institute (2011), investments in the mining sector showed that mining companies will have an investment capacity of approximately US $ 64.8 billion in 2011 to 2015 and that this could remain stable for the next few years. According to IBRAM (2011), investments between 2008 and 2012 were in the order of US $ 57 billion.

The economic crisis forced the investment forecast to fall to US $ 47 billion (period 2009-2013), according to the March 2009 survey. However, this sector is a great example of the importance of project management as a source of assurance and Capital economy.

From this perspective, DNPM - National Department of Mineral Production - indicates the rise of investments in mining:

*The Mineral Economy, in particular, energized by the recovery of mineral commodities, goes through a real euphoria, drawing a new mining-economic boom, with highly positive effects on the increase of net foreign direct investments, bringing greater reliability to the investors - attracted by the stability of the National economy, as evidenced by the successive falls in the country risk index (215 points, 01.03.2006).* (*DNPM, 2006, p.14*).

In this sense, for the implementation of complex projects, such as the ones mentioned above, it is necessary to have a specific project management methodology capable of ensuring the best allocation of resources in this type of investment. For this, the more mature the company is, the more competitive it becomes in allocating its resources.

According to Kerzner (2005), the maturity in project management consists in the development of processes that, by their very nature, become repetitive. With this, the probability of succeeding increases. However, success cannot be guaranteed.
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