

## Chapter 52

# Teaching Case for Addressing Risks with Strategies in an International Airport Project

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### ABSTRACT

*This is a case applying risk management, project management, and business strategy theories. The center piece is a successful build-own-operate (BOO) international airport mega-project completed in south-west India. This case study was applied for teaching a university senior-level course in business strategy. The paper explains the risk management framework, expected monetary value (EMV) calculation, and how the theoretical models can be applied to the BOO project. It then presents worked-out solutions to selected EMV problems.*

### INTRODUCTION

This is a teaching case about how risk management strategies were applied on the well-known build-own-operate (BOO) mega-project in India, called: Cochin International Airport Limited (CIAL). CIAL was developed on Kerala, which is one of the smallest but most beautiful states of India. It is sandwiched between the Western Ghats on the east and the Arabian Sea on the west. This tiny strip of land is best known for its natural resources, tourism, and high living standards (Tourism India, 2012).

The CIAL airport is a word class exemplar of strategic vision and risk management, executed as a public-private-partnership (PPP). This BOO project is significant because the state government remains the owner-operator. This is the first time in the literature that a large risky international airport BOO mega-project has been successful (Nair, 2011, November 5).

A major lesson that the CIAL BOO project delivered was in risk management. CIAL was completed at a total cost of about INR 283,00,00,000 (with all phases included), while other airports built later on the same PPP model like Bangalore

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and Hyderabad cost over INR 2000,00,00,000 (almost 10 times more).

This teaching case includes risk analysis theories, questions, and board diagrams of the solutions. The analysis material is based on a journal article that was a case study of the CIAL project (Paulose, 2013). No software is needed for students to solve the problems but a spreadsheet or calculator would help.

The main problem in the case is that of assessing the risks and making decisions. The key discussion questions for research and teaching purposes were:

1. What are the differences in mega-project construction strategies in terms of time and risk?
2. How can risk management theory be applied to improve CIAL strategic decision making?
3. How can business strategy be informed by risk analysis?

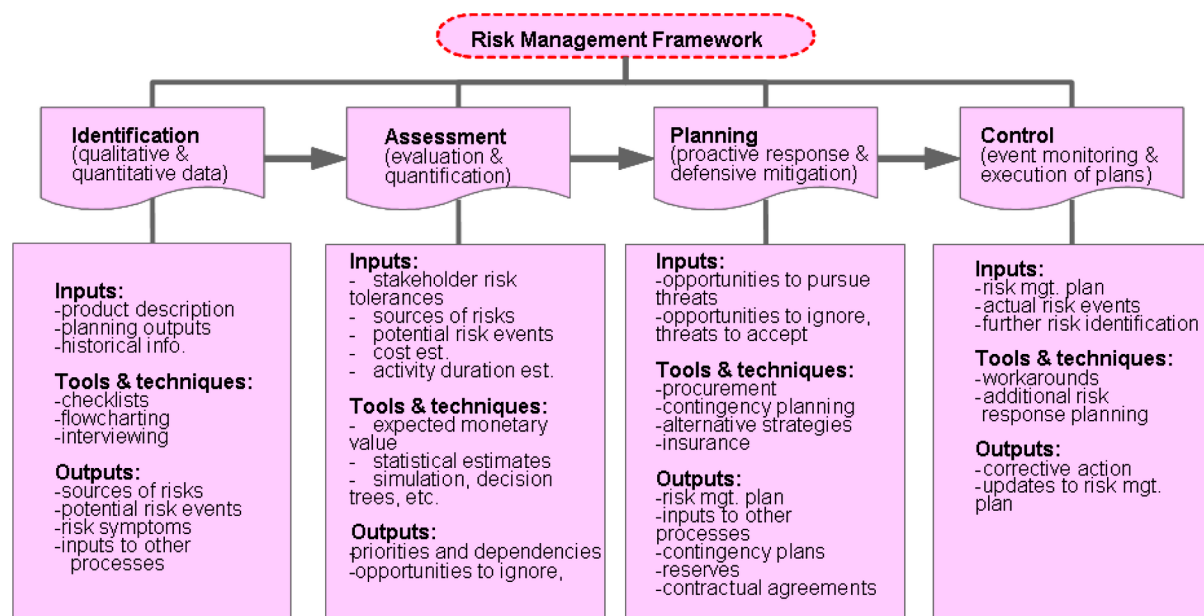
## LITERATURE REVIEW

### Risk Analysis Practices

Risk management is a framework consisting of four steps: “identification, assessment, planning and control” (Goodwin & Strang, 2012, p. 3), as shown in Figure 1. Each step has recommended tools, each begins with inputs, and each develops outputs. Although the steps are sequenced, iteration may be needed if uncertainty or new unanticipated events arise during the execution and control phases of a project.

Identification is a qualitative process to categorize uncertainty, generally done by using interviewing as a tool. Uncertainty should be quantified into a risk using cost estimates with probability theory but if quantification is not possible (as with complex BOO projects), risk should be acknowledged in a checklist. Assessment involves calculating risk impacts using statistical tools or decision trees. Planning means to develop

Figure 1. Risk management framework (Goodwin & Strang, p.3)



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