

Highway Project: Data Analysis – Part II

Name:

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### **I. Risk Response Strategy**

Every project contains some degree of risk inherent in the process. For that purpose, the task of risk management is one of the essential functions associated with project management. However, while in theory, the task of risk management might seem like a fairly straightforward process of identifying risk, and determining the correct response to it, in practice, it is a much more complicated affair. Indeed, most experts suggest that the best possible method would be to identify all the risks inherent in a project, while also ranking each risk regarding its severity and probability of occurrence. After those weightings have been determined by project coordinators and risk management, then one can determine the most effective way for reconciling or hedging what that risk would be. Academics and risk management experts separate risk response strategy into four primary categories: acceptance, avoidance, mitigation, and transference. Each one of these categories will be discussed in further detail in the following sections below.

#### **a) Acceptance**

Often, management is faced with the reality of having to incorporate a given risk into a project's structuring. Indeed, it is not always necessary to eliminate risk, but rather it might be determined that the risk should be baked into the project as a whole. This could be the result of there being no viable alternative for eliminating or reducing the risk factor, or it could be due to the conscious decision by the management to include the risk as a means of turning it into an opportunity. Regardless of the reason why the risk was accepted, it is imperative for risk

management to have contingency plans ready for implementation.

### **b) Avoidance**

This second option is the choice to do little or nothing about a given risk factor. However, avoidance often is not an option for project managers. In essence, avoidance involves the removal of processes in a project that involve the risk. Avoidance can be a complicated endeavor and could entail removing a section of a project that was originally meant to be implemented.

### **c) Mitigation**

Risk management involves not only determining whether a particular risk exists, but also determining the likelihood or probability of that risk of occurring. In addition to determining risk probability, the severity or impact of that risk should also be quantified. As such, mitigation as a form of risk response attempts to mitigate either the probability or severity of the risk factor.

### **d) Transference**

Risk management as an industry had grown tremendously over the past thirty years. A large part of that is due to the transference of risk. Risk transference comes in a multitude of different forms, including insurance, outsourcing, and financial derivatives such as futures and options. Any type of transference involves some degree of trade-off. For instance, the purchase of insurance involves the payment of a premium. Conversely, outsourcing involves giving up some revenue potential.

## **A. The Frequency of a Risk Response Strategy**

Studies have indicated that respondents included in the survey about risk factors

amongst Australian highway projects preferred mitigation as a risk response strategy. Indeed, results indicated that over 50 percent of respondents preferred mitigation for 44 percent of the risk factors included in the survey. Conversely, avoidance as a risk response strategy received 45 percent of the respondent vote for only 16 percent of the listed risk factors.

Studies suggest the reasons why mitigation is the preferred method for risk management is related to the pragmatic nature of how managers in the western world are taught to handle problem-solving. Regardless, risk mitigation is not something that comes easy, nor natural to human beings. Rather, as Kaplan (2002) suggests, “risk mitigation is painful, not a natural act for humans to perform.” Nevertheless, risk mitigation allows managers to break down larger risk factors into smaller, more manageable risks that can be contained more effectively than tackling the larger risk head on.

Conversely, risk avoidance was the least popular options, and the reasons seem clear: managers have been trained in business schools to tackle risks head on. Avoidance brings with it a certain connotation that most managers are not keen to undertake. Moreover, an analysis of the various risk indicates that avoidance, which is a relatively effective strategy among other industries, is not always a viable alternative when building highways and roads. Nevertheless, Alderman (2011) infers that risk avoidance can often result in the complete elimination of risk—whereas risk mitigation is simply a reduction of risk into more manageable pieces. As such, several analysts and academics have suggested that risk avoidance often achieves the ultimate goal of risk management.

### **B. Effective Strategic Responses**

Avoidance would be the most effective strategy for existing traffic and inaccurate design for several reasons. At the forefront is the need to eliminate risk factors. As mentioned in the previous section, risk avoidance entails the elimination of risk altogether.

## **II. Risk Allocation**

Improper material selection is often referred to the contractor because the construction company will be held responsible for the bulk of the material decisions. However, studies also indicate that the owner—wanting not to lose control over the costs of the project—will absorb the price risk associated with material selection as a means to hold an executive decision over the breadth and scope of the overall project.

Conversely, delays represent a time overlap involving the project running over the schedule originally planned for the construction. Time delays represent a significant risk for highway projects and represent the primary reason why highway projects continue to result in meaningful cost overruns. Regarding risk assessment, delays are the responsibility of the contractor to mitigate or avoid.

The presence of risk associated with unstable soil conditions is most often allocated to the owner of the project due to their role as a project manager. Thus, when designing a highway project, the project management group is responsible for determining the viability of the highway project as a whole. Manifestly, part of the feasibility report would entail the geological characteristics of the land in which the road is being built. As such, the project manager will determine the condition of the soil before entering into the project. Nevertheless, the risk is shared by both parties. Indeed, the contractor and their personnel will be responsible for

navigating the terrain that project management has deemed manageable. Nevertheless, the expertise in working in those conditions is with the contractor.

Inefficient planning is allocated to the owner and is transferred to the contractor regarding their agreement. The contractor has agreed that the overall plan is to their liking and that they will be able to fulfill and execute that plan to the greatest of his or her ability. For that reason, the actual risk is allocated to the contractor to carry out the construction of the highway according to the plan devised by the project management/owner.

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