

Dar Al Riyadh Insight #76

Decision Making Under Uncertainty

Dar Al Riyadh Insights reflect the knowledge and experience of our Board, executives and staff in leading and providing PMC, design and construction management services. Dar Al Riyadh believes in the importance of broadly sharing knowledge with our clients and staff to improve project outcomes for the benefit of the Kingdom of Saudi Arabia.

Introduction

This series of Insights looks at the special case of decision making under uncertainty. The relationship between uncertainty and complexity is explored as is their joint relationship with large complex projects. The importance of getting these projects well founded from an ability to manage uncertainty is discussed and the aspects of these strong foundations is described.

Effective decision making under uncertainty is discussed and high reliability practices for decision making under uncertainty are tabulated. The Insights suggest that we may have learned the wrong lessons from some of our most complex and most important projects delivered under high uncertainty and in the process hard coded a project management dogma that does not serve us under complexity or uncertainty well.

What is uncertainty?

Uncertainty consists of ambiguity, volatility and variability.

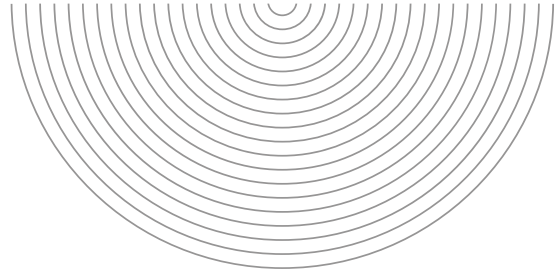
Ambiguity, an unquantifiable measure of uncertainty, may result from several sources:

- Inadequate view of external factors
- Uncertainty of cause and effect relationships
- Uncertainty inherent in means, methods and their effectiveness

The importance of stakeholder engagement and an increased focus on monitoring, measuring, tracking and understanding external project impacting factors cannot be overstated. Our project control resources are inward looking while uncertainty arises external to the project.

Tight coupling of tasks without effective buffers or adequate preparation for contingent execution ignores the uncertainties and variability inherent in all activities.

Volatility is a constant source of uncertainty and is associated with unpredictable impacts or rates of change. It arise from unknown and often unknowable future events (Black Swans) but often is perceived to arise from knowable but undealt with factors (Black Elephants).



Variability is associated with a known range of potential outcomes but with the result itself being uncertain (Rolling a dice. Result will be between 1 and 6 but we don't know which face will be on top.) This is aleatoric uncertainty as contrasted with the epistemic uncertainty of ambiguity.