

Reference Class Forecasting Reconsidered: Timing Project when Project Costs and Duration Are Uncertain

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ABSTRACT

Large-scale projects frequently experience deviations from their planned budget, timeline, and anticipated benefits. Traditional methods, like Reference Class Forecasting, often overlook the flexibility in project scheduling. This paper addresses this gap by introducing a real options model that optimizes project timing and value under uncertain investment costs, construction schedules, and output values. We illustrate the model using distributions with both thin and fat upper tails for cost and schedule overruns. Additionally, we provide guidance for practitioners on applying this approach using empirical data from similar past projects.

Keywords: Real Options; Major projects; Delays; Cost Overruns; Uncertainty; Reference Class Forecasting