

Dynamic Cost Risk Estimation and Budget Misspecification

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Our simulation of cost risk by explicit stochastic processes (e.g. Weiner process random walks) relies on Monte Carlo techniques to propagate budget estimate changes during the project development cycle to a total project cost risk probability distribution. A key assumption in these models, necessary for managing a portfolio of tasks cost effectively, is that the distribution of potential cost is symmetric about the budget. When the distribution of potential cost is not symmetric about the budget we say that the budget is misspecified. We model this situation by developing a simple learning curve describing the rate of convergence through time as the perceived budget approaches the true budget. An actual new technology development case study illustrating this by sensitivity analysis is used to demonstrate the extent of robustness of total project cost risk estimates to a range of learning curve parameter values.