

Discussion Paper

Modeling Project Criticality in IT Project Portfolios

by

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Abstract

Today's IT project portfolios (ITPP) contain many projects and varied interdependencies. Depending on a project's criticality to the ITPP, a failure can have massive consequences. However, existing methods usually only assess overall project portfolio risk and do not account for the criticality of single projects and their dependencies. Applying Bayesian network modeling to ITPPs, we bridge this gap and extend the current body of knowledge for the information systems and project management literatures. Our new method analyzes single projects' criticality in a portfolio context by considering both transitive dependencies and different dependency types in an integrated way. Since we demonstrate that single projects' criticality can vary substantially, being aware of which projects are critical is a key success factor for ITPP management. For practitioners, our method provides a straightforward procedure to enhance ITPP risk management.

Keywords: IT Project Portfolio Management, IT Project Criticality, Bayesian Network, Interdependencies