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Identifying Software Project Risks: An International Delphi Study

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IDENTIFYING SOFTWARE PROJECT RISKS: AN INTERNATIONAL DELPHI STUDY

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Despite the success stories in the literature, it remains a sad statistic that too many software development projects end in failure. Advocates of software project risk management claim that by identifying and analyzing threats to success, action can be taken to reduce the chance of failure. But the first step in successful risk management is identifying the risk itself, so appropriate countermeasures can be taken. In this presentation we describe research-in-progress to develop an authoritative list of risks, determine which of those risks are perceived as more important, and develop risk categories that can support theory development.

Previous research on risk management has relied on descriptions of good practice observed by the researchers. Recent work attempting to build a theoretical framework for understanding risk management has used this body of atheoretical, unsystematic research as the starting point. Our foremost concern is that we should address risk in a way that improves our capability to resolve the risks. That is, the interplay between risk identification and risk resolution must be clarified in theory and studied in empirical research. It is our aim to set this chain of study off on the right foot by providing a comprehensive, authoritative list of risks upon which we can confidently base further research.

A “ranking-type” Delphi survey, designed to elicit the opinion of a panel of experts through iterative, controlled feedback, was used to produce a rank-order list of risk items. We have also classified the risk items according to general categories which can be helpful in developing coping strategies and theoretical linkages between the coping strategies and the risk items.

We also took this opportunity to study how the perceptions of risk might differ across culture, organizational setting, economic conditions, and other constraints which might affect software development by conducting three simultaneous surveys in three different settings: Hong Kong, Finland, and the United States. The panels were composed of very experienced project managers known to the researchers in each country.

At the conference, we present a comprehensive list of risk items formed by combining input from all three panels and ranked lists produced independently by each panel. We also discuss our analysis of the lists and contrast our findings with previous research. Then we present a meta-classification of risk items supporting further theoretical development. Finally, we will engage the attendees in a discussion of the implications of our findings for both further research and practice.

An extended working paper that provides complete data, findings, and analysis will be available at the conference in limited quantity. We would also be happy to supply a copy of the working paper by mail to anyone who requests it at, or after, the conference.