FINDING FAILURE FAST IN A RAPID DEVELOPMENT ENVIRONMENT USING AHP

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ABSTRACT

In a rapid development environment, the very identification of viable solutions forms part of the project, in addition to its implementation. The pressures to "find failure fast" require that candidate solutions must be evaluated on the run, requiring at least a preliminary and partial implementation whose chief purpose is to identify, assess and suitably control associated risks. This renders the traditional linear planning and control methodologies unsuitable for such work.

In this paper, we developed a process which systematically analyses and prioritizes a series of previously selected candidate solutions using an AHP- based approach in which time, cost and quality criteria typically dominate. A quantitative risk assessment is performed on the highest rated candidate, leading either to its rejection, (and the initiation of a similar investigation into the next most preferred option), or the identification of a refinement believed to reduce the risk to acceptable levels. Since these refinements usually affect either cost, time or both, a re-calculation of the AHP is necessary, leading to an iterative "prioritize – plan – implement – test – reprioritize" process which provides a non-linear identification and implementation of the most promising solution from a cost/schedule/quality and risk perspective.

The method highlights the use of Work Breakdown Structure fragments, the appropriate aggregation of risk, dynamic decision-making and flexible change management protocols. It also relies critically on the effective communication and cooperation between planners and decision-makers operating at the commercial / technical interface.

Keywords: rapid development, project selection, risk aggregation, risk decision, prototyping