Abstract:

Every organization is threatened by unexpected and undesired events that cause crises. These crises are connected with high time and result pressure. In product development, methods to cope systematically with crises are only available on an abstract level. To support developers in solving crises, methods have to be provided. Because applying methods in product development increases the success of technical solutions. Hence, this paper aims at elaborating principles to enhance effective crisis solving. The paper focuses on two research questions: 1. Which factors differentiate crises in other fields from crises in engineering product development? 2. Which methodical approaches can be identified in other fields and transferred into engineering product development? For that purpose, procedures and methodical approaches of organizations beyond the technical domain, whose daily routine contains complex and challenging tasks, are observed and analyzed. Communication
and decision making in crises are emphasized. To generate expert knowledge of chosen organizations, employees of an organization acting in the aviation sector are interrogated in guided interviews. Furthermore, fire fighters are observed in organized workshops and practical exercises. In addition to comparing crisis definitions, methodical approaches are identified and transferred into the context of product development. As a result, 14 principles to cope with crises are framed, which are classified into the following clusters: procedure, communication, human, and training. This paper contributes a holistic set of principles to support engineers in crises. Because every principle bases on approaches identified in practical crisis solving.

Stichworte: Crisis, Decision Making, Problem Solving, Principles, Time Pressure

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