

The Coexistence of Quality Practices and Frozen Concept in R and D Projects

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Abstract : In R&D projects, there is no doubt about the need to change a current concept to an alternative one over time (i.e., concept leaping). Concept leaping is required since with most R&D projects uncertainty is present as they take place in dynamic environments. Despite the importance of concept leaping when needed, R&D teams may fail to do so (i.e., frozen concept). This research suggests a possible reason why frozen concept happens in the framework of quality engineering and control engineering. We suggest that frozen concept occurs since concept determines the derived plan and its implementation may be considered as equivalent to a closed-loop process, and is subject to the problem of not recognizing gaps as failures. We suggest that although implementing quality practices into an R&D project's routine has many advantages, it intensifies the frozen concept problem since working according to quality practices relates to exploitation of learning behavior, while leaping to a new concept relates to exploring learning behavior.

Keywords : closed loop, control engineering, design, leaping, frozen concept, quality engineering, quality practices

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