

# An Industrial Experience in CMMI L5 Improvement Opportunity: Implementing Usability

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CMMI L5 focused organizations have a target to maintain their business objectives and established refined quality objectives with continuous improvement activities. TÜBİTAK BİLGEM Software Technologies Research Institute (YTE) has a strategic goal in order to increase customer satisfaction based on quantitative management. In this context, critical processes or sub-processes, which explicitly challenged for improvement, are selected across organization from defined processes of YTE.

Aim of this paper is to share the experience on how a CMMI L5 improvement opportunity, which is usability, was identified, implemented, challenges faced during implementation and how improvement results were evaluated. Improvement opportunity (Improved requirements management and verification processes by complying with YTE usability standards and verification of those standards in projects) initiated from Quantitative Project Management (QPM) and Organizational Performance Management (OPM). The potential improvement suggestion about usability was got caught by taking into account the Software Usability Survey Ratio threshold (lower limit) in a large-scaled software development project and qualitative data analysis of open-ended questions in software usability surveys with data mining methodology: text mining. The aim was to institutionalize the Usability Principals by evaluating the effects on a pilot project. Firstly, the implementation plan for the pilot was documented. Then pilot usage started and problems related to the process were detected, solved and implementation plan updated. At the end of pilot, pilot project data and previous project data were compared by applying t-test and results show an increase in customer satisfaction ratio. Organization-wide deployment of the usability implementation was applied to other software development projects and higher software usability satisfaction rate is maintained.