Efficient Driving Forces to CMMI Development using Dynamic Capabilities

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 178
Number 18

Year of Publication: 2019

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10.5120/ijca2019919024

Abstract

The innovation of new technologies and dynamic marketing environments led software organizations to adopt standards and best practices. The main objectives of these organizations are to improve engineering and development, management of service delivery, and supplier management processes. The Capability Maturity Model Integration (CMMI) provides models for acquiring products (CMMI-ACQ), models for quality services (CMMI-SRV), and models for development (CMMI-DEV). The CMMI follows a set of stages known as the CMMI levels from one to five that determine an organization maturity level. Therefore, as the organization raises its maturity level to a higher level, it increases productivity, Return on Investments (ROI), and resource utilization. However, as a reference model, CMMI does not provide tools with the dynamic behavior of a competitive environment; therefore, organizations strive to enhance their market shares. This paper proposes to integrate the dynamic capability model with the CMMI; accordingly, the proposed model adapts and empowers the organization’s resources competitively. This paper intends to add dynamic capability components as part of the CMMI levels four and five. The proposed framework was validated using the System Usability Scale.
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(SUS) model. Results showed that the model is applicable and useful to enhance organization competence.

References


Index Terms

Computer Science

Software Engineering

Keywords

CMMI, dynamic capabilities, software usability scaling (SUS)