

A New Perspective on Earned Value Analysis: Development and Implementation of Metrics Specific to Defense Projects

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Abstract:

Defense industry projects accelerate a country's economic growth and technological development and are of vital importance for national security. Since the management of these project is not only a technical issue, but also critical factor that directly affects national strategies, their success differs significantly from other industrial projects. This study aims to add new metrics specific to defense projects to Earned Value Analysis (EVA). Since the existing EVA applications in the literature generally focus on industrial projects, the unique requirements of defense projects are ignored.

Within the scope of the study, a defense project was first evaluated by the portfolio manager using the EVA metrics in the literature, and then an updated EVA report with new added metrics was presented to the manager and the differences between these two evaluations were identified. In addition, while defining the project success criteria, the specified by the manager were converted into quantitative data using the Analytic Hierarchy Process (AHP). With the new metrics, it has been observed that strategic decisions are affected by these metrics.

This study demonstrates that the new metrics added to Earned Value Analysis contribute significantly to more accurately assess project success and more strongly support strategic decision – making.

Keywords:

Project Management, Earned Value Analysis (EVA), Defense Projects, Analytical Hierarchy Process (AHP), Industrial Engineering.