The CPI Stability Myth

There is undoubtedly the equivalent of an 'urban myth' still in circulation within the general project management community, arising from US Defense based research from the early 1990s, that the Earned Value (EV), Cost Performance Index (CPI) always stabilizes at the 20% completion and the final outcome will be within 10% of this value and usually worse. This myth has been extended by some authors to all projects in all industries; and I would suggest that this is demonstrably false in at least some circumstances.

If CPI stability was an incontrovertible 'fact' for all projects, there would be no need for active management of the project after 20% completion!

Newer research suggests CPI stability is not automatic. Earned Value is a very useful project management control tool mandated by many Government agencies in the USA, UK and Australia. However, the migration of the EV toolset from carefully controlled major defense projects into the general PM business community is definitely creating issues.

The DoD research established 'CPI stability' on a large number of major US military projects. Newer research has found CPI stability is not a 'given' and it rarely exists on small commercial projects. Rather than arguing over research findings, I would have hoped in the intervening years, there would have been some practical research to identify what underlying factors cause stability in the CPI measure as evidenced by the DoD research, determine if the factors are desirable and then find ways to improve project management practice in other industries so that the desirable factors are encouraged. As far as I am aware, this has not happened; my feelings are:

- When CPI stability is shown to be established, the 'CPI Stability' is a strong indicator of other important (but much harder to measure) factors such as stable management, stable requirements, an efficient management system, effective project culture, etc (many of which are likely to be present in major Defense projects as evidenced by the research undertaken by Christensen).
- Conversely, where CPI is unstable, significant changes in the underlying project can be reasonably assumed to be occurring, either at the management level or at the requirements/scope level. These changes may be beneficial or detrimental but are undoubtedly a risk that warrants the attention of senior management.

If these feelings are correct, it would also be useful to develop an understanding of the usefulness of CPI instability as a risk indicator (ie, what level of instability indicates a 'project at risk').

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