

Earned Schedule

Earned Schedule (ES) is emerging as a valuable tool in the overall management of projects. In our view, the ES methodology provides a valuable adjunct to, and a useful sanity check of, the 'critical path' (CPM) schedule developed for a project, for very little effort - provided the project has implemented Earned Value Management (EVM).

Using the same data as EVM, ES 'scales' the remaining duration of the project based on the volume of work accomplished to date compared to the planned volume, as measured by SPI(t). SPI(t) has the potential to predict future slippages that the CPM schedule may not be indicating.

CPM schedules have two major flaws inherent in the methodology:

- a. CPM assumes all future work will be accomplished as planned. There is no 'scaling function' for the performance of future work similar to the EVM calculations of $EAC = BAC/CPI$ for cost.
- b. CPM schedules do not show critical path slippage if 'float' is being consumed. The 'bow wave' of delayed work eventually becomes critical (usually with disastrous consequences) but there may not be pre-warning¹.

Research by Henderson and Zwikael has demonstrated that CPI and SPI(t) are closely correlated at a summary level across a range of commercial projects. This and other research suggests ES will provide a valuable management insight to help the successful delivery of projects.

Used properly, ES is the bridge between EVM cost and network schedule analysis, improving and providing the base for further developments in cost-schedule integration. ES can't replace scheduling (and does not seek to) but it does provide a useful insight above and beyond what's achievable using either traditional EV calculations or traditional CPM scheduling.

This article is part of Mosaic's **Project Knowledge Index** to view and download a wide range of published papers and articles see: http://www.mosaicprojects.com.au/PM-Knowledge_Index.html

For more on Earned Schedule:

- A sensibly priced book that explains the concept of ES and additional advances to the theory and practice of ES including the "P" factor, a measure of schedule adherence and "Effective EV," which discounts the EV accrued by EV earned out of the correct process sequence is available from Lulu Publishing for under \$15; printed paperback books are available from Amazon, Lulu and a range of other book sellers².
- The Earned Schedule tools are freely available from <http://www.earnedschedule.com> together with published papers and links to other sites.

¹ For more on this see: **Why Critical Path Scheduling (CPM) is Wildly Optimistic:** http://www.mosaicprojects.com.au/Resources_Papers_117.html

² **Earned Schedule** by Walter H. Lipke: <http://www.lulu.com/shop/walter-h-lipke/earned-schedule/paperback/product-18848236.html>

