




HARRADYNAMICS

Phased Earned Value Explained



HARRADYNAMICS has more than 35 years experience in the use of Earned Value Analysis (EVA) to define and report on the execution phase of major resource projects globally. Such tools, along with broader progress reporting, assist our clients understand the on-budget and on-time status of a project before approving the drawn down of funds that are typically subject to a range of approval conditions.

More recently Harradynamics has adopted the Phase Earned Value Analysis (PEVA) method, which provides a more streamlined and effective project performance measurement without the rigor and complexity that is typically required by conventional EVA methods. PEVA achieves this through the recognition of project execution phases as the key organising elements of a major resource project and also by addressing and resolving several of the known challenges of conventional EVA methods.

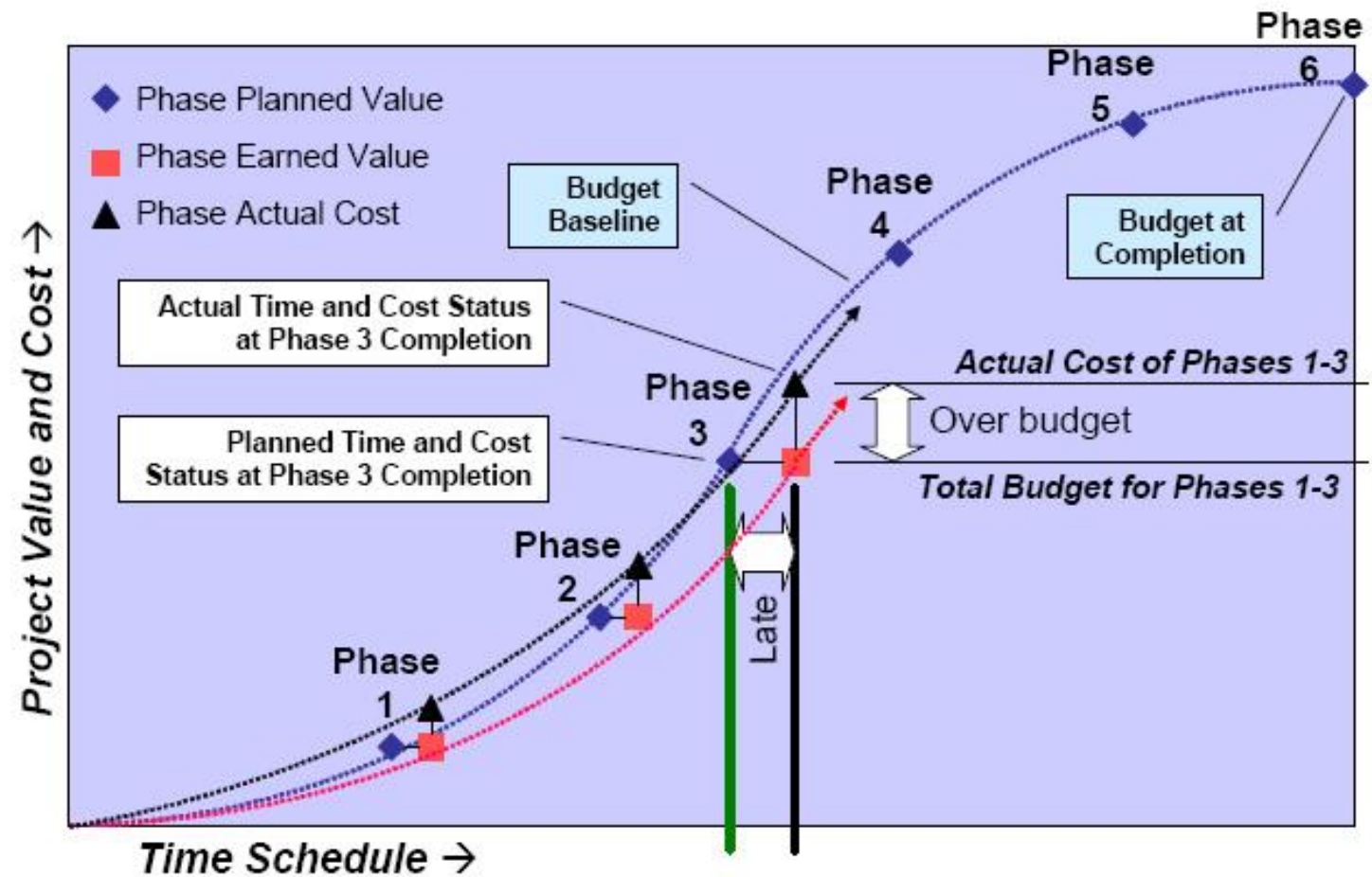
Project Managers typically divide large and complex projects into recognisable phases to aid in planning, execution and control. Dividing project deliverables (outcomes) into a series of phases may create difficulties in the creation of control accounts, which are seen as groupings of work packages such as those defined under a Work Breakdown Structure (WBS). With a phased project statusing approach, a set of similar deliverables by a given internal department or vendor may be implemented in a fragmented fashion, possibly in a range of separate locations or over several phases.

In short the PEVA method recognises the phased approach of most major resource projects as well as provide a statusing method that measures performance to key project milestones, such as phase gates.

PEVA Reporting

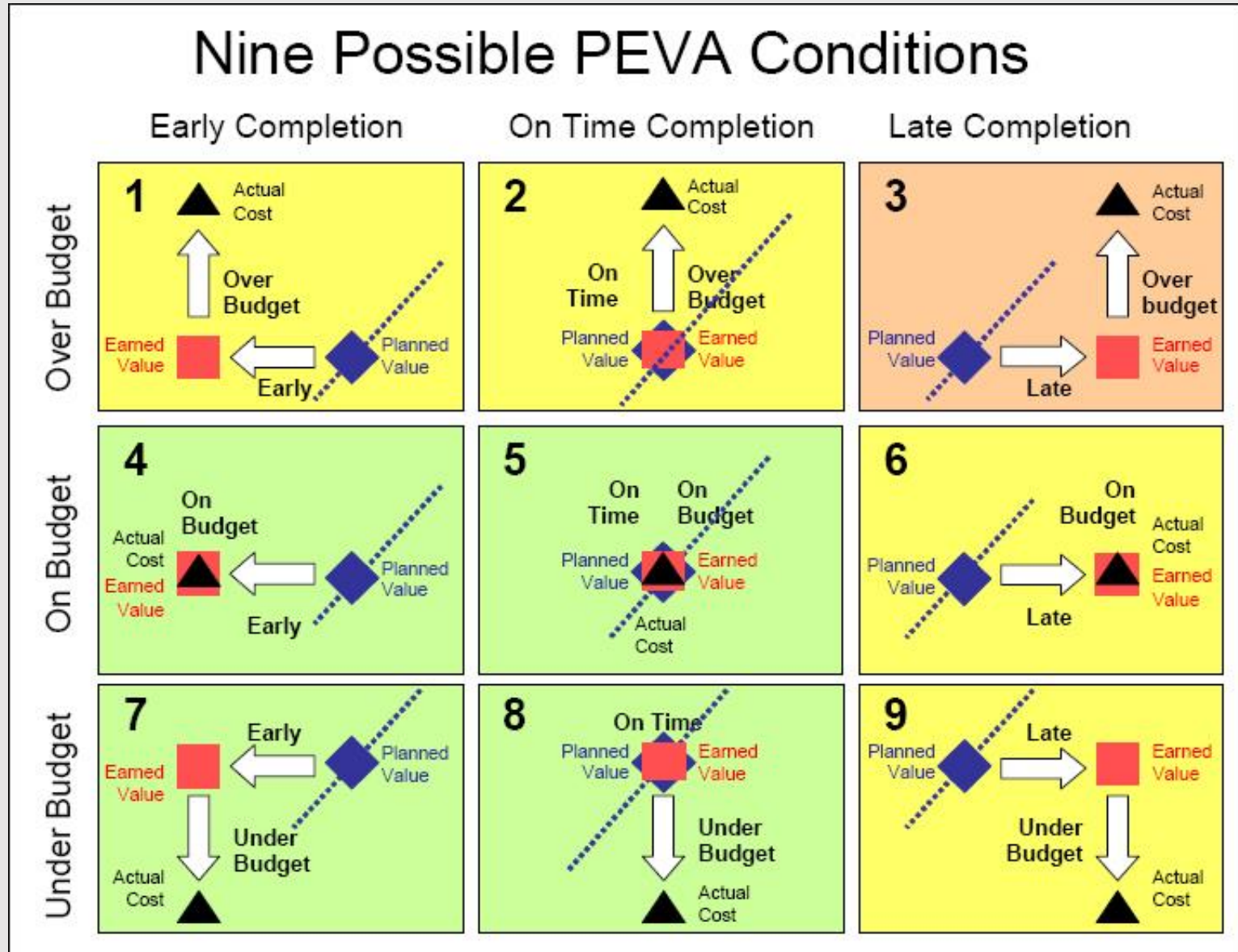
- Requires a Budget Baseline along with a Schedule Baseline. The Baseline can and should be updated if circumstances require.
- Is not limited by the number of Phases, or project locations, or re-baselining of the Schedule.
- Allows for the structured or staged development of a project including discrete ramp-up phases.
- Allows for a comparison between planned and actual dates separately from Budgeted and Actual Costs.
- Affords a simpler and more timely project reporting method.

Phase Earned Value Analysis Concept



PEVA Conditions

- There are 9 possible PEVA reporting conditions or outcomes.
- All reporting is compared to an on-time and on-budget outcome, that is typically pre-approved by the Company and/or by Lenders.
- PEVA monthly reporting not only allows Lenders to consider draw-downs on loan accounts but also affords the Company a timely opportunity to implement risk mitigation measures & strategies that avoid adverse project outcomes.



Implementation of the PEVA Method

❖ Prepare a Time Schedule by Phases

- Develop a Gantt chart that the project team will use to execute, control, measure, and report on project progress over time. Primavera P6 or MS Project are recommended. The projects WBS and development Phases need to be considered.

❖ Prepare Budgets by Cost Elements

- The project management team needs to identify the sources of costs in terms of the groups that charge the project, either as expenses, or hours, or as lump sums with exclusions, conditions, of terms factored in.

❖ Group Budget Elements by Phase

- Budget elements need to be arranged on the PEVA table in relation to the project phases in which these elements occur. They should then divide any cost elements occurring in more than one phase.

Implementation the PEVA Method

❖ Define Phase Completion Dates

- Each of the activities listed on the Gantt chart for a given phase requires a contributing group listed in the PEVA table for that same phase. The insertion of a column in the Gantt chart titled “Cost Code” in which budget cost codes are reporting is typically sufficient. The duration of all activities, especially those on the critical path, needs to be confirmed.

❖ Implement a Method to Deal with Approved Changes

- Make changes to the Gantt chart or PEVA table as the project progresses and ensure that all added activities involving the contributing groups are detailed in formal arrangements, such as change orders and purchase orders.

❖ Track Progress & Completion

- Calculate the actual costs for the work performed and deliverables provided by contractors, suppliers, vendors, and the owners team.

Implementation the PEVA Method

❖ Calculate Actual Costs

- Assess and calculate the actual costs for the work performed and deliverables provided by the Owners project team, contractors, suppliers, and vendors.

❖ Review and Variances and thereafter Take Action

- Should a 100% completion for a phase be achieved then the phase completion date and the actual cost of that phase will cause the PEVA Summary Table to automatically calculate the CV, CPI, SV(t) and SPI(t) for that phase, along with the forecast cost and schedule variances and indices for the balance of the project. Project managers can review these indicators and take necessary actions to address any cost overruns or schedule slippage issues.

❖ Report on Progress to the Approved Budget and Completion Date

- Regular, and typically monthly, reporting on a major resource projects execution phase is critical. Such reporting allows Owners and Financiers the time needed to consider forecast outcomes.

PEVA Time & Cost Calculations

- Phase Planned Value [PVp] is the total budget for a phase.
- Phase Earned Value [EVp] is equal to the Phase Planned Value, once the phase is completed.
- Phase Actual Cost [ACp] is the total of all internal and external costs attributed to that phase.
- Phase Cost Variance [CVp] is the difference between Phase Earned Value and Phase Actual (Cost.CVp = EVp – Acp).
- Phase Cost Performance Index [CPIp] is Phase Earned Value divided by Phase Actual Cost. (CPIp = EVp/Acp).
- Cumulative Cost Variance [CVcum] is total EV less the total AC, for all completed phases. (CVcum = EVcum – Accum).
- Cumulative CPI [CPIcum] is the total EV divided by the total AC, for all completed phases. (CPIcum = EVcum / Accum).

PEVA Time Metrics & Indicators

- Project Start Date is the planned and actual date for the initiation of the project.
- Phase Planned Completion Date is the calendar date (or time) on which the phase is planned to finish.
- Phase Actual Completion Date is the point when the phase deliverables are accepted as 100% complete.
- Phase Schedule Variance [SV(t)] is the difference between Planned and Actual Completion Dates for that phase.
- Cumulative Schedule Performance Index [SPI(t)] is the current planned duration (days), divided by the current actual duration, both counted from the project start to the end of the last completed phase.
- Forecast Phase End Date is the planned duration from the project start to the end of an incomplete phase, multiplied by the cumulative SPI(t) for the last completed phase.

