



Budgeting



It has been said that good budgeting is the uniform distribution of dissatisfaction. A cost performance measurement system is dependent on good budgeting practices to provide a realistic baseline against which actual costs can be compared. A fundamental requirement is that the internal budgets must add up to the program target cost [or Budget at Completion (BAC)]. The cost performance measurement system must also assign these internal budgets to both their appropriate [Work Breakdown Structure \(WBS\)](#) and [Organization Breakdown Structure \(OBS\)](#) elements.

The target cost is set by management as the cost goal for the program and the program budget reflects a distribution of that goal to program activities. This is an allocation process, based on estimates generated during the program's conceptual phase, that results in each managerially significant element of work (control account) receiving a budget that represents its value in terms of the overall program. As the work is performed, the actual costs recorded for that work can be compared to its budget to reflect cost performance. For a contract, the Negotiated Contract Cost ([NCC](#)) exclusive of profit or fee, normally provides the point of departure for the budget baseline.

See Section 2 of the [Industry Standard \(EIA-748\)](#) which offers ten statements regarding Planning and Budgeting.

At the conclusion of this lesson you will be able to recall the relationship of budget to the performance measurement system.

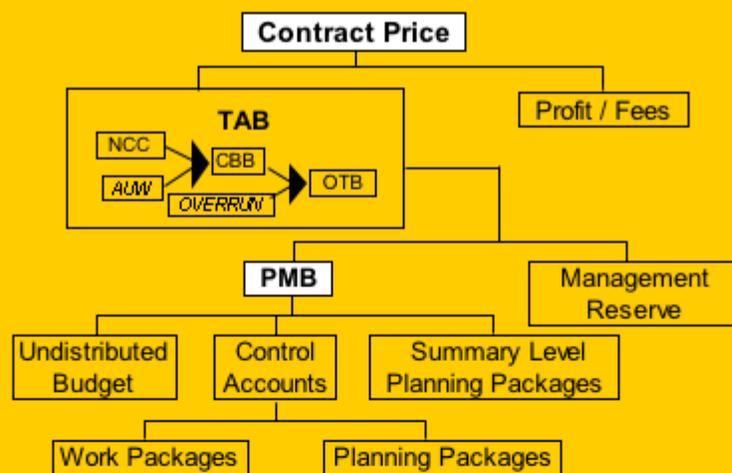
Work Breakdown Structure (WBS)

A product-oriented family tree division of hardware, software, services, and other work tasks which organizes, defines, and graphically displays the product to be produced as well as the work to be accomplished to achieve the specified product.

Organization Breakdown Structure (OBS)

The hierarchical arrangement (organization chart) of a company's management structure, graphically depicting the reporting relationships. Normally limited to showing only managerial positions, but may depict lower organizational levels.

Negotiated Contract Cost (NCC)



TERMINOLOGY

NCC	Negotiated Contract Cost	Contract price less profit / fee(s)
AUM	Authorized Unpriced Work	Work contractually approved, but not yet negotiated / definitized
CBB	Contract Budget Base	Sum of NCC and AUM
OTB	Over Target Baseline	Sum of CBB and recognized overrun
TAB	Total Allocated Budget	Sum of all budgets for work on contract = NCC, CBB, or OTB
BAC	Budget At Completion	Total budget for total contract thru any given level
PMB	Performance Measurement Baseline	Contract time-phased budget plan
MR	Management Reserve	Budget withheld by Ktr PM for unknowns / risk management
UB	Undistributed Budget	Broadly defined activities not yet distributed to CAs
CA	Control Account	Lowest CWBS element assigned to a single focal point to plan & control scope / schedule / budget
WP	Work Package	Near-term, detail-planned activities within a CA
PP	Planning Package	Far-term CA activities not yet defined into WPs
BCWS	Budgeted Cost for Work Scheduled	Value of work planned to be accomplished = PLANNED VALUE
BCWP	Budgeted Cost for Work Performed	Value of work accomplished = EARNED VALUE
ACWP	Actual Cost of Work Performed	Cost of work accomplished = ACTUAL COST
EAC	Estimate At Completion	Estimate of total cost for total contract thru any given level; may be generated by Ktr, PMO, DCMA, etc. = $EAC_{Ktr \text{ or } PMO \text{ or } DCMA}$
LRE	Latest Revised Estimate	Ktr's EAC or EAC_{Ktr}
SLPP	Summary Level Planning Package	Far-term activities not yet defined into CAs
TCPI	To Complete Performance Index	Efficiency needed from 'time now' to achieve an EAC

This excerpt from the DAU Gold Card shows the flow from Contract Price to Cost and ultimately to the Control Accounts of a typical program. Also notice this list of common EVM terms. The full DAU Gold Card is available in the Course Library.

Long Description

This diagram shows how the Contract Price is broken down into its components. The Contract Price consists of the Total Allocated Budget (TAB) and the Profit/Fees. Then the TAB is divided into its parts. The Negotiated Contract Cost (NCC) and Authorized Unpriced Work (AUW) make up the Contract Budget Base (CBB). The CBB and the Overrun make up the Over Target Baseline (OTB). The TAB is then further divided for tracking into the Performance Measurement Baseline (PMB) and the Management Reserve. The PMB is divided into the Undistributed Budget, Control Accounts, and Summary Level Planning Packages. The Control Accounts are divided into Work Packages and Planning Packages.



Management Reserve

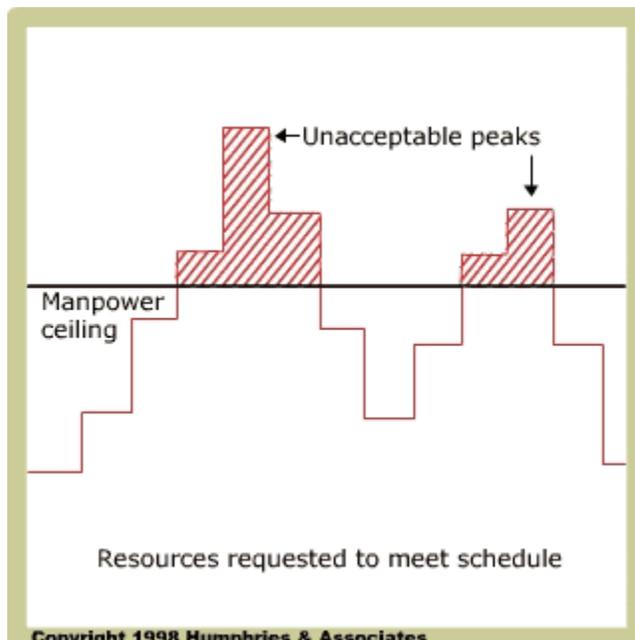
It is common practice for the contractor program manager to set aside a budget for unforeseen work, problem resolution and management control purposes, which is usually referred to as management reserve. The amount of management reserve depends on several factors, including how well the company did in negotiations, the risk associated with the program due to complexity and uncertainty, and management judgment.

Management reserve gives the program manager flexibility to cope with problems or unexpected events because it provides a "cushion" of resources to apply as needed. Without a reserve, the program manager is unable to budget for instances where it is discovered that in-scope work has been mistakenly omitted from the baseline, unless resources can be found by eliminating unneeded activities or achieving efficiencies in other areas.

The remainder of the budget is distributed to internal organizations and assigned to the work to be performed. That work has already been scheduled, at least preliminarily, so the allocation of budget to scheduled increments of work produces a time-phased budget baseline (the Performance Measurement Baseline (PMB)) for the program. Again, the process is iterative in nature. The spread of resources to what appears to be an optimum schedule may reveal a plan that cannot be performed. This happens because resources cannot be turned on and off like a faucet. An initial resource-loaded schedule will have peaks and valleys that must be smoothed out in order to maximize the efficient use of people and facilities.



Figure 5-1: Resource Leveling



Resource leveling involves adjusting schedules and may not result in the earliest possible completion date, although contracted dates and targets set by management must be accommodated. **Figure 5-1** shows the resource leveling process, the idea being to "cut off the peaks" and "fill in the valleys" by re-phasing activities.



D

Long Description

Figure 5-1: Resource leveling involves adjusting schedules and may not result in the earliest possible completion date, although contracted dates and targets set by management must be accommodated. This chart shows the resource leveling process, the idea being to "cut off the peaks" and "fill in the valleys" by re-phasing activities.



Figure 5-2: Budget Allocation



Internal budgets must address both the direct and the indirect (overhead) activities. Direct costs are managed at the control account level while indirect costs are usually managed at a more summary level in a "pool" arrangement. In addition, the budget planning must consider work which is part of the program but which cannot be identified in the WBS or the OBS in detail at the outset. Budget must be set aside for that work to ensure that it will not be consumed inadvertently before the work is incorporated in control accounts. This "undistributed budget" is also part of the budget baseline. Figure 5-2 illustrates the elements that make up the program budget.



D

Long Description

Figure 5-2 illustrates the elements that make up the program budget. It is a four level hierarchical flowchart, with a box at the top level labeled Contract Price, which branches downward to two boxes on the second level: Target Profit/Fee, and Contract Target Costs; which branches down to a third level: Management Reserve (Withheld for unknowns) and Performance Measurement Baseline (For known effort); which branches to two boxes on the lowest level: Distributed Budget (Control Accts) and Undistributed Budget.



Material Costs vs. Labor Performance

Within the control account, budgets should be further delineated in terms of major cost elements; i.e., labor, material and other direct costs. Cost element segregation is necessary to accommodate the differences in management and control of these elements and so that cost variances can be analyzed in those terms.

Understanding how much of a problem (cost or schedule variance) is related to material costs and how much is related to labor performance is of considerable interest to the program manager, particularly when estimating costs for work remaining.



Budgeting Knowledge Review

An EVMS uses good budgeting procedures and requires each project to integrate the _____ level, consistent with EVMS Standard EIA-748.

- WBS and the OBS at the Control/Cost Account
- The company's planning forecasts and the scheduling procedures at the Work Package
- The company's purchasing process and material inventory procedures at the Cost Account.
- The project's negotiated target cost and the work breakdown structure at the Cost Account.

Correct. An EVMS uses good budgeting procedures and requires each project to integrate the **WBS and the OBS at the Control/ Cost Account** level, consistent with EVMS Standard EIA-748.



End of Lesson

You must click the **Next** button in order to receive credit for this lesson.