



Change Control



Rarely, if ever, does a program proceed without changes, which is unfortunate because changes are disruptive and expensive. Poorly planned and executed programs are much more susceptible to change activity than are those that are well thought out prior to initiating the work. Regardless, changes are a fact of life and must be accommodated.

Changes generally fall into two categories; externally directed changes and internal re-planning. External changes usually involve changes in scope, schedule, or funding. Internal re-planning is intended to compensate for problems being experienced, to achieve efficiencies in operation, or to change work plans.

External changes are those directed by management or resulting from contract modifications. Such changes should be incorporated into work plans as quickly as possible to ensure that the program baseline remains current. Failure to do so on a dynamic program can cause changes to accumulate and force people to work to informal plans due to the administrative delays in updating baseline documentation. External changes usually result in an increase in the target cost, extension of the program schedule, or a combination of the two.

At the conclusion of this lesson you will be able to recall the impacts of external and internal changes on performance measurement baseline (PMB).

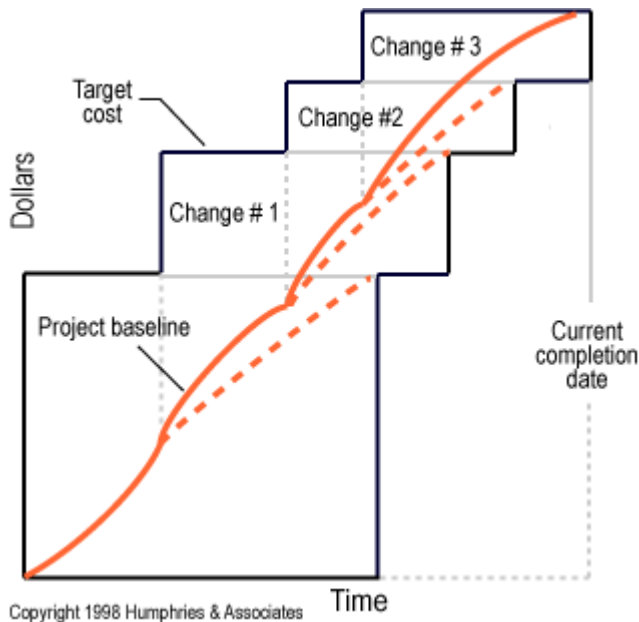


Figure 12-1: Incorporation of External Changes

Figure 12-1 illustrates the effects of external and internal changes on the program baseline.

Externally directed changes are not always generated by company management or by the customer. Many changes are initiated through engineering change proposals and other ideas offered up by company employees as ways to improve the product. These proposals are normally evaluated and endorsed by a change control board before being submitted to management or to the customer. Formal authorization is required before changes are incorporated into the program, including the establishment of cost, schedule and technical targets for the new scope of work.

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Long Description

Figure 12-1: Incorporation of External Changes graphs three external changes in the project baseline (cost over time) which increase the target cost and extend the current completion date.



Figure 12-2 Budgeting Baseline Log

Date	Change	Target costs	Authorized unnegotiated work	Contract budget base	Management reserve	PM baseline	Undistributed budget	Direct budget	O/H budget	G and A budget
1/02	ABC Contract	120	--	120	10	110	10	40	40	20
1/25	Contract Chg 001	20	--	20	2	18	--	8	8	2
1/31	January Summary	140	--	140	12	128	10	48	48	22
2/5	Contract Chg 002	--	45	45	0	45	20	11	11	3
2/15	Contract Chg 003	--	30	30	0	30	19	5	5	1
2/23	Contract Chg 004	30	--	30	2	28	--	12	12	4
2/28	February Summary	170	75	245	14	231	49	76	76	30
3/6	Changes 002 and 003	70	--	(5)	3	(8)	(39)	14	14	3
3/31	March Summary	240	--	240	17	223	10	90	90	33

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Figure 12-2 is an example of a baseline control log. The contractor should maintain a baseline change control log to show how the original program has evolved over time.

Long Description

Figure 12-2 Budgeting Baseline Log shows how the original program has evolved over time. It is a spreadsheet showing the dates and descriptions of contract changes, both internal and external to a sample project. Columns labeled Target costs, Authorized unnegotiated work, Contract budget base, Management reserve, PM baseline, Undistributed budget, Direct budget, O/H budget, and G and A budget contain data that characterize these changes.



Change Control

Check that the contractor has updated the WBS dictionary, control account planning sheets and other documentation to reflect changes, and use them to determine responsibility for actions taken, in case there are post-contract liability disputes.

Unlike external changes, which usually affect cost and schedule targets, internal re-planning only changes the shape of the baseline curve due to shifts of work elements or changes to schedules and budgets. Internal changes usually are necessitated by technical problems.

Test failures, performance shortfalls, design deficiencies, manufacturing problems and other technical difficulties require additional resources in terms of budget and schedule.

Additional budget comes from management reserve, from work deletions, or from other work if efficiencies can be found that will free up resources.



Figure 12-3: Internal Replanning with Management Reserve



Figure 12-3 illustrates the effects on the baseline resulting from internal re-planning using management reserve.



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Long Description

Figure 12-3: Internal Replanning with Management Reserve compares the curves of a sample original performance measurement baseline with a revised baseline, reflecting the allocation of management reserve. The difference between the final revised baseline and the target cost is labeled as the remaining management reserve. The difference between the target cost and the original baseline was the initial management reserve.



Re-planning and Management Reserve Transfers

When management reserve budget is used, it is transferred from the reserve account into control accounts. Transfers of management reserve are tracked and reported because they are often problem indicators. When work is moved from one time period to another, or from one organization to another, the budget assigned to that work should go with it.

Keeping work and budget tied together is an important concept that normally would not be violated in an Earned Value Management system, although a major re-planning may result in a redistribution of resources. In such cases, management and the customer must be kept informed of baseline changes and their rationale.

Re-planning of future work plans can occur at any time and it is important that changes be controlled and understood. Overlaying a plot of the current baseline on top of the previous month's baseline may reveal inappropriate shifts of work or budget.



Figure 12-4: Internal Replanning-Rephasing Work or Budget

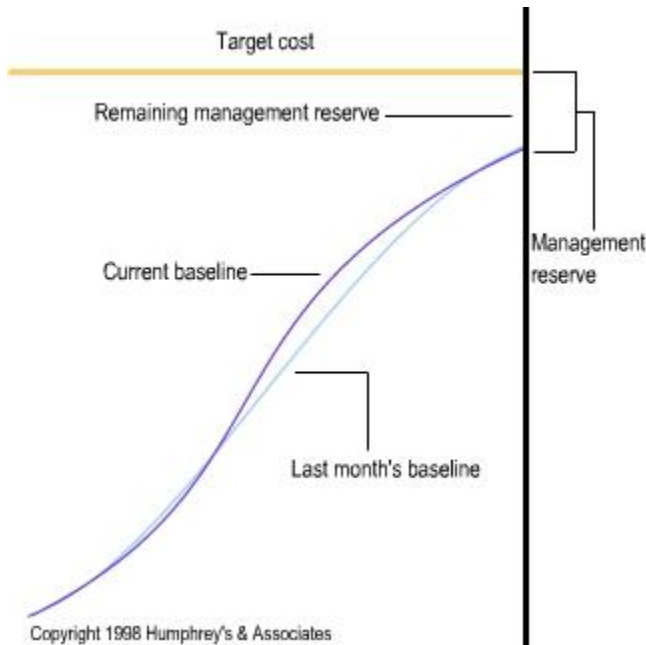


Figure 12-4 indicates that downstream work or budget has been moved forward in time. If only budget has been moved, it is important to identify the work from which it was taken. Otherwise, a significant downstream "surprise" may await.



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Change Control Knowledge Review

Why is it important to keep budget tied to work scope and schedule in an EVM system?

- Normally, tying work scope to budget is a simple process, and changes are relatively low-cost and minimally disruptive, yet plans are seldom changed once the program work begins.
- PMB changes are typically frozen in place once the contract work begins, so the change process and resulting costs are kept to a minimum.
- Contractors can be relied upon to maintain the validity of the PMB Change Log, and costly Government surveillance is not typically necessary nor desirable in the 'partnering' era.
- Keeping work and its associated budget and schedule integrated is critical to a true EVM system. Uncontrolled changes to the PMB affect the validity of program data and resulting analyses.

Correct.



End of Lesson

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