

## Components of a Project Portfolio Management Process: *Part Two – Managing the Pipeline*

*We started our coverage of Project Portfolio Management with two papers: Project Portfolio Management is not just Enterprise Project Management, and Project Portfolio Management: The Right Stuff. We continued this series with the first of a three-part discussion of the contents of a Project Portfolio Management process; Selecting Projects for the Pipeline. We continue this month with part 2: Managing the Pipeline (What stays in the pipeline). Topics will include:*

- ❑ Periodic measurement of status and performance
- ❑ Evaluation of status & performance against critical parameters
- ❑ Reporting of items outside of Targets/Limits/Thresholds
- ❑ Stage Gate & Bounding Box Concepts

### Modern Project Management (past its prime?)

For about the past 45 years (the era of Modern Project Management), the focus of project management was on successfully completing projects, delivering project content, and satisfying project stakeholders. We paid significant attention to issues of schedule, resource utilization, cost, and quality. We employed specialized computer-based tools, such as critical path scheduling, critical chain, risk analysis, resource allocation and leveling, and multi-project “slice & dice” reporting engines. We grew project management from an arcane, back-alley witchcraft type practice to a widespread and respected profession. And we took these scattered project management practitioners and brought them into centralized project management offices (PMO).

While those of us in the project management discipline were joyful when we helped to achieve project management success, we were dismayed to learn that project success did not always equate to business success. Across the hall from the PMO, senior operating personnel were often disconnected from the projects scene, as if the hallway were the Maginot Line. Why, they would ask, were so many projects not contributing to the firm’s bottom line? Why were critical and scarce resources being allocated to work that was not aligned with strategic objectives? They searched to find the “value” in these projects.

Across the hall, in the PMO, they would ask, “What strategic objectives”? Value? Not in our purview. Isn’t it enough to bring the project in on schedule and within budget? How can we perform so well and still fail to produce the results that senior management demands?

And this isn’t the half of it. What about the projects that don’t make it to the end? Or the projects that do make it all the way through, but deliver an unusable product? Finally, we are beginning to question whether the projects should have been approved or continued past a point of limited value.

So it is time to enter the era of Post-Modern Project Management, or what we now call Project Portfolio Management (PPM).

## Project Portfolio Management

PPM is primarily the process of determining which projects shall be in the firm's project portfolio. In part one of this series, we discussed the process of selecting projects for the portfolio. In this part, we discuss what could be called project "de-selection".

During the selection process, we make assumptions about the value of candidate projects. We look at the opportunities and balance them against potential risks. We predict the effect of the project on revenue and cash flow and consider the costs of the project. Many assumptions are made on completion of the project (and major segments of the project) according to a forecasted timeline.

But the project and business environments are not cast in concrete. These are not static environments. Projects don't always go as planned. The assumptions may become less valid with time. Windows of opportunity close – sometimes unpredictably.

## Managing the Pipeline

So let's see where this all leads. During the project selection process, we match the assumptions about the project with the assumptions about the business needs and opportunities. Once the projects are in the pipeline, we update both sets of assumptions. On the projects side, we periodically measure project status and performance. On the business side, we periodically validate or adjust the assumptions about value, opportunity, and need.

Two of the popular and proven techniques to accomplish this are (1) Earned Value Analysis, and (2) the Stage Gate process.

## Earned Value Analysis

How can we tell if a project is proceeding according to plan? If we are employing critical path scheduling techniques (CPM) diminishing float or slack is an indication of schedule slippage. But this doesn't always tell us how badly the work is falling behind. It also doesn't measure the actual costs against the amount of work that has been accomplished.

A better way to do this is the Earned Value Analysis technique (EVA). EVA can even be used in the absence of a critical path schedule, but it works best in conjunction with the CPM. To use EVA, there should be a list of the work to be performed, a weight factor for each item on the list, and a planned schedule of accomplishment. When we use a CPM, these items become a natural part of the process. The weight factor can be the budget, in either cost or man-hours. This budget is expressed as the Budget at Completion (BAC). When the work is scheduled, we can generate the Budgeted Cost of Work Scheduled (BCWS) which is the planned effort at any point in time.

In order to track status and performance, we need to periodically provide two pieces of information for each work item. The first is item percent complete (%C). By multiplying the %C times the BAC, we can compute the Budgeted Cost of Work Performed (BCWP). This is the Earned Value. By comparing the BCWP to the BCWS, we can calculate the schedule variance (SV). If we had planned to do 50% of the work item and only accomplished 20%, then we can tell that the item is behind. By using the budget values in the calculation, we are able to roll up

the SV to any level of the Work Breakdown Structure (WBS). By dividing the BCWP by the BCWS we produce the Schedule Performance Index (SPI). In this example, the SPI would indicate that we are making only 40% of the progress that we had planned.

The second progress item is Actual Cost for Work Performed (ACWP). To generate a Cost Variance (CV) we compare the ACWP to the BCWP. This is an important improvement over older accounting methods. Before we had earned value data, it was common to compare actual costs to planned costs. But this can produce a very misleading story, when the progress has not kept up with the plan. If in the example above, we had actually spent 30% of the budget, we are really overspent by 50%. We have spent 30% of the budget to accomplish 20% of the defined work. By dividing the BCWP by the ACWP, we produce the Schedule Performance Index (SPI).

For a more detailed discussion on EVA techniques, see the series of papers on Earned Value published on this website.

## Updating Critical Parameters

The EVA data provides information about project performance against the plan. With this information, the team can evaluate whether certain deficient performance results would warrant consideration of terminating the project prior to completion, or changing the priority of the project, or re-allocating resources to other work.

However, there will generally be additional factors to consider. Has there been any change in the need for this project? Is the window of opportunity still open? Has critical technology changed? Have the firm's strategies changed? On a periodic basis, all of the criteria that were examined when putting a value on the project should be validated and updated.

The Project Management Office (PMO) will publish reports indicating where defined targets, limits, and thresholds have been violated. The PPM Governance Council will consider this information together with the updated critical parameters to evaluate all projects for continuation or termination.

## The Stage Gate Process

If you hang around with some New Product Development (NPD) people, it won't be very long before someone reverently bandies around the name of "Cooper". This would be Dr. Robert G. Cooper, widely recognized as an NPD guru, and father of the Stage-Gate process. Dr. Cooper, professor at McMaster University, at Ontario, Canada, and author of "Winning at New Products: Accelerating the Process from Idea to Launch" (among six books and numerous articles), has much to contribute to the discipline of Project Portfolio Management (PPM).

The typical NPD project consists of a series of steps starting with project conception and leading to product delivery. These steps can usually be grouped into a series of phases. Each phase will have a number of activities, possibly performed in multiple disciplines, leading to an interim milestone or goal.

In the Stage Gate process, each of these phases (called Stage) is separated by a decision point (called Gate).

Just as there is a set of criteria for determining if the project is to be selected for the active portfolio, each Gate will have a set of metrics so that the project can be evaluated. The Governance Council reviews the project, at each gate, making a Go/No Go decision. Funding may be cut off, or the project put on hold, if the evaluation data shows that the project performance is not supporting the original plan or is no longer making sound use of limited resources. Other reasons for killing the project may include technical limitations or failure, a change in the financial considerations, or inability to meet the allowable time window.

The Governance Council is the “gate-keeper”. The Governance Council is made up of senior representatives of the functions responsible for business success. Evaluations are made against pre-determined criteria. Decisions are made by comparing the metrics to those criteria. Gut feelings or territorial protectionism should be resisted.

## The Bounding Box Approach

What if your project doesn't fit well into a phased mode? Perhaps there are significant overlaps between basic phases. Or the project contains some looping components, as might be found in pure research projects.

In this case, you might want to pass up the stage gate process for the “bounding box” approach. This process calls for the setting of selected critical parameters (boundaries), and is a type of “management by exception” technique. The Governance Council approves a set of targets or limits, such as delivery dates, cash flow, projected returns, performance metrics, etc. As long as the project stays within the boundaries, the project team will control most of the action and decisions. However, if a critical target or limit is compromised, then the situation must be brought to the attention of the Governance Council, which arranges for a review of the project and consideration of project termination, or continuation with reset targets and limits.

## Success Stories

In an earlier paper, I reported several benefits to the firm when managing the pipeline by employing a structured termination process:

- ❑ For example; during the first 90 days of the merger between HP and Compaq, the Global Project Management Office stopped 114 projects or programs that were not aligned with the emerging strategy or made poor use of resources.
- ❑ There are reported claims that the best performing companies averaged 40 percent early cancellation of projects, using stage-gate techniques to review value vs. risk.
- ❑ Critical resources are freed-up for higher value projects.
- ❑ Projects that are not performing well, whether due to technical, schedule, cost, or scope problems, do not continue to drain resources and dollars.

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