

Value Analysis Reporting

Benjamin Srock

Embry-Riddle Aeronautical University Worldwide Campus

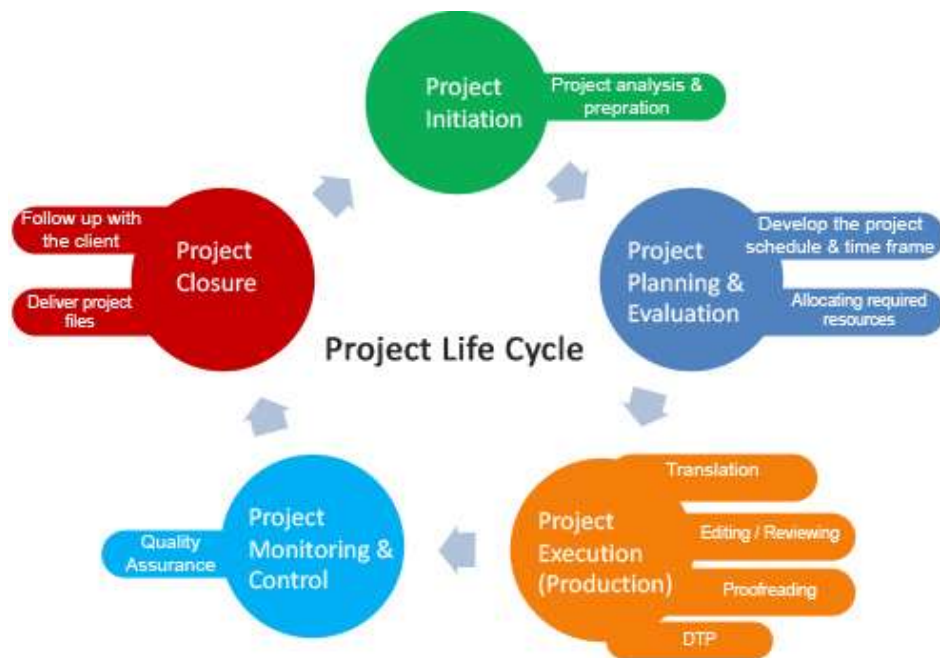
Effective Communication for Managing Projects

PMGT-502

Ki-Young Jeong, Ph.D.

October 2, 2016

## Value Analysis Reporting

*Figure 1. Project Life Cycle*

Understanding value analysis reporting begins with understanding the project lifecycle and why this type of reporting is essential. The project life cycle provides an understanding of when and where certain processes will occur. The planning phase of any project establishes material, manpower, and other resources needed to support the final project deliverable. Establishing project estimates is not an easy task and may require that each activity is broken into small enough pieces to allow for estimation (Dow & Taylor, 2015, p. 526). Use of the project work WBS provides an organized method for cost loading and collection of performance data and value analysis. Once underway, the project does not merely operate on autopilot, it takes monitoring and controlling project goals and timelines. As a method of monitoring performance, value analysis provides views a project from the perspective of cost to ensure the

cost is not greater than originally planned. Project value analysis views the project from the perspective of earned value, planned value, and actual cost.

Earned value is the value of work accomplished, based on labor hours and cost. Earned value analysis is a powerful approach for evaluating project performance. It also provides a quantitative basis for estimating actual completion time and actual cost at completion (Brandon, 1998, p. 11). The benefit of earned value analysis is that you can see the rate of progress, of most projects, compared to the original plan. Measuring earned value requires an understanding of how of Planned Value (PV) and Actual Cost (AC) relate to each other for a given task or deliverable. Planned value is that value that assigned to each task. Should a task be scheduled to take three days and the cost for the three days is \$1200, then the PV is \$1200. Actual cost is the cost incurred during a tasks given period. If the cost for the same three-day task is \$1000, then the AC is \$1000.

Calculating earned value is simply as a process of mathematics, and its results help indicate how much time, and money is necessary to complete the task in question and the project as a whole. Calculations include determining cost variance (CV), scheduled variance (SV), cost performance index (CPI), and schedule performance index (SPI).

- $\text{Cost Variance (CV)} = \text{Earned Value (EV)} - \text{Actual Cost (AC)}.$
- $\text{Schedule Variance (SV)} = \text{Earned Value (EV)} - \text{Planned Value (PV)}$
- $\text{Cost Performance Index (CPI)} = \text{Earned Value (EV)} / \text{Actual Cost (AC)}.$
- $\text{Schedule Performance Index (SPI)} = \text{Earned Value (EV)} / \text{Planned Value (PV)}.$

Activity	Planned Value (PV)	Earned Value (EV)	Actual Cost (AC)	Cost Performance Index (CPI)	Cost Variance (CV)	Schedule Performance Index (SPI)	Schedule Variance (SV)
A - Kitched Demolition	4000	4000	4000	1.00	0	1	0
B - Plumbing	2000	2000	2400	0.83	-400	1	0
C - Electrical	2000	1500	1600	0.94	-100	0.75	-500
D - Drywall	1600	0	0	0	0	0	0
E - Paint	1200						
Totals	10800	7500	8000	0.924	-500	0.917	-500
				CPI<1 = Over budget	CV<0 = Over Budget	SPI<1= Behind Schedule	SV<0=Behind Schedule

*Figure 2: Earned Value Analysis Report*

Figure 2 represents a possible kitchen renovation project. Each WBS deliverable has been calculated according to the percentage of each task completed compared against the actual and planned costs. From the report given, the project is over budget and behind schedule. Based on the cost per day estimated during the original project plan, the report indicates that cost and time have been exceeded.

To ensure each stakeholder understands the meaning of the numbers, it can be expressed as time and cost accrued per day of a given task, compared to the budgeted amount expected by the same reporting point. Figure 3, represents a simple flow chart indicating the process in days and cost per day, compared to the percentage of task completed at the time the report or analysis was completed.

Activity	Predesseor	Duration (days)	Cost / day	Total Cost
A - Kitched Demolition	-----	4	1000	4000
B - Plumbing	A	4	500	2000
C - Electrical	A	4	500	2000
D - Drywall	B, C	2	800	1600

*Figure 3: Activity Flow and Budgeted Cost / Day*

Figure 4, represents the actual percentage of activity completed at the time of reporting. This percentage is used to calculate the earned value based on the original budgeted cost/day and the number of days scheduled by activity.

Report after end of day 8		
Activity	Actual % Complete	Incurred Cost
A	100	4000
B	100	2400
C	75	1600
D	0	0

Figure 4: Percentage of Activity Complete at Time of Report

Figure 5, represents a simplistic view of the activities A, B, C, and D as they relate to each other in the process and how much of their activity was originally scheduled to be completed by the reporting date. The figure indicates that activities A, B, and C should have been completed in preparation for the accomplishment of Activities D, E, and beyond.

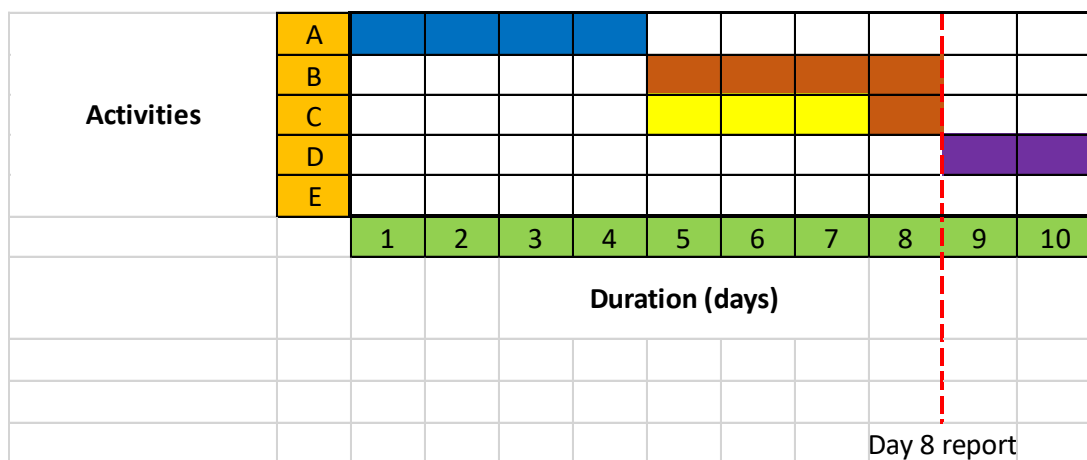


Figure 5: Flow Chart w/ Predecessors

Figure 6, represents each activity from the standpoint of Actual Cost of Work Performed, Budgeted Cost of Work Performed, Budgeted Cost of Work Scheduled, and their associated cost and schedule performance. From the calculations taken, the overall status of the project is behind schedule and over budget. Some tasks did make their targeted budgets and schedule, but as a whole, concentration needs to be made on those activities that have slipped in cost and time.

Activity	ACWP	BCWP	BCWS	CPI	CV	SPI	SV
A	4000	4000	4000	1	0	1	0
B	2400	2000	2000	0.83	-400	1	0
C	1600	1500	2000	0.94	-100	0.75	-500
D	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
Total to Date	8000	7500	8000	0.9375	-500	0.9375	-500
	CPI= BCWP/ACWP			SPI=BCWP/BCWS			
	CV=BCWP-ACWP			SV=BCWP-BCWS			

*Figure 6: Schedule and Cost Performance*

In conclusion, the reporting of earned value provides each stakeholder with a picture of how each activity, and the project overall, is doing from a cost and schedule point of view. This information makes it possible for project management and key stakeholders to monitor and control the project life cycle process and makes the adjustments necessary to ensure the project budget and timeline are maintained.

## References

- Brandon, D. (1998, June 1998). Implementing Earned Value Easily and Effectively. *Project Management Journal*, 29(2), 11-18. Retrieved from <http://www.pmi.org/learning/library/implementing-earned-value-completion-cost-5390>
- Dow, W., & Taylor, B. (2015). *Project Management Communication Tools*. Renton, WA: Dow Publishing LLC.