

Figure 5-1

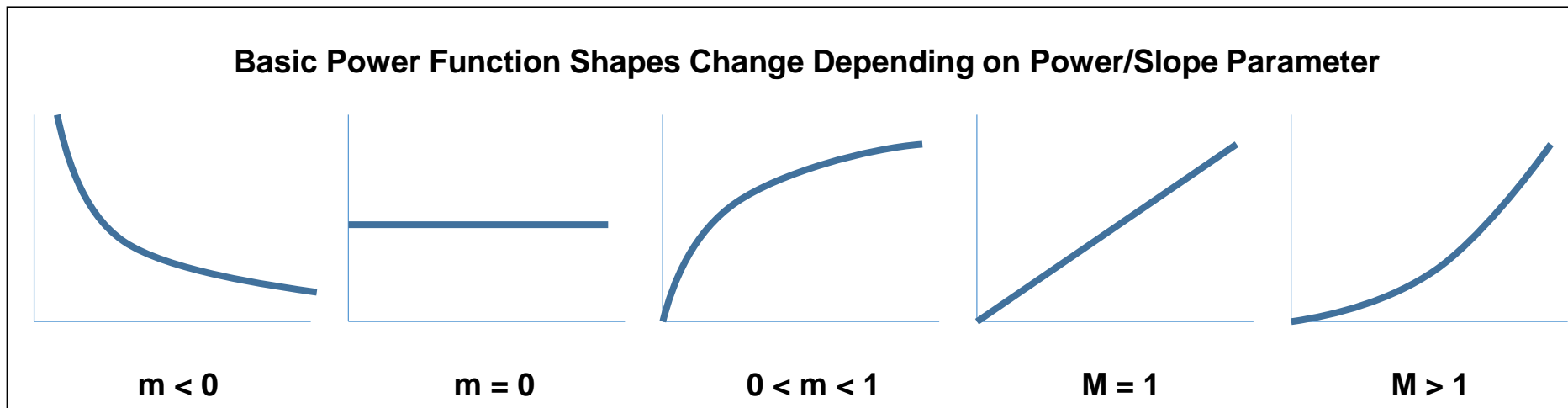


Figure 5-11

y-Axis Scale	Logarithmic y	Exponential Function $\log(y) = M x + C$	Power Function $\log(y) = M \log(x) + C$
	Linear y	Linear Function $y = m x + c$	Logarithmic Function $y = M \log(x) + C$
		Linear x	Logarithmic x
		x-Axis Scale	

Figure 5-16

Random-Start Bisection Method for Determining an Offset Adjustment

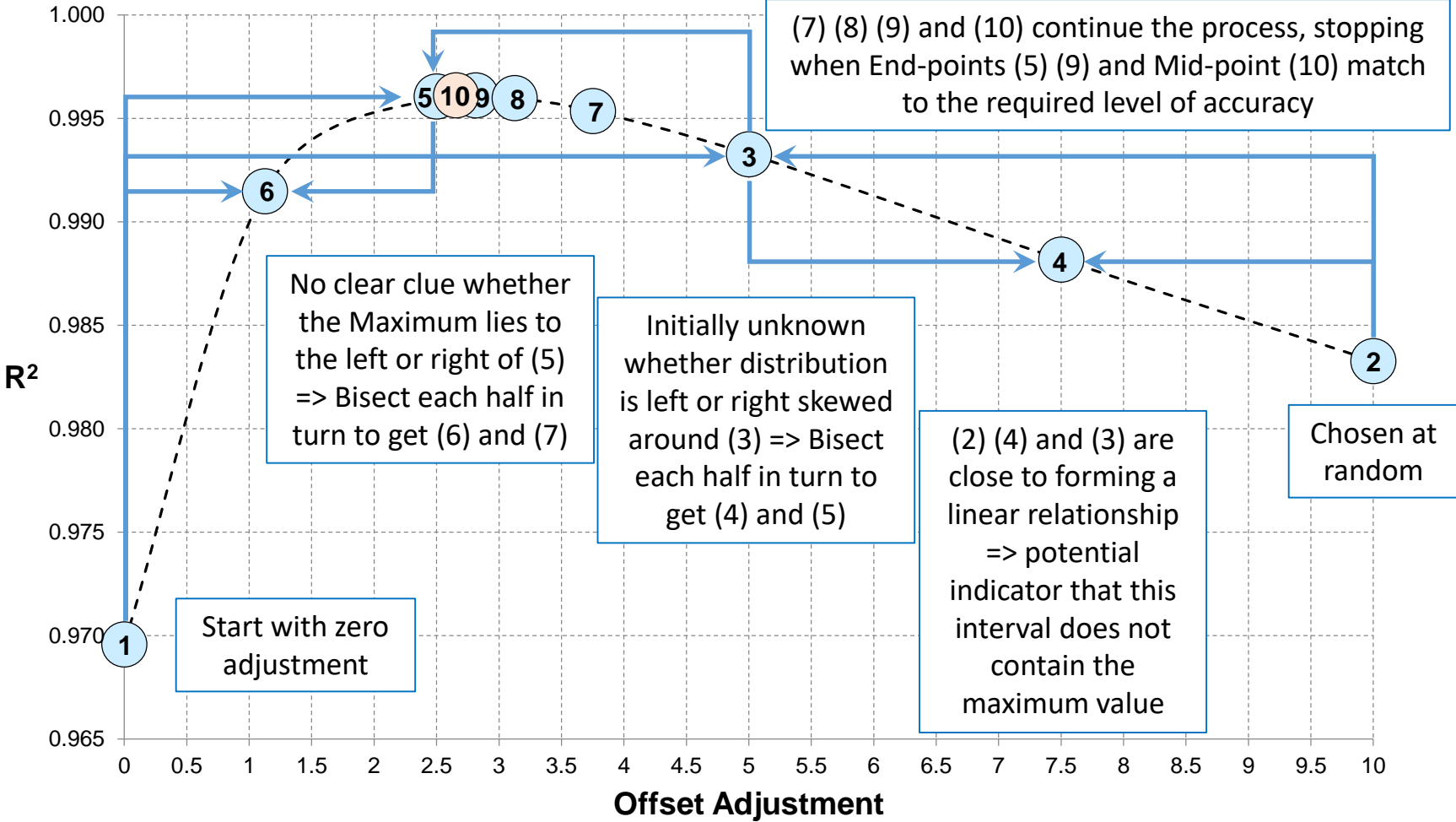


Figure 5-31

Generalised Logarithmic Function Data			
x	Offset x	Log Offset x	y
1	3.6563	0.5630	1
2	4.6563	0.6680	2
3	5.6563	0.7525	3
4	6.6563	0.8232	4
5	7.6563	0.8840	5
7	9.6563	0.9848	7
12	14.6563	1.1660	9
17	19.6563	1.2935	11
22	24.6563	1.3919	12
27	29.6563	1.4721	13

Bisection Algorithm Results		
Step	Offset	R ²
1	0	0.9696
6	1.125	0.9915
5	2.5	0.9961
10	2.65625	0.9961
9	2.8125	0.9961
8	3.125	0.9960
7	3.75	0.9954
3	5	0.9933
4	7.5	0.9882
2	10	0.9833

} > Convergence

Step	Offset	R ²
10	2.65625	0.99613

↑ ↑ ↓ ↓ ↓

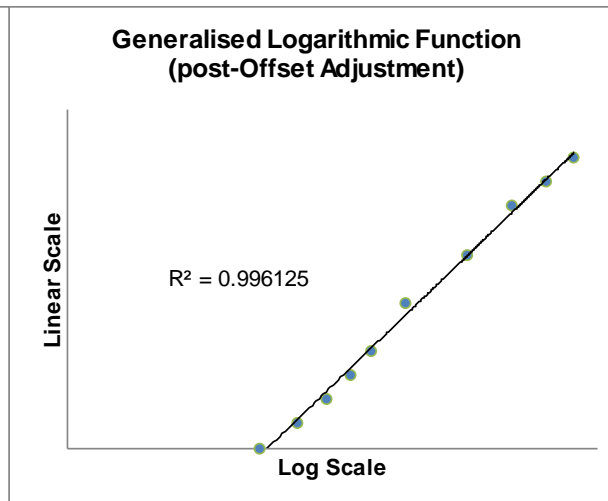
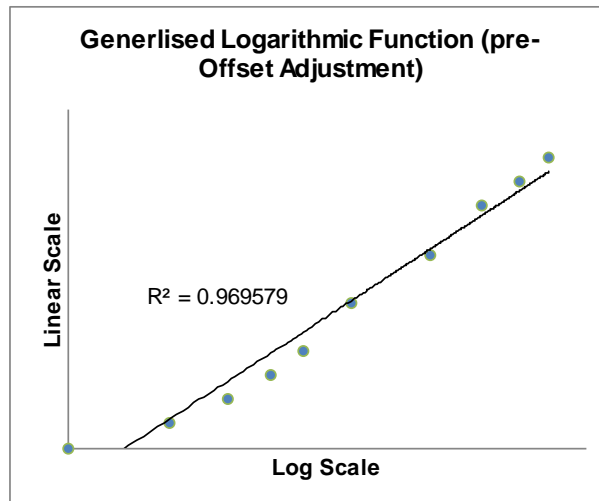


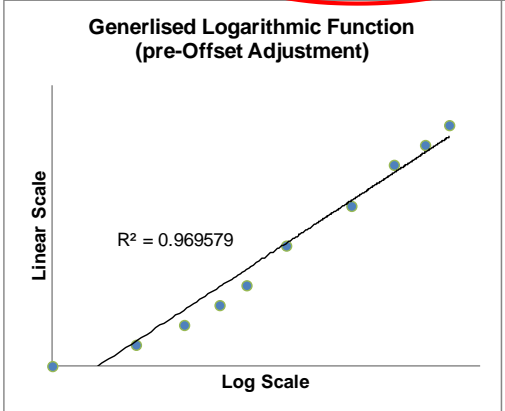
Figure 5-32

Using Microsoft Solver to Find the Best Fit Offset Adjustment for a Generalised Logarithmic Function

Generalised Logarithmic Function Data			
x	Offset x	Log Offset x	y
1	1	0.00000	1
2	2	0.30103	2
3	3	0.47712	3
4	4	0.60206	4
5	5	0.69897	5
7	7	0.84510	7
12	12	1.07918	9
17	17	1.23045	11
22	22	1.34242	12
27	27	1.43136	13

Offset	R ²
0	0.96958

Solver Variable > 0 < Solve



Solver Parameters

Set Objective:

To: Max Min Value Of:

By Changing Variable Cells:

Subject to the Constraints:

Constraint set to prevent the Offset Adjustment creating the Log of a Negative Number in the "Log Offset x" data

Make Unconstrained Variables Non-Negative

Select a Solving Method:

Solving Method
Select the GRG Nonlinear engine for Solver Problems that are smooth nonlinear. Select the LP Simplex engine for linear Solver Problems, and select the Evolutionary engine for Solver problems that are non-smooth.

Figure 5-33

Generalised Logarithmic Function Data			
x	Offset x	Log Offset x	y
1	3.6563	0.5630	1
2	4.6563	0.6680	2
3	5.6563	0.7525	3
4	6.6563	0.8232	4
5	7.6563	0.8840	5
7	9.6563	0.9848	7
12	14.6563	1.1660	9
17	19.6563	1.2935	11
22	24.6563	1.3919	12
27	29.6563	1.4721	13

Offset	R ²
2.65625	0.99613

Solver Variable >

< Solver Target to Maximise

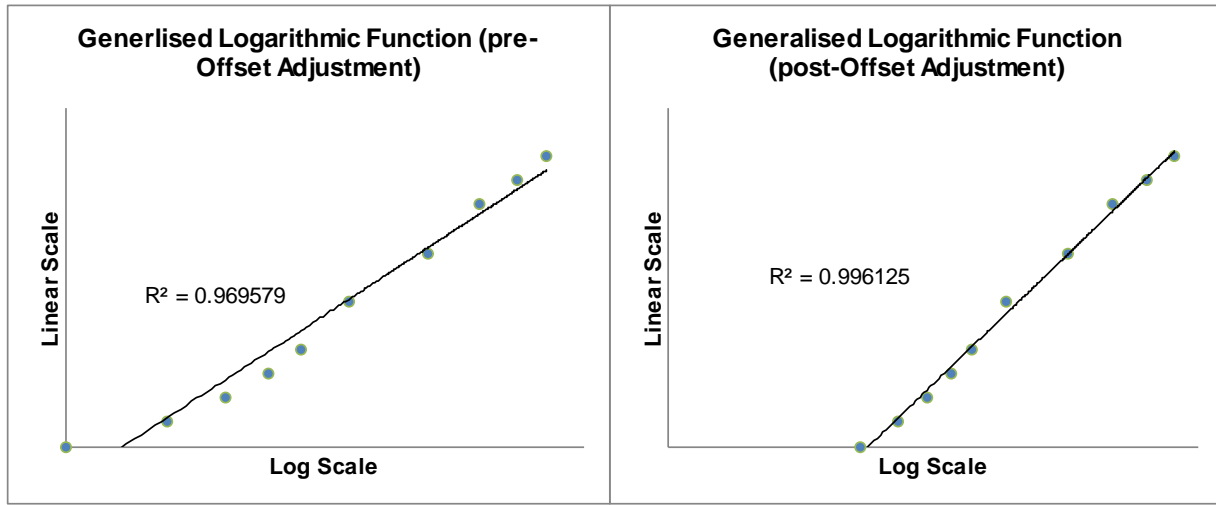


Figure 5-34

Earned Value Management Terminology

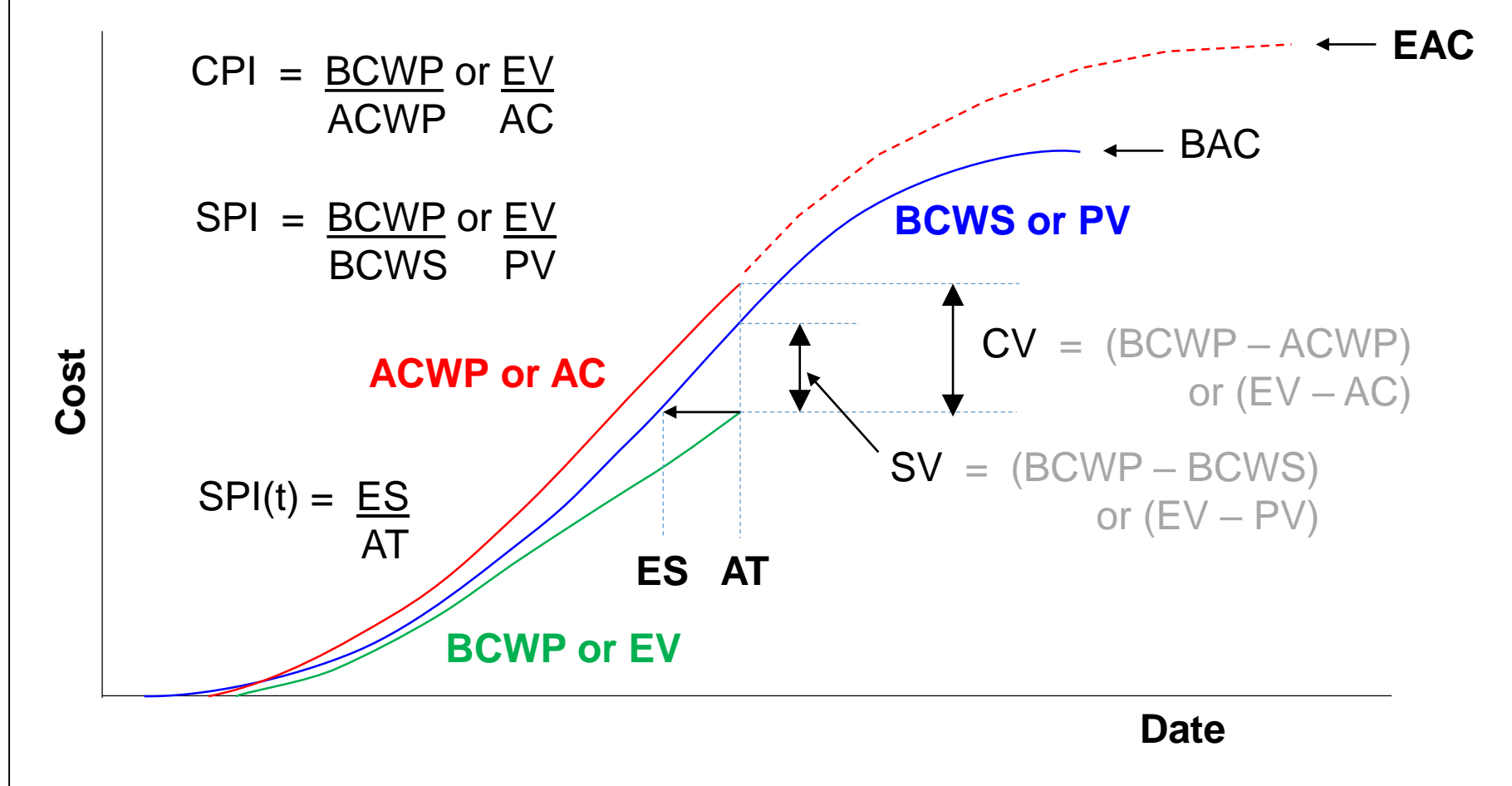
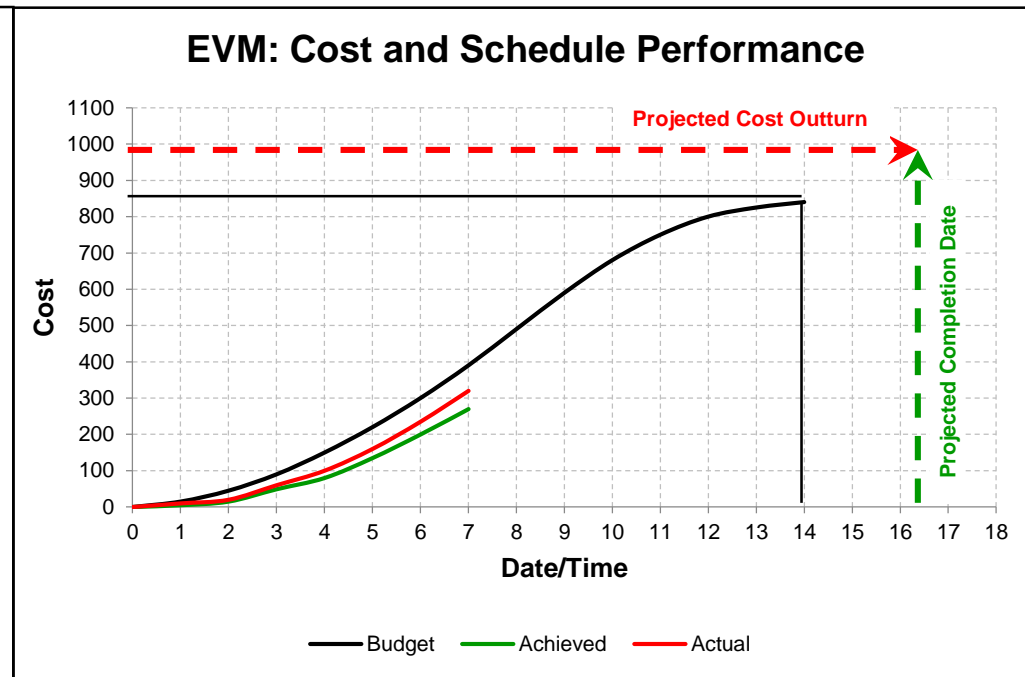
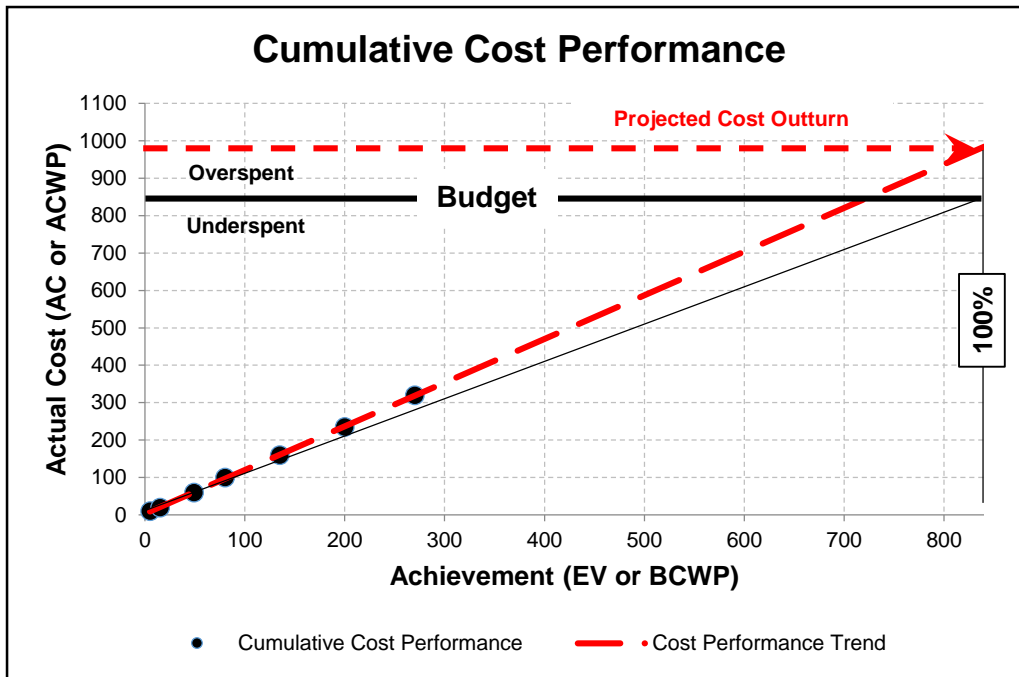


Figure 5-37



It is often helpful to re-construct the EVM chart as the intersection of the Cost Performance and Schedule Performance Trend graphs placed to the left or right, and above or below as shown in order to substantiate the calculated EAC and corresponding projected completion date.

Although not shown here, it is possible to profile the “journey” from the latest position to the EAC based on the two individual Performance Trend graphs.

Figure 5-40

