

## Enabling **Earned Value Management** for Your Maturing Project Management Organization

*The next destination on your Clarity PPM Roadmap?*

### **Earned Value Management (EVM)**



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# Earned Value Management (EVM)

- ∅ Earned Value Management (EVM) is a statistical operation for performance measurement that compares the project's present actuals against what was planned.
  
- ∅ For example, EVM may compare the length of time a task would take, according to a baseline budget plan, to the actual length of time it took, while capturing the metrics in Clarity PPM for performance measurement in key areas:
  - ∅ Schedule performance (current schedule vs baseline schedule)
  - ∅ Budget performance (current cost versus budgeted cost)
  
- ∅ This presentation is offered as a framework for preparation, and best practices, and provides guidance for setting up Clarity PPM in the browser/UI for Earned Value Management and Analysis.



# Project Life Cycle Context

- 1. Plan the Project (task /assignment/ETC)**
- 2. Baseline /Budget the Project**
- 3. Execute the Project /Monitoring and Controlling**
  - ∅ **Schedule Status Updates**
  - ∅ **Cost Budget Status Updates**
  - ∅ **Risk /Issues Updates**
  - ∅ **Project Team Status Updates**
  - ∅ **Scope and Quality Status Updates**
  - ∅ **Project Performance Metrics**
    - **Earned Value Management**

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# Earned Value Management

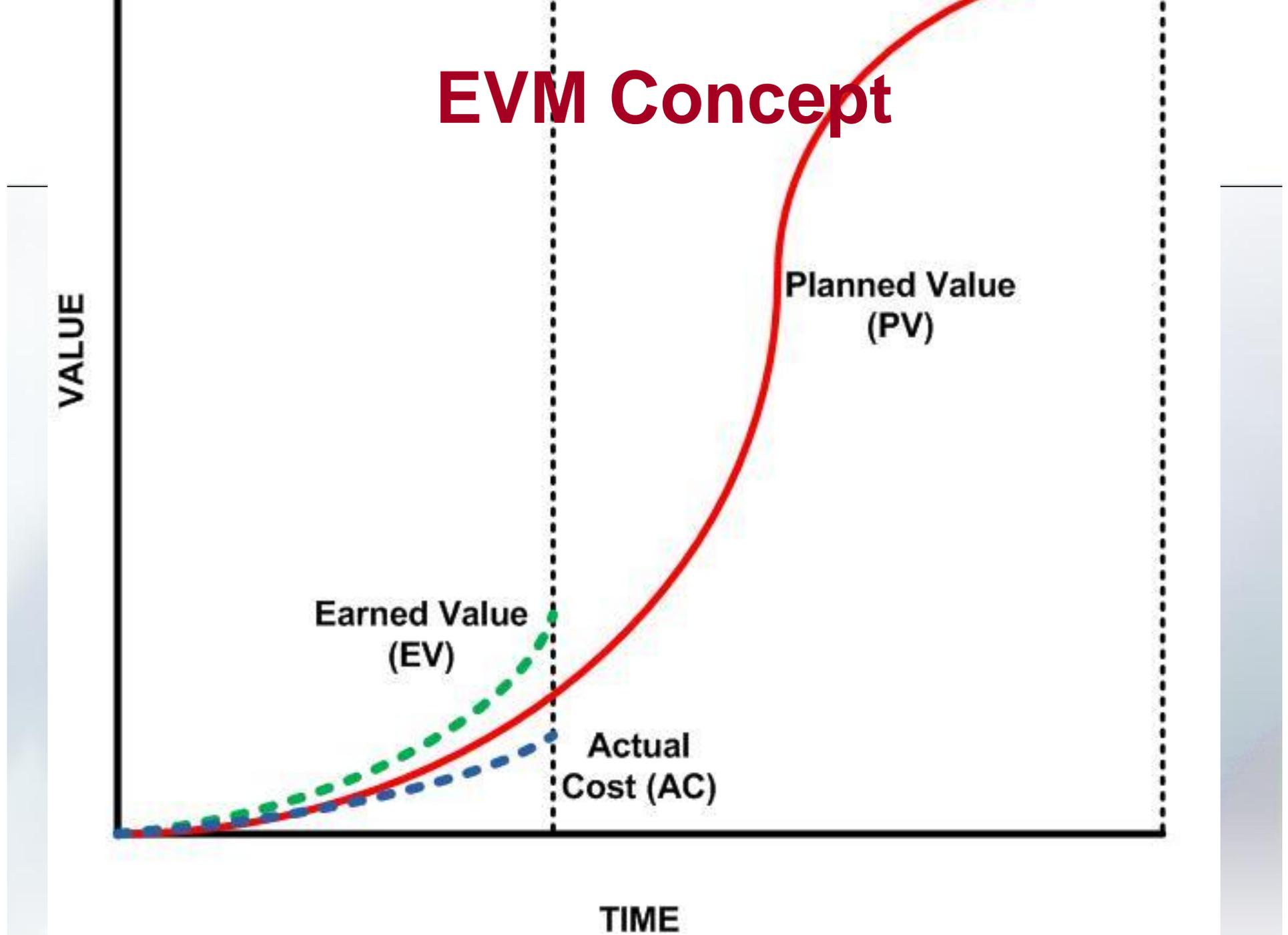
**A method of measuring  
project performance**

**It compares the amount of work that was planned  
with what was actually accomplished to  
determine if cost and schedule  
performance is as planned**



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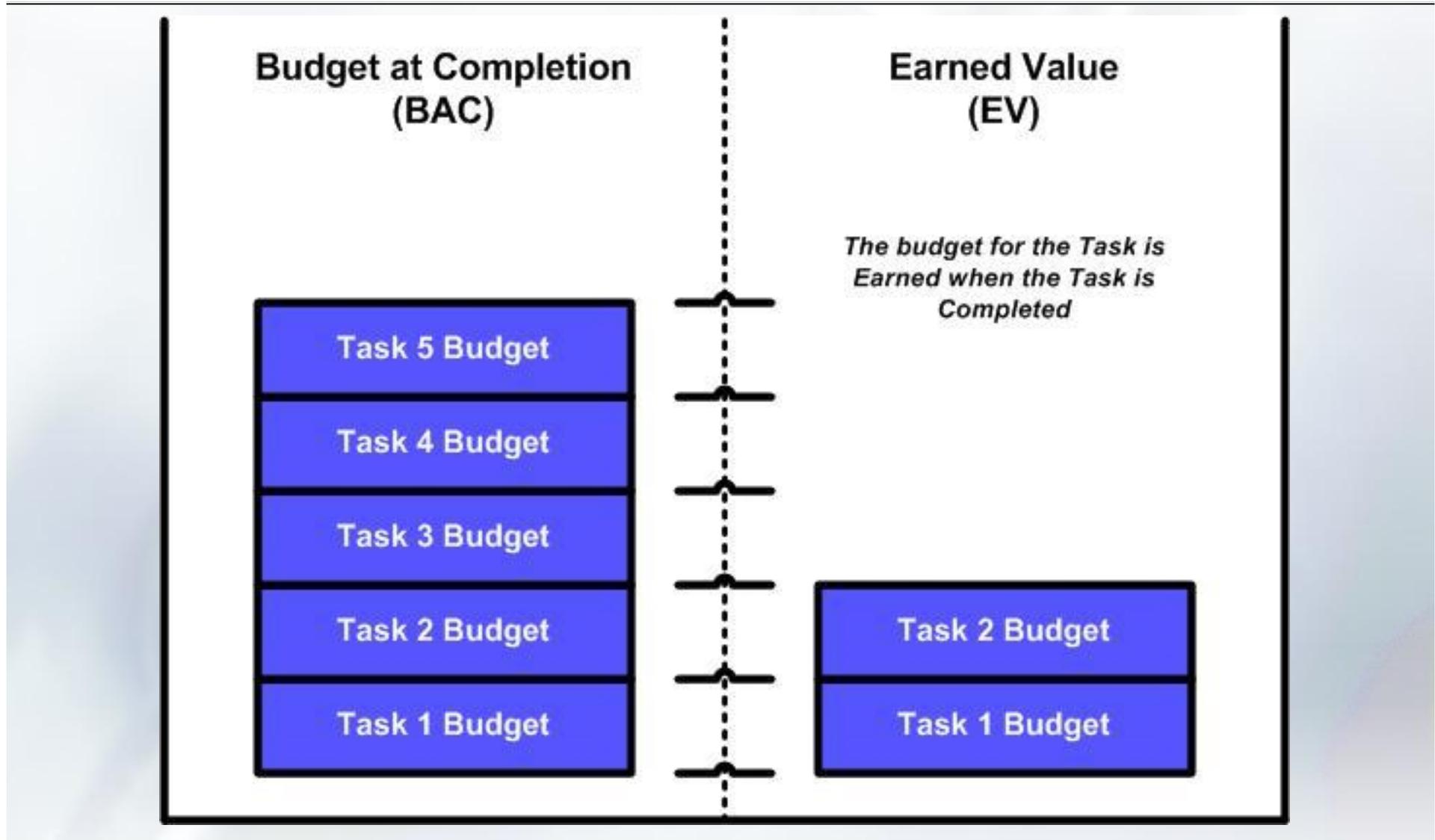
# EVM Concept



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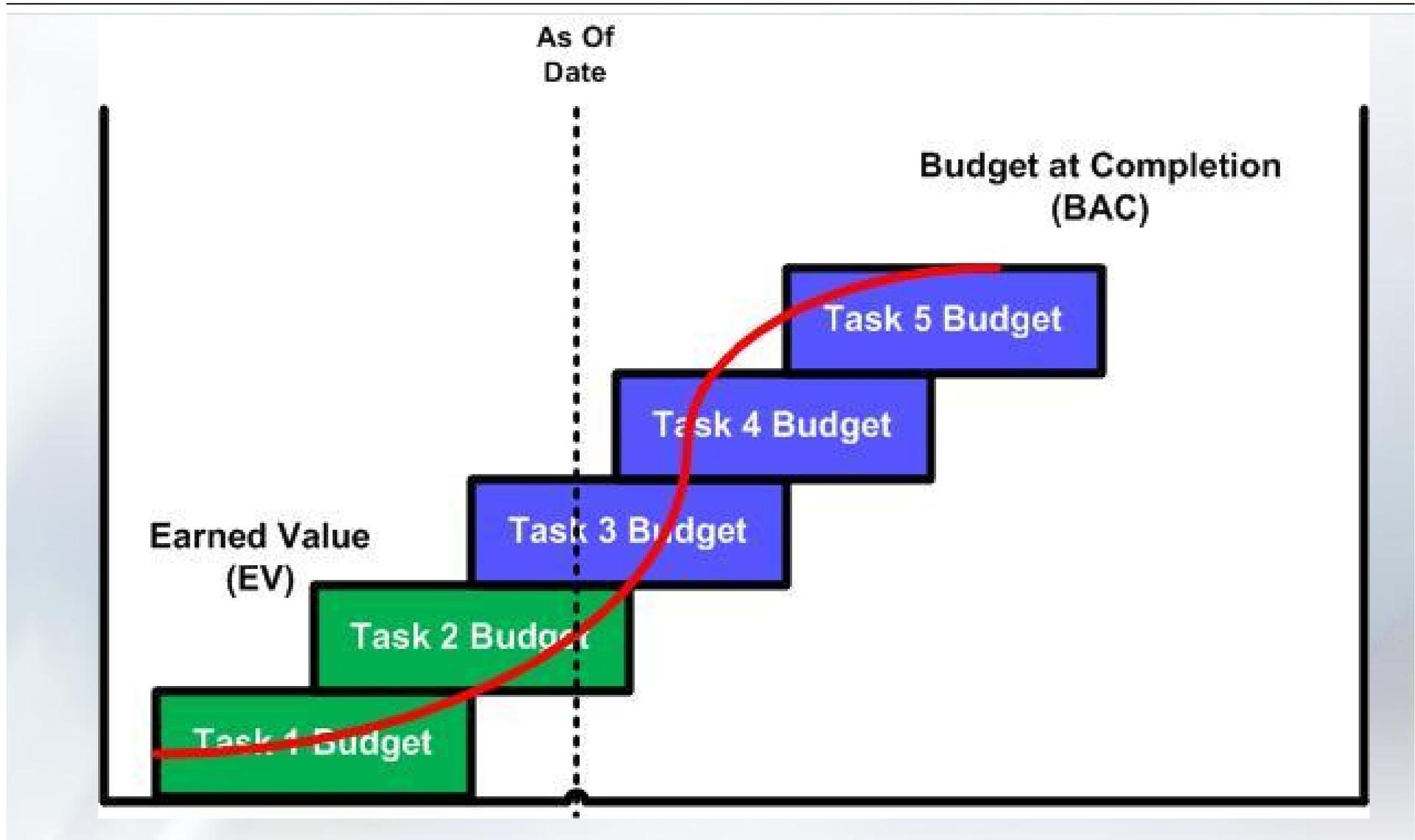
# EVM Concept



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# EVM Concept



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# The Language of EVM

PMI TERM	CLARITY TERM	ACRONYM	DEFINITION
Planned Value	Budgeted Cost of Work Scheduled	PV BCWS	Is the authorized budget assigned to the work to be performed.
Earned Value	Budgeted Cost of Work Performed	EV BCWP	Is the value of work performed expressed in terms of the budget assigned.
Actual Cost	Actual Cost of Work Performed	AC ACWP	Is the total actual cost incurred in accomplishing the work.
Budget at Completion	Budget at Completion	BAC	Is the total budget for the project.

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# The Language of EVM

PERFORMANCE INDICATOR	ACRONYM	FORMULA
Cost Variance	CV	$CV = EV - AC$ $= BCWP - ACWP$
Cost Performance Index	CPI	$CPI = EV / AC$ $= BCWP / ACWP$
Schedule Variance	SV	$SV = EV - PV$ $= BCWP - BCWS$
Schedule Performance Index	SPI	$SPI = EV / PV$ $= BCWP / BCWS$

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# Project Analysis

## PERFORMANCE

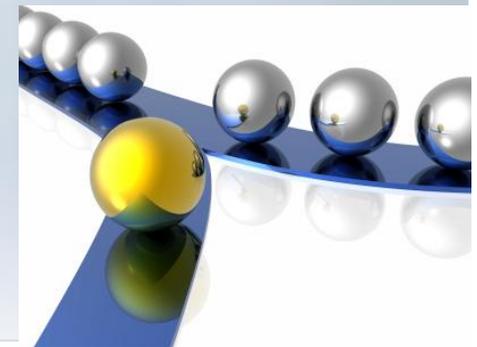
CPI < 1 => 1 **GOOD**

SPI < 1 **BAD** => 1 **GOOD**

## VARIANCE

CV - **BAD** + **GOOD**

SV - **BAD** + **GOOD**





# Clarity Configuration

Refer to Free White Paper





# Clarity PPM – EVM Setup

- ∅ Rate Matrix for Projects and Resources
- ∅ Time Tracking
- ∅ Baselined Projects
- ∅ Earned Value Time Period(s) defined

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# Earned Value Attributes

- ∅ Project As Of Date
- ∅ Earned Value Calculation Method
- ∅ Task % Complete

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# Clarity PPM – EVM Jobs

- ∅ DataMart, Timeslices, and Rate Matrix
- ∅ Post Timesheets
- ∅ Update Hierarchy Data
- ∅ Investment Allocations
- ∅ Update Earned Value Totals
- ∅ Update Earned Value Button on Baseline Page

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# Clarity PPM EVM Use Case



## Earned Value Management (EVM)





# Case – Week One

## Baseline Information

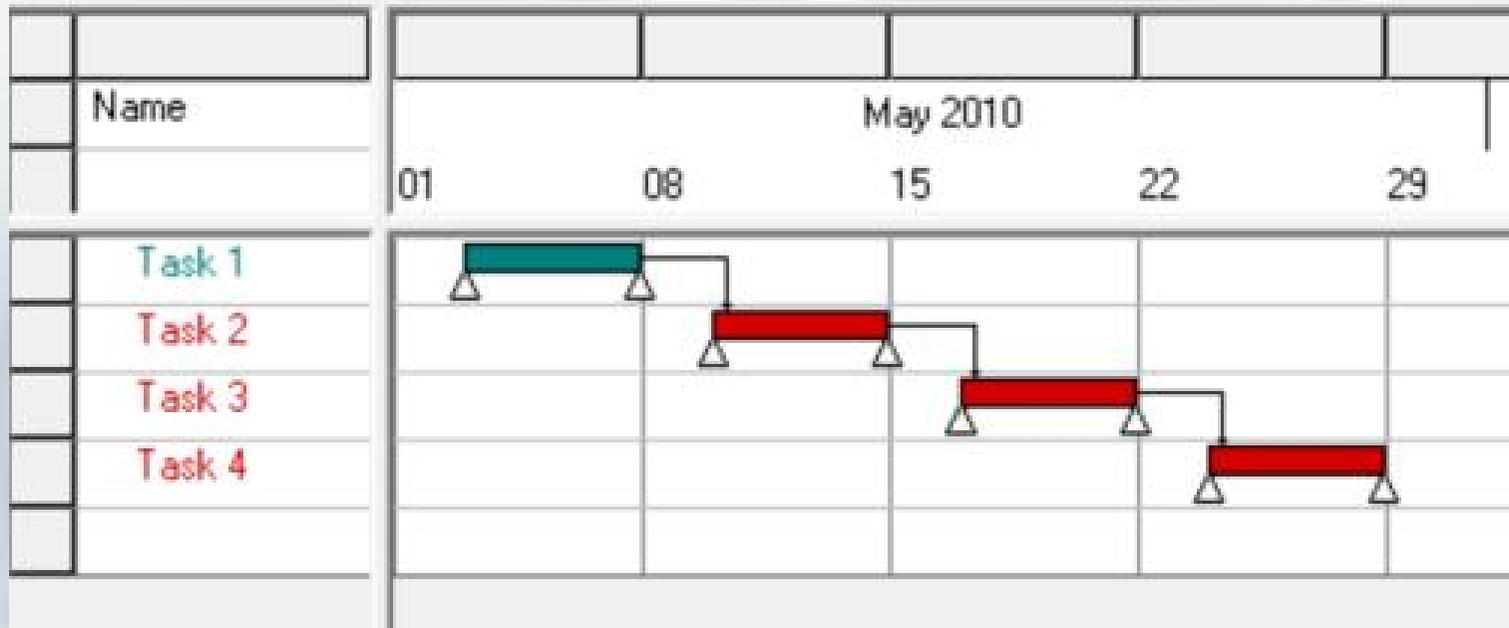
- ∅ 4 tasks
- ∅ 5 days duration each
- ∅ 1 Resource at 100% - 40 hrs /task
- ∅ Rate for Resource is \$100/hr
- ∅ Budget for each Task is \$4,000, Total = \$16,000

## Actual Performance at the end of week 1

- ∅ Task 1 complete at the end of week 1
- ∅ Actual hours spent at the end of week 1 = 50hrs



# Gantt View



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# Case Results – Week One

## EVM Calculations

- ∅ BCWS (Planned Value) = the budget after 1 week = 40hr x \$100 = \$4,000
- ∅ **BCWP (Earned Value) = the budget of Task 1 = \$4,000**
- ∅ ACWP (Actual Cost) = 50hr x \$100 = \$5,000

## Performance Calculations

- ∅  $CPI = BCWP / ACWP = \$4,000 / \$5,000 = .8$
- ∅  $CV = BCWP - ACWP = \$4,000 - \$5,000 = -1,000$
- ∅  $SPI = BCWP / BCWS = \$4,000 / \$4,000 = 1.0$
- ∅  $SV = BCWP - BCWS = \$4,000 - \$4,000 = 0$

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# Clarity UI View

As Of Date	6/4/2010	% Complete Calculation Method	Duration
* Progress	Started	( Changing this method will affect how Task % Complete is displayed and calculated. Changing % Complete method may affect your earned value metrics. )	
% Complete	25.00%		

<b>Tracking</b>	
Time Entry	<input checked="" type="checkbox"/>
Track Mode	Clarity
Charge Code	Expense

<b>Staffing</b>	
Default Staff OBS Unit	Requisition Approval Required

<b>Earned Value</b>			
Earned Value Reporting Period	Weekly EVM Periods JH	CPI	0.80
EV Calculation Method	Percent Complete	CV	-1,000.00
BCWP Override		SPI	1.00
BCWS	4,000.00	SV	0.00
BCWP	4,000.00		
ACWP	5,000.00		
BAC	16,000.00		

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# Case Project Analysis

## PERFORMANCE

CPI .8

$< 1$

**BAD**

SPI 1.0

$=> 1$

**GOOD**

## VARIANCE

CV -1000

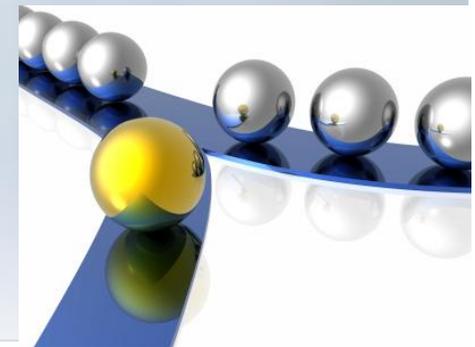
-

**BAD**

SV 0

$=+$

**GOOD**



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# Case Results – Week Two

## Baseline Information

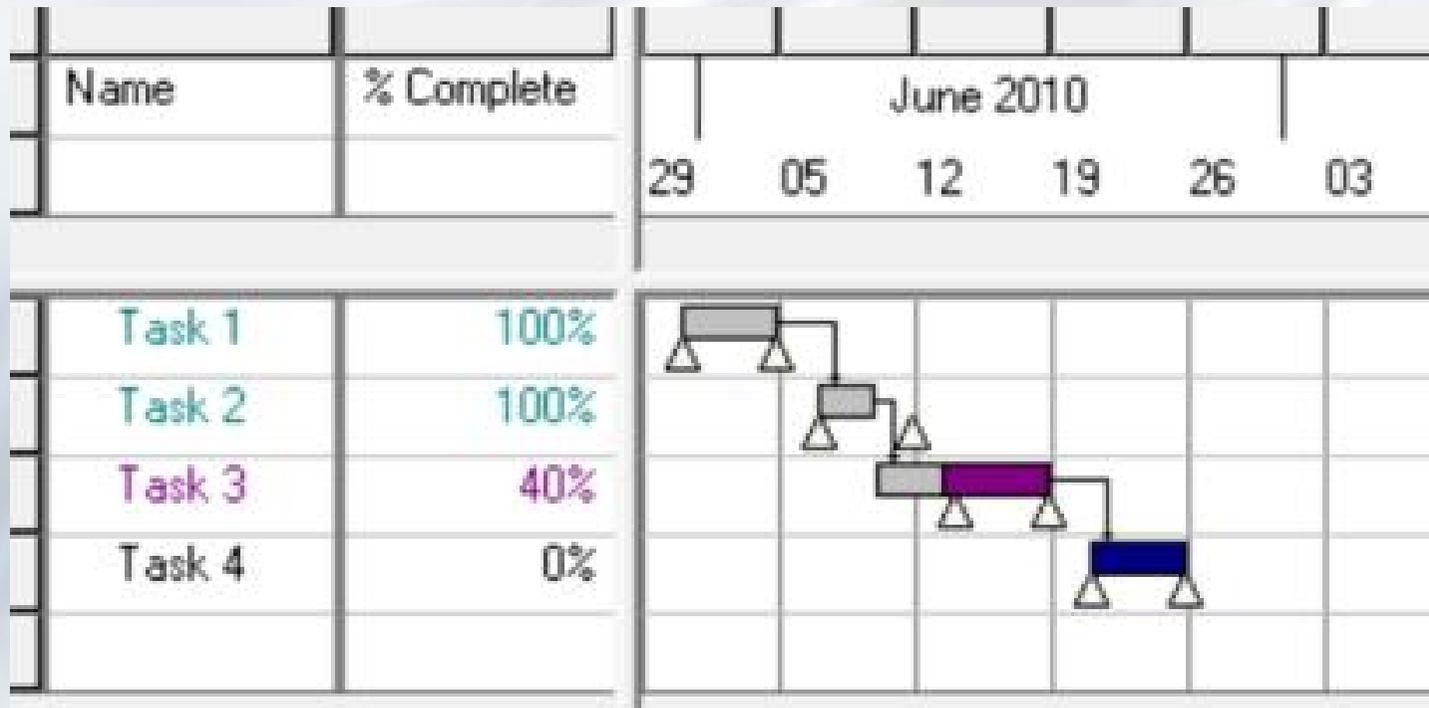
- ∅ 4 tasks
- ∅ 5 days duration each; 4 week project duration
- ∅ 1 Resource at 100% - 40 hrs/task
- ∅ Rate for Resource is \$100/hr
- ∅ Budget for each Task is \$4,000; Total = \$16,000

## Actual Status at the end of week 2

- ∅ Task 1 complete at the end of week 1; actual hours spent was 50 hrs
- ∅ Task 2 complete at the end of Day 8; actual hours spent was 24 hrs
- ∅ Task 3 started at the beginning of Day 9 and continued thru Day 10; actual hrs spent was 16 hrs



# Gantt View



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# Case Results – Week Two

## EVM Calculations

∅ BCWS (Planned Value) = the budget after week 2 = 40hr x \$100 x2 = \$8,000

∅ BCWP (Earned Value) = Task 1 budget = \$4,000 + Task 2 budget = \$4,000 + 2/5 of Task 3 Budget = \$1,600. Total Earned Value = \$9,600

∅ ACWP (Actual Cost) = 90hr x \$100 = \$9,000

## Performance Calculations

∅ CPI = BCWP / ACWP = \$9,600 / \$9,000 = 1.07

∅ CV = BCWP – ACWP = \$9,600 - \$9,000 = +600

∅ SPI = BCWP / BCWS = \$9,600 / \$8,000 = 1.2

∅ SV = BCWP – BCWS = \$9,600 - \$8,000 = +1,600



# Clarity UI View

As Of Date	6/11/2010		
* Progress	Started	* % Complete Calculation Method	Duration
% Complete	54.00%	( Changing this method will affect how Task % Complete is displayed and calculated. Changing % Complete method may affect your earned value metrics. )	
<b>Tracking</b>			
Time Entry	<input checked="" type="checkbox"/>		
Track Mode	Clarity		
Charge Code	Expense		
<b>Staffing</b>			
Default Staff OBS Unit		Requisition Approval Required	<input type="checkbox"/>
<b>Earned Value</b>			
Earned Value Reporting Period	Weekly EVM Periods JH	CPI	1.07
EV Calculation Method	Percent Complete	CV	600.00
BCWP Override		SPI	1.20
		SV	1,600.00
BCWS	8,000.00		
BCWP	9,600.00		
ACWP	9,000.00		
BAC	16,000.00		

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# Case Results – Project Analysis Week 2

## PERFORMANCE

### Actual Results

### Criteria

CPI

1.07

**GOOD**

< 1

**BAD**

SPI

1.2

**GOOD**

=> 1

**GOOD**

## VARIANCE

CV

+600

**GOOD**

-

**BAD**

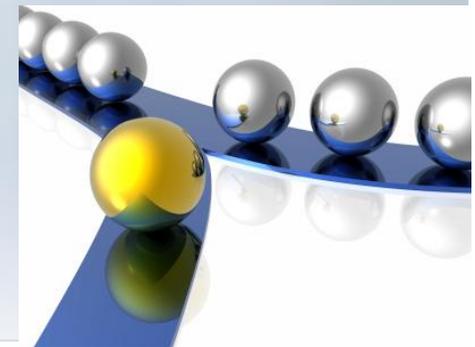
SV

+1,600

**GOOD**

=+

**GOOD**



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