4-6 October, Nationals Park, Washington DC

Project Partners℠

Earned Value Management: Getting Started

Project Controls EXPO
Washington, DC - USA

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2022

Getting Started
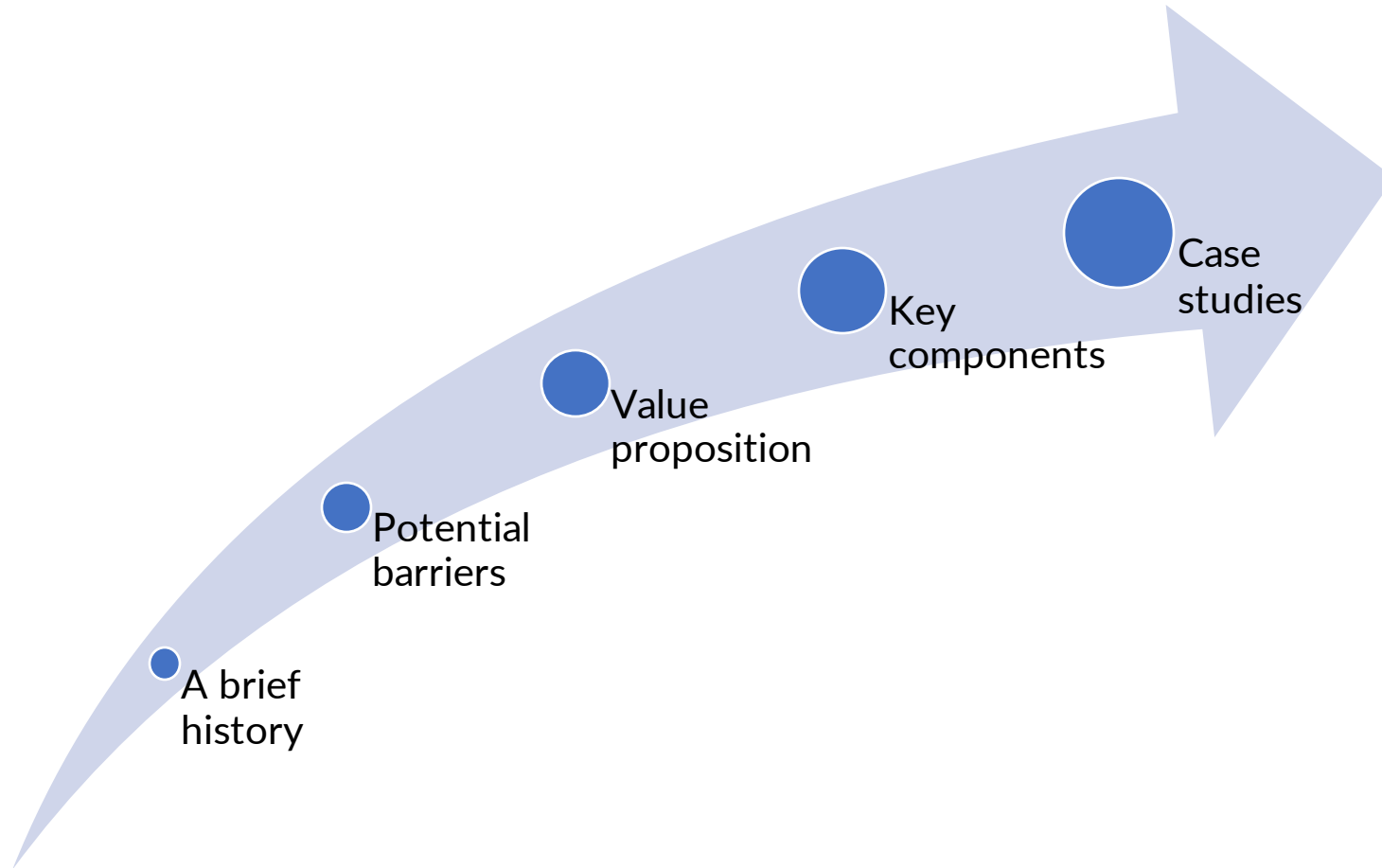
About me

- LT, USN Civil Engineer Corps (CEC) – 5 years
- General contractor- scheduler, estimator, quality control representative, other duties as assigned
- IT Project Management
  - CalPERS
  - Hewlett-Packard
- Oracle Primavera consultant – since 2006
- Former PMP and Current Certified Scrum Master
- 'Converted' EVM supporter

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A brief history

Industry Standards...starting with US DOD

1967: Cost/Schedule Control Systems Criteria (C/SCSC or CS2)

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50 Years of EVM

The Evolution of Earned Value Management

Written by: Wayne F. Abba | March 01, 2017

Defense Acquisition University (DAU) Magazine Blog post by Wayne F. Abba, dated March 1, 2017 (50 years of EVM)

Industry and Federal Guidelines

No shortage of policies, procedures, and guideline to implement an Earned Value Management system

EIA-748 Standard for Earned Value Management Systems (EVMS)

EIA-748 32 Guidelines

Etc...

ANSI/EIA-748-1998
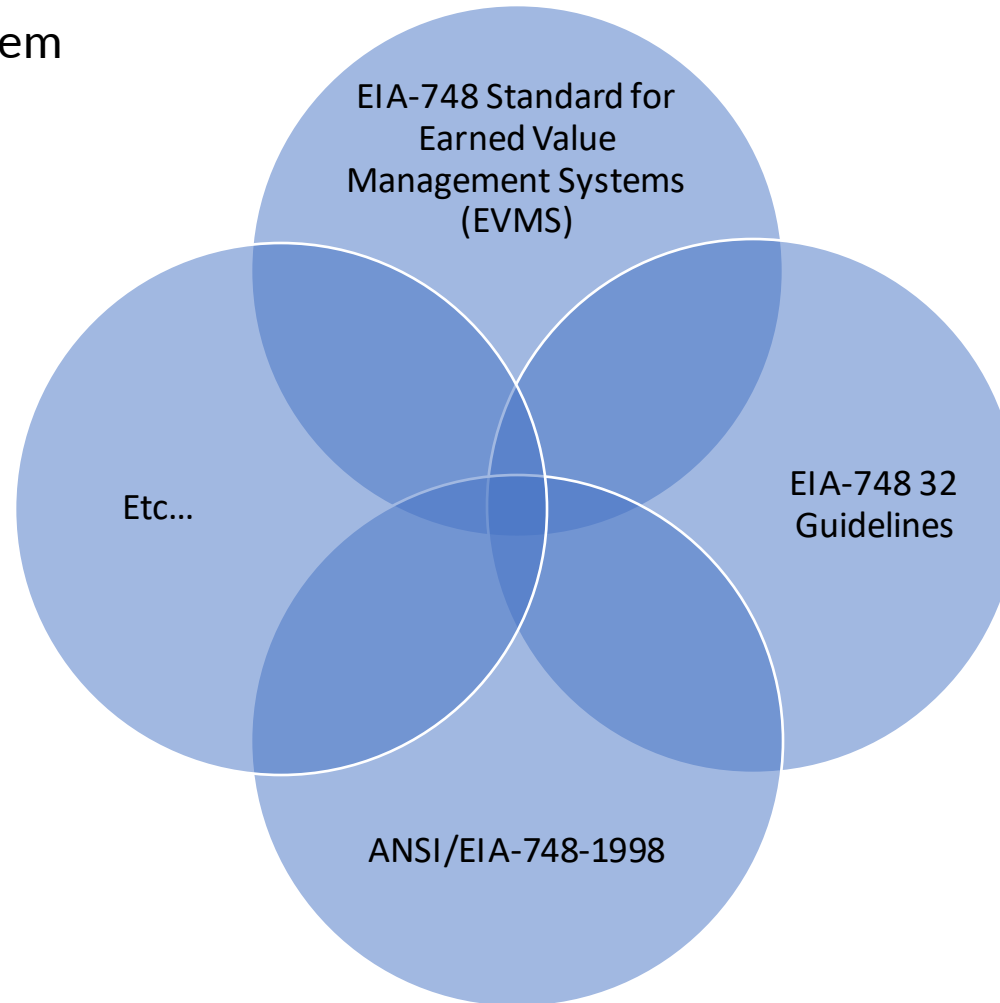
Earned Value Management Systems EIA-748-D Intent Guide

1. Define authorized work
2. Identify Program Organization Structure
3. Company integration of EVMS subsystems with Work Breakdown Structure (WBS)
4. Identify organization/function for overhead
5. Integrate WBS and Organization Breakdown Structure (OBS), create control accounts
6. Sequential scheduling of work
7. Identify interim measures of progress, i.e., milestones, products, etc.
8. Establish a time-phased budget
9. Identify significant cost elements within authorized budgets
10. Identify discrete work packages
11. All work package budgets & planning packages sum to control acct
12. Identify and control LOE budgets
13. Establish overhead budgets by organization element
14. Identify management reserve and undistributed budget
15. Reconcile program target cost goal with the sum of all internal budgets
16. Record direct costs from the accounting system
17. Summarize direct costs into WBS without allocation
18. Summarize direct costs into OBS without allocation
19. Record indirect costs
20. Identify unit costs, equivalent units costs, or lot costs
21. Accurate material cost accumulation by control accounts; EV (Earned Value) measurement at right time; full accountability of material
22. Control account monthly summary, identification of Cost Variance (C), and Schedule Variance (SV)
23. Explain significant variances
24. Identify and explain indirect cost variances
25. Summarize data elements and variances through WBS/OBS for mgmt.
26. Implement management actions as a result of EVM analysis
27. Revise EAC (Estimate at Completion) based on performance data; calculate VAC
28. Incorporate authorized changes promptly
29. Reconcile budgets with prior budgets
30. Control retroactive changes
31. Prevent all but authorized budget changes
32. Document changes to Performance Measurement Baseline (PMB)

What happened?

Perfection supplanted 'good enough'

"EVM's original purpose—a timely, reliable management information system—is compromised to the extent it is redefined as an audit-oriented oversight system with punitive consequences for noncompliance."

Cited: Wayne F. Abba, DAU Magazine Blog dated March 2017

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Barriers to adoption

Our projects are too small for EVM

I don't understand these acronyms

We don't have reliable estimates

We don't have visibility to the actual costs

Our schedules are not realistic

I don't want to see 'red' on my projects

Our projects are too unpredictable

I don't have time for this

No one is asking for this information

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The EVM Difference

- Focus on 'where we're going' vs 'where we've been'
- EVM provides an indicator of project health
  - Indicator: a thing, especially a trend or fact, that indicates the state or level of something

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Key components

EVM as indicators: Use the results as 'indicators'
and adjust accordingly when there are downward trends in
performance – advance notice, ability to adjust, and time to adjust

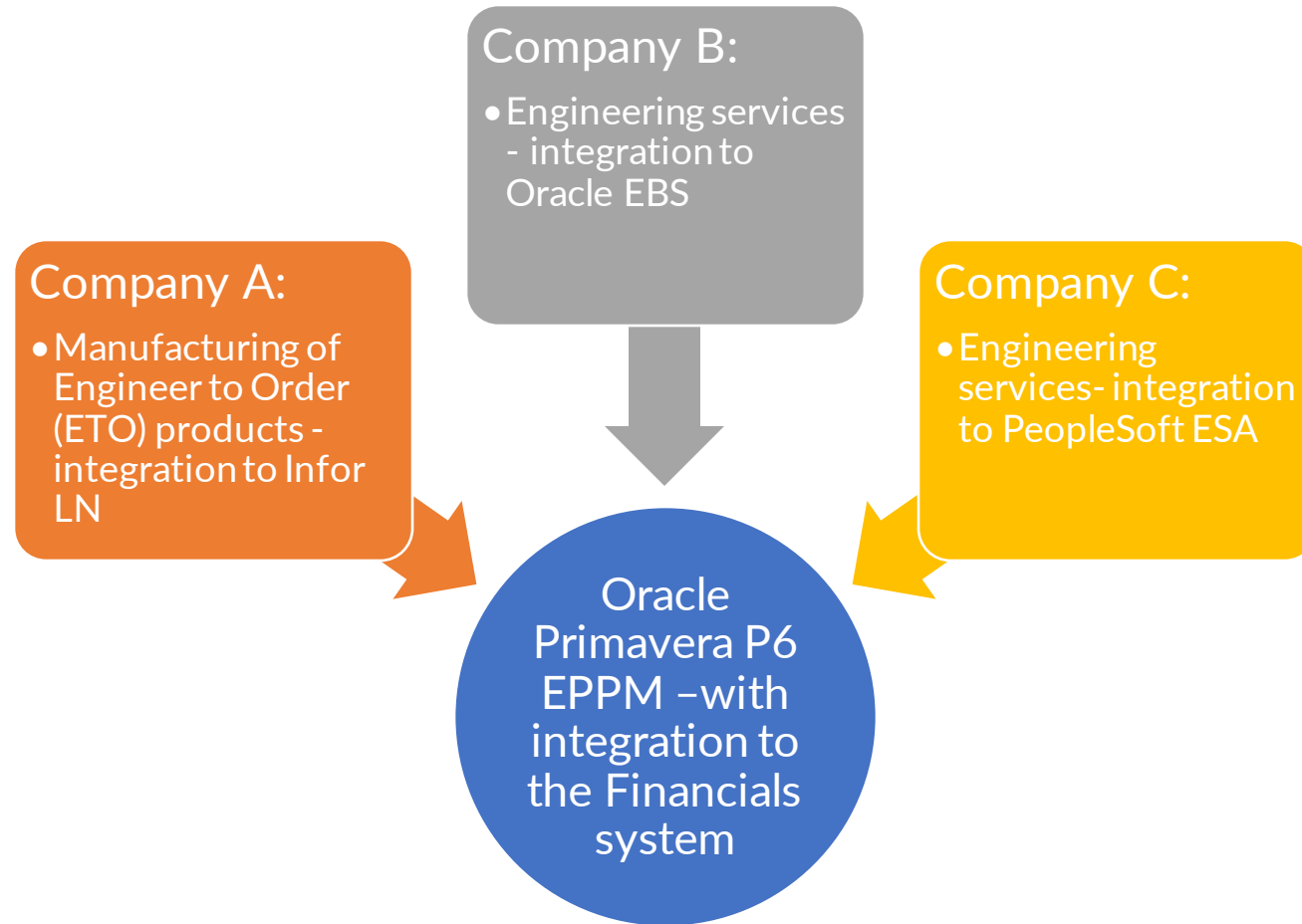| Work Breakdown Structure (WBS)	Schedule Baseline	Good estimates	Actual Costs	Schedule Progress and % Complete
Well defined project scope	Clearly defined activities and schedule logic	Resource/cost loading of activities	Method to capture actual costs on the planned work – timely and accurate	Method to capture schedule progress and % complete on the planned work – measurable progress

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Case Studies

Company B:
- Engineering services - integration to Oracle EBS

Company A:
- Manufacturing of Engineer to Order (ETO) products - integration to Infor LN

Company C:
- Engineering services- integration to PeopleSoft ESA

Oracle Primavera P6 EPPM –with integration to the Financials system
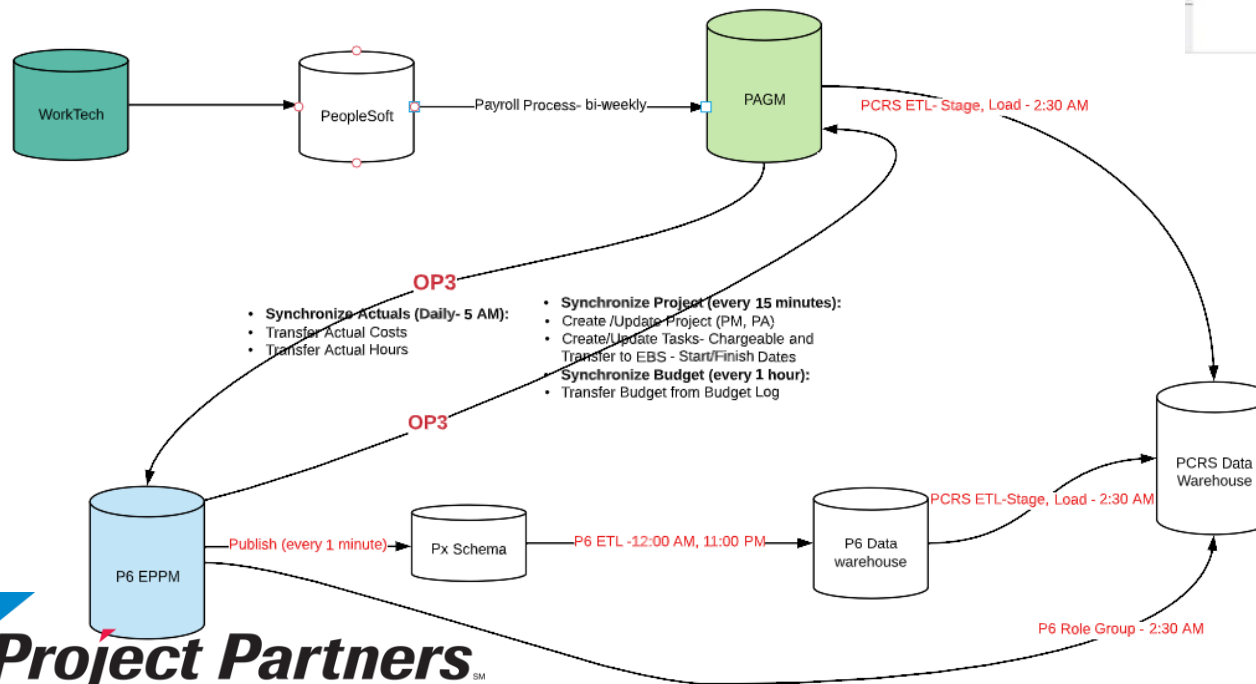
Company A

- Use P6 EPPM for planning, time reporting, and progress updates (including % complete)
- Transfer this information to Infor LN for costing
- Transfer this information back to P6 EPPM
- Generate reports in P6 and in Power BI
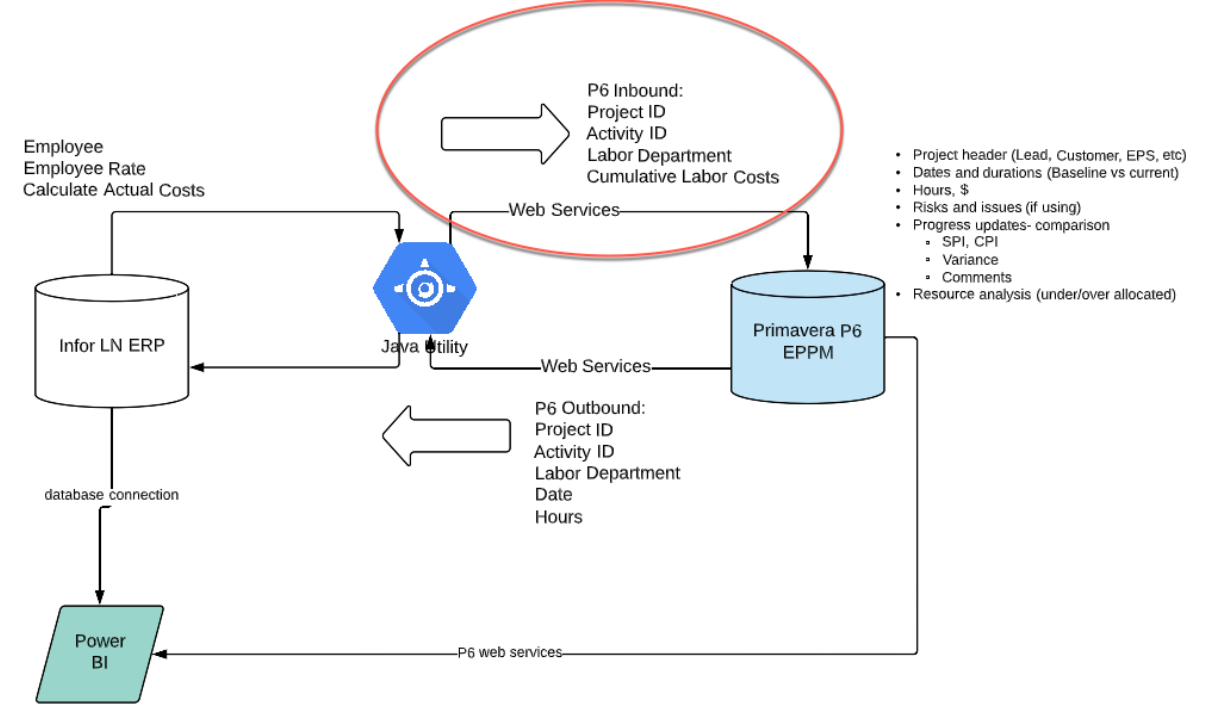
|	Start	Finish	Data Date	Planned Total Cost	Actual Labor Cost	Planned Value Cost	Earned Value Cost	Performance % Complete	Estimate To Complete	Estimate At Completion Cost	Cost Performance Index	CPI- Cost	Schedule Performance Index	SPI - Cost
	09-Apr-15	26-Nov-37		$13,534,196.38	$5,180,274.82	$6,818,324.02	$4,872,073.60	36.89%	$8,434,427.66	$13,615,071.47	0.94		0.71	
	19-Apr-18 A	16-Jan-23		$8,943,488....	$4,155,808....	$4,917,744.39	$3,983,572....	46.23%	$4,742,705....	$8,898,882....	0.96		0.81	
	04-Sep-18 A	24-Sep-21	26-Oct-20	$105,090.97	$66,651.00	$69,874.20	$66,885.97	68.55%	$17,411.00	$84,062.00	1.00	🟢 1.00	0.96	🟡 0.96
	02-Jan-19 A	04-Jun-21	26-Oct-20	$21,685.00	$14,699.80	$19,466.33	$7,601.00	35.05%	$7,020.00	$21,719.80	0.52	🔴 0.52	0.39	🔴 0.39
2	05-Jan-19 A	06-Jul-21	26-Oct-20	$315,047.40	$127,337.60	$260,584.77	$233,225.40	83.01%	$41,531.16	$169,207.01	1.83	🟢 1.83	0.90	🟡 0.90
	06-Apr-20 A	19-Aug-21	26-Oct-20	$20,926.00	$11,191.50	$18,711.98	$10,862.20	48.99%	$6,801.50	$17,993.00	0.97	🟡 0.97	0.58	🔴 0.58
	23-Jan-20 A	03-Feb-22	26-Oct-20	$212,986.53	$241,669.50	$71,777.40	$48,402.33	37.08%	$79,217.50	$320,887.00	0.20	🔴 0.20	0.67	🔴 0.67
...	19-Apr-18 A	27-Jan-22	26-Oct-20	$1,393,139.25	$1,095,285.60	$1,166,015.12	$1,127,121.74	82.29%	$242,562.08	$1,337,847.68	1.03	🟢 1.03	0.97	🟡 0.97
	20-Apr-20 A	14-Sep-21	26-Oct-20	$8,791.34	$3,060.00	$6,057.96	$2,658.00	30.18%	$5,788.34	$8,848.34	0.87	🟡 0.87	0.44	🔴 0.44
20	03-Apr-19 A	28-Jun-22	26-Oct-20	$437,174.53	$118,645.95	$122,839.75	$68,797.64	18.09%	$349,056.97	$467,702.92	0.58	🔴 0.58	0.56	🔴 0.56
	15-Mar-19 A	25-Feb-22	26-Oct-20	$233,408.51	$26,604.00	$153,321.85	$81,494.33	29.08%	$190,363.20	$216,967.20	3.06	🟢 3.06	0.53	🔴 0.53
...d	03-Feb-20 A	23-Jul-21	26-Oct-20	$28,566.00	$5,961.00	$18,645.42	$8,224.20	28.71%	$21,474.00	$27,435.00	1.38	🟢 1.38	0.44	🔴 0.44
A...	02-Dec-19 A	09-Aug-21	26-Oct-20	$280,733.00	$162,654.33	$168,269.13	$113,197.90	40.70%	$151,875.25	$314,529.58	0.70	🔴 0.70	0.67	🔴 0.67
...	17-Feb-20 A	23-Aug-21	26-Oct-20	$296,054.99	$270,815.10	$232,561.08	$174,739.69	59.46%	$119,785.09	$390,600.19	0.65	🔴 0.65	0.75	🔴 0.75
	02-Jan-20 A	31-Mar-21	26-Oct-20	$152,854.64	$132,016.70	$151,769.14	$129,767.64	82.24%	$12,483.50	$144,530.95	0.98	🟡 0.98	0.86	🟡 0.86
..	02-Mar-20 A	05-Nov-21	26-Oct-20	$255,458.00	$53,320.60	$72,716.83	$19,235.90	7.90%	$213,977.90	$267,298.50	0.36	🔴 0.36	0.26	🔴 0.26
	03-Feb-20 A	18-Dec-20	26-Oct-20	$25,174.00	$24,953.67	$25,174.00	$24,130.00	95.85%	$0.00	$24,953.67	0.97	🟡 0.97	0.96	🟡 0.96
	06-Mar-20 A	09-Jun-22	26-Oct-20	$356,464.28	$92,937.40	$121,976.21	$47,393.20	11.22%	$364,478.87	$457,416.27	0.51	🔴 0.51	0.39	🔴 0.39

Company B

- Use P6 EPPM for budgeting, timeline, and progress updates (including % complete)
- Transfer task information to EBS
- Collect costs in EBS and transfer to P6
- Transfer data to data warehouse for Cognos reporting

Company C

- Use P6 EPPM for planning (based on resource, bill rates, and estimated bill amounts) and progress updates (including % complete)
- Transfer the activities and assigned employees to Financial system for time reporting
- Transfer worked hours and billing amounts to P6 EPPM
- Generate reports in P6 and Primavera Analytics
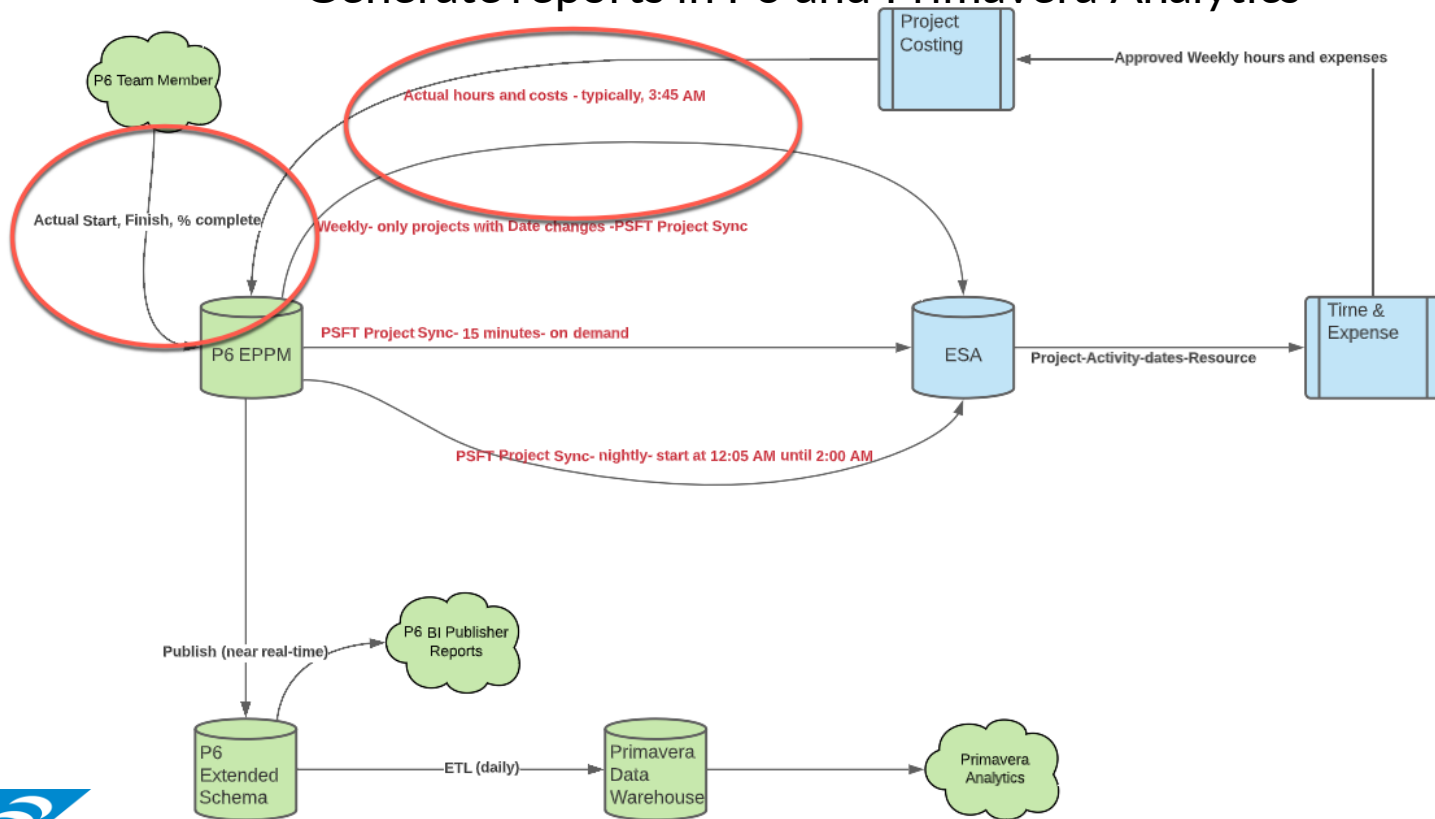
Key Reminders
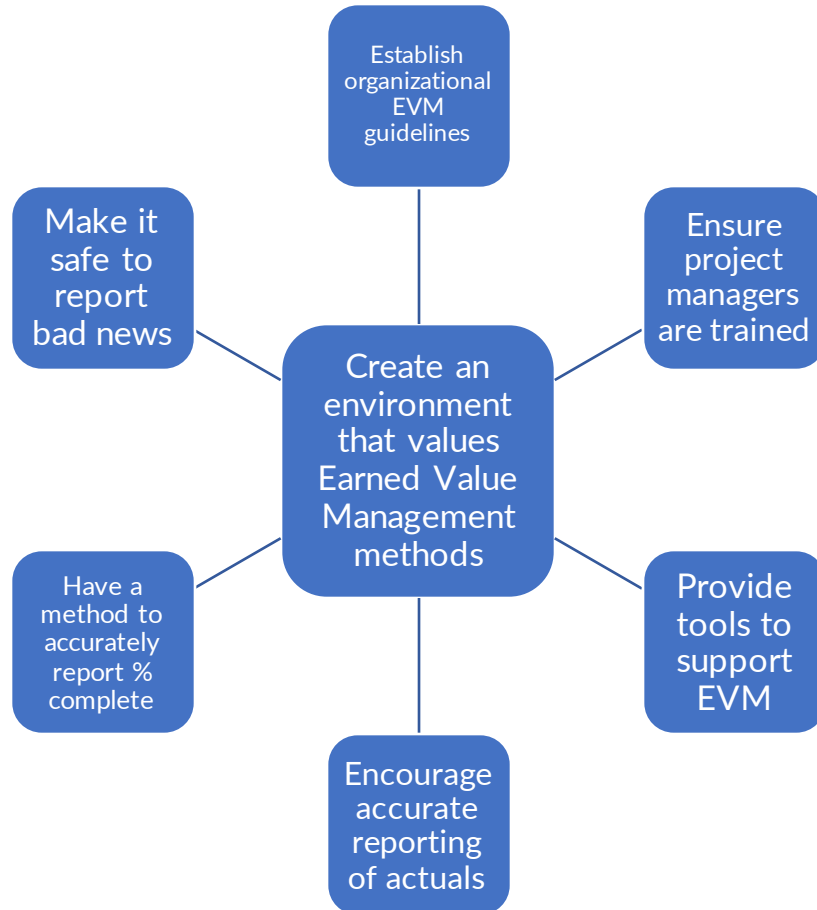
- Well defined project scope – Work Breakdown Structure (WBS)

- Clearly defined activities and schedule logic - established baseline

- Resource/cost loading of activities – 'good estimates' - established baseline

- Method to capture actual costs on the planned work – timely and accurate

- Method to capture schedule progress and % complete on the planned work – measurable progress

- Use the results as 'indicators' and adjust accordingly when there are downward trends in performance – advance notice, ability to adjust, and time to adjust

Questions?

Transforming Project-Centric Organizations

Project Partners has provided business transformation services and software solutions for project-driven organizations for well over 25 years. Due to our deeply unique knowledge of project-based industries, and the exceptional work of our 100+ global team of senior consultants/personnel, we are known for and are highly recognized as the worlds' leading experts in enabling Project Financials and Project Executions Applications for Project Organizations.

- ✓ Leveraging our 25-year heritage, **founded in 1997** by the former chief architect of **Oracle EBS Projects** who is widely regarded as the expert source for project solutions, we currently service over **400 clients** worldwide
- ✓ Leading Experts in **End-to-End ERP** Processes and Systems incl. Financials, PtoP, Projects, and HCM for Project-Based Organizations with Certified Oracle On-Premise and Cloud ERP & PPM Specialists
- ✓ Serving as a cross-pillar business and technology partner with a strategic focus on **Engineering/Construction** (Over 48 E&C customers), Aerospace & Defense, Utilities, Professional & Hi-Tech Services
- ✓ Supporting **multi-geographical operations** with a **worldwide team** and have executed global implementations for hundreds of clients who manage tens of thousands of projects, thousands of users, multiple languages, and currencies
- ✓ **Developed 10+ software products**: focused on supporting, augmenting, and integrating **Oracle ERP/Project Execution Solutions**

Our customers look to us as one of the leading consulting firms for a single-point solution provider for all requirements across **Oracle ERP Cloud™, Oracle® E-Business Suite™, and Oracle Primavera™** applications. To further enhance the solutions available to our customers' Project Partners recently engaged with **Kahua™** and became a Kahua certified partner.

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THANK YOU

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