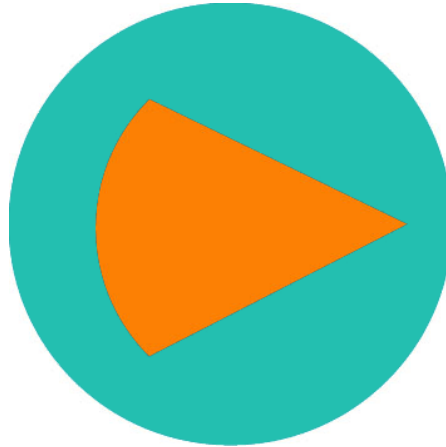


# Project Management Webinar



Earned Value Basics

**PROJECT**insight<sup>®</sup>

Project & Portfolio Management Software

Initiate Project Intelligence<sup>®</sup>

# Things to Know...



- ▶ All participants will be on mute
- ▶ Questions are welcome
- ▶ Use the question box to ask questions
- ▶ PM training is valid for 1 PDU
- ▶ Must be in attendance for full session
- ▶ PDU certificate sent by the end of the day
- ▶ Recording and slides sent by tomorrow

# Moderator



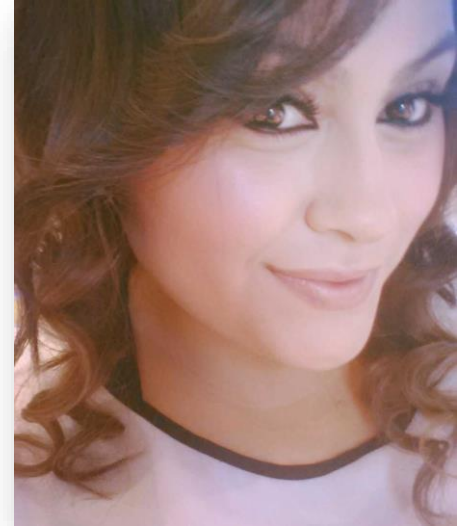
**Denise Rodriguez**

Project Insight

*Marketing*

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[www.projectinsight.net](http://www.projectinsight.net)



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# Presenter



## **Diane C. Buckley, MBA, PMP**

CEO, Core Performance Concepts Inc.

*Training in project management,  
PMP® and CAPM® certification, leadership,  
business analysis, agile and six sigma*

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[www.coreperformanceconcepts.com](http://www.coreperformanceconcepts.com)

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# Poll Question



Do You Want to use Earned Value?

- A. Yes, we have implemented it fully
- B. Yes, we use it for some projects
- C. Yes, but we don't know how to apply it
- D. No, but I'm interested in the concept

# Objectives of the Webinar



At the end of this webinar, you will be able to:

- Define the basic building blocks of earned value management
- Describe how a practical application of earned value management is used
- Read and interpret the earned value management report information

# Cost Management

## Purpose

- Estimate, budget, and control costs of the project

## Primary tool of controlling costs

- Earned value management



# Question for you...

## **What costs do you measure on your projects?**

Labor hours used?

Labor \$\$ used?

Actual cost?

Material or equipment costs?

Travel & living?

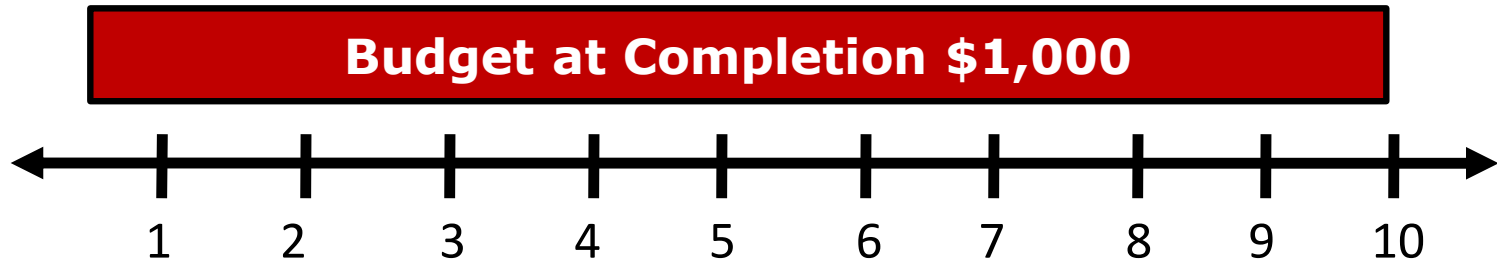
Contractors or consultants?



*Please submit your ideas through the question box*

# Building Blocks

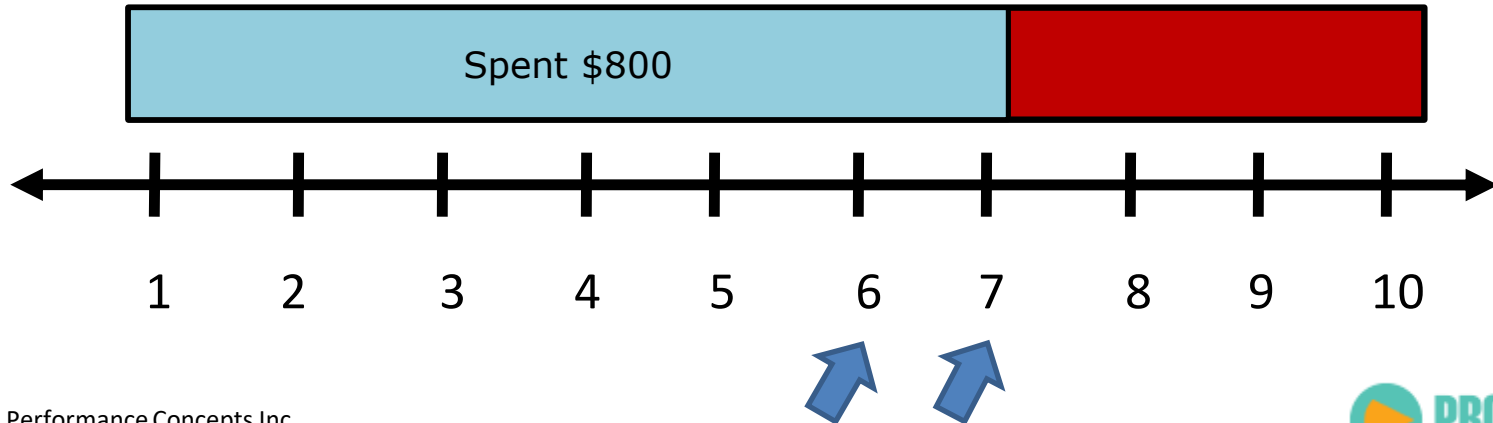
- Planned Value (PV) – What was budgeted
- Actual Costs (AC) – What was spent
- Earned Value (EV) – What was accomplished



# Measuring Earned Value

After 7 days

- Planned Value (PV) - \$700
- Actual Costs (AC) - \$800
- Earned Value (EV) – Six days worth of work = \$600



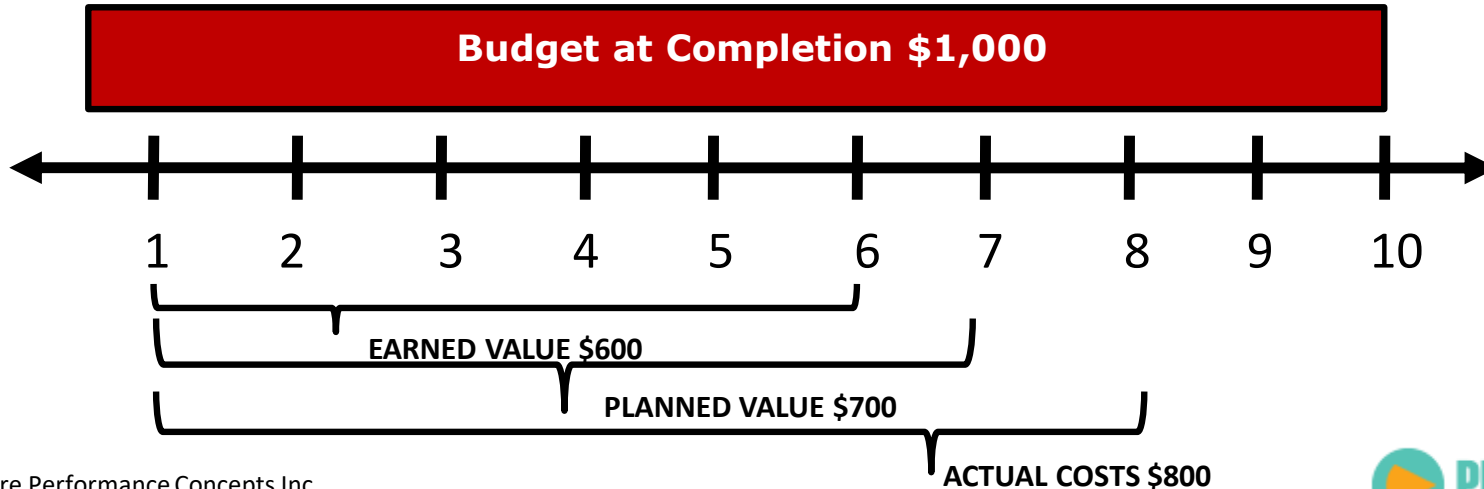
# Earned Value Calculations

CV (Cost Variance)     $\$600 - \$800 = <\$200>$

- EV (Earned Value) minus AC (Actual Costs)

SV (Schedule Variance)     $\$600 - \$700 = <\$100>$

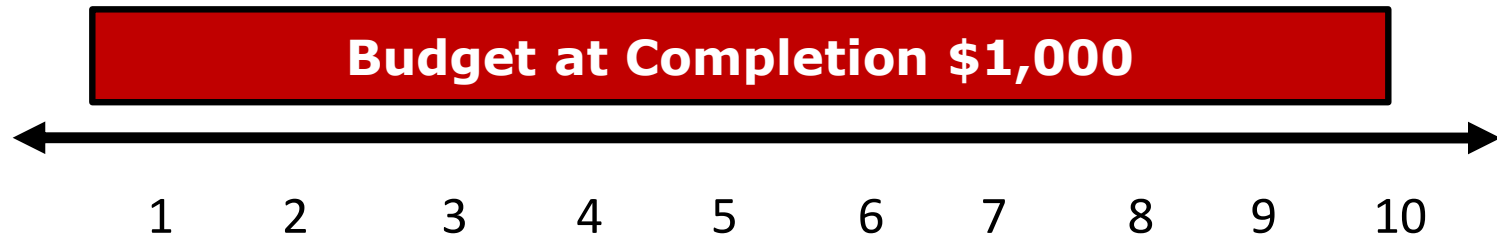
- EV (Earned Value) minus PV (Planned Value)



# Budget at Completion

## Budget at Completion

- For an entire project
- For a specific activity



# Earned Value Analysis

	Budget at Completion	Planned Value	Actual Costs	Earned Value	Schedule Variance	Cost Variance
A	\$1,000	\$1,000	\$1,200	\$ 1,000		
B	\$ 500	\$ 500	\$ 400	\$ 400		
C	\$2,000	\$1,500	\$1,200	\$1,000		
D	\$4,000	\$2,000	\$2,200	\$2,500		
E	\$1,000	\$ 0	\$ 100	\$ 100		
Total	\$8,500	\$5,000	\$5,100	\$5,000		

1. Which activities are behind schedule?

3. Which activities are over budget?

2. Which activities are ahead of schedule?

4. Which activities are under budget?

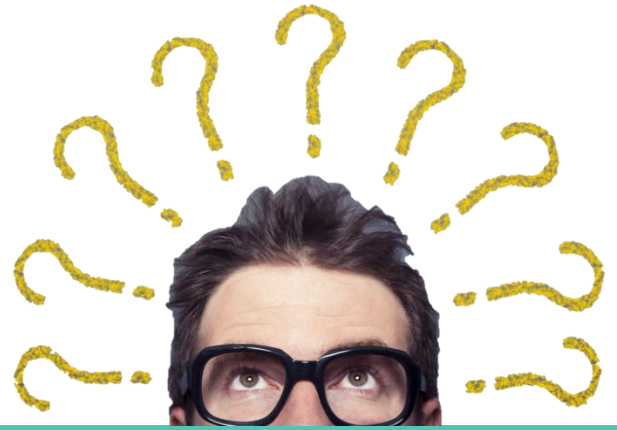
5. Is the project over/under budget?

# Earned Value Analysis

	Budget at Completion	Planned Value	Actual Costs	Earned Value	Schedule Variance	Cost Variance
A	\$1,000	\$1,000	\$1,200	\$ 1,000	\$0	<\$200>
B	\$ 500	\$ 500	\$ 400	\$ 400	<\$100>	\$0
C	\$2,000	\$1,500	\$1,200	\$1,000	<\$500>	<\$200>
D	\$4,000	\$2,000	\$2,200	\$2,500	\$500	\$300
E	\$1,000	\$ 0	\$ 100	\$ 100	\$100	\$0
Total	\$8,500	\$5,000	\$5,100	\$5,000	\$0	<\$100>

1. Which activities are behind schedule? **B & C**
2. Which activities are ahead of schedule? **D & E**
3. Which activities are over budget? **A & C**
4. Which activities are under budget? **D**
5. Is the project over/under budget? **Over budget**

# Question for you...



Have you used earned value in measuring progress?

- If not, what do you use?

Have you used earned value in forecasting?

- If not, what do you use?

*Please submit your ideas through the question box*



# Busy Foods Inc. – Our Case Study



Customer Needs



Organizational Needs



Project Charter

# Factors Affecting Busy Food Inc.

## Overview

- BUSY FOODS services over 200 clients world-wide.
- Most of BUSY FOOD'S clients are large restaurant venues who can serve thousands in a single day

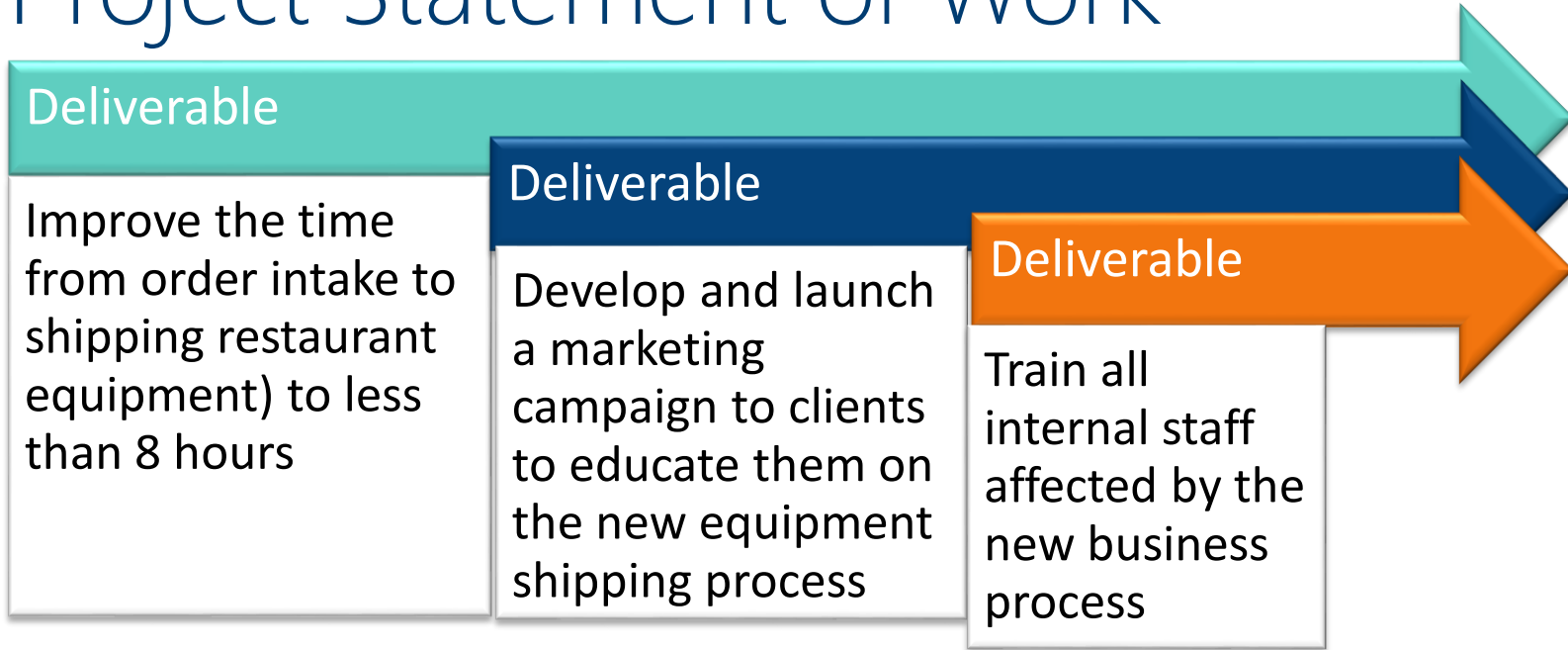
## Situation

- In recent years, long-term clients have started to leave for a competitor who promises overnight delivery of restaurant equipment without a minimum order.

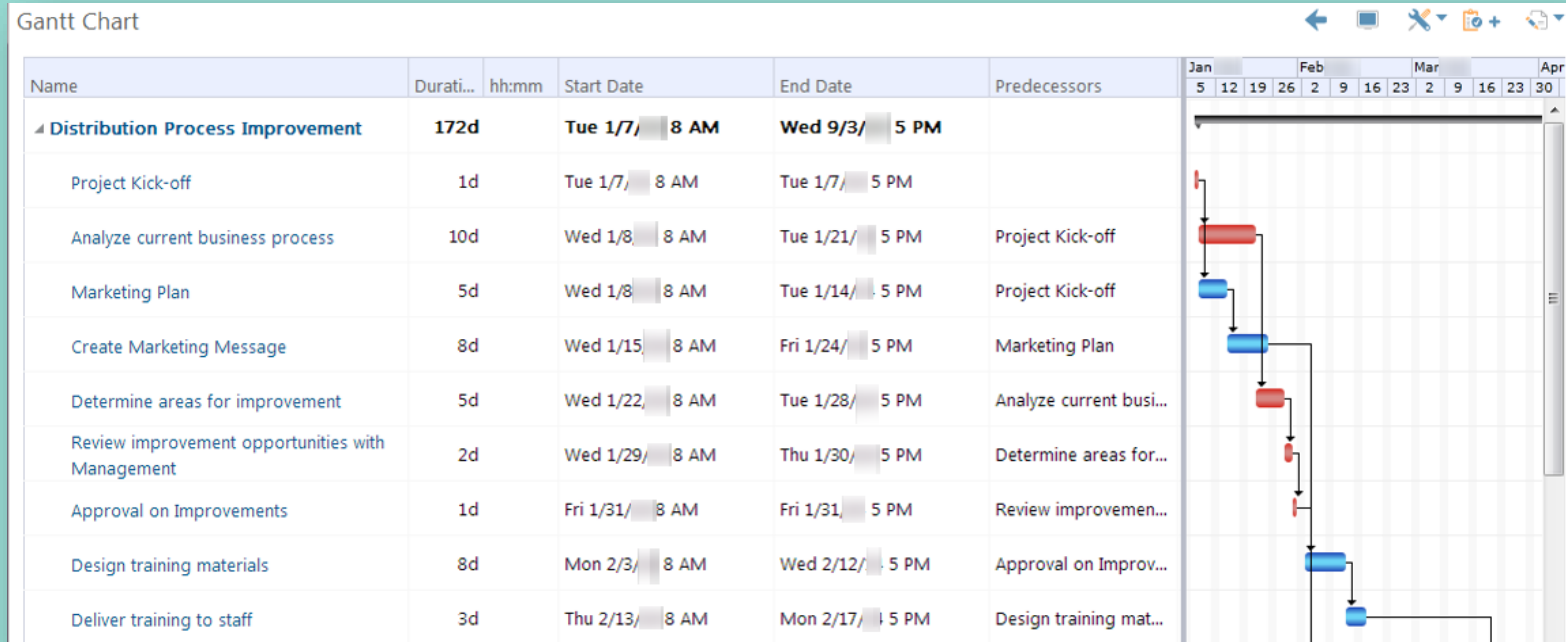
## Goal

- BUSY FOODS would like to improve their distribution process to match the competition

# Project Statement of Work



# Our Project Schedule



# Link to Project Insight

## Practical application

- Our project has started
- The following information is available



# Applying Earned Value in Project Insight

Task Name	Duration	hh mm	Work Hours	Start Date	End Date	Work Total Exp	Work Planned Value	Actual Total	Work Earned Value
▼Distribution Process Improvement	52d		642.00	Thu 1/1/ 8 AM	Fri 3/13/ 5 PM	\$3,500.00	\$3,500.00	\$2,350.00	\$1,400.00
Project Kick-off	1d		5.00	Thu 1/1/ 8 AM	Thu 1/1/ 5 PM	\$100.00	\$100.00	\$100.00	\$100.00
Analyze current business process	10d		120.00	Fri 1/2/ 8 AM	Thu 1/15/ 5 PM	\$2,400.00	\$2,400.00	\$800.00	\$600.00
Marketing Plan	5d		20.00	Fri 1/2/ 8 AM	Thu 1/8/ 5 PM	\$400.00	\$400.00	\$400.00	\$400.00
Create Marketing Message	8d		30.00	Fri 1/9/ 8 AM	Tue 1/20/ 5 PM	\$600.00	\$600.00	\$1,050.00	\$300.00
Determine areas for improvement	5d		30.00	Fri 1/16/ 8 AM	Thu 1/22/ 5 PM		\$0.00		\$0.00
Review improvement opportunitie...	2d		10.00	Fri 1/23/ 8 AM	Mon 1/26/ 5 PM		\$0.00		\$0.00
Approval on Improvements	1d		2.00	Tue 1/27/ 8 AM	Tue 1/27/ 5 PM		\$0.00		\$0.00
Design training materials	8d		10.00	Wed 1/28/ 8 AM	Fri 2/6/ 5 PM		\$0.00		\$0.00
Deliver training to staff	3d		10.00	Mon 2/9/ 8 AM	Wed 2/11/ 5 PM		\$0.00		\$0.00
Deliver marketing message through...	10d		100.00	Wed 1/28/ 8 AM	Tue 2/10/ 5 PM		\$0.00		\$0.00
Implement improvements	25d		250.00	Wed 1/28/ 8 AM	Tue 3/3/ 5 PM		\$0.00		\$0.00
Test improvements as a prototype	5d		40.00	Wed 3/4/ 8 AM	Tue 3/10/ 5 PM		\$0.00		\$0.00
Approve improvements	2d		10.00	Wed 3/11/ 8 AM	Thu 3/12/ 5 PM		\$0.00		\$0.00
Go-Live	1d		4.00	Fri 3/13/ 8 AM	Fri 3/13/ 5 PM		\$0.00		\$0.00
			1.00	Thu 1/1/ 8 AM	Thu 1/1/ 8 AM		\$0.00		\$0.00
<b>Project Total:</b>	<b>52d</b>		<b>642.00</b>	<b>Thu 1/1/ 8 AM</b>	<b>Fri 3/13/ 5 PM</b>	<b>\$3,500.00</b>	<b>\$3,500.00</b>	<b>\$2,350.00</b>	<b>\$1,400.00</b>

As of January 15<sup>th</sup>:

Schedule Variance = \$1,400 - \$3,500 = <\$2,100>

Cost Variance = \$1,400 - \$2,350 = <\$950>

# Analyzing Earned Value Data

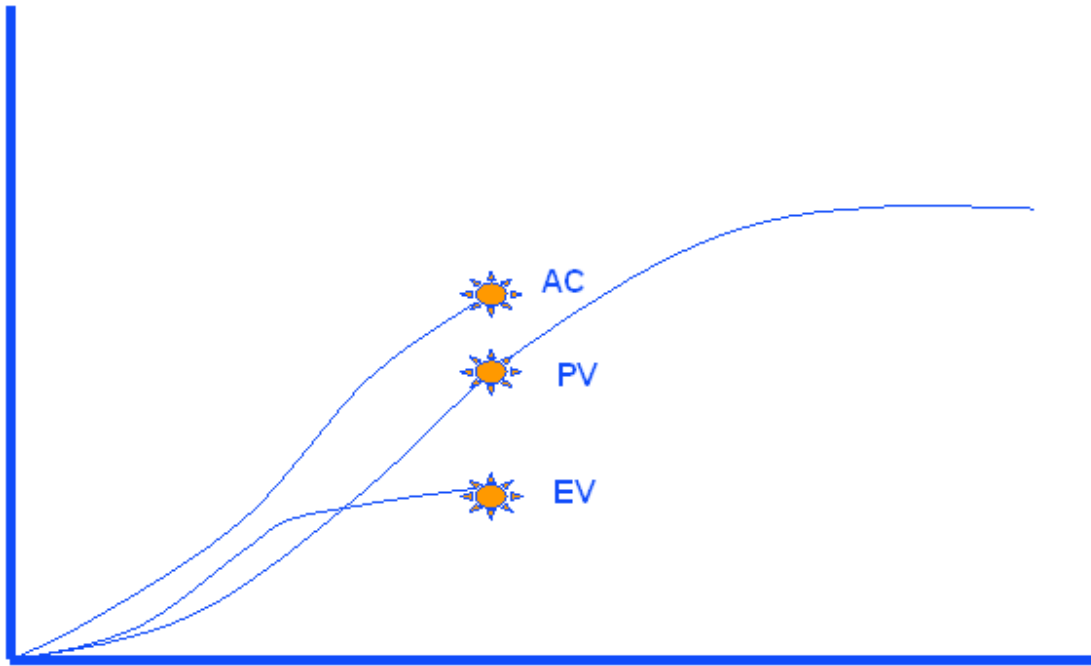
## *Analyze current business process*

- $SV = \$600 - \$2,400 = <\$1,800>$
- $CV = \$600 - \$800 = <\$200>$
- Efficiency of Work (40 hours spent for 25% of work; should have been 30 hours)

## *Create marketing message*

- Budget rate was \$20 per hour
- 30 hours for a total of \$600 = \$20 per hour
- Actual rate was \$35 per hour

# Earned Value on an S Curve





# Project Manager's Responsibility

---

- Estimate, budget, and control project costs
- Know the expected budget at completion for the project as well as the activities
- Measure actuals at the activity level
- Manage earned value management indicators
- Forecast changes as accurately as possible

# Performance Data

## Project Summary

OVERVIEW CUSTOM FIELDS BUDGET SCHEDULE PERFORMANCE RESOURCES LINKS APPROVALS

Earned/planned values calculated through 5/8/2009 [Calculate Now](#)

### ▼ Performance Dollars

	Planned Value (PV)	Earned Value (EV)	Actual Cost (AC)	Dollar Cost Variance (CV) [EV - AC]	% Cost Variance [CV / AC]	% Cost Variance (EV) [CV / EV]	Dollar Schedule Variance (SV) [EV - PV]	% Schedule Variance [SV / PV]	Cost Performance Index [EV / AC]	Schedule Performance Index [EV / PV]
Work Cost	\$3,500.00	\$1,400.00	\$2,350.00	\$-950.00	-40.43%	-67.86%	\$-2,100.00	-60.00%	0.60	0.60
Billable Work Cost	\$0.00	\$0.00	\$0.00	\$0.00			\$0.00			

### ▼ Performance Hours

	Scheduled Hours (Planned - P/H)	Accomplished Hours (Earned - E/H)	Actual Hours (A/H)	Accomplished Hours Variance (AHV) [E/H - A/H]	% Accomplished Hours Variance [AHV / A/H]	% Accomplished Hours Variance (EVH) [AHV / EVH]	Scheduled Hours Variance (SHV) [E/H - P/H]	% Scheduled Hours Variance [SHV / P/H]	Accomplished Hours Performance Index [E/H / A/H]	Scheduled Hours Performance Index [E/H / P/H]
Work Hours	642.00	70.00	95.00	-25.00	-26.32%	-35.71%	-572.00	-89.10%	0.74	0.74
Billable Work Hours	642.00	70.00	95.00	65.00	1,300.00%	92.86%	-572.00	-89.10%	14.00	14.00



# Cost Performance Index (CPI)

CPI (Cost Performance Index) = Earned Value/Actual Costs

- $\$1,400/\$2,350 = 60\%$

For every dollar spent, you only receive \$ 0.60 worth of value!

# Cost Performance Forecasting

What will the cost be at the end of the project?

- Original budget for project is:
  - 642 hours
  - @ \$20/hour
  - = \$12,840
- Assuming the trend will continue, apply the CPI:
  - $\$12,840 / 0.6 =$
  - $\$12,840 / 0.6 = \mathbf{\$21,400}$



# Sample Exam Question #1



You are the project manager on a software implementation project. The total cost of the project is expected to be \$100,000.

You are more than half-way through a 6 month project and the Actual Costs are \$40,000. Is your project doing well?

- A. Yes, because you are half-way done with the project and the costs are only \$40,000
- B. Yes, because earned value is \$50,000, which is greater than the actual costs
- C. Unsure, because you do not know what was completed (in terms of dollars) at the halfway point
- D. Unsure, because actual costs only reflect the first 2 months of the project

# Sample Exam Question #2



You are managing a construction project  
and the following information is provided  
for the project :

Budget at Completion : \$5 million

Planned Value to Date: \$3.5 million

Actual Costs to Date: \$3.45 million

Earned Value to Date: \$3.25 million

**What should you do?**

- A. Nothing, your costs are in line
- B. Determine why the schedule is behind and take corrective action
- C. Determine why you are under budget and adjust your forecast accordingly
- D. Nothing, you are ahead of schedule and your costs are in line

# Review



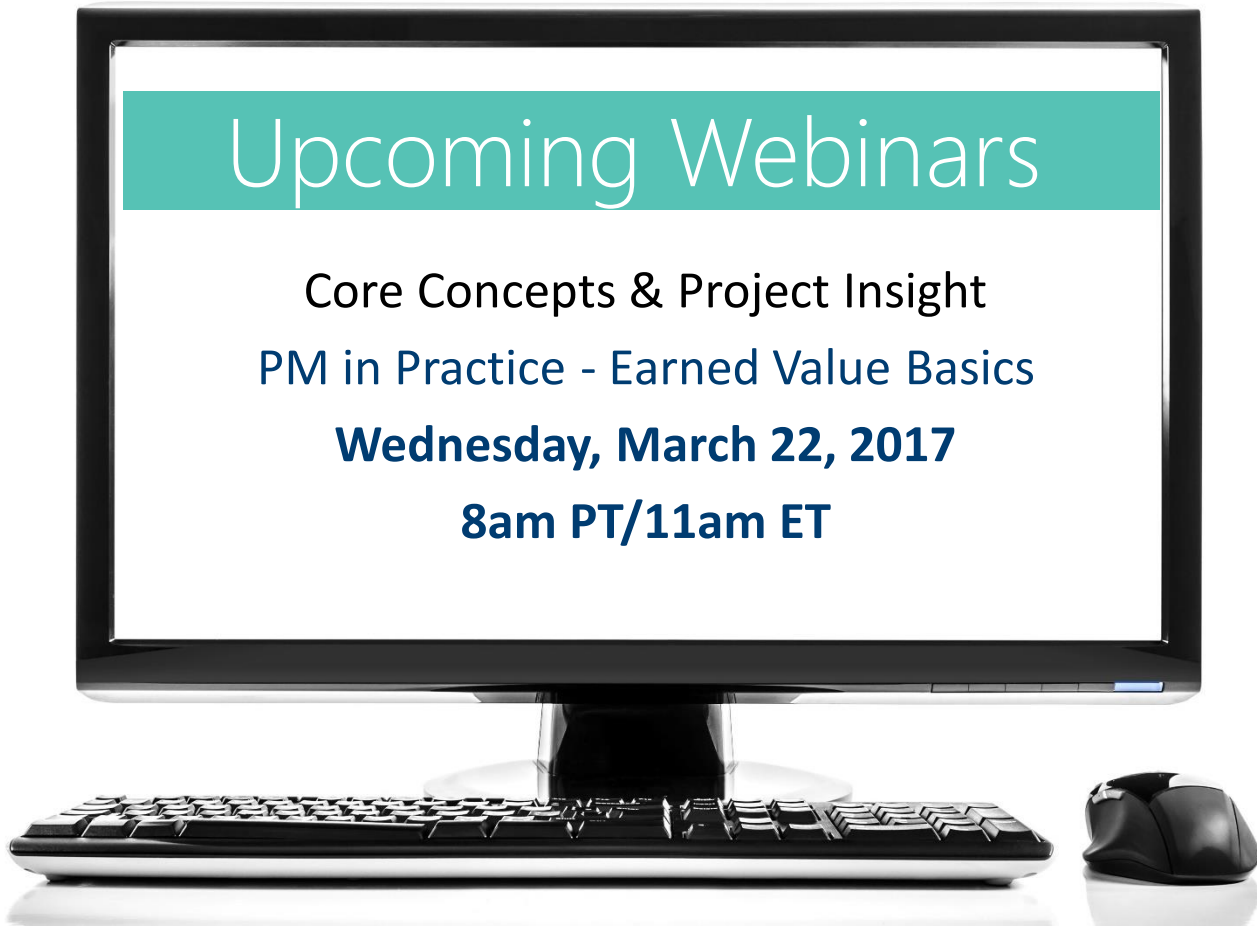
- What are the basic building blocks of earned value management?
- How is earned value management used to evaluate schedule and cost?

Any questions?



# Upcoming Webinars

Core Concepts & Project Insight  
PM in Practice - Earned Value Basics  
**Wednesday, March 22, 2017**  
**8am PT/11am ET**



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See you next time!