



PROJECT MANAGEMENT CENTER FOR EXCELLENCE

A.J. CLARK SCHOOL OF ENGINEERING
Civil & Environmental Engineering Department



EARNED VALUE MANAGEMENT: A CASE STUDY



Joseph D. Launi, PMP

2020 Project Management Symposium

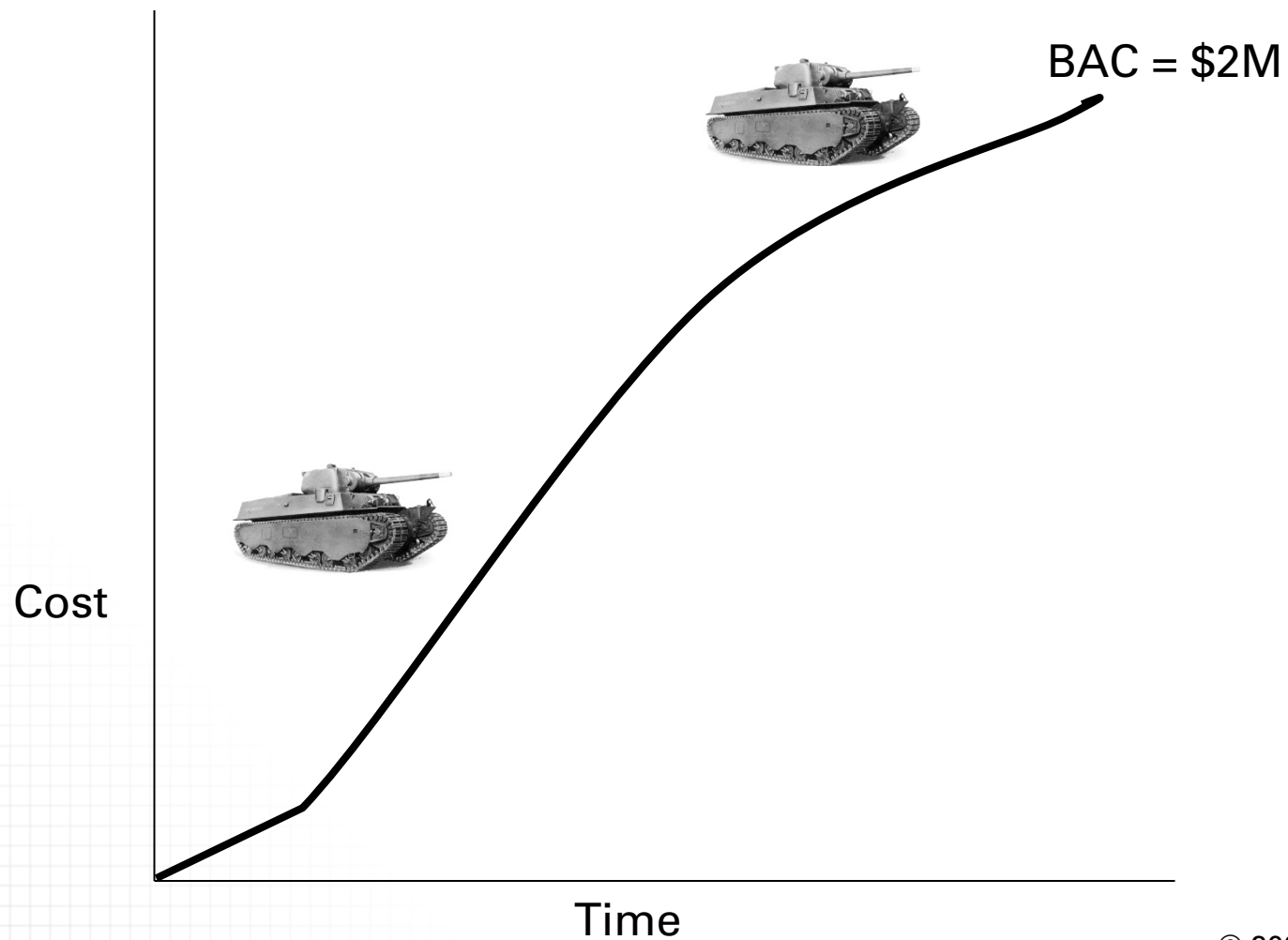


Terms

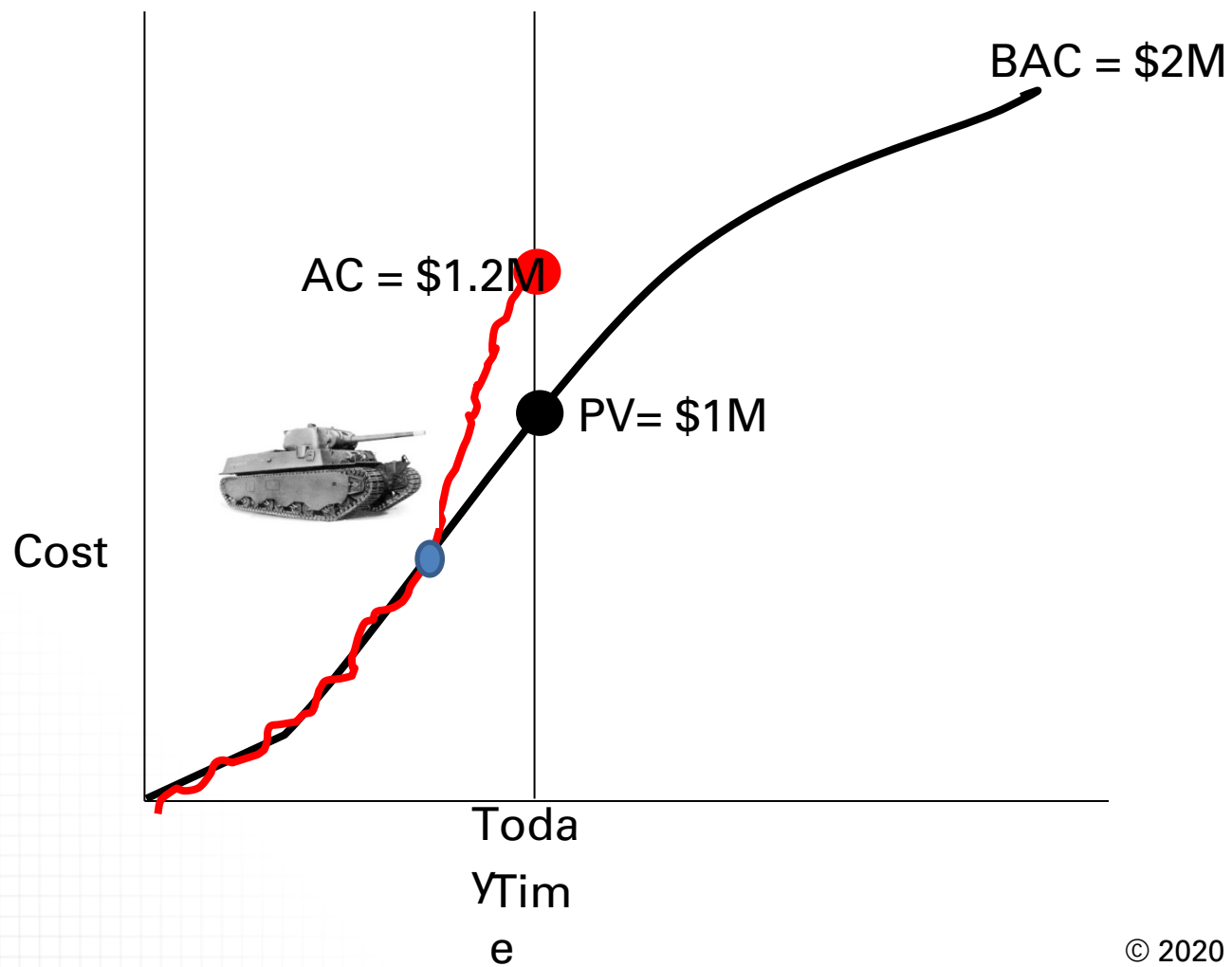
- Planned Value (PV) = Planned Amount to be Spent to Date
- Actual Cost (AC) = Actual Cost to Date
- Earned Value (EV) = “Value” of Work Completed to Date
- Budget at Completion (BAC) = The sum of all budgets established for the work to be performed.



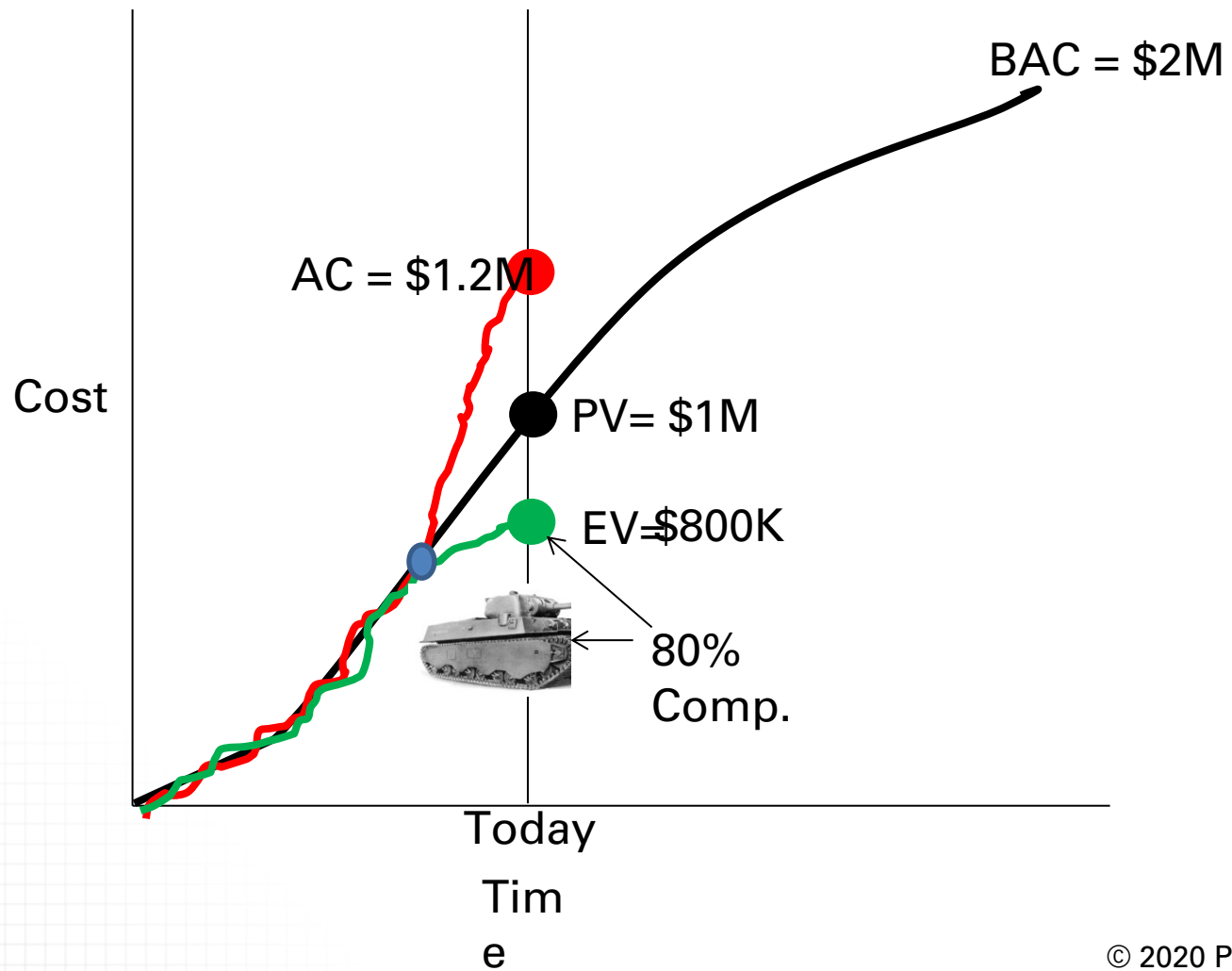
Cost Baseline



Actual Costs



“The Full Monty”



Tracking Percent Complete

Weighted Milestone Method with BAC = \$1M

Design Phase Complete: 25% EV= \$250K

Development Phase Complete: 50% EV= \$500K

(cumulative=\$750K)

Testing Phase Complete: 20% EV= \$200K

(cumulative=\$950K)

Fixed Formula Method (50:50)

Acceptance Complete: 5% EV= \$50K

(cumulative=\$1M)

Act.	Mon	Tues.	Wed.	Thur.	Fri.	PV	EV	AC
A	8					\$1000	\$2500	\$1000
Act.	Mon	Tues.	Wed.	Thur.	Fri.	PV	EV	AC
A	8	8	8	8		\$4000	\$2500	\$4000
Act.	Mon	Tues.	Wed.	Thur.	Fri.	PV	EV	AC
A	8	8	8	8	8 Comp.	\$5000	\$5000	\$5000

Other Methods

- Percent Complete: estimates % complete using subjective measures.
- Level of Effort: for non-tangible work: PV is assigned to each LOE and EV assigned upon completion
- Apportioned Value: EV is earned based upon an estimated %. I.e. QA for a project manager.

Further Cost Analysis

$$CV = EV - AC =$$

(\$400K)

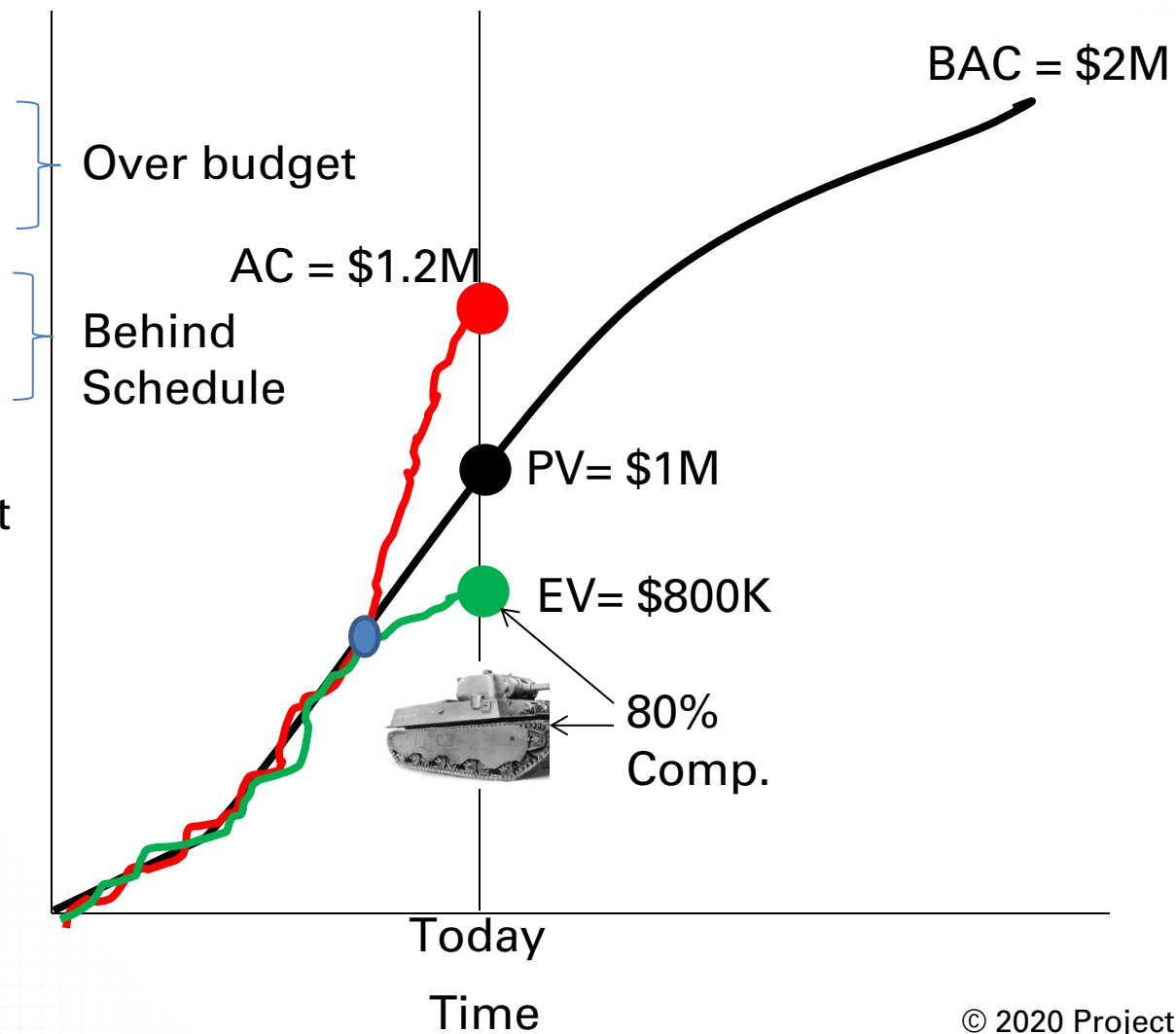
$$CPI = EV/AC = .667$$

$$SV = EV - PV =$$

(\$200K)

$$SPI = EV/PV = .80$$

Cost



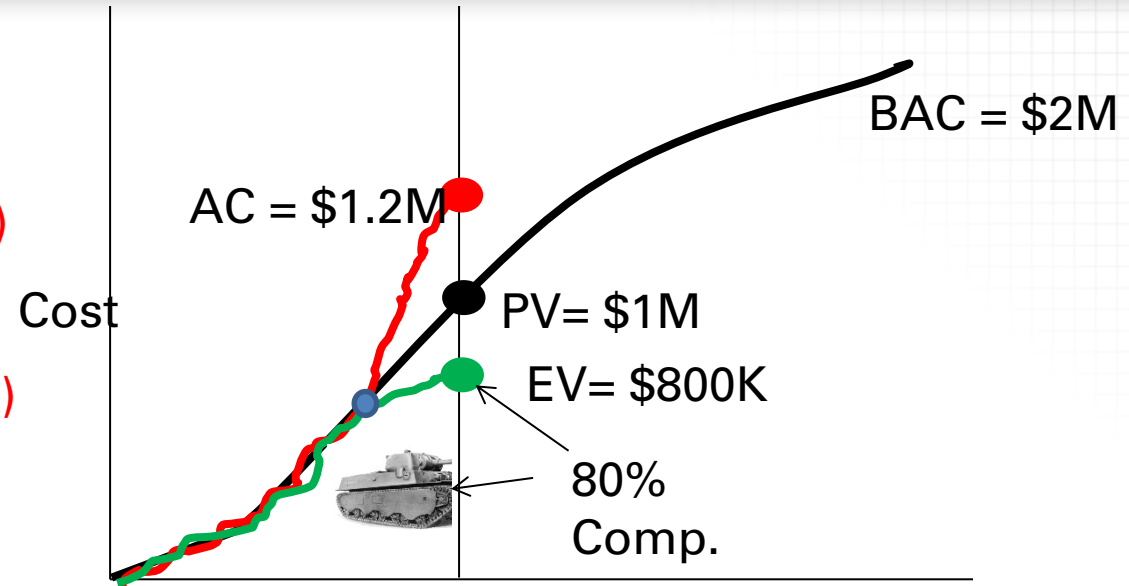
Forecasting

$$CV = EV - AC = (\$400K)$$

$$CPI = EV/AC = .667$$

$$SV = EV - PV = (\$200K)$$

$$SPI = EV/PV = .80$$



Project Scenario	Est. at Completion (EAC)	Est. to Complete (ETC)
Bad Assumption/ Est.	$AC + \langle \text{New ETC} \rangle = \underline{\hspace{2cm}}$ $\$1.2M + \langle \$800K \rangle = \$2M$	ETC is based on new assumptions
Anomaly (1 time occurrence)	$AC + (BAC - EV) = \underline{\hspace{2cm}}$ $\$1.2M + (\$2M - \$800K) = \$2.4M$	BAC-EV
Spending Pattern Cont.	$BAC/CPI = \underline{\hspace{2cm}}$ $\$2M/.667 = \$2.9M$	$(BAC - EV) / CPI$
Spending and Productivity	$AC + \frac{(BAC - EV)}{CPI} = \underline{\hspace{2cm}}$ $\$1.2M + \frac{(\$2M - \$800K)}{.667} = \underline{\hspace{2cm}}$	
To Complete Performance Index (TCPI)	Description	Effort Needed
$\frac{BAC - EV}{BAC - AC}$	Effort to complete work with present BAC	1.5
$\frac{BAC - EV}{EAC - AC}$	Effort to complete work with new EAC	_____
		Variance at Completion
		$VAC = BAC - EAC$

Questions?



Joe Launi, PMP

703-777-1689

Twitter: @jdlauni

jdlauni@projectmanagementexperts.com

www.projectmanagementexperts.com