

Getting to Done
and
Some Issues Along the Way

Glen B. Alleman
Wednesday 15th August 2018
8:35 AM – 9:35 AM

PGCS PROJECT AND PROGRAM MANAGEMENT SYMPOSIUM
• Better Management • Better Projects



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Project
Disappointment
Starts When We
Fail to Apply
these 5 Immutable
Principles for
Project Success

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Immutable Principles of Project Success



1. What Does Done Look Like?
2. What's the Plan to Get to Done?
3. Do We Have Enough Time, Resources, And Money To Reach Done?
4. What Impediments Will We Encounter Along The Way to Done?
5. How Do We Know We Are Making Progress Toward Done?

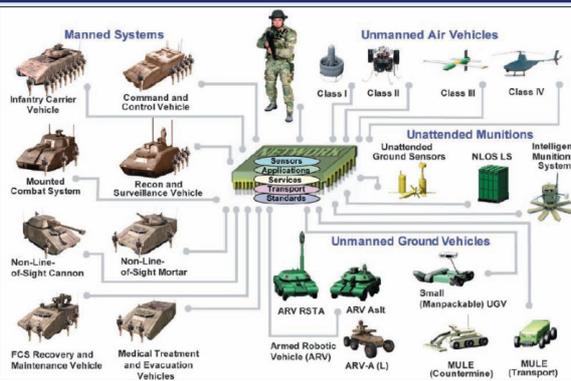
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Q1. Where Are We Going?

Eliciting Requirements Is Always Domain Dependent



"Implement the 8 stories for our new warehouse inventory tracking system using the existing web site platform as a starting point."

"Design and integrate 18 major weapon systems and platforms simultaneously within strict size and weight limitations, while synchronizing the development, demonstration, and production of as many as 157 complementary systems with the Future Combat System content and schedule." (This is an actual requirement)

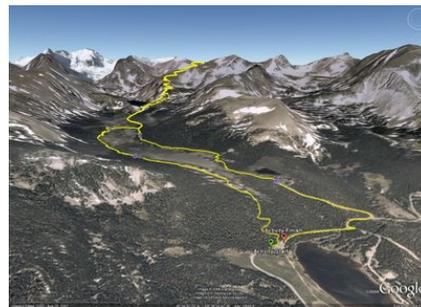
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PLAN FIRST!

- **Plan** – is a strategy for successful completion of the project.
- **Schedule** – are steps needed to successfully execute the Plan.
- **Execution** – is the physical performance of the steps in the schedule to deliver the outcomes defined in the Plan.



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Scheduling *Always* comes **after** Planning

- What are individual, dependent and, sequential steps needed to deliver these capabilities?
- The schedule has durations, dependencies, timing, dates, resources and other things related with the Plan.
- The idea that these steps “emerge” is fanciful in many situations.

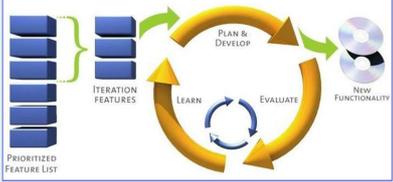
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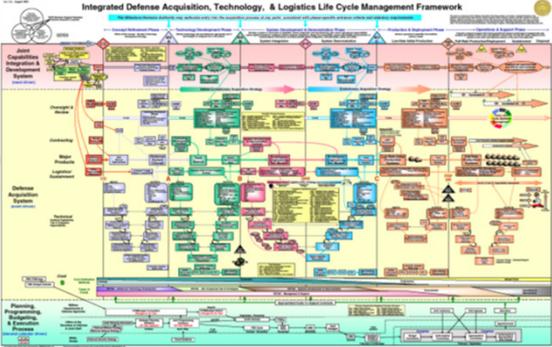
Q2. How Do We Get to Done?

Some problems respond to lightweight approaches, like Scrum, DSDM, Crystal, and XP as product development methods.



This approach works well the requirements for Done are emerging

Others require more complex approaches, like a System of Systems (SoS) spiral development processes.



So Does This!

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Q3. Do We Have Enough Time, Money, and Resources To Get to Done?

In the resource management business, optimism is **always** the source of trouble

A Common Problem	A Simple Solution
We have undue optimism	Use documented procedures – no matter the method – for estimating and planning using historical data.
By nature we attempt to avoid risk and uncertainty	Understand and prioritize risks for each critical component empowers management and staff. Use this knowledge to control your optimism.
We rely too much on intuitive judgment	Simple statistical models are more often correct than the human judgment. Have the number to back up your intuition.

The Rational Planning of (Software) Projects, Mark C. Paulk, Software Engineering Institute, Carnegie Mellon University, Pittsburgh, PA 15213-3890

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Q4: What Are the Impediments to Getting There?



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Q4. Five Fundamental Principles of Risk Management



1. Hope is not a strategy
2. No single point estimate of cost or schedule can be correct
3. Cost, Schedule, and Technical Performance are inseparable
4. Risk management requires adherence to a well defined process
5. Communication is the Number One success factor

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Q5:
How Do We Know We Are Making Progress to Plan?



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Q5: What are the Primary Measures of Progress to Plan for this Project?

Will we recognize Done?
When will we be Done?
What will it cost to be Done?

- What does Done look like for the customer?
- How can we recognize Done when it arrives?
- How can we be sure we can get to from here to Done?
- What are the impediments to getting to done?

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Q5: Technical Performance Measures

- Tell us how well a system is achieving the planned performance requirements at the planned time, for the planned cost.
- Use actual or predicted values from:
 - Engineering measurements
 - Tests
 - Experiments
 - Prototypes
- For Example:
 - Response time
 - Range
 - Power
 - Weight



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Q5. How Do We Know If We Are Making The Progress We Planned To Make?	
A	The only credible measure of progress is the Physical Percent Complete for the planned deliverables.
B	Physical Percent Complete means tangible evidence of the outcomes that were planned – measured at the time they were planned to be delivered.
C	This is the basis for full Earned Value Management with physical percent complete. This is also a natural a fit with the agile approaches to software development.
D	All successful methods measure the evidentiary outcomes in units meaningful to the stakeholders. These units are usually “money” and “time.”

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When we think of trade-offs between **C**ost, **S**chedule, and **T**echnical **P**erformance, it's actually a Ponzi Scheme

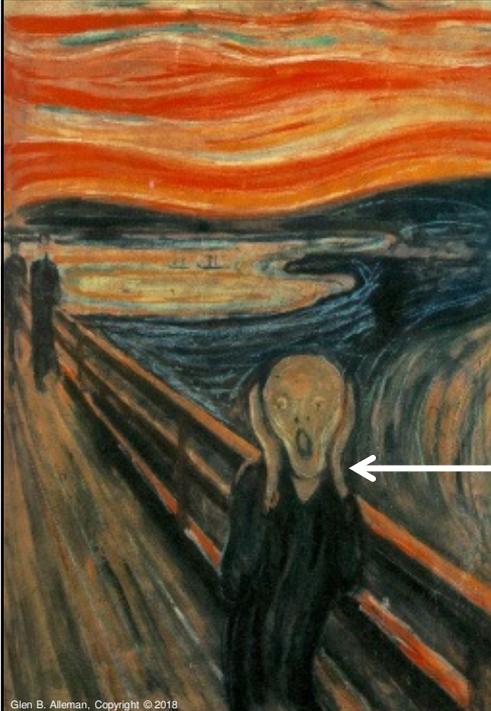
When we're on *baseline*, the algebraic relationship between **C,S,P**, means when there is a change everyone loses



Charles Ponzi,
Born March 3, 1882, Italy.
Died Jan 18, 1949, Brazil.
Served 5 years federal prison,
9 year state prison,
deported to Italy.

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The Best Approach To Measuring *Real* Progress is Earned Value and Earned Schedule Management *Don't scream, because...*

These measures ask and answers a simple question ...
What "value" did we earn for

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Q5: Physical Percent Complete



No stretching the truth allowed once we measure Technical Performance with tangible evidence based on Quantifiable backup Data.

- Measuring physical percent complete is the basis of every successful project management method.
- It answers the question of what “done” look like in units of measure meaningful to the decision makers.
- It answers questions like:
 - What does done look like for today, this week, this month, at the end of the project?
 - What does done look like for entry/exit into the upcoming technical review?
 - What does done look like for quality control?
 - What does done look like for the customer?

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You know you're Practicing the 5 Principles if you ...

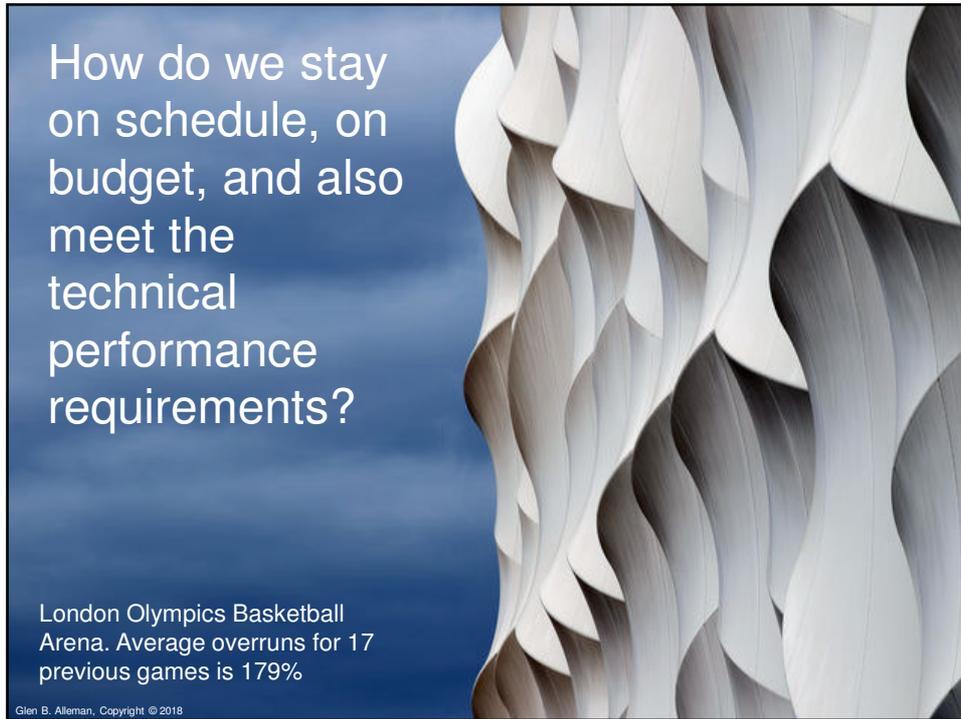
1	Have a defined Mission, Vision, Capabilities , and Requirements ; by which to create ...
2	the Plan for fulfilling these capabilities and connected Requirements and Schedule for producing the needed outcomes to meet this Plan ; and have ...
3	allocated enough Time, Money , and Resources to increase the probability of our project's success; by ...
4	knowing what Risks are in front of your and their retirement or handling plans; and you can ...
5	measure progress as Physical Percent Complete for each planned Deliverable in our Plan "on or before" the planned time and "at or below" the planned cost.

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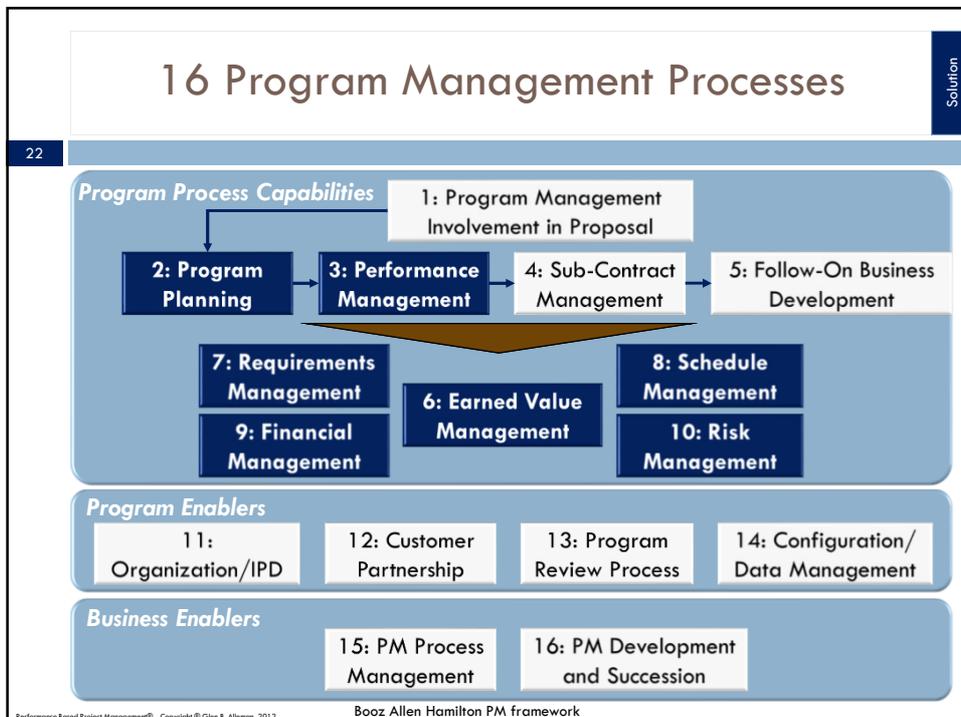
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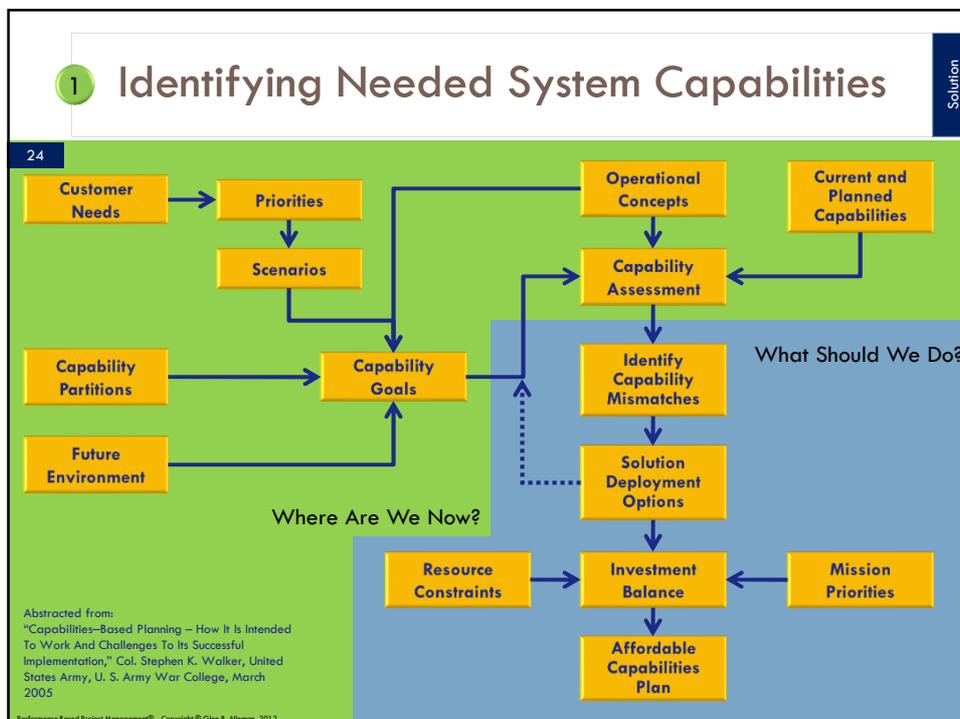
The 4+1 Questions Every Project Must Answer to be Successful

Capabilities	Requirements	Plans	Execution + Continuous Risk Management
<p>1 What capabilities are needed to fulfill the Concept of Operations[†], the Mission and Vision, or the Business System Requirements?</p>			
	<p>2 What technical and operational requirements are needed to deliver these capabilities?</p>		
		<p>3 What schedule delivers the product or services on time to meet the requirements?</p>	
			<p>4 What periodic measures of physical percent complete assure progress to plan?</p>
<p>5 What impediments to success, their mitigations, retirement plans, or “buy downs are in place to increase the probability of success?”</p>			

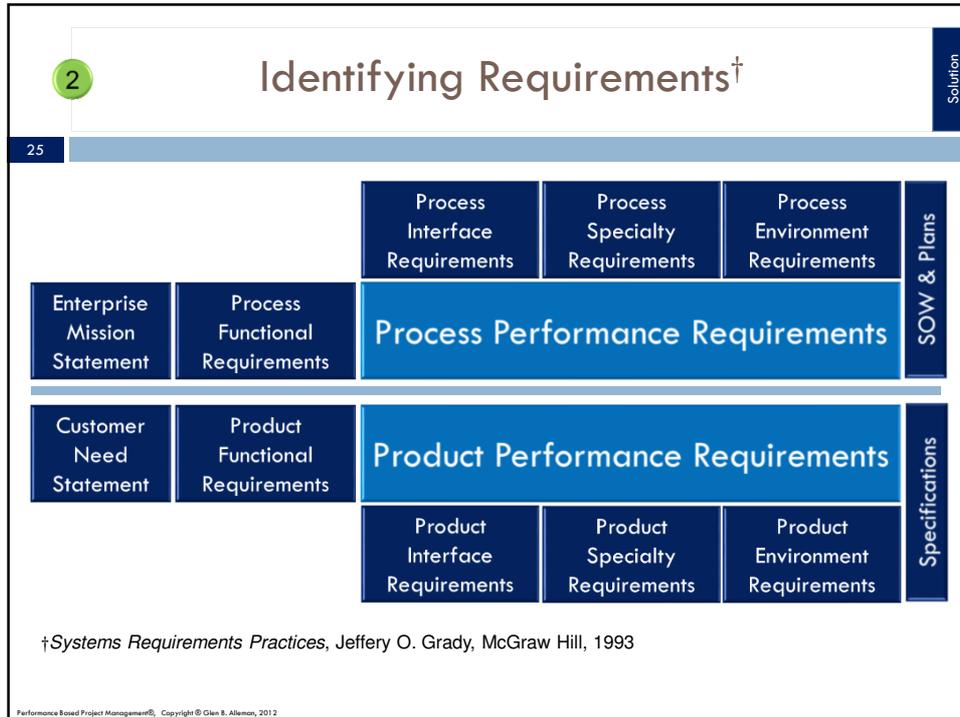
[†] A Concept of Operations (ConOps) describes the characteristics of a system from the point of view of an individual who will use that system. It is used to communicate the quantitative and qualitative system characteristics to all stakeholders.

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Solution

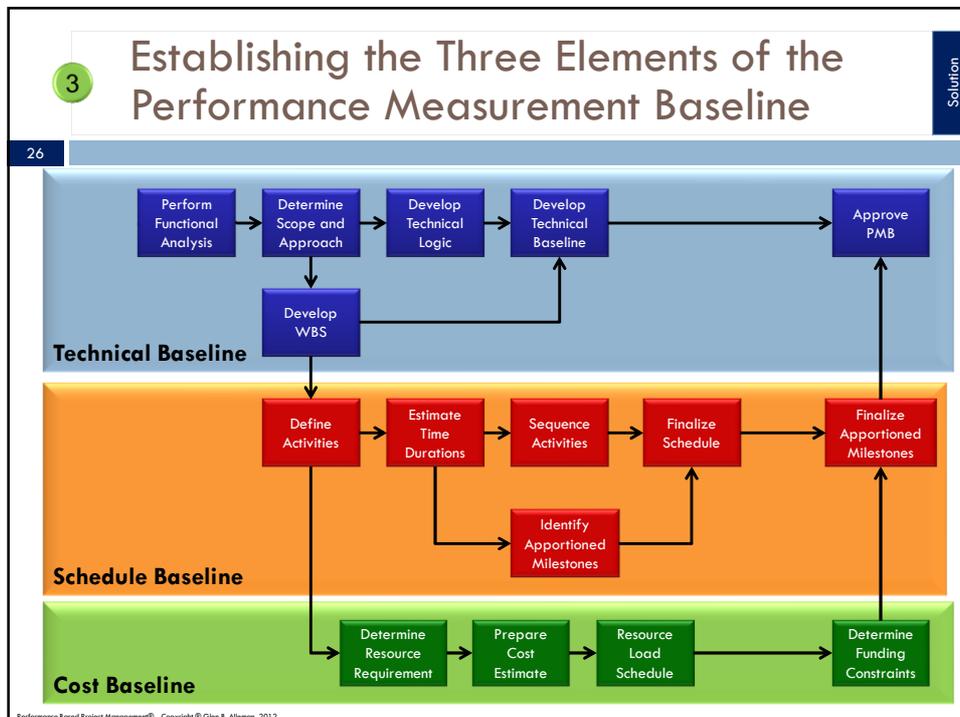
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- Performance Based Management(sm) describes of the increasing maturing of a product or service through Events or Milestones, Accomplishments, Criteria, and Work Packages.
- Each Event or Milestone represents the availability of one or more capabilities.
- The presence of these capabilities is measured by the Accomplishments and their Criteria.
- Accomplishments are the pre-conditions for the maturity assessment of the product or service at each Event or Milestone.
- This hierarchy decomposes the System Capabilities into Requirements, Work Packages, and the activities the produce the deliverables. This hierarchy also describes increasing program maturity resulting from the activities contained in the Work Packages.
- Performance of the work activities, Work Packages, Criteria, Accomplishments, and Events or Milestones is measured in units of "physical percent complete" by connecting Earned Value with Technical Performance Measures.

The structure of a Deliverables Based Plan

Program Events
Define the availability of a Capability at a point in time.

Accomplishments
Represent requirements that enable Capabilities.

Criteria
Represent Work Packages that deliver the Requirements.

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Execute the Performance Measurement Baseline (PMB)

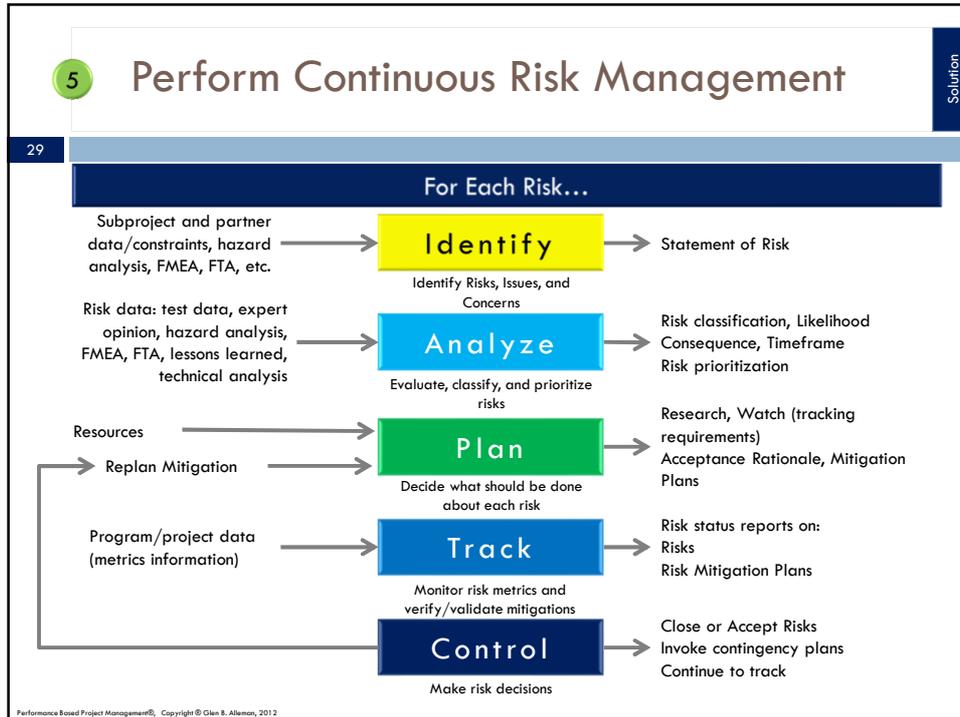
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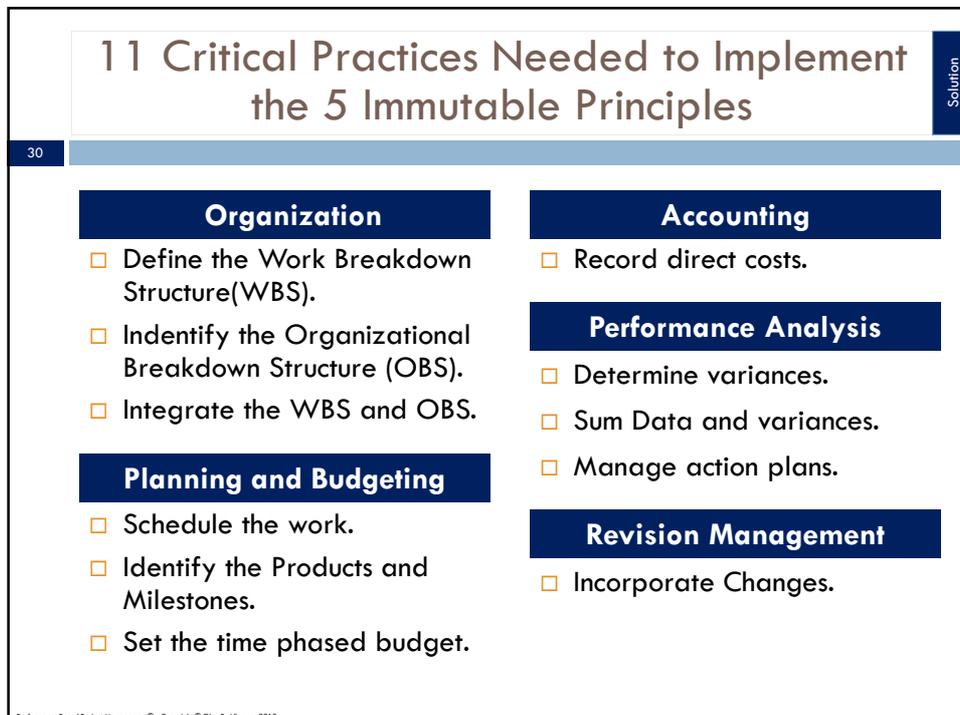
- Authorize and perform the Work according to the Plan described in the network of Work Packages and Planning Packages held in the scheduling tool.
- Accumulate and Report Performance Data using Earned Value (BCWP) and other measures of increasing maturing based on the assessment of the Physical Percent Complete.
- Analyze the Performance Data derived from the Earned Value metrics and make any adjustments to the network of Work Packages.
- Take management actions for any variances to assure on-time, on-budget and on-specification of all deliverables produced by the Work Packages.
- Maintain the Performance Management Baseline (PMB) throughout the programs duration for all Earned Value parameters.

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Performance Based Management^(sm) Puts You On the Road to Success ...



... By Providing Credible Answers To 5 Core Project Questions.

1	▶ Where are we going?	Capabilities and Requirements
2	▶ How do we get there?	Master Plan and Schedule
3	▶ Are there enough resources?	Contract Budget Baseline
4	▶ What are impediments to progress?	Risk Management Plan
5	▶ How do we measure progress?	Earned Value Management

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5 Practices Needed to Implement the 5 Immutable Principles

1	▶ Identify Capabilities with measurement units meaningful to the customer	Concept of Operations, Statement of Objectives
2	▶ Identify Technical and Operational Requirements to deliver capabilities	Value Stream Map tracing requirements to capabilities
3	▶ Establish risk adjusted Technical, Cost, and Schedule Baseline(s)	Performance Measurement Baseline (PMB)
4	▶ Execute PMB with measurement units meaningful to the decision makers	Measures of Performance
5	▶ Apply Continuous Risk Management	Risk Handling and Risk Retirement Plans

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Call to Action



- ✓ Measure tangible evidence of progress to plan as “Physical Percent Complete.”
- ✓ Define what “done” looks like in fine grained increments before starting the work.
- ✓ Define the planning horizon inside your ability to control the future.
- ✓ Stay on schedule, late starts mean late finishes.
- ✓ Build a team who holds each other accountable for results.

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How do we actually put these Principles and Practices to work for success? Come to Workshop to see that ...

... As a Program Manager, You have to be...

RUTHLESS

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Did We Learn Anything Useful?



No matter our tolerance for risk, or the methods we use – the 5 Immutable principles always increase the probability of success.

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Glen B. Alleman
Niwot Ridge, LLC
4347 Pebble Beach Drive
Niwot, Colorado 80503
303.241.9633
glen.alleman@niwotridge.com

Performance Based Management^(sm)
Integrated Master Plan
Integrated Master Schedule
Earned Value Management Systems
Risk Management
Proposal Support Services

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