

## Project Management Symposium 2023

Making the Leap from Project to Program/Portfolio Manager –  
Why Some Sink and Some Sail

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**SOUTHERN ILLINOIS UNIVERSITY**  
**EDWARDSVILLE**



# Agenda

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1. *Portfolios vs Programs vs Projects*
2. *How the outputs differ*
3. *How the roles differ*
4. *Different skills required*
5. *Ten Program Management Best Practices*

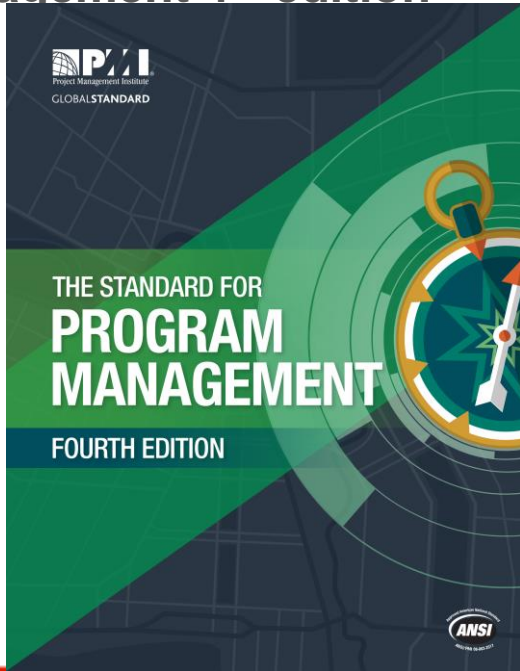
# About your instructor

- Project Management Professional (PMP) & Risk Management Professional (RMP) PMI Qualified Trainer
- Married 43 years, 2 Daughters, 8 Grandchildren
- Ordained Minister & Marriage Enrichment Facilitator
- BS EET 79' - MBA in Project Management
- Ameren Corp: Engineer, Supervisor, Manager, Director
- 22 years teaching
- CEO, Lomax Consulting Group
- Life Philosophy: Persistence, Agility & Optimism
- 92% Program/Project success rate

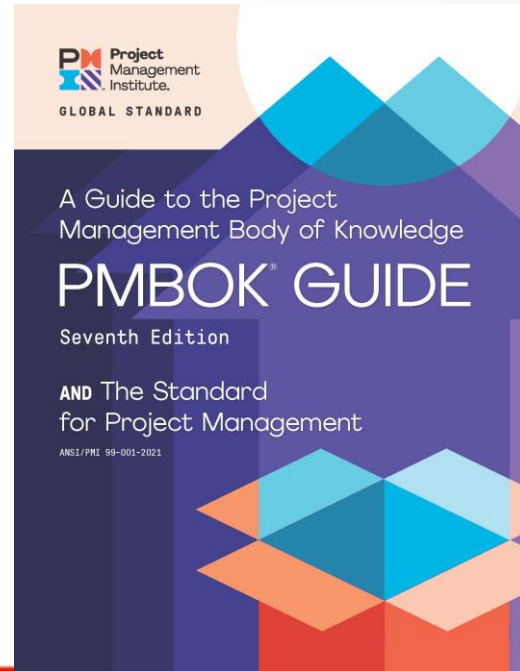


# Our “True North” Professional Standards

Standard for Program  
Management 4<sup>th</sup> edition



PMBOK 7th Edition



# How Big Things Get Done, Factors that Determine the fate of Projects

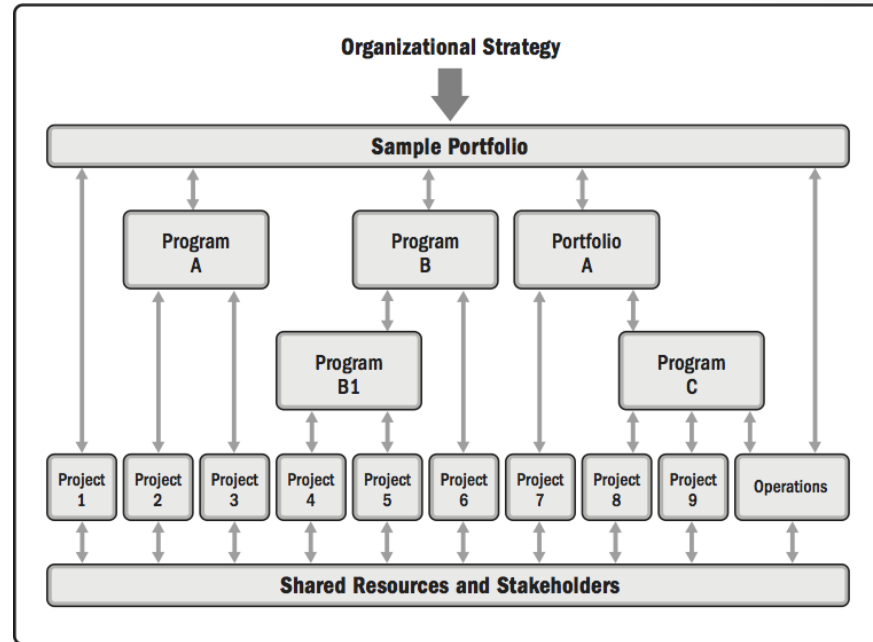
Bent Flyvbjerg and Dan Gardner

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- 16,000 projects
- What % hit their cost projection?
- What % of projects hit their schedule and budget
- What % of projects hit their schedule, budget and scope?
- Fat tailed statistics and “Black Swan” DOD/IT Projects



# Organizational Project Management



*A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Sixth Edition,*  
Project Management Institute, Inc., 2017, Page 12.

# Portfolios, Programs, and Projects



**Project\*** A temporary endeavor undertaken to create a unique product, service, or result.

**Portfolio\*** Projects, programs, subsidiary portfolios, and operations managed as a group to achieve organizational strategic objectives.

**Program\*** Related projects, subsidiary programs, and program activities that are managed in a coordinated manner to obtain benefits not available from managing them individually.

These definitions are taken from the Glossary of Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* – Sixth Edition, Project Management Institute Inc., 2017.

# Why Programs

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1. Corporate Complexity & Complex Solutions
2. Multiple projects may be needed to accomplish an organizations goals.
3. To obtain organizational benefits not available from managing projects separately
4. To enhance capabilities, facilitate change, create/maintain assets, offer new products/services



# Program Management



**Program management\*** The application of knowledge, skills, and principles to a program to achieve the program objectives and obtain benefits and control not available by managing program components individually.



# Portfolios, Program & Projects

	Project	Program	Portfolio
Focus	A unique product or solution	Related projects coordinated to obtain benefits not separately available	Projects and programs managed to achieve a strategic objective
Key goals	Project deliverables	Leverage similarities	Contribute to corporate scorecard
Planning	Discrete project activities CPM of Activities	Roadmap of milestones, Interdependencies identified & coordinated	Long term value
Monitoring	Quad Constraints	Program Metrics	Shareholder Value
Success	1 methodology	Multiple methodologies	Earning per share

# Portfolios, Program & Projects

Domain Knowledge Area	Project Management	Program Management
Cost	Budget compliance	Aggregate Reserves, Moving funds around, Benefit bridge funding
Schedule	Activity Logic, Follows Program schedule	Handoffs & Dependencies, precedes project schedules
Procurement Management	Select/Make/buy analysis	Contracts leveraged
Quality Management	Inspections	Quality Interference (speed vs bandwidth)
Resource Management	Outsource overload	Prioritized resource assignment changes, learning curve, etc..
Risk Management	Risk Register of threats & opportunities	Risk Integration

# Poll #1: A Program or Large Project?

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- Sarah has been asked to lead the CDC team working on planning and delivery of Corona Virus vaccines to 350 million candidates in the 50 states plus military bases overseas. She was asked by the sponsors to complete this in 9 months, use all CDC approved vaccines, include family members, deploy a block chain data system to track 2<sup>nd</sup> doses and real time side effects. Status reports are required monthly. At the Charter Approval meeting, the scope was increased to include a robust marketing campaign to address vaccine hesitancy.
- Is this a Program or a large project? What was basis for your choice?

# Program Examples

- Program consist of:
- Components
  1. Projects (Battery, Software, Motor Systems)
  2. Subsidiary Programs (Safety Standards)
  3. Program Support Activities (Web based project status reports)



1. Defense Portfolio
2. Aircraft Programs
  - a. AI Drones Project
  - b. Transport Aircraft Program
  - c. Fighter Jets Program
    1. FA-18E Platform Project
    2. F-15 Project
3. Guided Missiles Portfolio/Program
4. Barrington Subdivision

# Program Management Decisions

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1. **Selecting the best program structure.** Traditional, Agile, Waterfall, Hybrid, etc. Appropriate decomposition of complex Programs/Portfolio into discrete project to maximize results
2. **Program/Project Scope Management** – Identify & prioritize program projects/deliverables. Identify deliverables interdependency. Integrating & Approving projects for the Program. Accelerating, Decelerating, Cancelling Program components.
3. **Program/Portfolio Risk Management** – Identify the cross functional risk and how risks (threats & opportunities) from one project impacts other projects. Leverage common response plans that can apply to multi-project risks to save costs.



# 3 Key Roles for Program Management

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- Program Manager
  1. Coordinate component activities so project managers adapt & reach program objectives
  2. Assure project components receive required resources
  3. Develop Program Dashboard
  4. Project Manager Accountability
  5. Project Manager Training/Coaching
- Project Manager Role
  4. Lead project scope, schedule, budget, quality, risk, communications
  5. Escalate to Program Mgr as req'd
  6. Align with program agreements
- Program Sponsor/Steering Committee Roles
  7. Program Manager selection, support & advice
  8. Program alignment & visibility
  9. PMO Standards, Best Practices & audits

# Program Management – Mindset

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- Thinking Framework
  - Risk Identification & Management
  - Conflict & Ambiguity
  - Collaborative definition of “done”
- People Framework
  - Inspires the shared Vision
- Outcomes Framework
  - Dependency management across projects





# Program Management – Key Skills

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1. Leverage Program Charter to Identify Components...
2. Identify Component interdependencies & influences...
3. Identify Program Stakeholders
  - a. Sponsor
  - b. Program and Project Managers
  - c. Functional Managers
  - d. Product Managers
  - e. Suppliers/Regulators/Users/Clients/Customers

# Program Management – Key Skills

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4. Determine degree components contribute to program goals
  - a. Probability & timing of contribution
  - b. Area(s) of contribution (touch points)
  - c. Degree(amount) of contribution (\$/share, market share)
5. Coordinate program activities across components
  - a. Financing
  - b. Resource planning
  - c. Procurement
  - d. Information and Data Management
  - e. Quality

# Program Management – Key Skills

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6. Identify & address cultural, geographic and business line differences
7. Lead component risk management integration
8. Create component agreements
  - a. Resource sharing
  - b. Delivery/Handoff
  - c. Accountability, Others
9. Develop initial scope, cost, schedule, quality, etc. plans

# Program Management – Key Skills

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## 10. Program Resource Management

- Money
- People
- Facilities
- Tools, Models, Testing
- Services, etc.

## 11. Project Consolidations (combine projects a and b into new project c)

## 12. Program Procurement Management

- Identify, Quantify, Sequence redundant outsourcing
- Best fit contract type

# Program Support Activities

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1. Program Infrastructure of
  - a. Schedule, Financial, Procurement, Risk, Resource availability Supporting Software & Reporting tools
  - b. Data Repositories (content, attributes, sharing, archival)
  - c. Knowledge Sharing - Information Collection, Distribution
  - d. Configuration & Security (data access)Management
2. Integrated Scheduling Software & Resource Calendars
3. Consolidation (combine project a & b into c)
4. Summary (a + b +c= Program)
5. Roll up (Level 2 Release 3 include Level 3 Release 3.1+3.2+3.3) activities (schedule, budget, resource plan, others)



# Decomposition

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– WBS Decomposition Questions:

Table 2.2 PMI WBS 3<sup>rd</sup> edition

- I. What are the program component parts?
- II. What are needs and expectations?
- III. What is required to achieve business value?
- IV. What are interim & final deliverables?
- V. What external sources are required?
- VI. What's needed to assure quality, safety and long term functionality?

Exercise: Brainstorm a listing of 8 projects or components for SIU Annual Symposium Program using these and other discussion questions

# Program Decomposition Methods

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1. By Resource (Cyber security, R&D, Beta Testing) or Schedule (Time to Market, LD's and Incentive) driven components
2. Parallel or Sequential connected components(projects)
  - a) Subcomponents that must be completed at the same time for assembly
  - b) Flight, fuel or weps Coding that must be dropped to simulator at same time
  - c) Phase components. Design, Prototype, Procurement, Testing, Delivery
  - d) Largely predictive, waterfall type of related projects

# Program Decomposition

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3. Leverage existing framework
  - a. An OPA WBS template
  - b. A WBS from a previous & identical Program
  - c. New employee application
  - d. Specific Predictive, Iterative & Agile templates
  - e. Lazy PM Syndrome risk
4. Project born from Feasibility studies
5. Requirement Traceability Matrix options
  - Identification of solution options that:
    - Logically connected to the objective, deliverable or problem.
    - Meets most but not all of the objective
    - Has cost points below full solution due to elimination of lower priority functions.



# Program Decomposition

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6. Projects based on related skills (programming, engineering, marketing, Cybersecurity, Training)
8. Projects based on a specific deliverable or feature grouping
9. Budget Authorization Levels
10. Component Sensitivities (best practice vs methodology)
11. Top down WBS development 2.4.3.1 PM Standard
12. Bottom up WBS development 2.4.3.2 PM Standard

# Program Decomposition – Top Down

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## 13. Top down development 2.4.3.1 PM Standard

- I. Starts with final, high level outcomes, services or results
- II. Review scope documents to assist item I.
- III. Identify the major or interim deliverables
- IV. Sum of elements at each level represents 100% of the work in the element above
- V. Review and refine until stakeholders agree.
  - Valuable when brainstorming and need to discover project deliverables
  - Each level 2 elements contains at least 2 level 3 elements
  - Easy to add/remove deliverables as program scope changes

Example: Midwest and Southeast divisions consolidated into one organization.

# Program Decomposition – Bottom Up

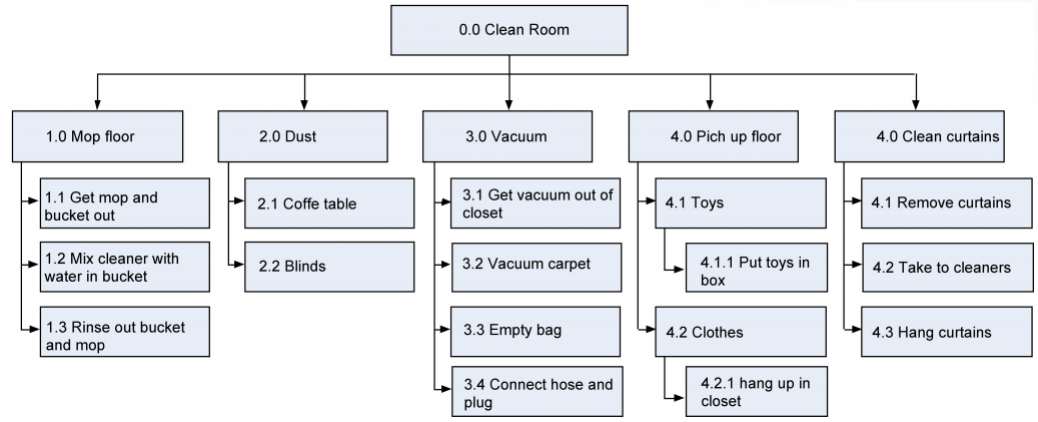
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## 14. Bottom up development 2.4.3.2 PM Standard

- I. Start with Deliverables or User Stories
- II. Logically group related activities, sub deliverables, features
- III. Aggregate to a higher level, analyze the subset to assure all work has been encompassed
- IV. Repeat until all project elements aggregate to a single parent level representing the program.
  - Useful when critical to confirm all projects are included
  - Examples:
    - Eliminate one headquarters
    - Consolidate HR and Engineering
    - Combine database systems

# Sample Program WBS Hierarchy

- Level 1 Program
- Level 2 Projects, Subsidiary Programs, Program Activities
- Level 3 Sub projects, Phases or Agile Iterations/Sprints
- Level 4 Deliverables, Outcomes Capability, Feature
- Level 5 Work Packages or Agile User Stories
- Level 6 Activities(tasks)



# Requirement Traceability

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- Consider the Program requirement to deliver a new CRM system. Select the appropriate option for the CRM software system that delivers most of the high priority value/functionality at a fraction of the cost of a full featured CRM system. Estimate the loss of functionality percentage (10, 20, 50%) and the cost savings percentage (5, 30, 60%)
  - a. Use of an off the shelf CRM tool
  - b. Add mobile functionality to current CRM tool
  - c. Develop an Excel macro containing basic customer information and preferences
  - d. Other?

# Risk Assessment Interdependencies

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- Best way to minimize and manage program surprises.
- Risk, Assumptions, Issues, Dependencies
- Risk Interdependency Criteria
  1. Risk Probability
  2. Risk Impact
  3. Risk Frequency
  4. Risk Timing
  5. Risk Direction (Centrality)

# Risk Assessment Interdependencies

Taiwan University ISD Project Hwang, Hsiao, Chen, Chern

Project Management Journal Feb/March 2016

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- Project and Program risk are often interrelated
  - a. Resource availability & Cost
  - b. Complexity & Training
  - c. Outsourcing & specifications details
  - d. Authentication security & user friendly access
  - e. Advertising cost(Google ad placement) and market share(sales)
  - f. Others?
- Risk A, B, & C have additive and compounding effects

# Risk Assessment Interdependencies

Taiwan University ISD Project Hwang, Hsiao, Chen, Chern  
Project Management Journal Feb/March 2016

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- Project and Program risk are often interrelated
- Centrality Factor
  - Risk B is Central to both Risk A and Risk C
  - Outgoing connecting leaving Risk A, headed to Risk B
  - Incoming connectivity headed to Risk A from Risk B



# Risk Assessment Interdependencies

Taiwan University ISD Project Hwang, Hsiao, Chen, Chern

Project Management Journal Feb/March 2016

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- Extended DEMATEL Approach
  1. Identify risk relationships  
(does a influence b)
  2. Identify strength of the influence  
(how much does a influence b)
  2. Use Quantitative Risk Analysis to measure influence
  3. Use FMEA (Failure Modes Effect Analysis) to detect and measure influence
  4. Identify feedback effect of b on a  
(#of relations x degree of influence)

# Risk Interdependencies

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- Asset Legal hold or Data Retention Duration
  - Company A has 3 day hold/3 month data retention
  - Company B has 30 day hold/7 year data retention
- Identify, Quantify, Communicate and Manage related project risks
- Application & Infrastructure Projects
  - Project A is to design and implement new video conference software (due 12/31/23)
  - Project B is working on segmenting current applications for cyber security and needs to run until VC software training is completed and validated (Beta due 3/31/24) Typical training/validation takes 3-4 months

# Program Management Best Practices

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- a. Define program desired outcomes and benefits  
(Business Case)
- b. Identify all the projects appropriate for the Program
- c. Identify Program Sponsor and Program Manager
  - I. Sponsor to approve charter
  - II. Engage in program prioritization
  - III. Select Program Manager
- d. Develop Program Charter. Obtain charter approval

# Program Management Best Practices

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- f. Prioritize projects in the Program. Allocate program budget across all projects.  
(What prioritization scheme works in your culture?  
How are priority options quantified for continuity? I.e., high, medium, low
- Project Prioritization
  - Sets resource management (which resource and when assignment is made)
  - Strength of strategic links
  - Impacts selection of project manager

# Program Management Best Practices

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- g. Identify and manage project interdependencies
  - i. Risk
  - ii. Constraints
  - iii. Conflicts
  - iv. Assumptions
  
- h. Projects done in phases may warrant Program Management
- i. Project revisions and upgrades may warrant Program Management
- j. Programs may warrant a “multi-weighted” project selection criteria

# Program Management Best Practices

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- k. Manage Project to Project Agreement
  - Potential areas for project agreements
- l. Project Exit ramp criteria (Cancel, Delay or Descope)
- m. Enhance program benefits by sequencing project components as needed (Website, mobile app, AI Bots, which first?)
- n. Programs may warrant project diversity to balance organizational strategy
- o. Identify and manage project interdependencies
  - Risk, Constraints, Conflicts, Assumptions, etc.)

# Program Governance

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1. Authorize, change or cancel projects in the Program
2. Develop & communicate shared governance structure (changes, reporting, quality, variance reporting, Basis of Estimates, etc.)
  - Manage change request within a shared governance. Identify and manage changes that affect multiple projects.
3. Aggregating cost and schedule contingency
4. Contingency release protocol
5. Leverage common project risk response plans

# Program Reporting

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**Program/Project Control** – Integrating different project controls. Accurate reporting of project/program progress of Schedule, Cost, Quality, Deliverables, Risk. Integrating different progress metrics.

**Program Cost Management** – Scalable cost management rolled up from projects to program. Reporting cost at project level to incorporate into accurate forecasting of end of program cost.

**Procurement Management** – Leveraging outsourced work for benefits of scale among projects. Contract selection, Conduct and control procurement & proposal evaluation for maximum ROI.



# Program Controls

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**Human Resources Management** – Sharing/leveling project resources across the Program. Just in time resource availability, resource conflicts, variable resource skill level. Managing project conflicts within the program.

**Schedule Management** – Managing cross project activities, shared resources or related deliverables and milestones. How does Project A impact Project B milestones and end dates?

# Leveraging the Procurement Process

## Contract Types

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### 1. Fixed Price Contracts

- Firm Fixed Price
- Fixed Price with Incentive Fees
- Fixed Price with Economic Adjustments

### 2. Cost Plus (Reimbursable) Contracts

### 3. Time & Material Contracts



# Leveraging the Procurement Process

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## Enterprise Environment Factors

1. Marketplace conditions. Favorable or not for outsourcing at this time?
2. Marketplace availability. Single or multiple competitive suppliers
3. Supplier experience, biases and assumptions
4. Typical or special terms and conditions. Industry, Project, Product specific.
5. Unique country, state or local requirements.

# Plan Procurement Management

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- Firm Fixed Price (price ceiling)
  - Risk transferred to seller
  - Risk paid for by buyer
  - Buyer must have precise specifications
  - Changes by buyer subjected to cost increases (often significant)
- **Firm fixed Price**
    - Most common contract type
    - Perception that price is set (fixed) at contract inception
    - Cost increase born by seller if proven it is related to their performance.
    - Cost increases with root cause not proven by seller subjected to increase.
    - Options to avoid significant cost increases

# Leveraging the Procurement Process

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- a. Cost Reimbursable Contracts
  - b. Risk kept by buyer
  - c. Risk paid for by buyer (often at lower costs)
  - d. Include fee for sellers profit
  - e. Great for environment when scope precision is poorly known or defined; i.e. high risk procurement
  - f. May include seller incentives and/or penalties
  - g. Often called Cost + contracts
- **3 types of Cost-Reimbursable Contracts**
    1. Cost Plus Fixed Fee
    2. Cost Plus Incentive Fee
    3. Cost Plus Award

# Leveraging the Procurement Process

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- a. Cost Reimbursable Contracts
  - b. Risk kept by buyer
  - c. Risk paid for by buyer (often at lower costs)
  - d. Great for environment when scope precision is unknown; i.e. ultra high risk procurement
  - e. May include seller incentives and/or penalties
- **Time & Material Contracts (T&M)**
    - a. Combination of Fixed fee and Cost Plus
    - b. Often used with:
      - Very Poor scope definition
      - Staffing procurement
      - Unplanned projects
    - c. Full expected expense may not be determined.
    - d. May include a not to exceed value
    - e. Unit pricing terms may be included such as labor rates, rental rates, material rates.

# Program Procurement Management

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- Delivery of Corona Virus vaccines to 350 million candidates in the 50 states plus military bases overseas. complete this in 9 months. 4 Project in the program are:
  1. Develop a block chain data system to track inventory levels in real time.
  2. Develop robust marketing campaign to address vaccine hesitancy.
  3. Delivery of vaccine to 400 final use location
  4. Storage of vaccine (temp, humidity, etc.)
  5. Disposal of expired and unused
- What type of contract should be used?
  - Cost Plus
  - Firm Price, Lump Sum
  - Time & Material
  - Cost Plus Fixed Fee

# Leveraging the Procurement Process

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## **ASK AN EXPERT**



- Expert Judgment
  - Best type of Contract to use
  - Contract evaluation Criteria
  - Contract Performance Metrics
  - Terms and Conditions
  - Legal, technical (product or service), procurement experts, etc.



# Abraham Lincoln on Program Management

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Thank you!

## Summary

1. *Portfolios vs Programs vs Projects*
2. *How the outputs differ*
3. *How the roles differ*
4. *Different skills required*
5. *Program Management Best Practices*



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