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Engineering the Business of Defense Acquisition: An Analysis of Program Office Processes

Charles K. Pickar, Naval Postgraduate School

Raymond D. Jones, Naval Postgraduate School

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Overview

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- Background, “The Fog of More…”
- Research Approach
- The Problem
- Methodology
- Proposed Model
- Conclusion

The Fog of More…

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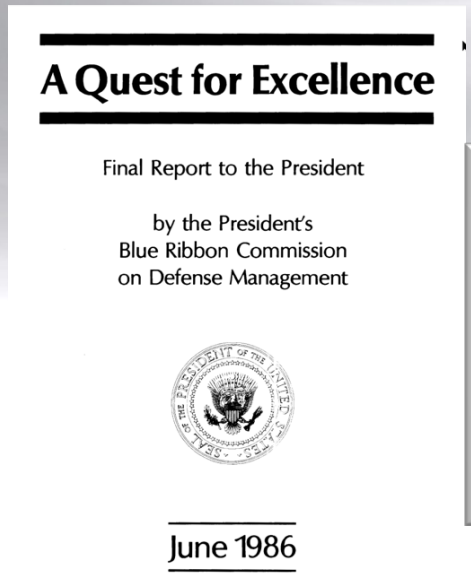


A Quest for Excellence

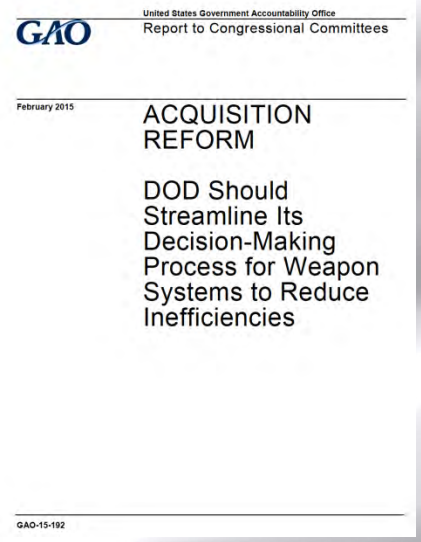
Final Report to the President

by the President's
Blue Ribbon Commission
on Defense Management

June 1986

Removing bureaucratic inefficiencies in our acquisition of major weapon systems …. The [PM] finds that, far from being the manager of the program, he is merely one of the participants who can influence it. An army of advocates for special interests descends on the program …. (Packard Commission)

- *"We surveyed 24 program managers that held a milestone B or C decision since 2010 and found that it took them over 2 years on average to complete the entire set of documents needed for the milestone decision. The program managers, as well as other acquisition officials we surveyed, considered on average about half of the information requirements as not highly valued."* (GAO, 2015)



GAO

United States Government Accountability Office
Report to Congressional Committees

February 2015

ACQUISITION REFORM

DOD Should Streamline Its Decision-Making Process for Weapon Systems to Reduce Inefficiencies

GAO-15-192

The Approach

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- Multi-phased Effort to address acquisition reform at the PM level—where projects are actually managed
- Using Enterprise Systems Engineering (ESE) develop a system model of Program Management Office (PMO) functions
  - ESE links systems management to process execution

The Problem

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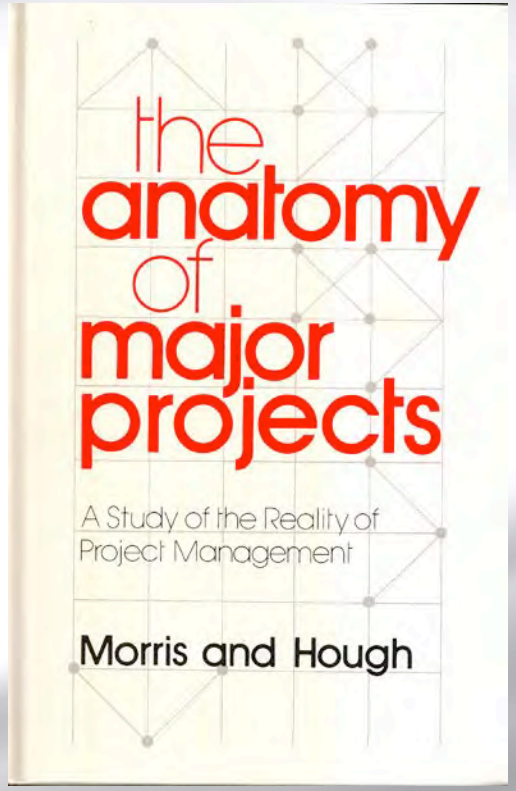
- *"Curiously despite the enormous attention project management and analysis have received over the years, the track record of projects is fundamentally poor, particularly for the larger and more difficult ones. Overruns are common. Many projects appear as failures, particularly in the public view. …[W]hy does the record so consistently show project overruns to be the norm? Is this the indictment of project management that it seems?* *(Morris & Hough, 1988)*



Is this a policy or management problem?

Project Management as System

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- An enterprise system consists of a purposeful combination (e.g., a network) of interdependent resources (e.g., people, processes, organizations, supporting technologies, and funding) that interact with each other to coordinate functions, share information, allocate funding, create workflows, and make decisions, etc.; and their environment(s)
- A network of many variables in casual relationships = incomplete knowledge*
  - Interdependent
  - Dynamic
  - Unstable
  - Opaque
  - Uncertain

*D. Dorner; P. Nixon; S. D. Rosen, Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, Vol.327, No. 1241, Human Factors in Hazardous Situations. (Apr. 12, 1990), pp. 463-473.

Acquisition as Enterprise System

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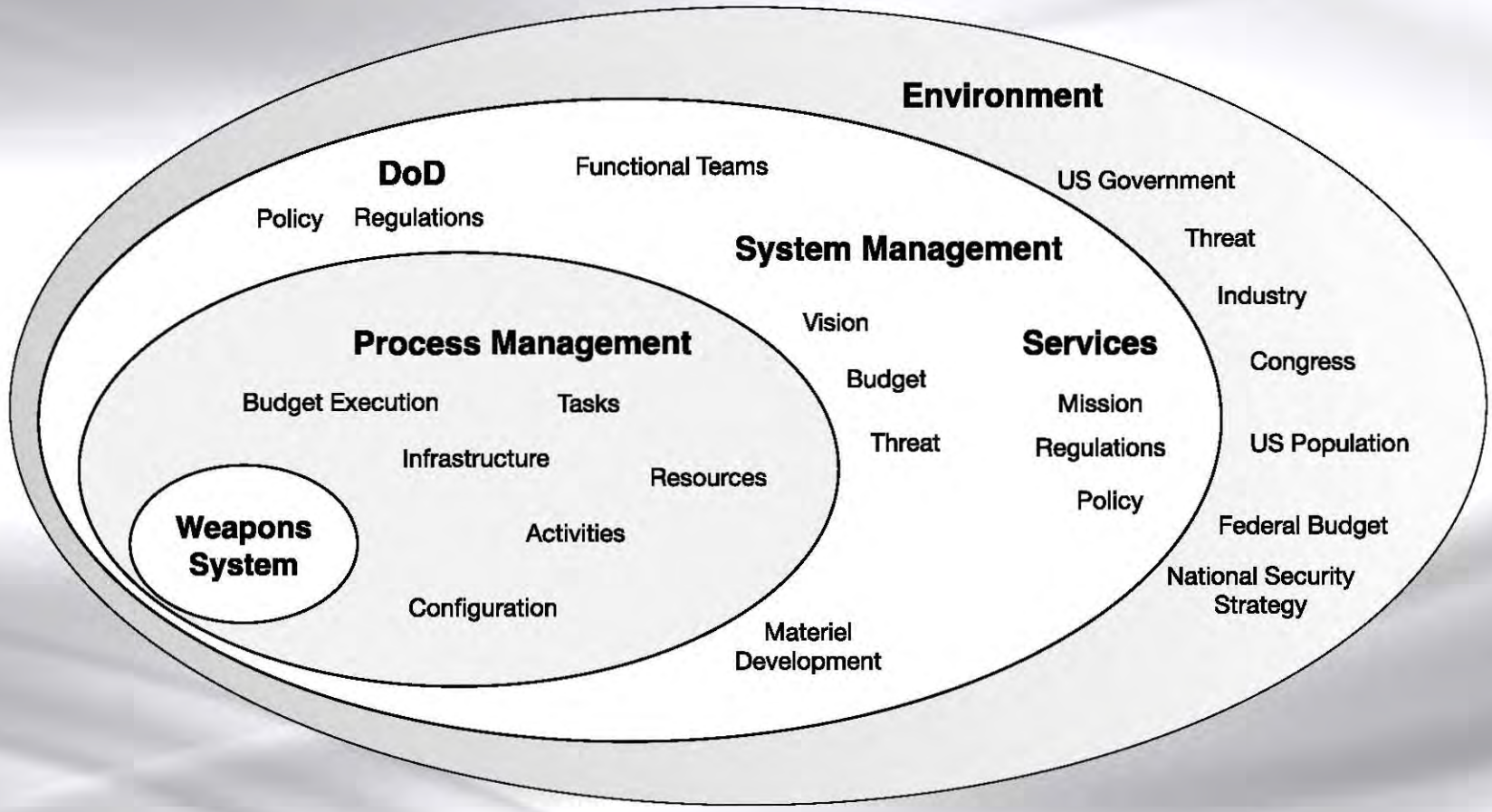

Process, Functions & Management

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Enterprise System Engineering

- Interdependence
- Processes
- Social
  - People
  - Optimized for Job satisfaction
- Technical
  - Procedures
  - Technology
  - Optimized for efficiency

Project Management Tasks

- Activity Management
- Configuration Management
- Resource Management

Process Growth Through Life Cycle

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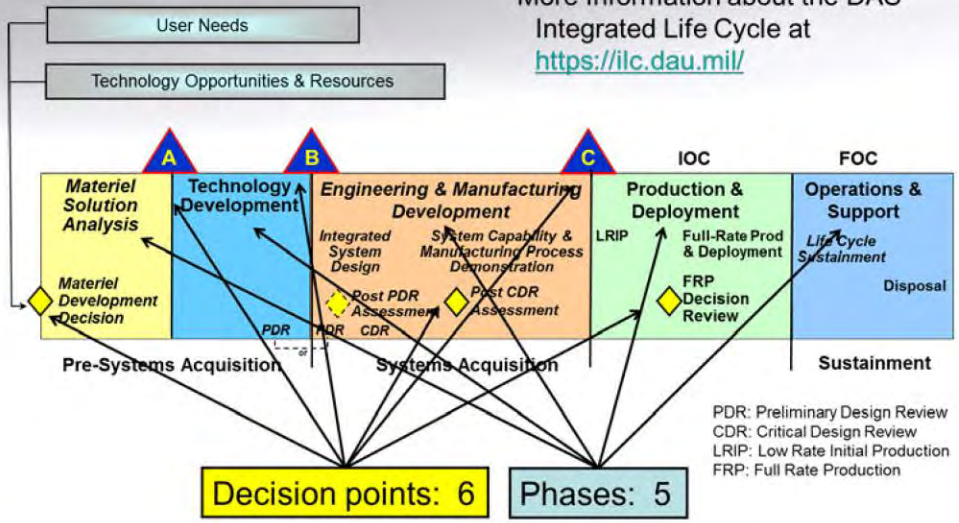

More Information about the DAS Integrated Life Cycle at https://ilc.dau.mil/

- Acquisition Decision Memorandum (ADM)
- Analysis of Alternatives (AoA) (update)
- Acquisition Strategy
- Affordability Assessment
- Acquisition Program Baseline
- Acquisition Information Assurance Strategy
- Benefit Analysis & Determination
- Capability Production Document (CPD)
- Title 40/Clinger-Cohen Act (CCA) Compliance
- CIO Confirmation of CCA Compliance ***(for MDAPs & MAIS, DoD CIO confirms)***
- Consideration of Technology Issues (ACAT I & II)
- Competition Analysis
- ***Component Cost Estimate (CCE)***
- Cooperative Opportunities
- Core Logistics Analysis/Source of Repair Analysis
- Cost Analysis Requirements Description (CARD) (MDAP & MAIS)
- ***Corrosion Prevention Control Plan***
- ***Data Management Strategy (in acquisition strategy)***
- Exit Criteria
- Initial Capabilities Document (ICD) (if program initiation)
- Independent Cost Estimate (ACAT I)
- Independent Technology Readiness Assessment (TRA) (ACAT ID)
- Information Support Plan (ISP)
- Industrial Base Capabilities (MDAP)
- ***Item Unique Identification Plan (SEP annex)***
- Life Cycle Sustainment Plan (LCSP)
- ***Life Cycle Signature Support Plan***
- Manpower Estimate (MDAP)
- MDA Program Certification (if program initiation)
- ***Military equipment valuation (in acquisition strategy)***
- Net-Centric Data Strategy (in ISP)
- Operational Test Agency OT&E Report
- Program Protection Plan (PPP)
- Programmatic Environment, Safety, & Occupational Health Evaluation (PESHE)
- Selected Acquisition Report (SAR) MDAP (if rebaselined)
- Spectrum Supportability Determination
- ***Systems Engineering Plan (SEP)***
- ***System Threat Assessment Report (STAR)(ACAT I)***
- System Threat Assessment (ACAT II)
- Technology Readiness Assessment (TRA)
- Test & Evaluation Master Plan (TEMP)

- Acquisition Decision Memorandum (ADM)
- Analysis of Alternatives (AoA)
- Acquisition Information Assurance Strategy
- Clinger-Cohen Act (CCA) Compliance
- CIO Confirmation of CCA Compliance ***(for MDAPs & MAIS, DoD CIO confirms)***
- Consideration of Technology Issues
- ***Component Cost Estimate (CCE)***
- Economic Analysis (MAIS)
- Exit Criteria
- Initial Capabilities Document (ICD)
- ***Item Unique Identification (IUID) Implementation Plan***
- ***Life Cycle Signature Support Plan***
- Market Research
- ***MDA Program Certification***
- Program Protection Plan (PPP)
- ***Systems Engineering Plan (SEP)***
- Technology Development Strategy (TDS)
- Test & Evaluation Strategy (TES)

- Initial Capabilities Document (ICD)
- ***AoA Study Guidance (AoA Plan due immediately following the MDD)***

Project Management is Accomplished by Processes

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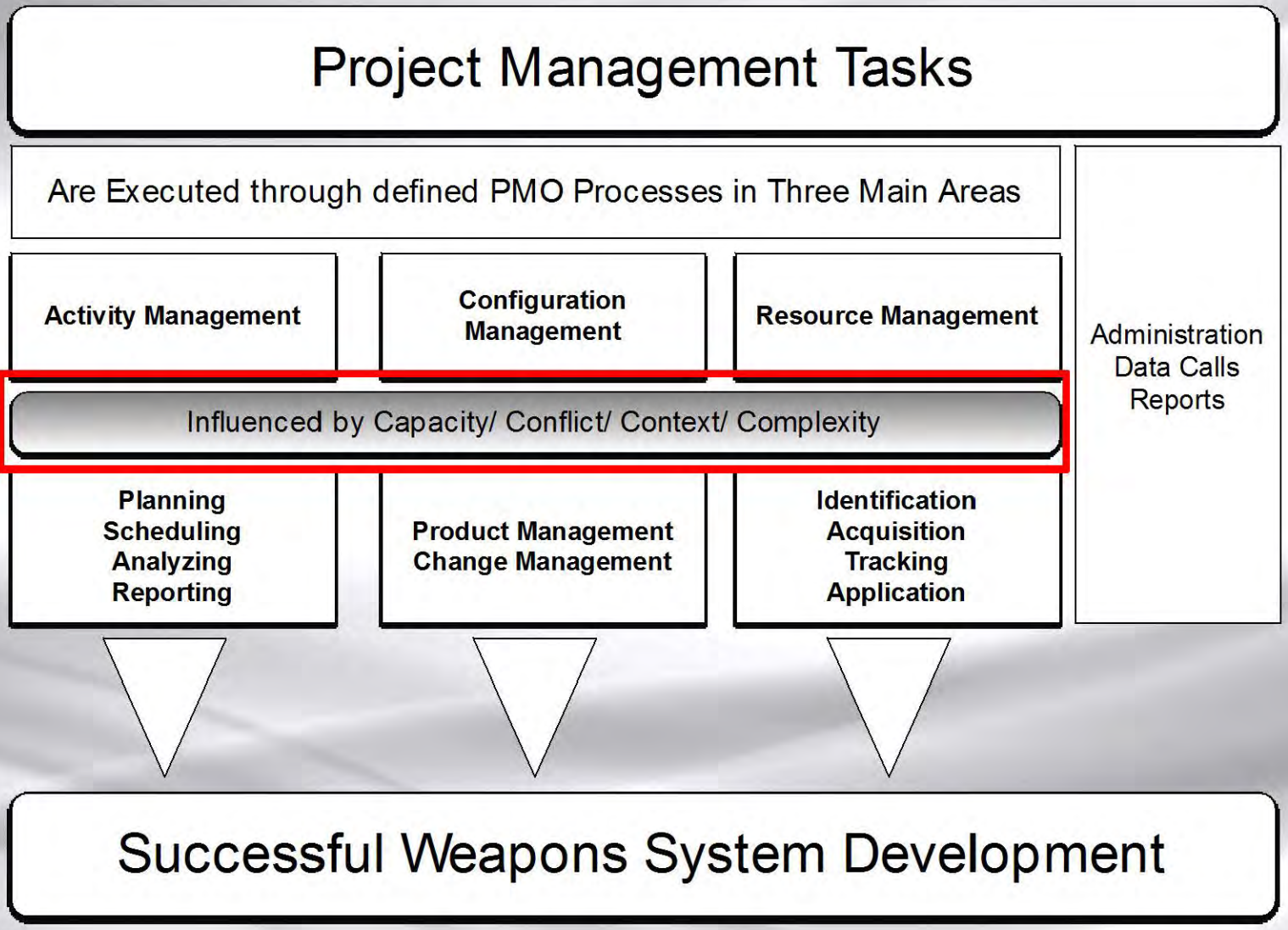

Characteristics of Process*

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- Define how the work of the organization is done
- Logical organization of people, materials, energy, equipment and procedures into work activities designed to produce a result.
- Set of processes lead to the accomplishment of a task
- Cross organizational boundaries (between tasks and organizations)
- Process Entities
  - Interorganizational
  - Interfunctional
  - Interpersonal
- Process Activities
  - Operational
  - Managerial

A Quantitative and Qualitative Approach to Acquisition Research is Essential

*Davenport, T. (1990). The New Industrial Engineering: Information Technology and Business Process Redesign | MIT Sloan Management Review. MIT Sloan Management Review. Retrieved from http://sloanreview.mit.edu/article/the-new-industrial-engineering-information-technology-and-business-process-redesign/

Analytical Framework

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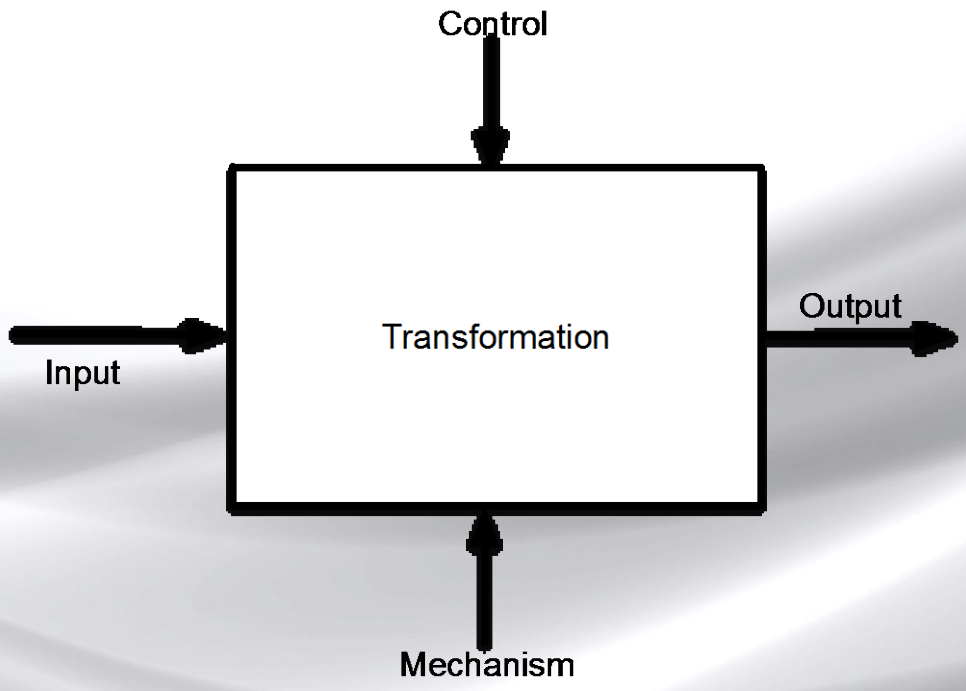
- Systems Engineering
  - Enterprise Systems Engineering
  - Business Process Reengineering
  - Socio-political
  - PMO process classification
  - PMO process categories
- Management Science
  - Decision making
  - Change

IDEF0 Modeling Approach



Process Elements

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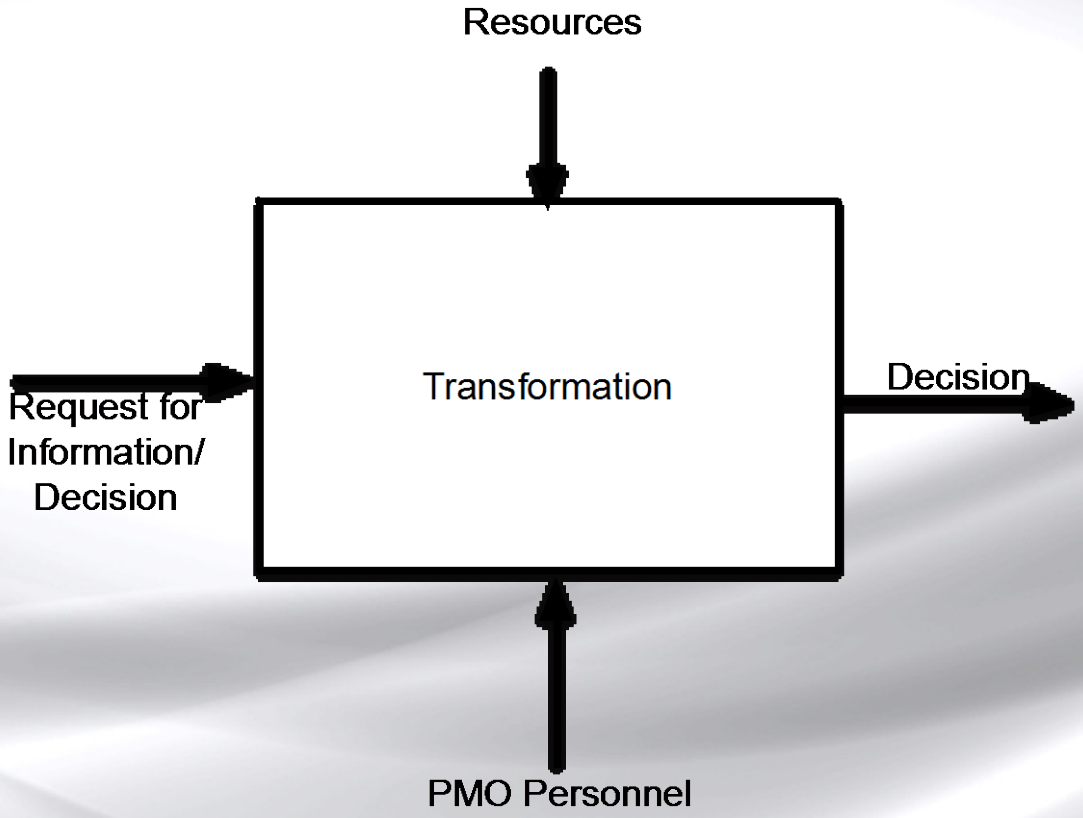
- Work
- Resources
- Information
- Decision

Decision = Information + Resources + Work



Process Category Level

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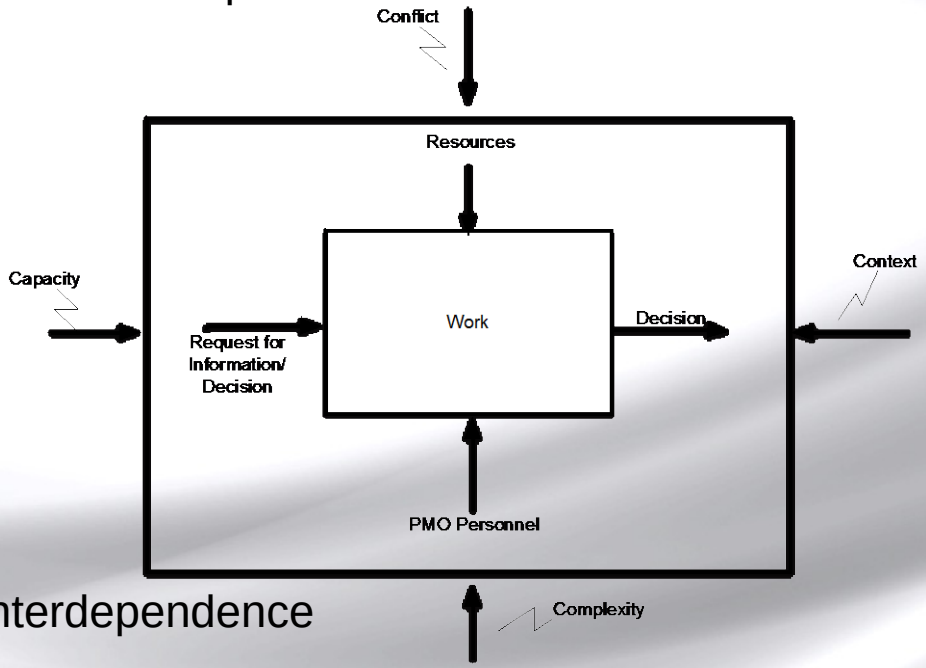
- Capacity/ Scope
  - Amount of work that can be performed by the PMO in a set amount of time
  - Finite measure—internally generated capacity or externally contracted
  - Metrics = actions, processes, decisions and completed tasks
- Conflict
  - People, system and organization
  - Matrix environment challenges
- Context
  - PMO ecosystem
  - Stakeholders
  - Communication
- Complexity
  - System focused
  - Structural, Dynamic, Socio-political, interdependence
- Value



Process Categories

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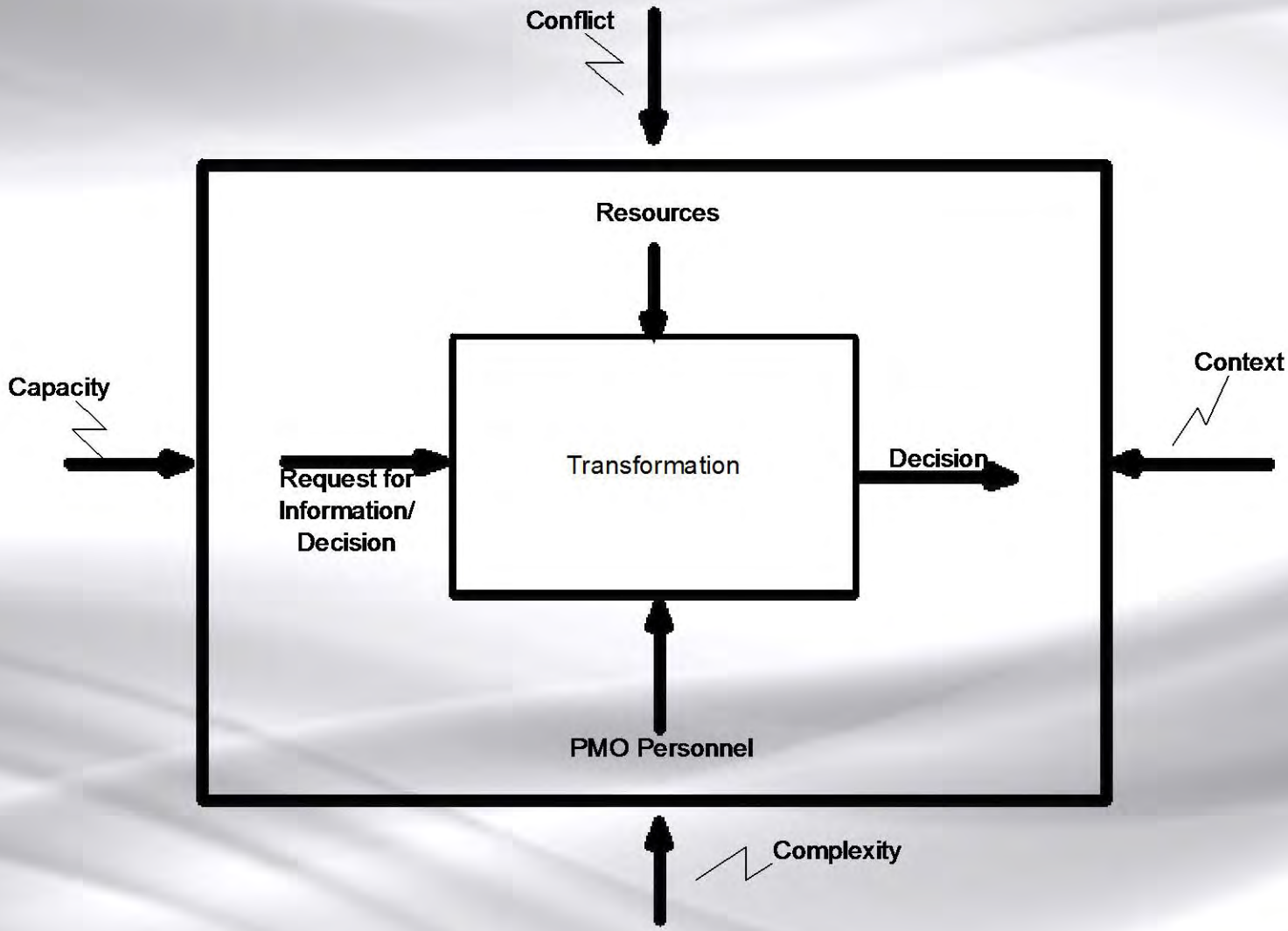

Process Model

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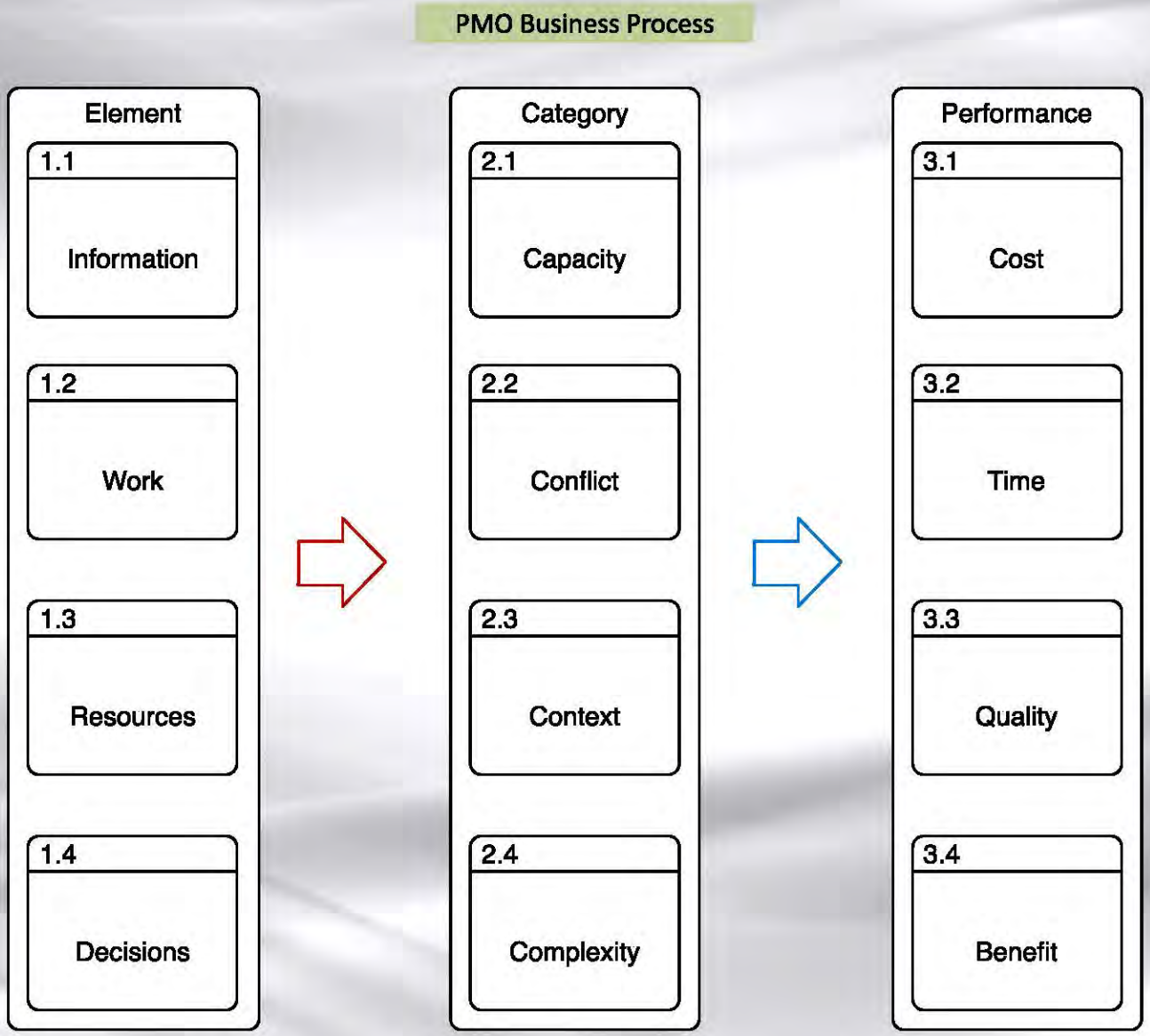

Conclusion

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- Reform will not come from top-driven initiatives alone—A systems approach that links the systems management level to PMO processes can help identify best practices
- An enterprise systems engineering approach provides a framework for examining PMO activities and decisions
- Process Level analysis will help extend research beyond policy adjustments to get at the heart of acquisition change
- Process focused analysis will identify those value adding and key decision process activities in the PMO
- A broad systems approach to the entire acquisition system will ensure a more complete understanding of the challenges and lead to better solutions

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BACKUP

IDEF Modeling Norms

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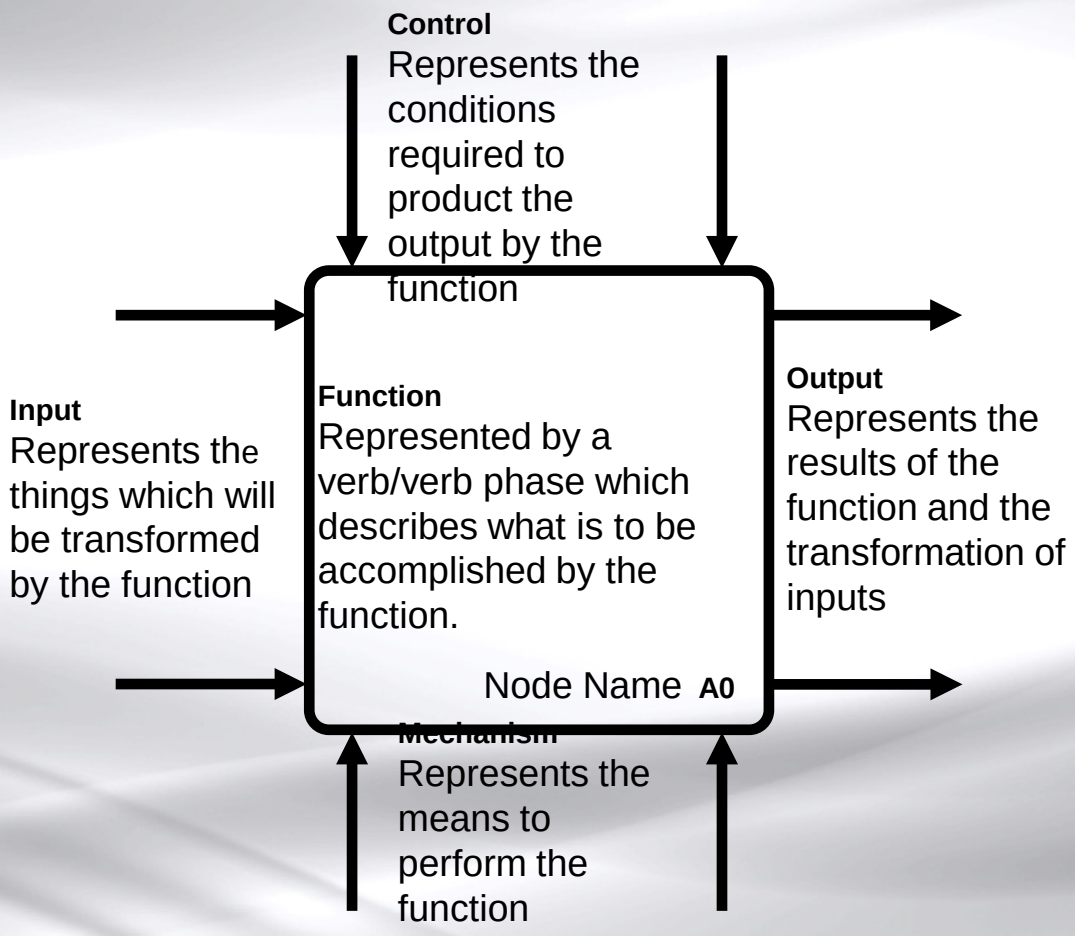

Definitions

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- System: A set of interacting or interdependent components forming an integrated whole.
- Reengineering: The fundamental rethinking and radical redesign of core business processes to achieve dramatic improvements in critical performance measures such as quality, cost, and cycle time.
- Process: a structured, measured set of activities designed to produce a specific output for a particular customers or market.