Identifying Enterprise Leverage Points in Defense Acquisition Program Performance

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Early Research Observations

- **Anomalous behaviors of <u>a</u>cquisition are in-fact <u>*emergent behaviors*</u> of a much larger, complex system**
  - **Prior studies suggest many of the 'pathologies' outside of the control of the acquisition managers**

- **These studies point out a need to understand the *entire* system**
  - **To cut any piece out (like <u>a</u>cquisition) and study it exclusively would preclude finding a full set of root causes**
  - **Therefore, I began to look "outside" of <u>a</u>cquisition**

Challenge: Find an appropriate representation for the Enterprise

- **Here's what I did**
  - **Borrowed ideas and concepts from Value Stream diagramming**
  - **Used commonly accepted understandings of probabilities and occurrence**
  - **Represented activity in frame of reference understandable to target audience: military and civil servants in AF (used DAU "Wall Chart" organizing framework)** 🛈
  - **Scoped it to a reasonable abstraction and size**
    - **Main unit of measurement is a "program"**
    - **Restricted to ACAT I, II, and III programs**
    - **Limited to Milestone C and earlier in Acquisition parlance**

Top Level Abstraction

A Representation of the Enterprise of "Cradle to Grave" Acquisition in the US Air Force

Swim Lane	Pre-MS "A" (Concept Refinement)	Pre-MS "B" (Technology Development)	Pre-MS "C" (System Development & Demonstration)	Pre-Full Rate Production (Production & Deployment)	Operations and Sustainment
User					
Requirements					
Money		Scope of Model			
Acquisition					
Contractor					

Time ⟶

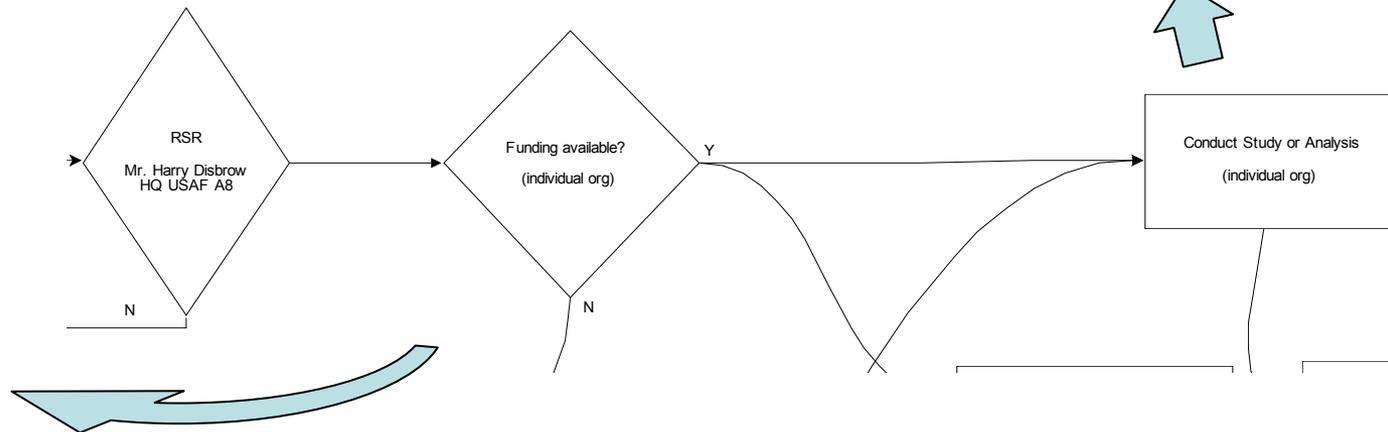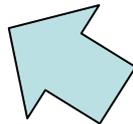Pre-MS A   Pre-MS B   Pre-MS C
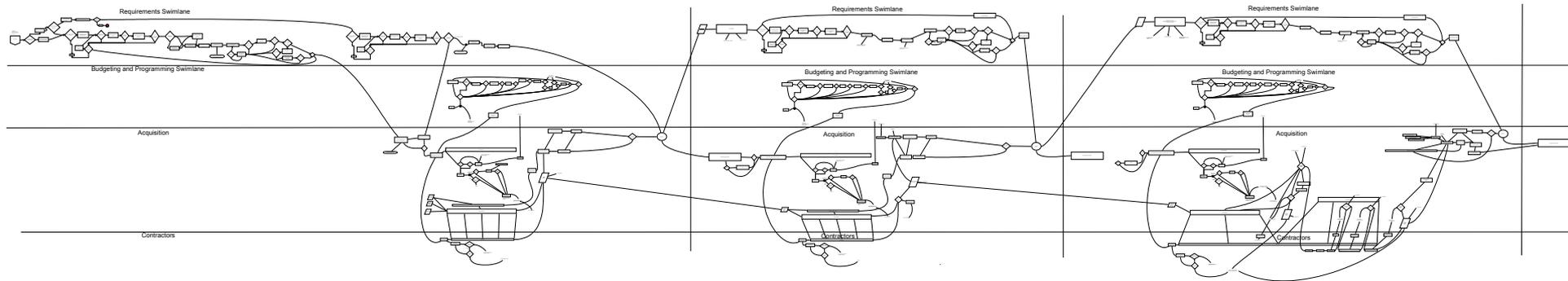
Output consists of time elapsed and actual cost for single program
 - and tracks comparison to proposed time required and original proposed costs

Model Design: Every decision point, every process task, is documented and sourced; now validated

RSR – **Decision Point**
-Sources: Official Docs, Interviews (Krussel, Moen)
-Probability: 98%

Conduct study or analysis – **Task**
-Sources: Official docs, Interviews (Krussel, Duda)
-- Time Distribution: 45 to 180 days; binomial, p=0.40

Funding Available? – **Decision point**
-Sources: Interviews (Krussel, Schilling, Duda)
-Probability: 80%

RSR

Mr. Harry Disbrow
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N

Funding available?

(individual org)

Y

N

Conduct Study or Analysis

(individual org)

Discussion and Policy Implications

- **A Few examples**
  - **PDR (and new DoD 5000.2 response)**
  - **Rework modeling (explicit vs. implicit)**
  - **Variance at local levels vs. Enterprise variance**
  - **Undocumented handoffs, waiting periods**

- **Policy Implications**
  - **Consider ^ overlay of staffing profiles to Enterprise model behavior**
  - **Consider ^ error bars of program vs. point estimates**
  - **^ Oversight functions, managing risk, value-added govt workforce activities**

- **Candidate issues to pursue:**
  - **How much time is spent "waiting" in the system?**
    - **What is the cost of waiting?**
    - **How can the ratio of waiting to non-waiting taks be improved?**
  - **Which tasks do the data suggest have a more influential role in taking time (or cost) in the overall process?**
    - **What is the overall impact of a process' time to Enterprise outcomes?**
  - **Where can an Enterprise leader suggest "investments" into the process with the greatest impact to cycle time or cost reduction?**

Summary

- **Introduction to problem and motivation**
- **Model development**
- **Discussion and Implications**