Actions to Enhance the Injection of Commercial IT in DoD Systems: A Synthesis Perspective

CTNSP, NDU

8 July 2004

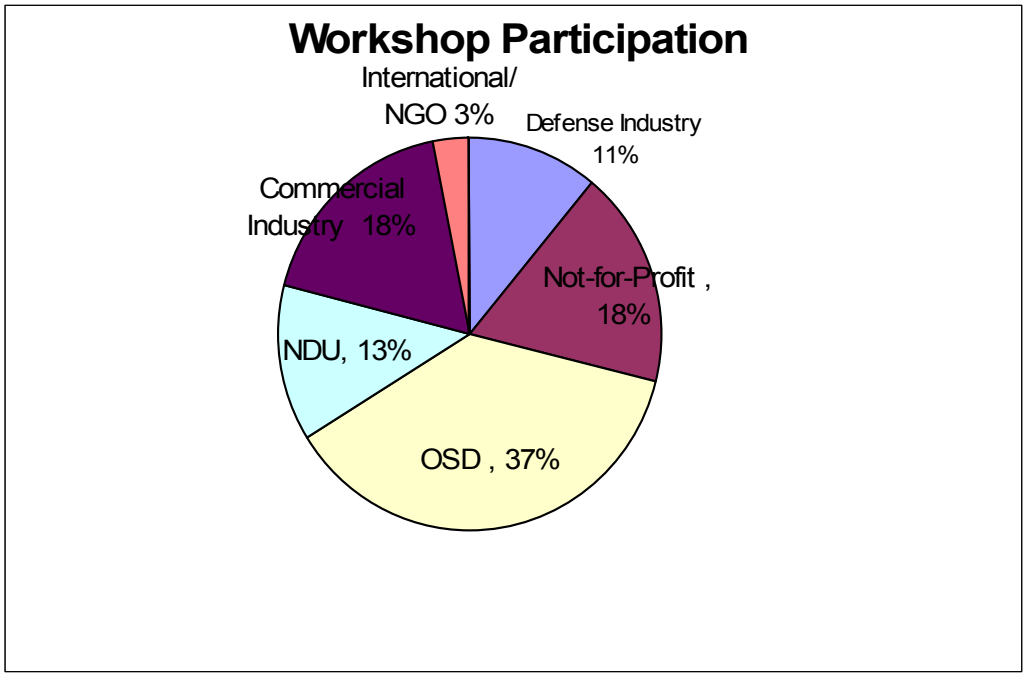
Outline

- Introduction
- Insights on Nature of the Problem
- Highest Priority Recommendations
- Summary

Background

- Who
  - Sponsor: Center for Technology and National Security Policy (CTNSP), National Defense University (NDU)
- What
  - Convened a Workshop to explore options to enhance the use of commercial information technology in DoD systems
- How -- Established five break-out groups
  - I Enhancing Communications, Decreasing Barriers
  - II Creating New Institutions (Policy)
  - III Creating New Institutions (Technical)
  - IV Lessons Learned and Harvesting Low Hanging Fruit
  - V Case Study: Stabilization & Reconstruction Operations
- Where/When
  - NDU, Fort McNair, Washington, DC; 7-8 July

Workshop Participants



- Defense Industry (e.g., Lockheed Martin, BAH)
- Commercial Industry (e.g., Ericcson, CISCO,…, ArcSight)
- Government (e.g., OSD, COCOMS, Agencies)
- Academia (e.g., NDU, NPS)
- Not-for-Profit (e.g., IDA, MITRE, SEI, JHU/APL)
- IO/NGO (e.g., UN)

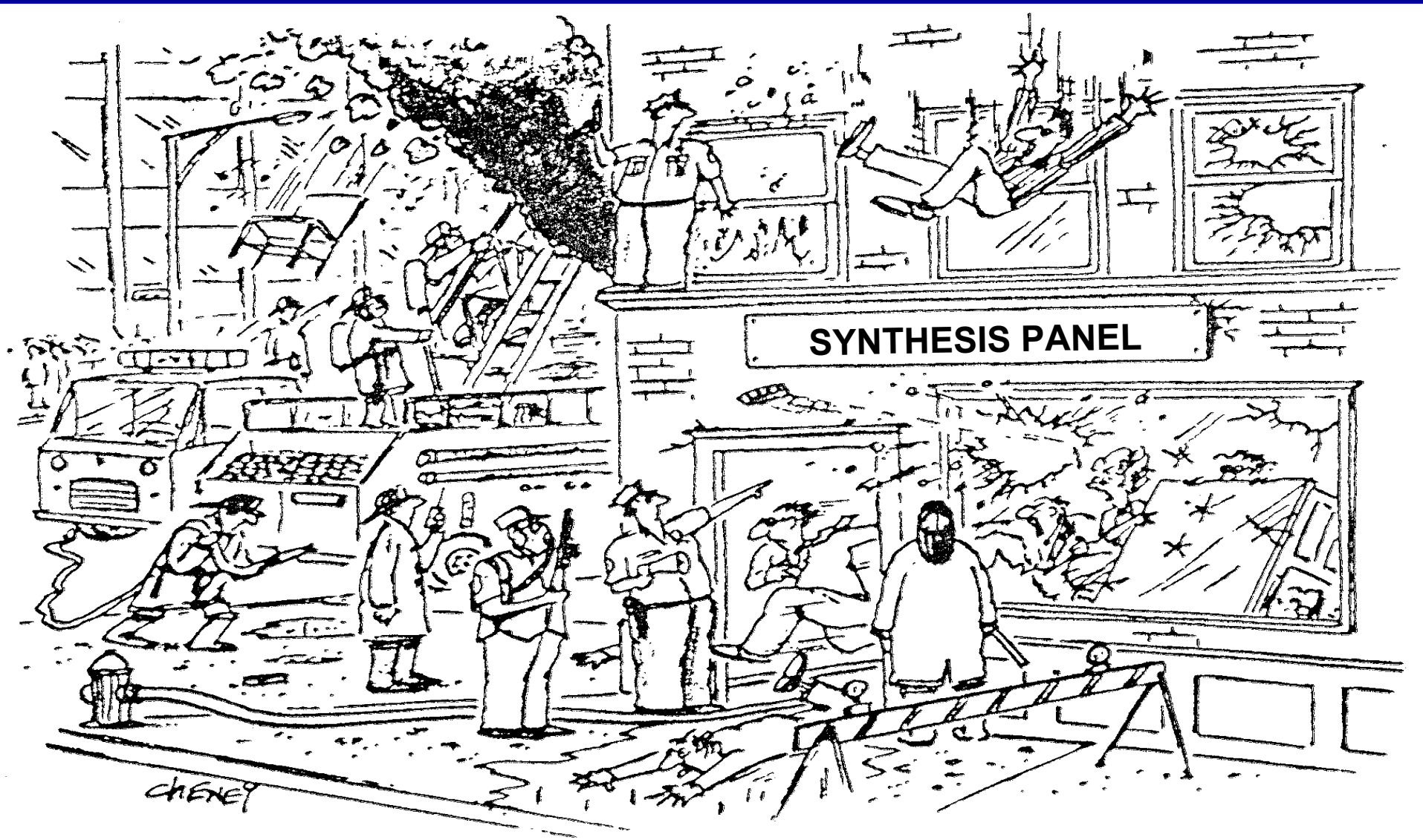
Synthesis Group Goals, Objectives

- Goals
  - Provide an overview of the entire Workshop
- Objectives
  - Clarify the nature of the problem, drawing on plenary presentations
  - Derive key findings and recommendations from the results of the break-out groups

Acknowledgement: Synthesis Panel Composition

- Frank Kramer, CTNSP
- Stuart Starr, CTNSP
- Alan Paller, SANS Institute
- Jim Gantt, ARL
- John Casciano, Ball Aerospace
- Ken Minihan, Paladin

Synthesis Panel: Concept of Operations



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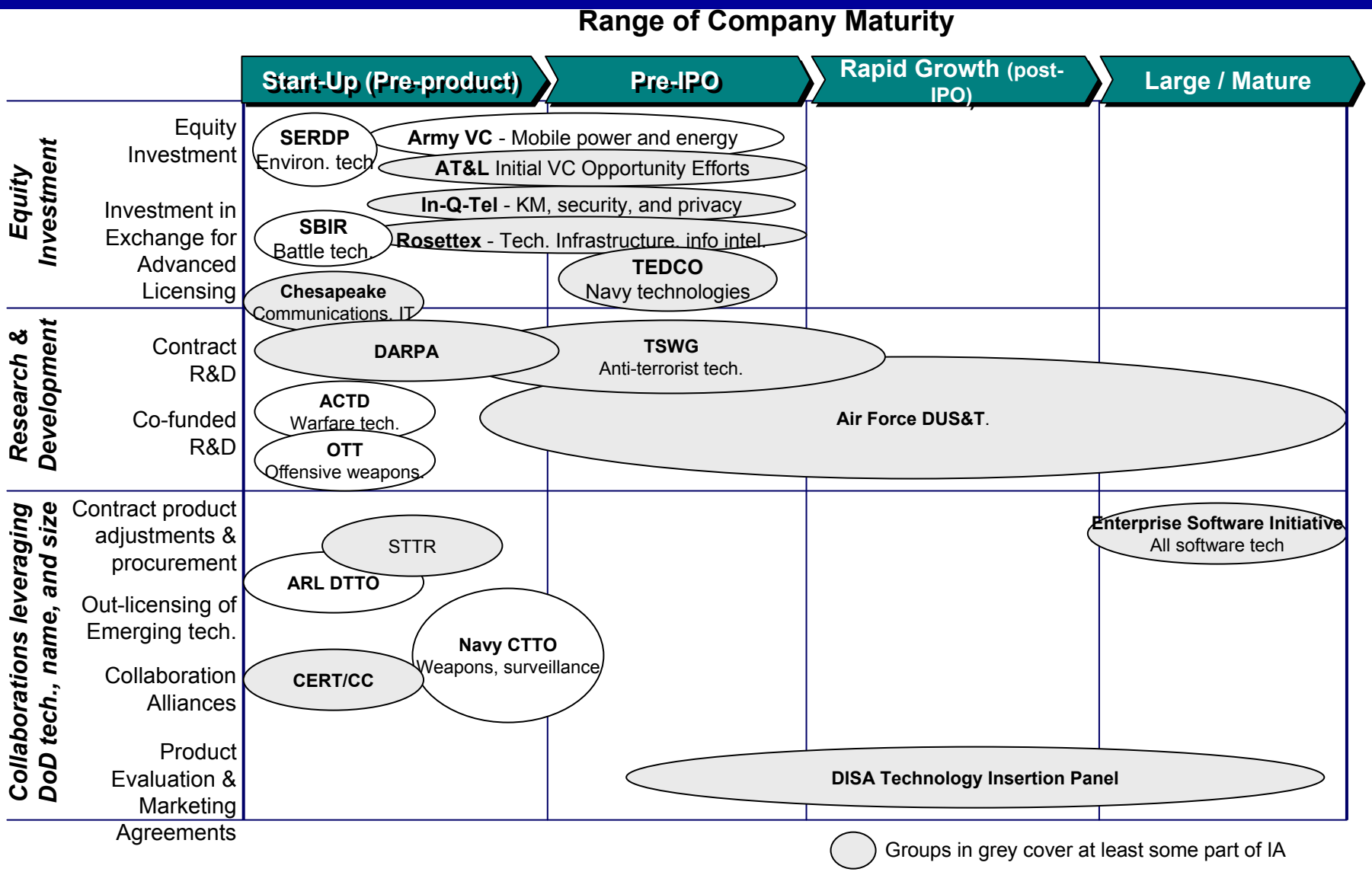
Perspectives of LTG Dunn, NDU

- LTG Dunn cited four reasons why NDU is convening this workshop
  - IT is critical to the Transformation of DoD
  - The cost of IT has substantial implications for DoD (in a microcosm, NDU pays $13K/machine)
  - Innovation in IT is largely occurring outside DoD -- how can DoD capture it?
  - Congress is asking us to study it

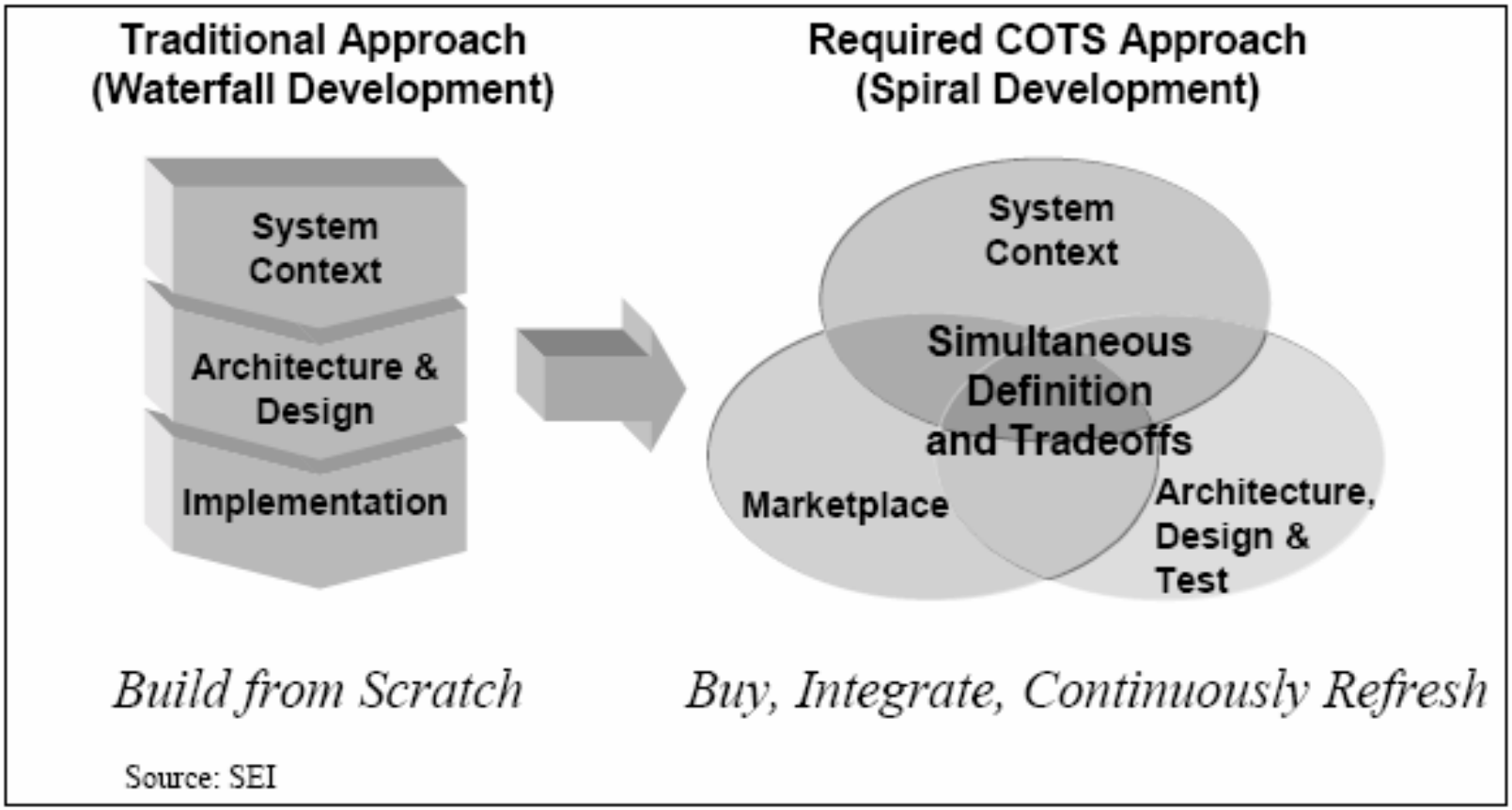
Perspectives of Frank Kramer

- Many challenges exist (e.g., DoD market for COTS IT characterized as non-attractive, non-transparent, non-agile, non-reach-out, isolating)
- A broad array of methods exist for DoD to capture COTS IT (15 options cited)
- Key DoD COTS IT concerns include
  - Integration
  - Reliability
  - Sustainability
  - Assurance
- Identified 11 slides worth of potential changes to enhance DoD's capture of COTS IT

DoD's Current Engagement Strategy



USAF SAB Perspective: Fundamental Culture Shift



Perspectives of Rep Smith (D-WA)

- "The military can not take years developing new products when commercial products are readily available"
- Some "good ideas" include
  - Venture Capital-related activities
  - Creation of web portals
  - Use of "Techfinders" (including Congress as a resource)
- Key issues include
  - Education (low and declining numbers of math/science/engineering students in the US)
  - Export control (need for a balanced approach that protects national security without eroding US international market share)
  - Incentives (reward bold individual risk takers who push the envelope)

Observations

- Bob Armstrong
  - "One goes through 3 stages in dealing with the Federal Government -- Frustration; Aggravation; Rage (FAR)"
- Page Hoeper
  - "The function of Government is to make things happen that otherwise would not" (re: creation of OnPoint)
- Frank Kramer
  - We must identify the *most critical* recommendations in the areas of
    - Policy (SecDef)
    - Legislation (Congress)
    - Implementation (other senior DoD decision makers)

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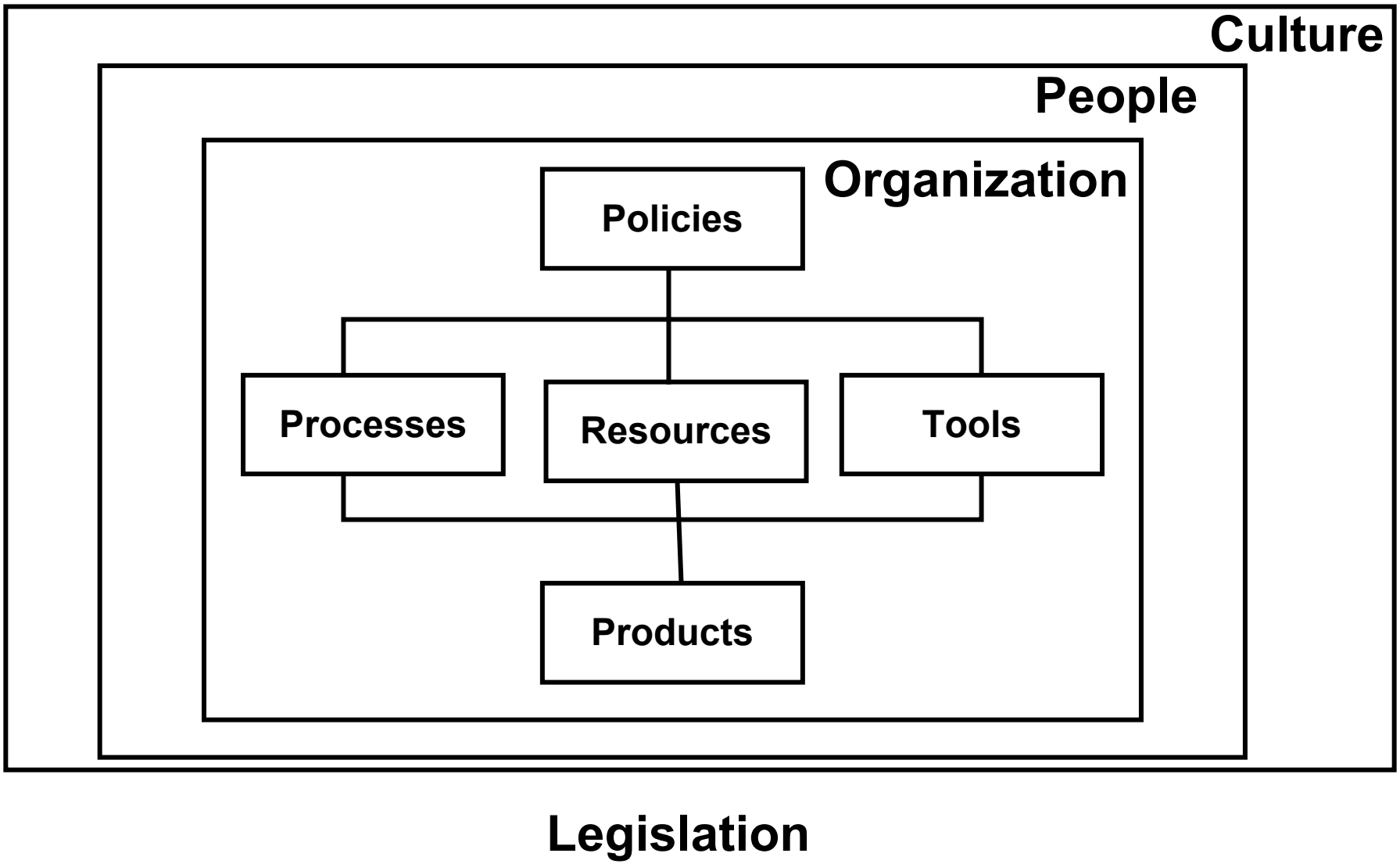
Framework for Recommendations



Key Recommendations (1 of 6)

- Culture
  - A *fundamental* change in the acquisition culture is required
  - We must transition from a culture of *information hording* ("titanium rice bowls") to *information sharing* (re: collaborative market surveys)
  - Leadership support is *critical!* e.g.,
    - Change incentives, disincentives (e.g., reward prudent risk taking)
    - Support cross-cutting communications, education, and training

Key Recommendations (2 of 6)

- People
  - Establish DoD COTS Advocates across DoD mission areas, domains
  - Develop curricula, programs to *enhance education and training for the PM, PEO*, emphasizing why and how to employ commercial IT products in DoD acquisitions
  - Change the *incentive structure* to encourage PMs, PEOs to take prudent risks in employing commercial IT
- People -- Decision makers
  - Sensitize senior decision makers to the nature of the problem (e.g., address in Capstone)
  - Provide decision makers with a list of COTS IT questions that they should pose to the PM, PEO team (see next slide for strawman)

Strawman Questions for the Decision maker to Pose

- Prior to the Acquisition
  - What are your plans to use commercial IT in the acquisition?
  - Have you conducted a thorough, in-depth market survey of relevant commercial IT products?
  - If you have decided not to employ commercial IT, justify your decision (considering the Total Ownership Cost (TOC))
- At the Initial Review
  - Are you using an open architecture that will facilitate the injection of commercial IT?
  - Have you done due diligence in evaluating the capabilities and limitations of the proposed commercial IT?
  - Are you planning to modify a COTS product to make it fit into your system (recognizing that it then ceases to be a COTS product)?
- At the First Spiral
  - What are your plans to refresh the COTS products that you are using?
  - What problems do you anticipate in the interactions among the COTS products you are using, refreshing?
- At Future Spirals
  - What lessons have you learned in your use of COTS (document them!)
  - What value (if any) have you derived from your use of COTS (e.g., avoided product obsolescence; reduced the TOC)

Key Recommendations (3 of 6)

- Organization
  - Establish new organizational mechanisms to encourage the injection of commercial IT into DoD; e.g.,
    - Create a Networked Virtual Organization
      - Mini-hub inside DoD
      - Centers of knowledge and action
      - Private sector facilitators
    - Enhance, facilitate, reward, and grow successful technology adoption models
  - Create new *joint* PMs responsible for acquiring commercial IT for the domains of warfighting, business, intelligence, and Enterprise Infrastructure Environment (EIE)
  - Create a Lead Government Agency for post-conflict S&R operations

Key Recommendations (4 of 6)

- Policies
  - Incentivize large defense companies to exploit COTS IT
  - Mandate waivers to use anything *but* COTS IT for
    - Business domain
    - EIE
- Processes
  - (DoD) Participate more aggressively in standards fora
  - Enhance the "TechFinder" role in DoD to improve insight into commercial innovations, concepts, processes
  - Create testbeds to facilitate the evaluation of commercial IT products (particularly for small, innovative companies that lack resources, clearances)
  - Introduce *risk based means* to streamline the transition of COTS IT through the JCIDS, acquisition, and PPBE systems

Key Recommendations (5 of 6)

- Resources
  - Provide resources to implement key ASD(NII) COTS IT initiatives (e.g., MID 905)
  - Provide resources to Combatant Commands for COTS IT exploitation
    - NORTHCOM (HLD)
    - JFCOM (support implementation of IPLs)
- Tools
  - Create and sustain a web portal to facilitate cross-community exchange of information (e.g., articulation of DoD needs; publishing of information on COTS IT products, capabilities)

Key Recommendations (6 of 6)

- Products
  - Perform and document, adequately resourced pilot activities to develop lessons learned
  - Focus attention on areas of “low hanging fruit” (e.g., commercial Information Assurance products; visualization products; M&S)
  - Emphasize the use of products that adhere to open systems standards
- Legislation
  - Authorize automatic reprogramming authority for $ saved using COTS
  - Establish thresholds below which Congress provides limited oversight of COTS IT injection efforts

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Summary

- The injection of commercial IT into DoD systems remains a continuing problem that must be managed *vice* solved
- The community has taken significant *initial* steps to address the problem; e.g.,
  - Formulated *policy* directing use of commercial IT (e.g., Accelerate the Use of COTS IT Software and Services, 25 June 2004)
  - Issued new *directives, instructions* (e.g., DoDD 5000)
  - Created new *organizations* (e.g., Venture Capital-related entities)
- However, in order to make further substantive improvements, we have to
  - Transform the ***culture*** (e.g., by implementing incentives, overcoming disincentives)
  - ***Educate & train*** the users, providers of commercial IT -- *and* the decision maker!
  - Explore ***new organizations*** (e.g., pursue a networked virtual organization)
  - Implement new ***processes*** (e.g., create new testbeds; streamline processes through *risk based means*)
  - Enhance ***tools*** (e.g., implement a web portal)
  - Develop needed ***products*** (e.g., harvest residual low hanging fruit)