A Capability Value Frontier

In Support of Acquisition Approaches to Enable Military Effectiveness

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Agenda

- **Today's Environment**
- **Study of Acquisition Approach Focused on Outcomes**
- **Capability Value Frontier Concept and Mission Engineering**
- **Closed Loop Acquisition for Life Cycle Capability Insertion**
- **Recommendations and Next Steps**

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Current Environment

- Chaotic, short cycle threats
- Power projection force, minimal footprint
- Agile, dispersed forces and fires
- R&D dominated by commercial sector
  - associated technology proliferation
- Qualitative advantage at risk
  - adversaries operate within our OODA Loop
- Consolidated industrial base

Is a linear process still appropriate?

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Current Acquisition Study Focus

- **Re-design the acquisition / life cycle process**
  - **from long-cycle to inherently short-cycle**
  - **from rigid to agile**
  - **from linear to closed loop**
  - ***from product focus to capability focus***
  - **enabled by contemporary technology**
- **Assess acquisition workforce qualification requirements**
  - **from compliance to innovative**
- **Adopt commercial and international processes where appropriate**
  - **agile / affordable process**
- **Buy outcomes / availability across life cycle**
- **Assess enabling financial and governance processes**
  - **significantly improve level of trust between Government & Industry**

Enable DoD to be a world-class buyer

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Way Ahead

- **Current DoD Acquisition process is a risk averse, linear, inherently long cycle system**
  - **Migrate to an adaptive system**
- **National security environment is chaotic with short cycle threats**
  - **Capitalize on A&D industry investment in agile processes to enable short cycle, rapid tech insertion**
- **US losing technological advantageand cost / exchange ratio**
  - **Regain technological advantage through A&D investment in unique military capabilities (third offset)**
- **Past decade of acquisition reform focused on cost growth control**
  - **Focus reform efforts on warfighter outcomes**

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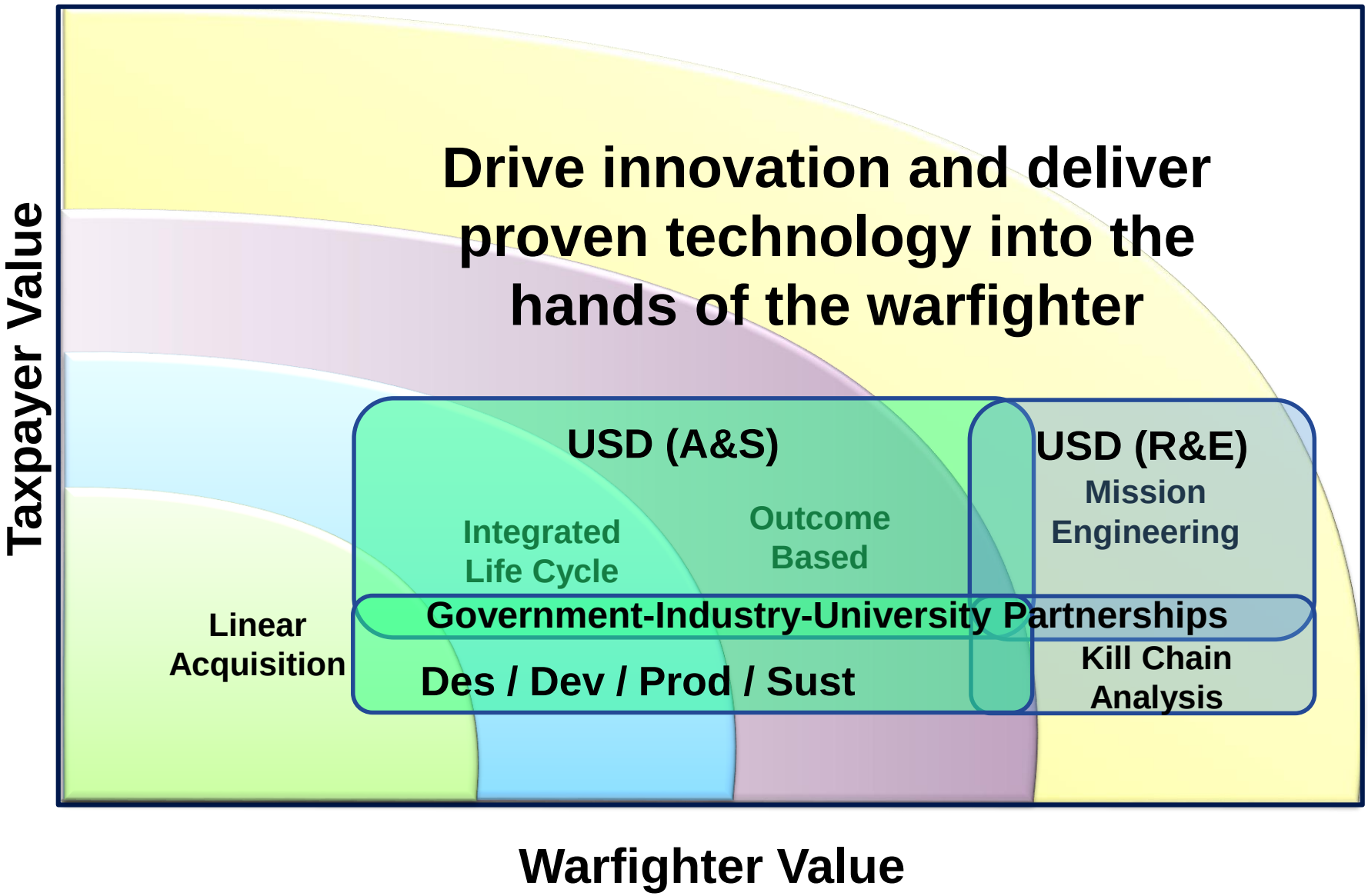
Capability Value Frontier



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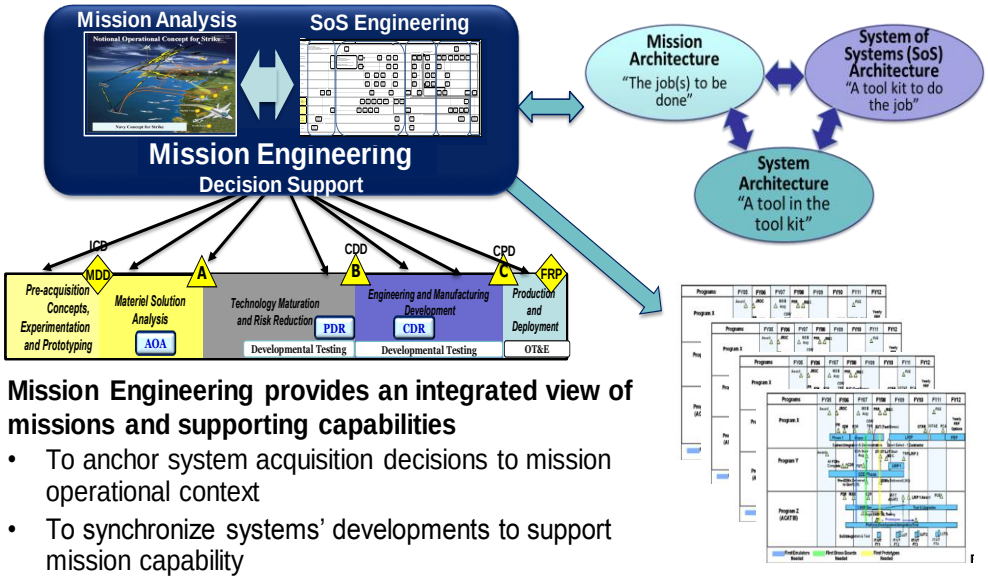
Industry Support to Mission Analysis and Mission Engineering

NDIA SE Division and INCOSE lead Industry 'Mission Engineering Study' to determine

- Industry state of the practice industry regarding mission analysis and engineering and
- How industry can improve the practice and engage in mission engineering



Mission Engineering provides an integrated view of missions and supporting capabilities

- To anchor system acquisition decisions to mission operational context
- To synchronize systems' developments to support mission capability
- To provide an integrated mission capability to warfighters

Conclusions

- Industry finds value in ME and MA
- Industry has much to offer: large number of practitioners and a variety of tools and approaches
- Much more can be done if we work collaboratively to:
  - Refine and understand the definition of ME
  - Address the common challenges
  - Share best practices, tools, and models
  - Find a means to provide access to relevant data
  - Share resources for skill development
  - Explore other opportunities (e.g., additional modeling capabilities)
- Recommend establishing a joint action plan to move forward

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Adaptive Acquisition Approach

- **Focused on optimizing warfighter value for greater capability and lower cost to achieving continuous kill chain optimization**
- **Integrates mission engineering during the initial capability development engineering of product and sustainment solutions**
- **Selects architectures that support capability insertion and provide for continuous capability improvement**
- **Accommodates ease of modification and upgrade incorporation**
- **Implements operational concept with sets of systems to achieve mission objectives and support multiple missions**
- **Obtains O&S feedback to mission engineering to complete a closed loop approach that drives continuous capability improvements**

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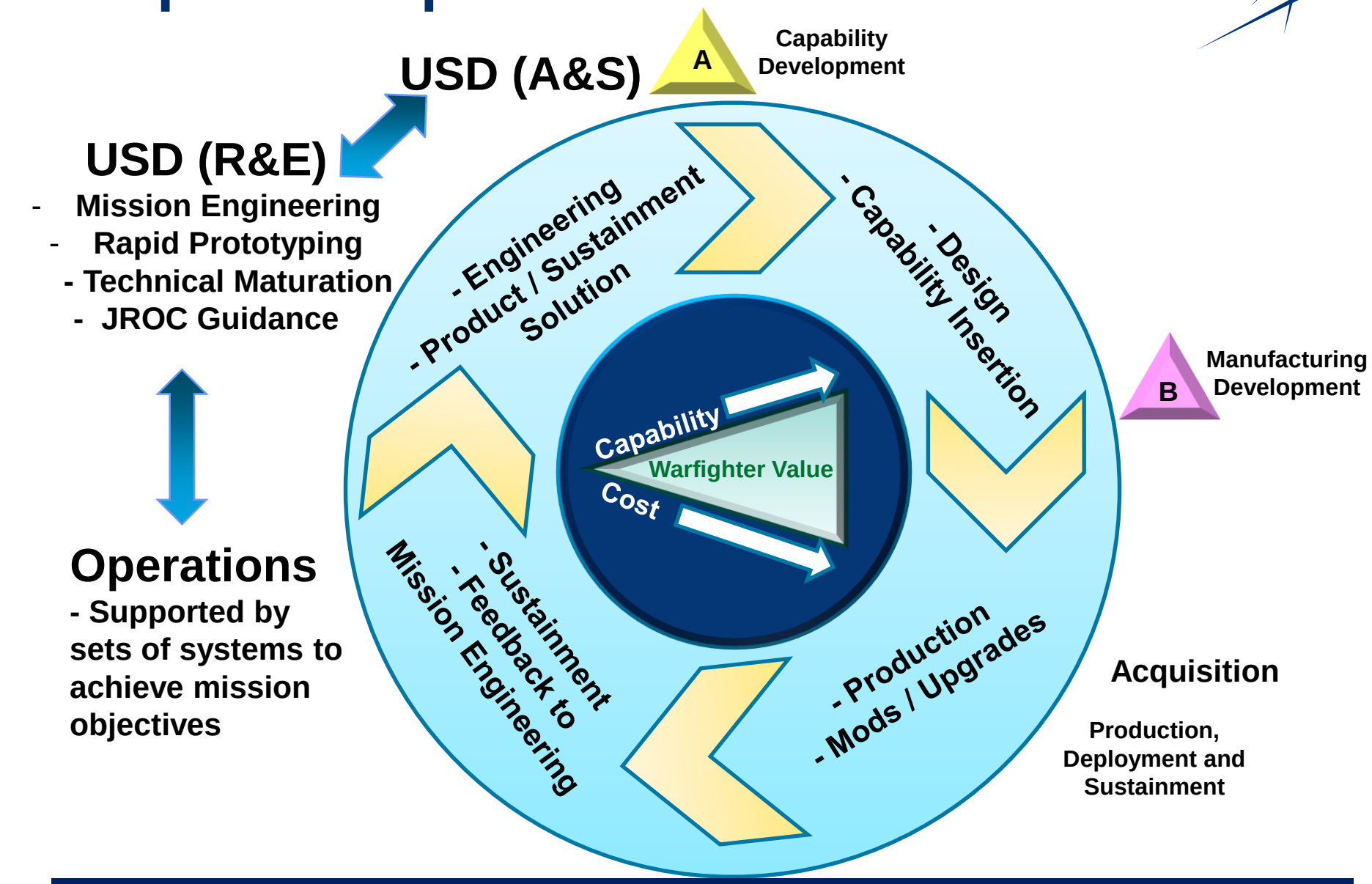
Adaptive Acquisition



CONTINUOUS KILL CHAIN OPTIMIZATION

Strategic Recommendations

- **Establish robust mission engineering capability within USD (R&E)**
  - **co-chair JROC**
  - **network Component battle labs**

- **Focus USD (A&S) on design, development, production, sustainment**
  - **include systems engineering in A&S organization**
  - **realign PEO structure to mission engineering portfolios**
  - **re-affirm PM as accountable and responsible**

- **Codify new adaptive acquisition process**
  - **enable continuous technology insertions**
  - **single, integrated plan to MDA**
  - **eliminate milestone C**

- **Rapidly implement outcome / performance based contracts for sustainment**

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Next Steps

- **Support strategic recommendations with industry associations and the DoD**

- **Flesh out strategic structure**
  - **governance structure**
  - **enabling financial processes**

- **Develop specific recommendations for administration**

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Abstract

A move from linear acquisition of products to Government / industry partnerships focused on capabilities is an approach focused on increasing both taxpayer and warfighter value. Acquisition and sustainment approaches that both support an integrated life cycle and are outcome based rely on an integrated approach to design, development, production, and sustainment. Key elements of this approach include early and continuous sustainment considerations, modularity to support adaptation of technology, implementation of an adaptive system, and realistic cost estimates to buy outcomes / availability across the life cycle. To maximize value, application of mission engineering portfolio approach that leverages global innovation is key. Optimization of capabilities across program acquisitions for the larger system of systems needs to focus on operational requirements / kill chains that enables military effectiveness in a dynamic world.

An adaptive acquisition approach is needed to focus on optimizing warfighter value for greater capability and lower cost while focused on achieving continuous kill chain optimization. Integration of mission engineering is key during the initial capability development engineering of product and sustainment solutions. Selection of architectures that support capability insertion provides for continuous capability improvement. Production systems also need to accommodate ease of modification and upgrade incorporation. Operations are supported by sets of systems to achieve mission objectives, with systems supporting each role in a mission (kill chain) and supporting multiple missions. The operations and sustainment part of the life cycle provides feedback to mission engineering to complete a closed loop approach that drives continuous capability improvements.

This approach is consistent with Better Buying Power, "the implementation of best practices to strengthen the Defense Department's buying power, improve industry productivity, and provide an affordable, value-added military capability to the Warfighter"(http://bbp.dau.mil/), including focus on affordable capabilities and programs and life cycle costs. It is also supports current Office of the Secretary Defense (OSD) mission engineering focus and continued acquisition reform research.

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