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# Speed with Discipline

**\*Empowering IT Acquisitions**

**Tim Rudolph, Ph.D.**

AFLCMC Chief Technology Officer

AF Integrated Information Capabilities

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# Challenges to Speed

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- **Net-Centric warfare is here today**
  - **Our forces hindered by large weapon system approaches**
- **Tightly coupled interdependencies and custom development increase development time/cost**
  - **Late development cycle changes and sustainment >\$s**
- **Legacy base of capabilities requires modernization to meet modern cyber threats**
- **Reality: Decreasing budgets**

*Delivering rapid secure capabilities requires NEW approaches*

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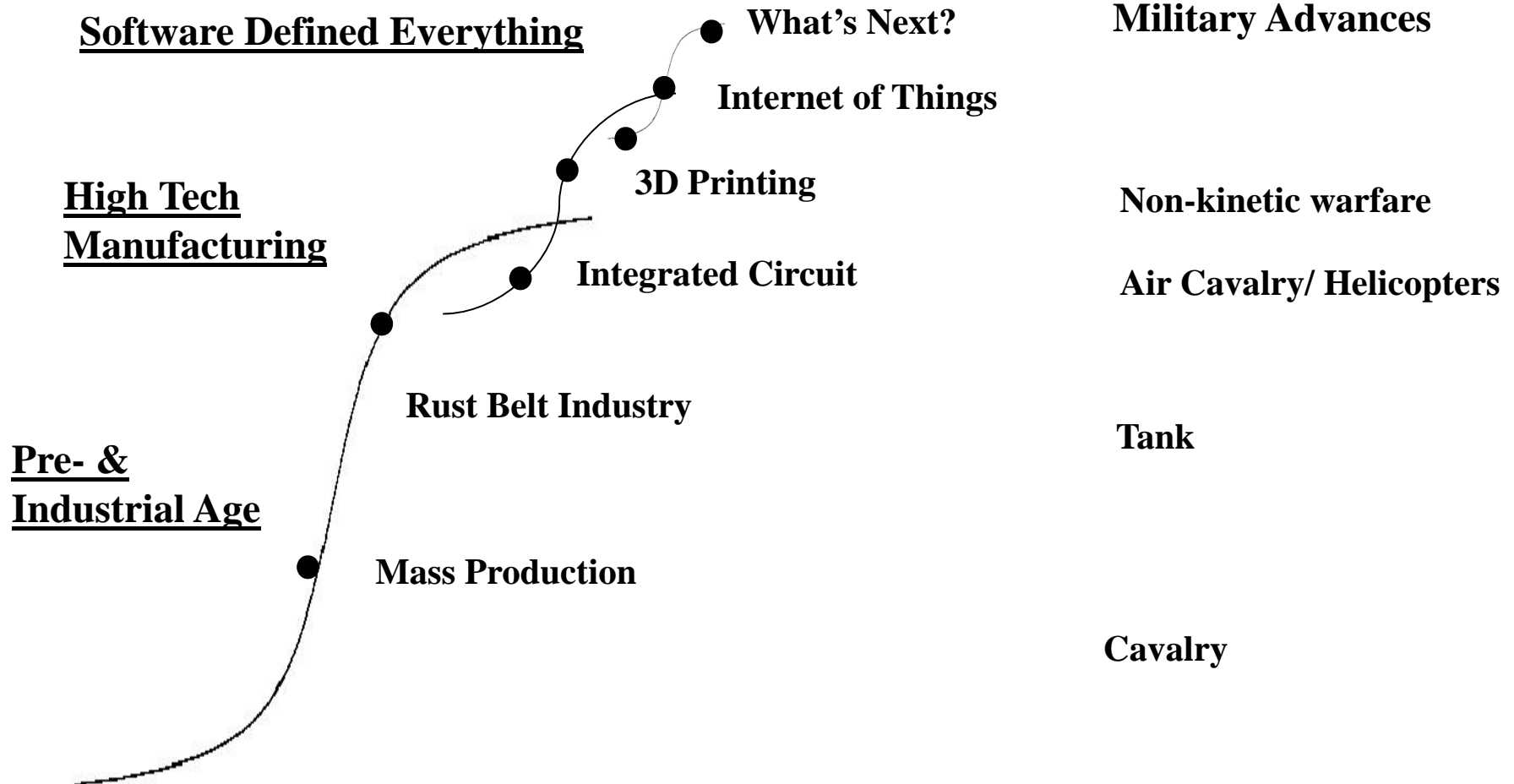


# Examples of Disruptive Change



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Ref: The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, Clayton Christensen, 1997

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# DoD Acquisition Drivers



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- **2010: Better Buying Power 1.0**
  - Deliver the warfighting capability we need for the dollars we have
  - Restore affordability to defense goods and services
- **2012: Better Buying Power 2.0**
  - Incentivize Productivity & Innovation in Industry and Government
  - Eliminate Unproductive Processes and Bureaucracy
  - Promote Effective Competition
- **2015: Better Buying Power 3.0**
  - Provided specific initiatives for focus areas
    - Remove barriers to commercial technology utilization
    - Use Modular Open System Architecture
    - Cybersecurity

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# Growing Software Dependency



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**Air Force's Growing Reliance on Software in Major Airframes.** (Source: Mark T. Maybury, *CyberVision 2025*, US Air Force, 2012, p. 18; who, in turn, sourced the material from the Software Engineering Institute and Lockheed Martin).

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# Late to Need

- Information Assurance adding 18 month+
- Limited Value
  - Controls vs risk based



6+  
Years

## Operations

- In last 5 years, poor success with ~50% termination/critical change rate
- Standalone Systems can take 6+ years to deliver, provided they are not terminated first.



## Acquisition



# USAF Bending the Cost Curve (BTCC)



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- **BTCC complements Better Buying Power**
- **PlugFest Plus is a series of events**
  - Adapt new acquisition approaches to rapid, agile capabilities
  - Allow greater (non-traditional industry) competition
  - Deliver a final product for immediate warfighter use
  - Institutionalize process model
- **Combine Modern Open Systems Architecture + Modern Acquisition**

***Focus is on Assembly versus Production***

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# Modular Open System Architecture



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- **Distributed Common Ground System**

Already a key enabler for information sharing and collaboration among previously isolated intelligence centers

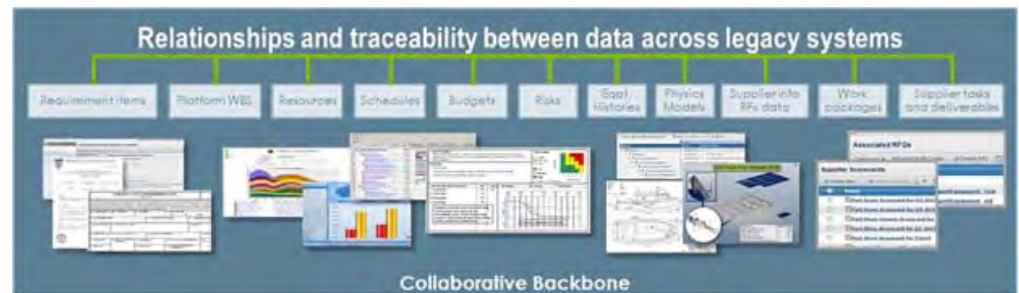


- **Licensed as open source software**

- **Published standards allow for increased competition and plug-in integration**

- **Allows for acquisition of modular capabilities**

- **Toolbox will evolve to become part of the bigger OSD “Digital Thread” transformation**



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# Software Quality is a 'Transformation Driver'

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- **Software Quality processes can capture the full value of open system architectures**
  - **Achieve technology refresh cycles aligned with global innovation**
  - **Enable iterative system development and fielding**
  - **Broaden pool of technologies available to meet mission requirements**
  - **Reduce costs to develop and sustain Air Force systems**
- **Open Design, granular component development, and measurement**
- **Software Quality “Early and Always”**

*Software quality is fundamentally effective  
systems/software engineering*

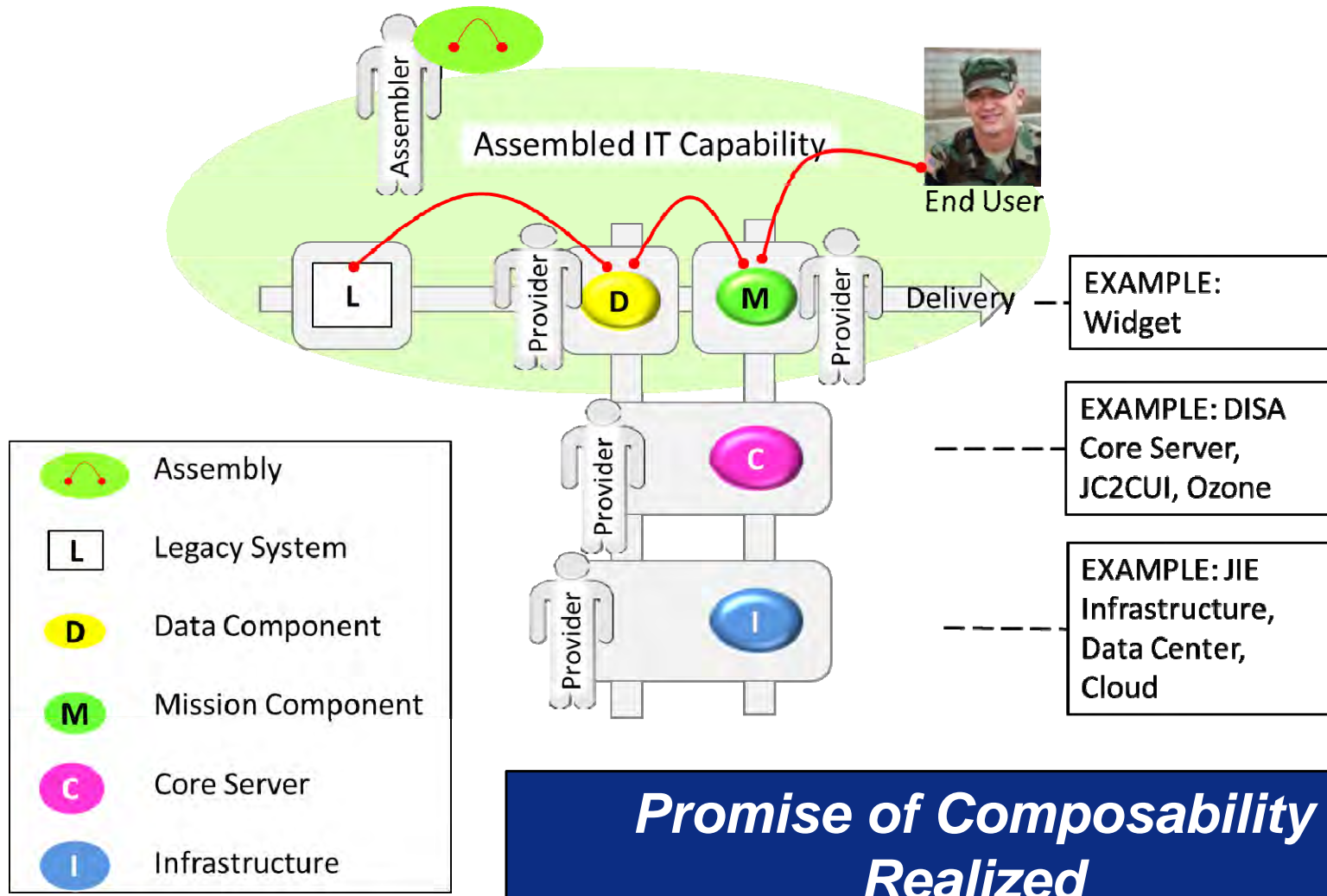
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# Assembled Capabilities

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***Promise of Composability  
Realized***

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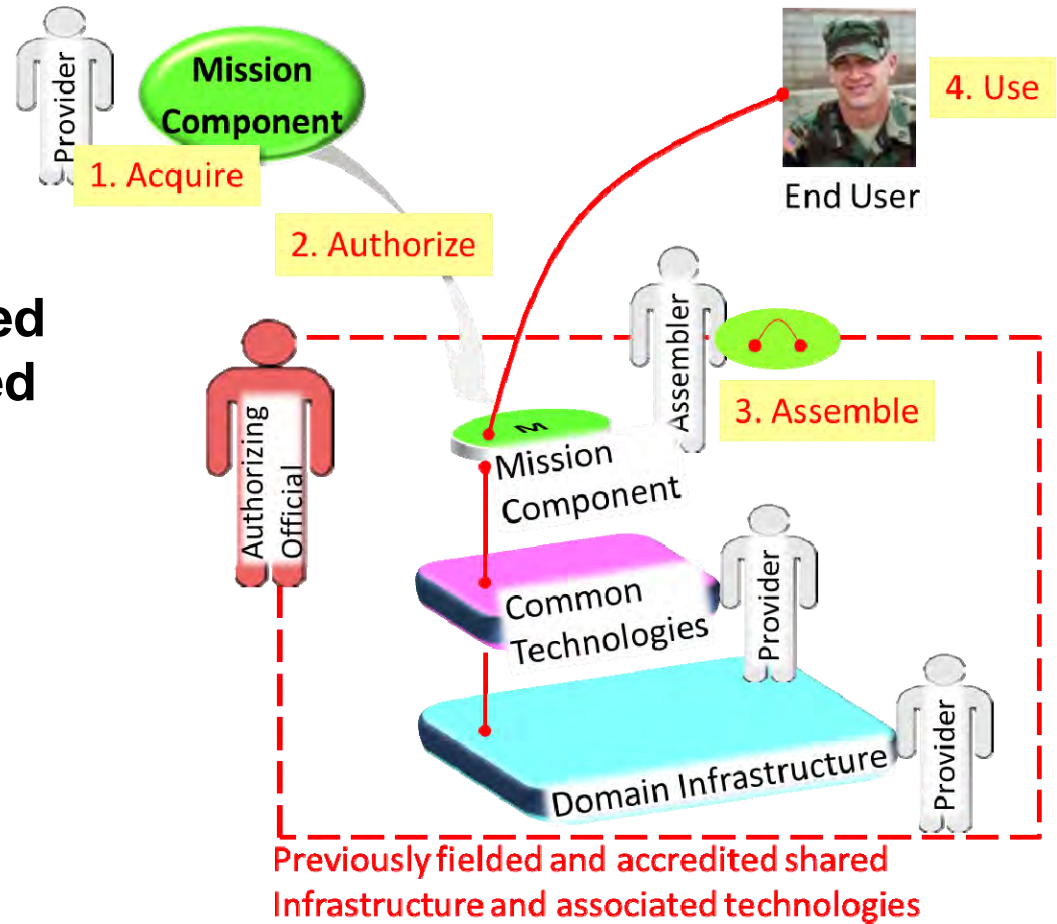
# Mission Assurance Approach



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1. Acquire a mission component
2. Authorize the mission component to be included in a previously accredited baseline
3. Assemble the mission component with domain infrastructure
4. Use the assembled IT capability, Iterate



***Tailored security requirements can be leveraged to rapidly field secure capabilities***

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# Speed of Need

- C&A inheritance
- Granular, mission software focus



Acquisition



~6 Weeks to  
Months Operations



The Assembled IT Capabilities Approach enables fine-grained acquisition of mission components which are assembled with shared infrastructure and common technologies.



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# The Future



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- **Compelling need**
  - Rapid secure capabilities to the Warfighter
- **Value proposition**
  - Mission capabilities delivered thru software speed
- **Well-defined and implemented composable software required for**
  - Assembled Capabilities
  - Reciprocity of security
- **Quality is the key enabler!**

***Software focused mission capability can succeed if supported by rapid, innovative acquisition approaches***

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**DELIVER TO COMMITMENTS**



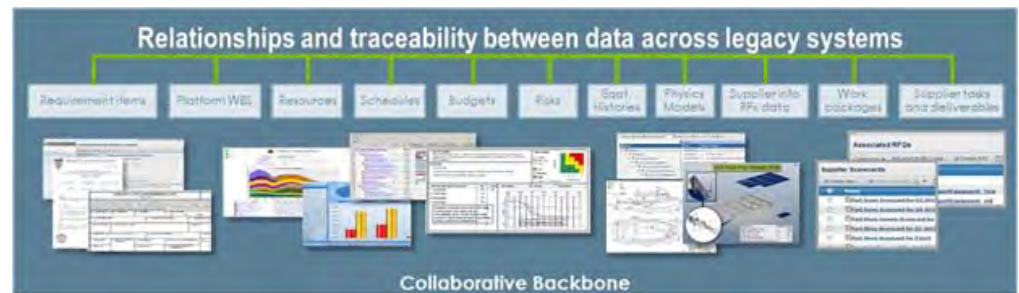
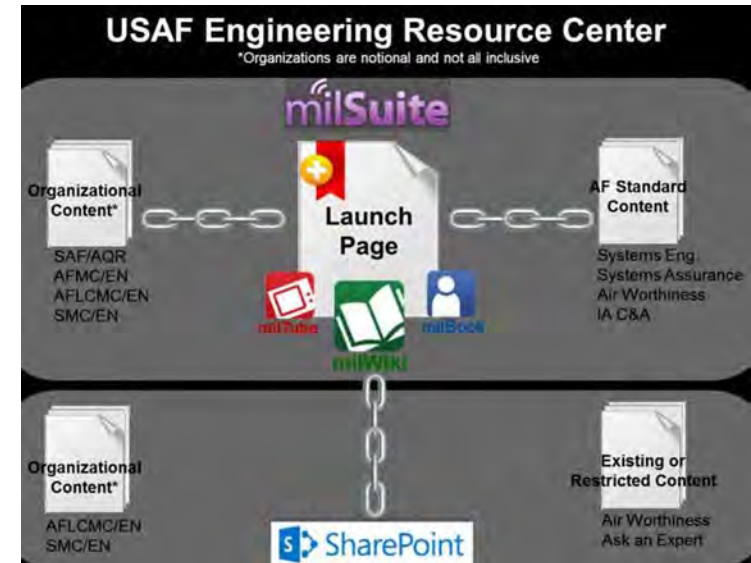
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# BBP Enabling Agile Transformation in ISR

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- **Evolving a 30-year plan with key concepts:**
  - Better Buying Power (BBP)
  - Strengthening Organic Engineering
  - Owning the Technical Baseline
- **DCGS moving to and checklists using Acquisition Workbench**
  - Pathfinders to transition to Agile or Blended Agile
  - Toolbox will evolve to become part of the bigger OSD “**Digital Thread**” transformation



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