



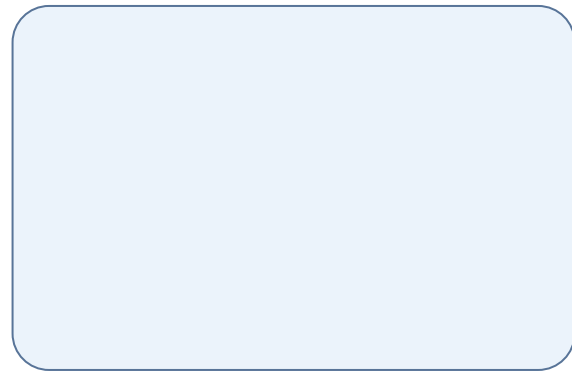
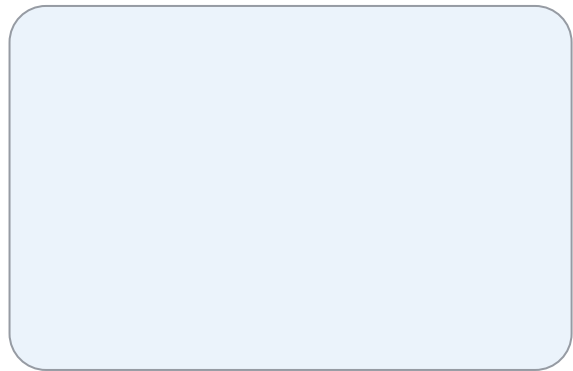
Decision Making and the Era of Platform Engineering

Everything you ever wanted to understand and things you thought were not related.

June 2023

Overview

- The Nature of Decisions in different domains
- Iterative decision making for complex environments
- Software development in complex environments
- Development and Operations in complex environments
- Value stream networks that focus iterative decision making
- Understanding the Digital Ecosystem
- The goal of Platform Engineering
- Using Platform Engineering to address mission needs in complex environments
- Conclusions

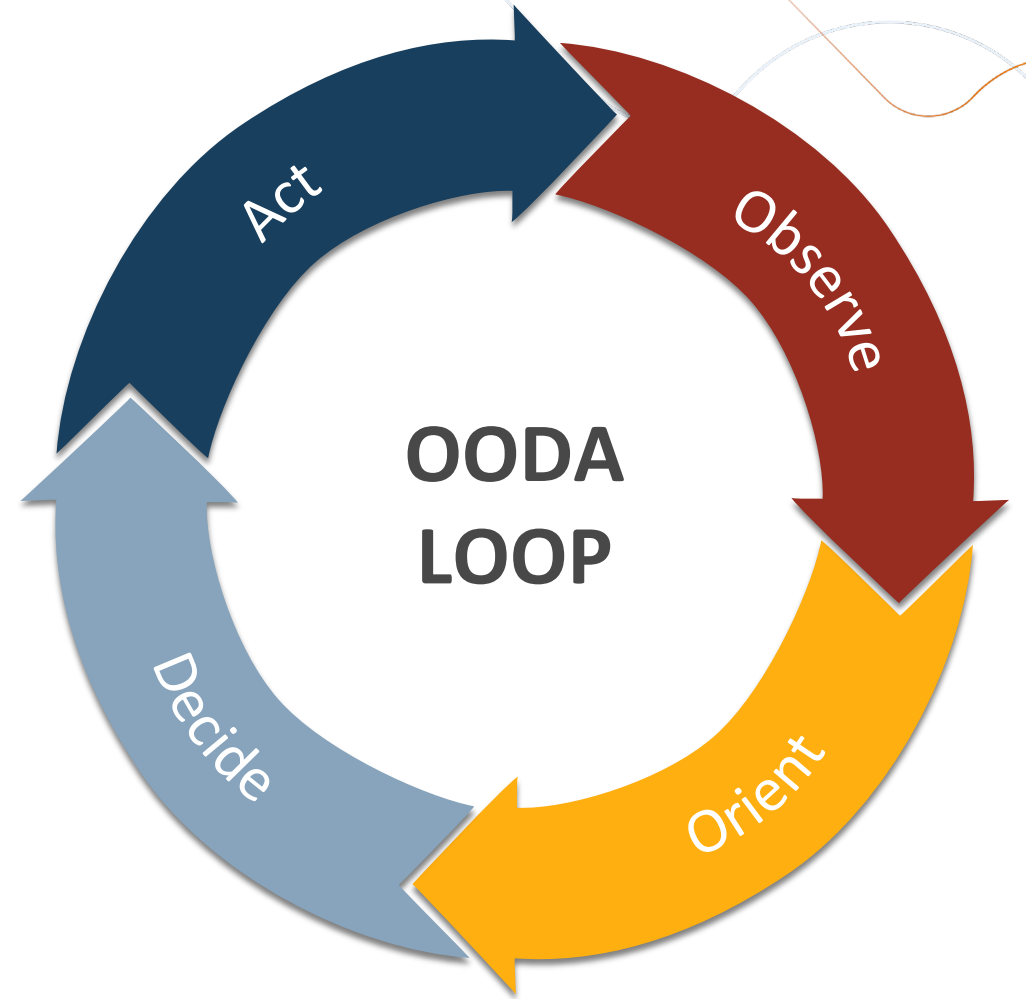


Complex/Chaotic Environments Require Experimentation

Boyd's OODA Loop: Out-cycle your opponent

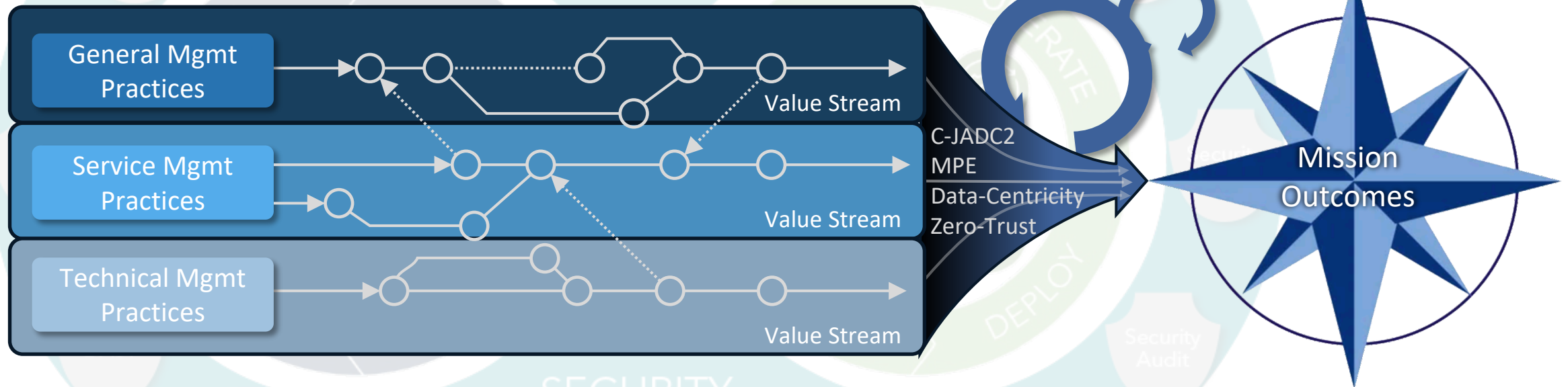
Not Managers with Expertise (Taylorism) but Experimentation (Deming: Plan, Do, Check, Act)

Team of Teams: All oriented toward a common mission and continually sensing the environment and responding



Value Stream Networks, Agile, DevSecOps

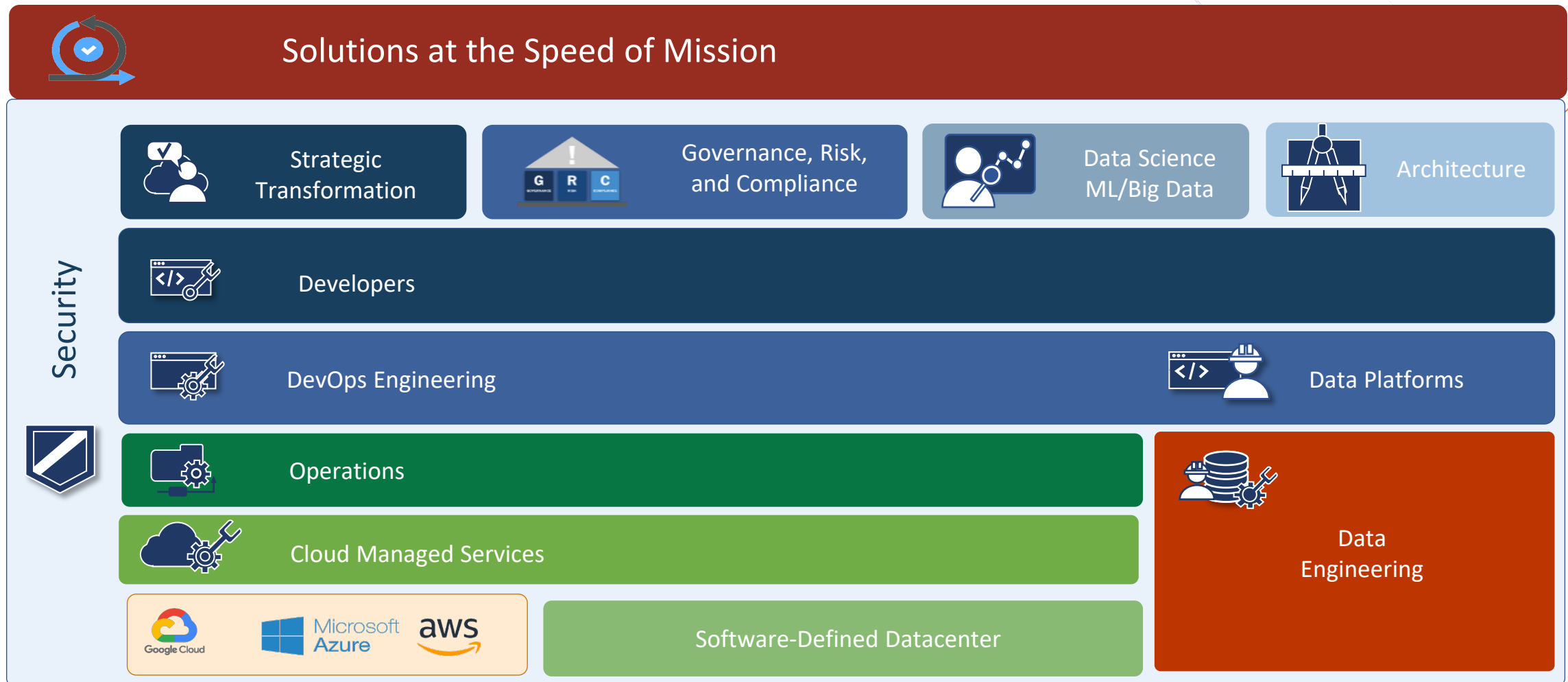
A value stream determines all the steps in a practice and works backward from the desired outcome to determine the processes necessary to support the outcome.



All activities aligned and focused on Mission Outcomes. Agile and DevSecOps are aimed at responding to mission needs.

Practices focused on **outcomes and not process.**

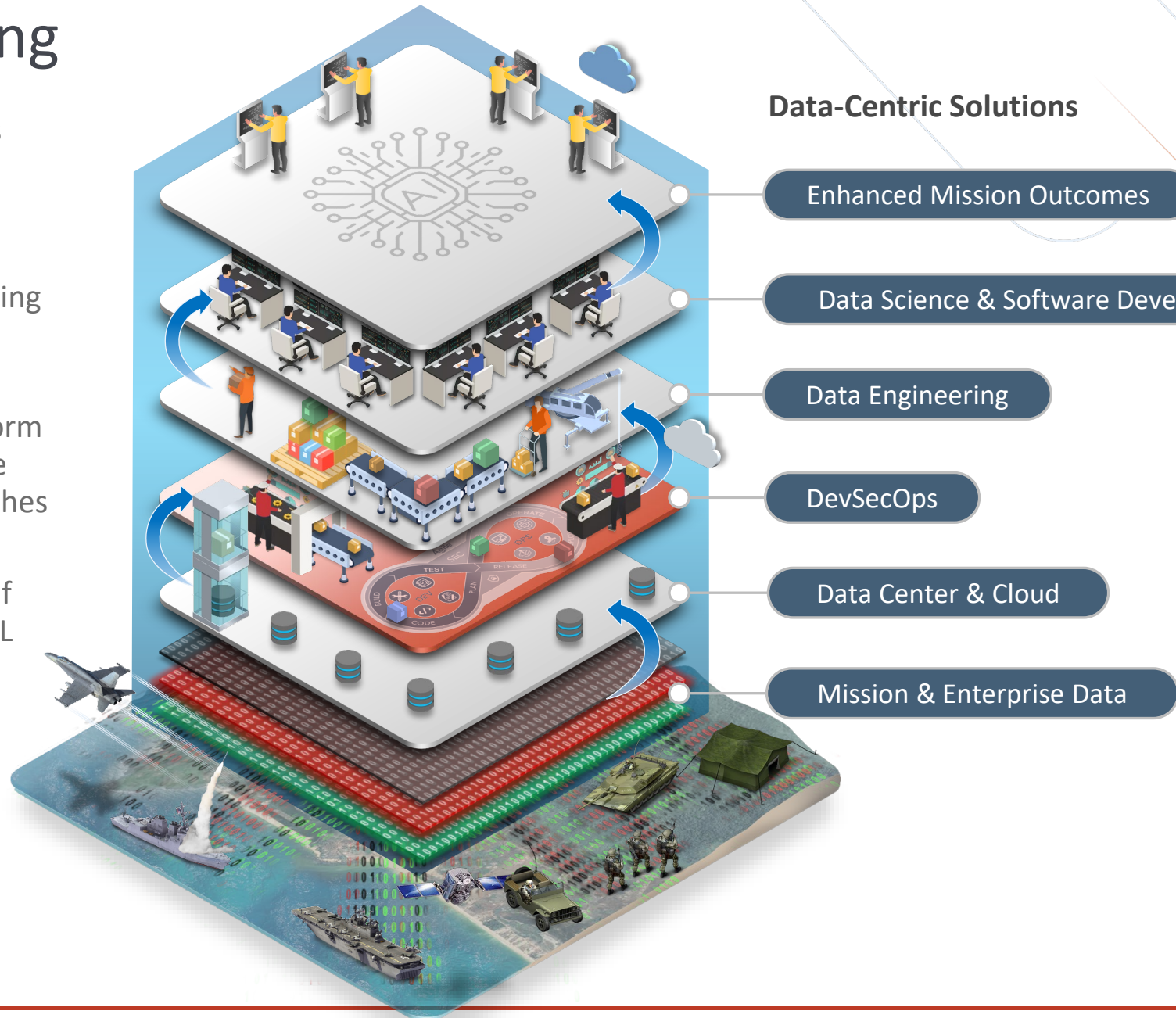
Understanding the Digital Ecosystem (Focused on Outcomes)



Each practice in this Digital Ecosystem needs to be considered as its own Value Stream. Each practice needs to consider its end-to-end stream that delivers mission outcomes. Response to mission outcome needs is enhanced by the introduction of “as code” approaches to each practice.

Platform Engineering

- The ability to provide “everything as code” requires deep expertise and a mature platform
- Google’s Service Reliability Engineering model
- Organizations are moving to a Platform Engineering approach to provide the repeatable glue for DevOps approaches
- The technology is not an end to itself but enables all upstream goals of ITIL v4 as it supports the mission



Overcoming Complex and Chaotic Environment Challenges

USECOM Challenges:

- Security cooperation & country enabling
- Volume of data
- Russia
- Terrorism
- The Balkans
- Levant
- Infrastructure build

USAFRICOM Challenges:

- The Maghreb Region: Antiterrorism & humanitarian efforts
- Security cooperation & country enabling
- Volume of data
- Piracy
- Austere infrastructure

USEUCOM

51 European Countries
Land Mass: 10.7 mil. mi²
Ocean: 13 mil. mi²

USAFRICOM

53 African States
Land Mass: 11.2 mil. mi²
Coastline: 19,000 mi

Specific Country Challenges



Italy:

- EU point of entry
- Security Gateway
- Facing constant migration security challenges
- Homeland security



France:

- Anti-terrorism across COCOMs
- Independent diplomatic and military approaches



Germany:

- Refugee control
- Economic center of EU

C4

- Tyranny of distance
- Inconsistent bandwidth
- Joint and Coalition C2 information sharing
- Data tagging, categorization, and ability to move across classifications and mission partner boundaries
- Flexibility to stand-up coalition forces for a wide range of missions and challenges

Outcomes

- Flexible/scalable architectures
- Real time application of emerging technologies
- Everything as code

Intel

- Insufficient coverage across AO
- Integration of open source and next generation ISR
- Volumes of data and ability to ingest and process data
- Intel sharing across joint and coalition forces

Outcomes

- Data driven decisions
- Global collaboration in real time
- Integration of non-traditional ISR and mission partner intel

Logistics

- Long lines of communication
- Supply chain visibility and integrity
- Strategic air, sea, and land logistics operate on unclassified networks
- Visibility of logistics across coalition forces

Outcomes

- Right-sized delivery models
- Reduced waste (movement and storage)
- Gained awareness, reduced loss risk

Concluding Thoughts

- The Art of War and the decision-making process for complex environments orients us toward a correct way of thinking
- Experimentation and iteration are the way battles are won and complex problems are solved
- Software Development and Infrastructure Operations need to be understood in relation to the problems they are solving
- Understanding the digital ecosystem focuses on what needs to be transformed
- Platform engineering is not an end to itself but is the emerging architecture to address the strategic needs to transform
- Transformation requires that all aspects of the enterprise focus on mission outcomes
- Experts aren't going to solve complex problems