A Roadmap-Based Framework for Acquiring More Agile and Responsive C4I Systems

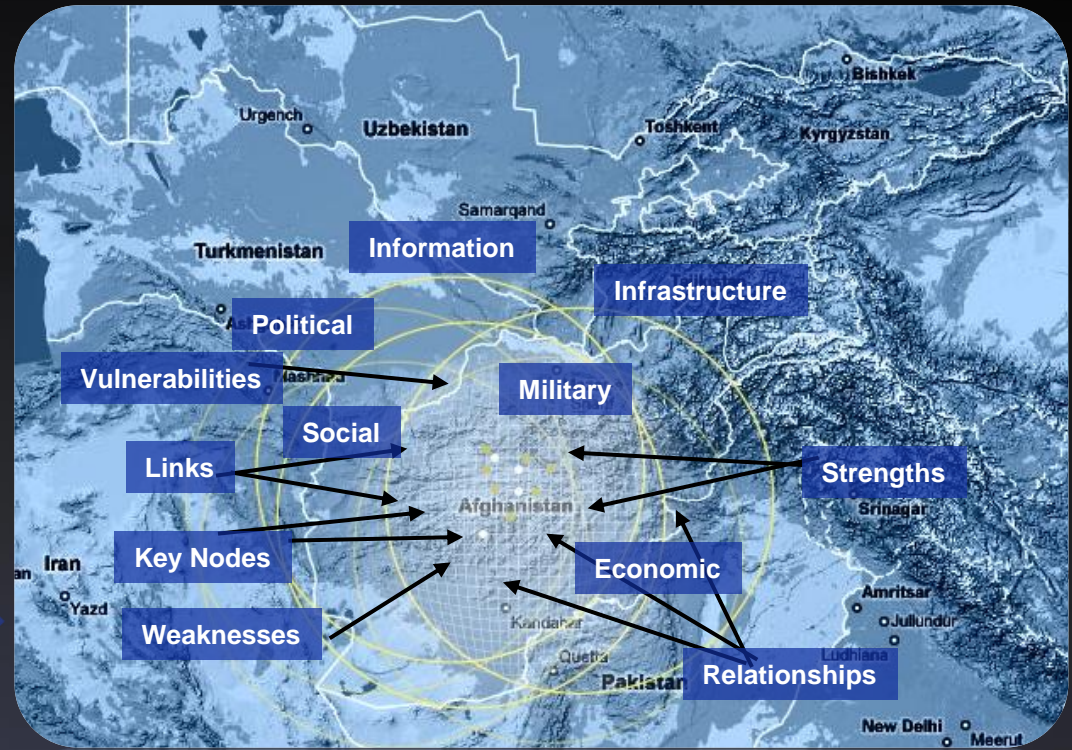Booz | Allen | Hamilton

Agenda

- C4I Acquisition Challenges

- Changing the Acquisition Paradigm

- A Roadmap-Based Framework

- Case Study

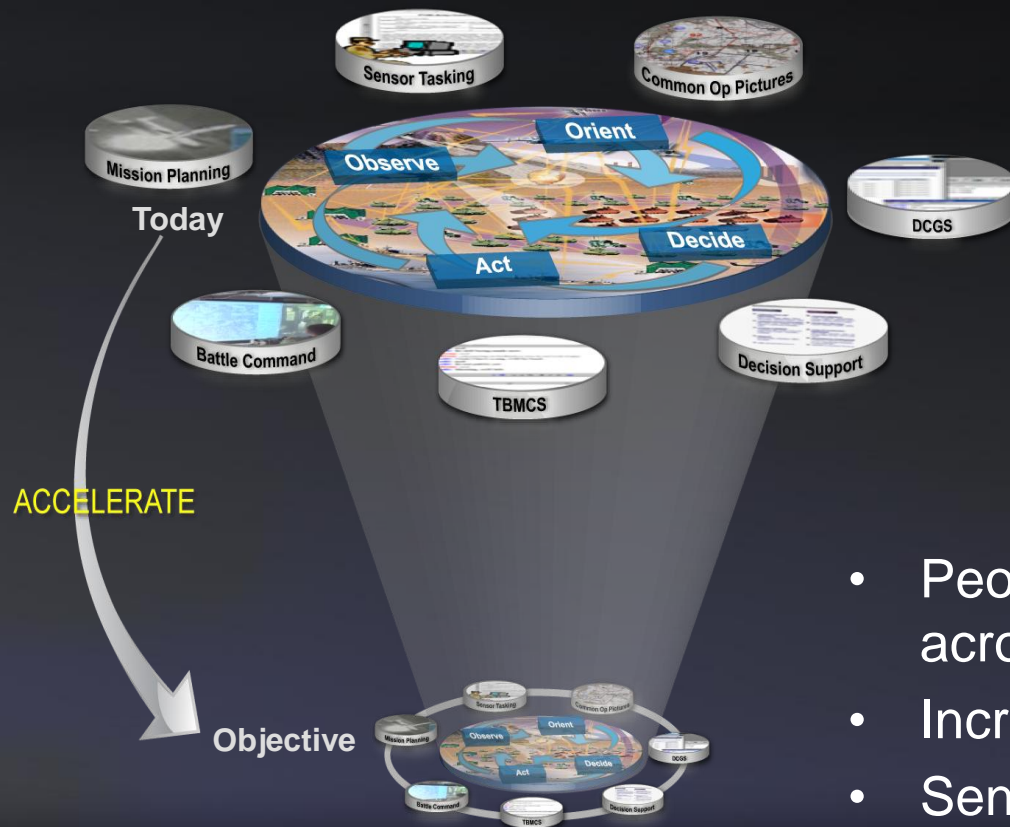- Key Success Factors

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Operational Drivers
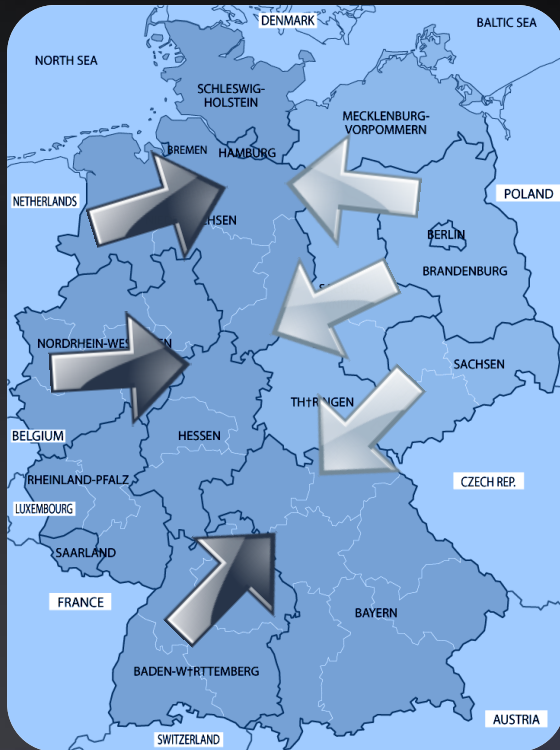
Legacy Military Environment
(Time – Space)

Today's Environment
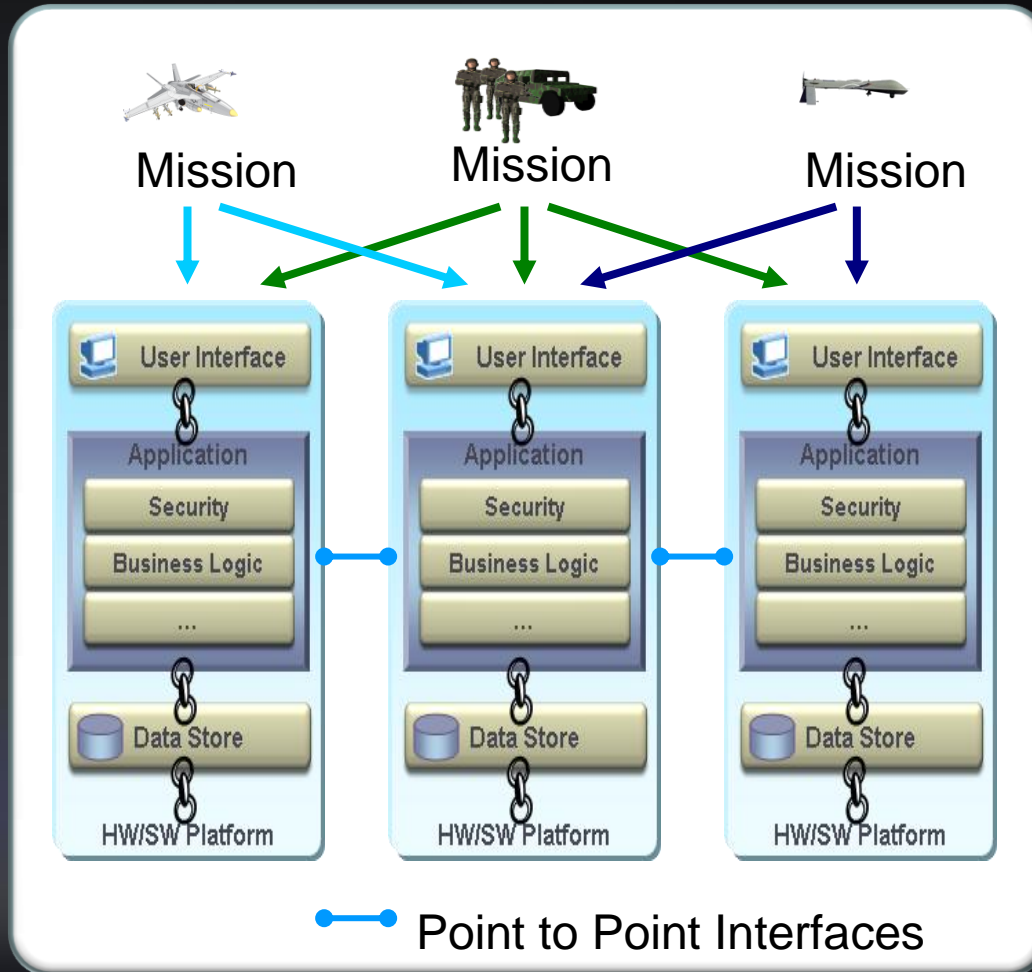(Political, Military, Economic, Social, Information, Infrastructure)

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C4I Systems Must Evolve To Meet Dynamic Mission Needs In Condensed OODA Loops

- "Cylinders of Excellence" living in silos
- Sensor-Shooter chain in days / hours

- People and systems connected across time and space
- Increase information sharing
- Sensor-Shooter chain in hours / minutes

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Acquisition Woes Stem From the Way We Build C4I Systems

Mission   Mission   Mission

User Interface

Application
Security
Business Logic
...

Data Store

HW/SW Platform

Point to Point Interfaces

- Prolonged acquisition lifecycle
  - C4I systems become victims of Moore's Law
- Lack of definitive requirements
  - Dynamic and changing mission needs
- Warfighters scramble to meet current needs with ad-hoc systems
  - Competing with O&M resources

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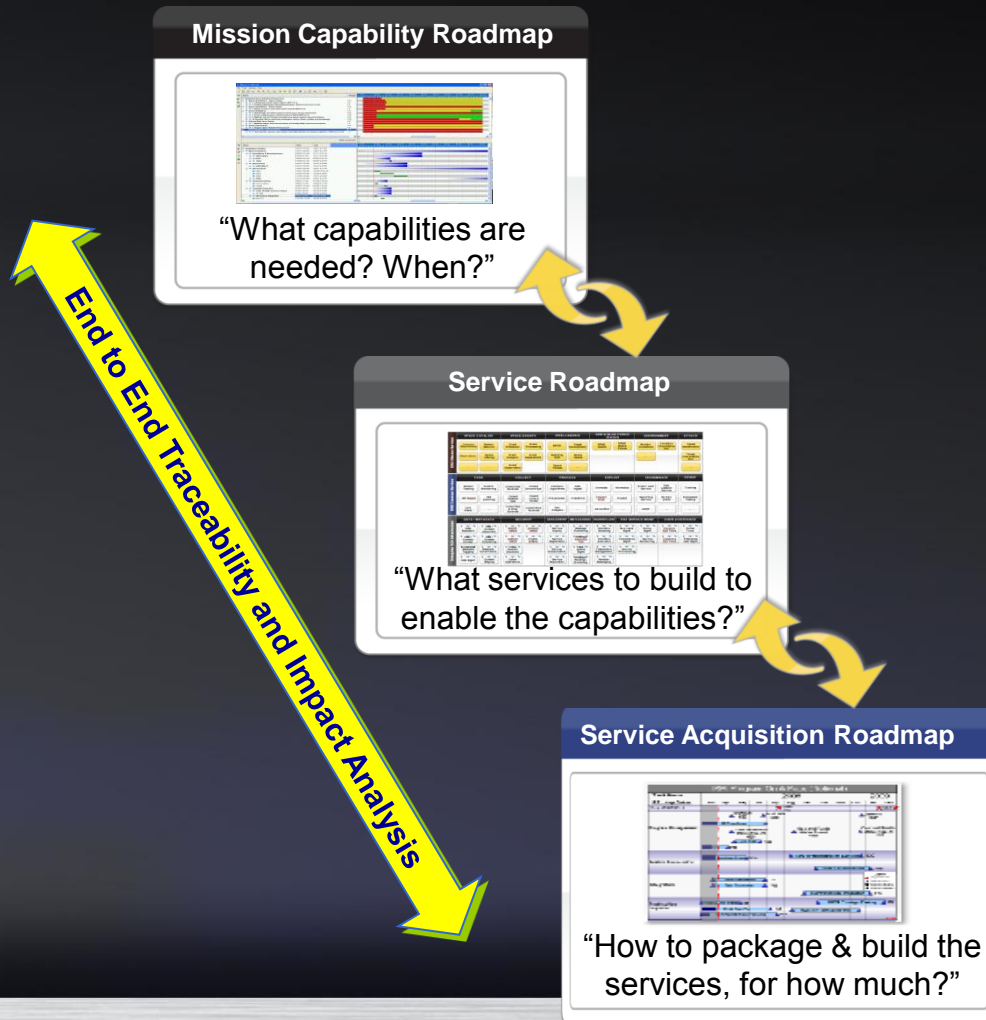# Net-Centric Solutions: Rethink WHAT We Acquire
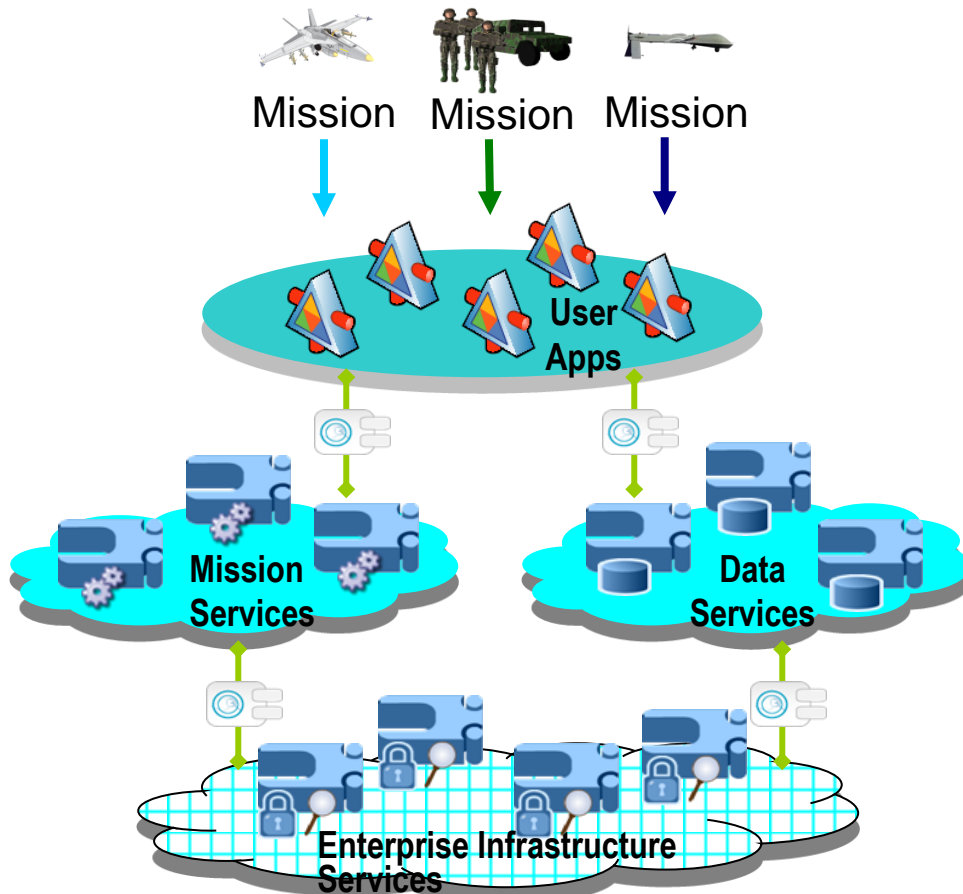
- Service, not systems

- Assemble, not build

- Reuse before build

- Build for reuse

Acquisition Implications

- Increased complexity for integration / assembly
- Standards and specifications play a critical role
- Reuse and collaboration across organizational boundaries
- More "Hands-on" government oversight
  - Capability planning
  - Adopt / Buy / Create (ABC) analysis
 - Service portfolio management
  - Performance management
  - Governance

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The Roadmap Framework – An Enabler of the New Acquisition Paradigm

Mission Capability Roadmap

"What capabilities are needed? When?"

Service Roadmap

"What services to build to enable the capabilities?"

Service Acquisition Roadmap

"How to package & build the services, for how much?"

End to End Traceability and Impact Analysis

- Systematically track capability requirements
- Map capabilities to services with well-defined interfaces
- Prioritize and sequence service acquisition activities
- Interconnect cost, schedule, risk, and performance for acquisition
- End-to-end traceability and visibility

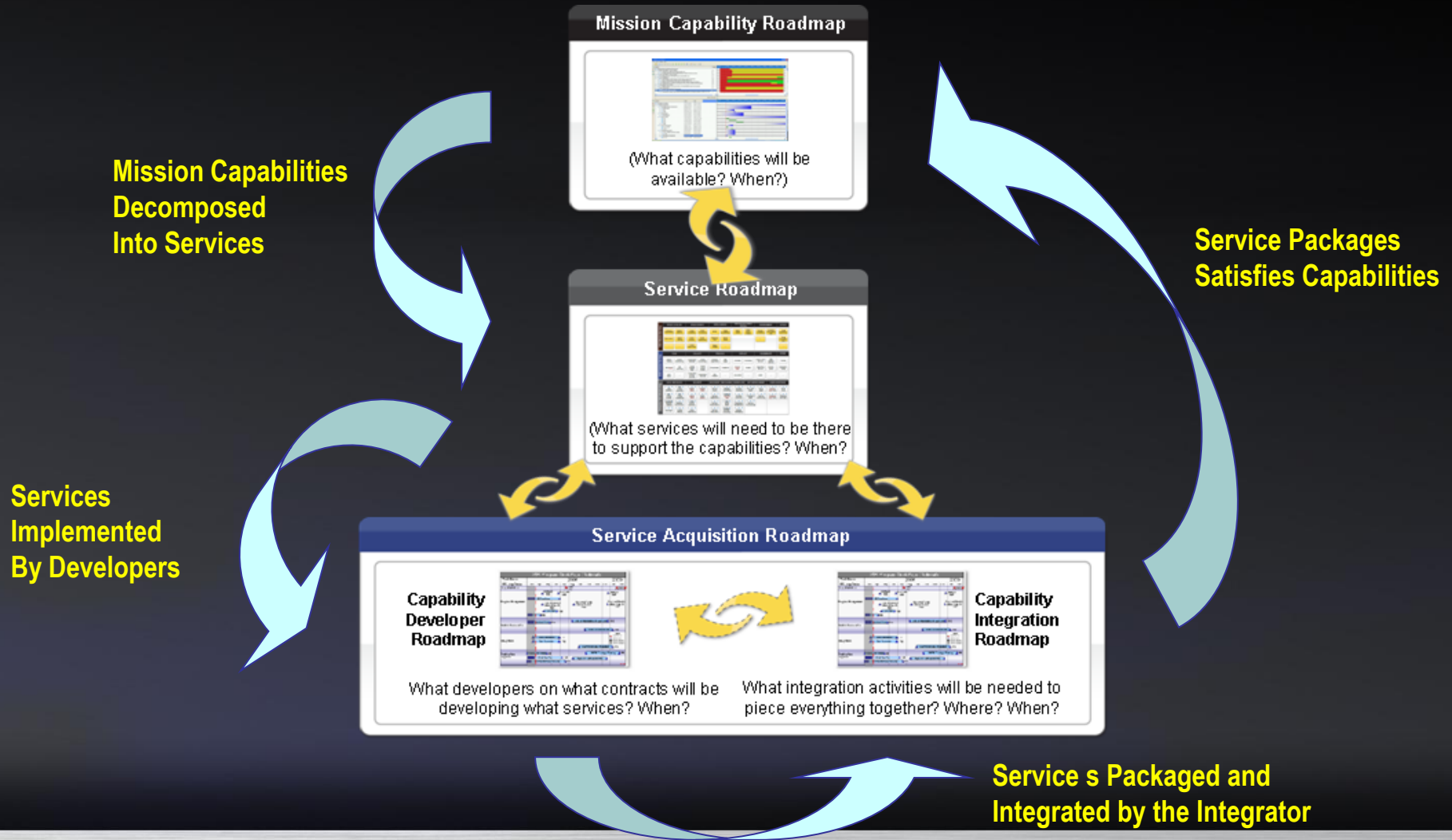Booz | Allen | Hamilton

The Roadmap Framework Provides the Needed Planning / Oversight for Agile, Incremental Capability Acquisition

Evolutionary Acquisition

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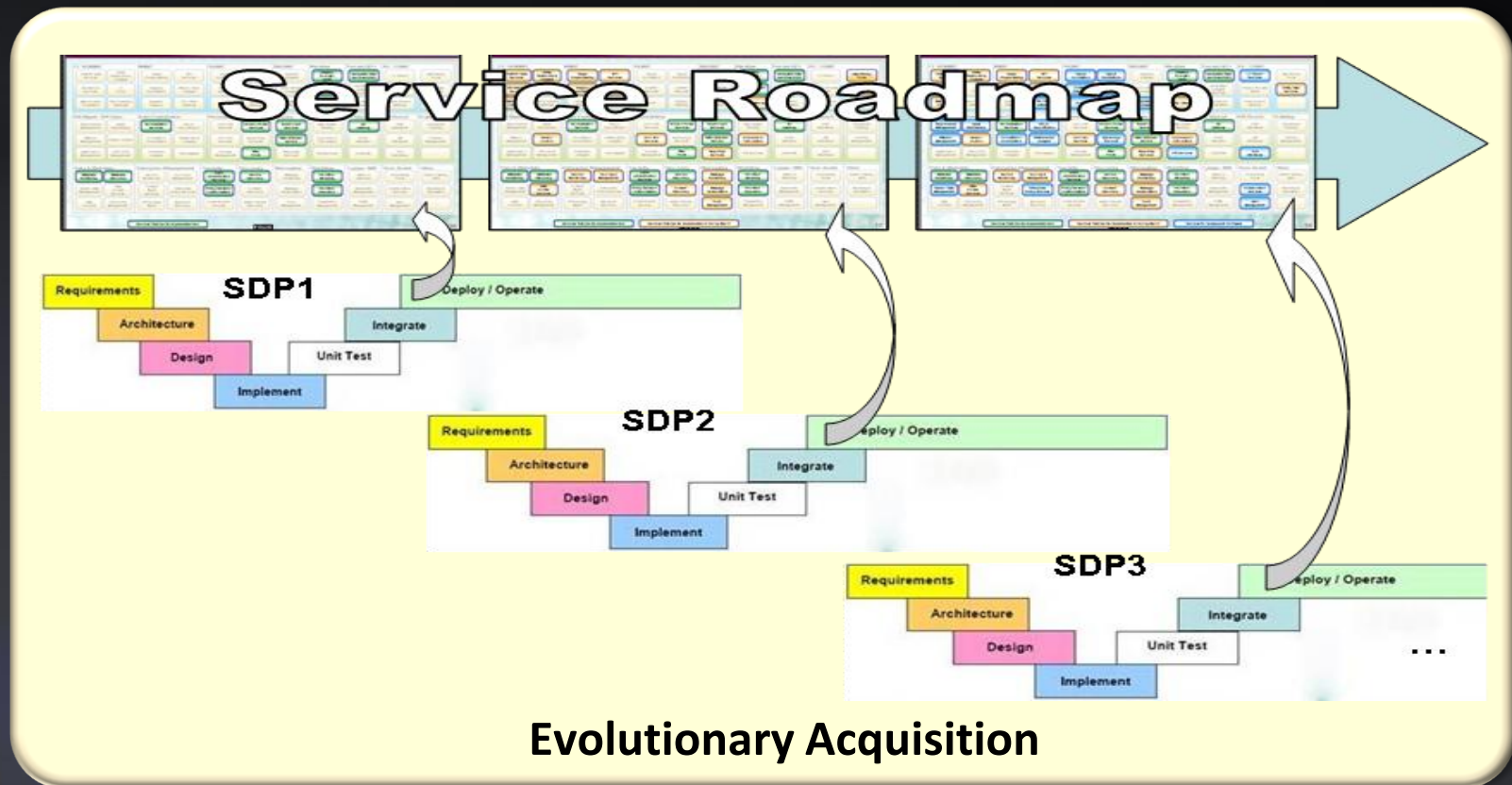
Case Study –
Acquisition Strategy Innovation (USAF Program)

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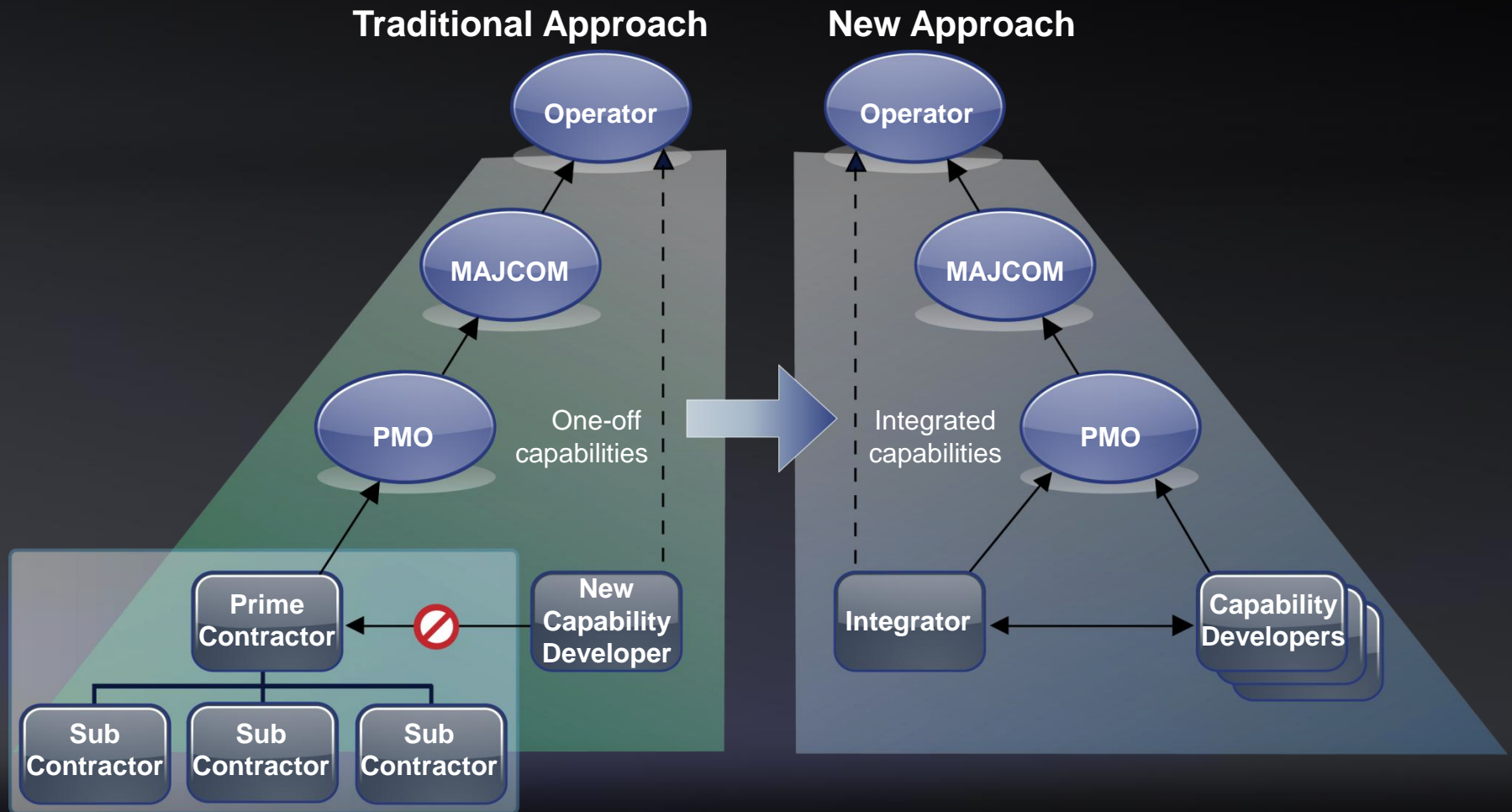
Case Study (Cont.) – The Roadmap Framework Served as the Basis for Managing the Program Baseline

Mission Capabilities Decomposed Into Services

Services Implemented By Developers

Service Packages Satisfies Capabilities

Service s Packaged and Integrated by the Integrator

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Case Study (Cont.) – Round-trip Traceability Example

Mission Capability Roadmap

		FY 2009			
		Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep
Space Surveillance - Catalog					
2 Man-made Space Objects					
2.1 Collection reqts					
2.2 Task SSN					
2.3 Collect position obs					
2.4 Update space pos					
2.5 Collect SOI obs					
2.6 Update Sat Characterization Info					

XYZ Processing Services

ADC Service   **MDC Service**   **SPG Service**   ...
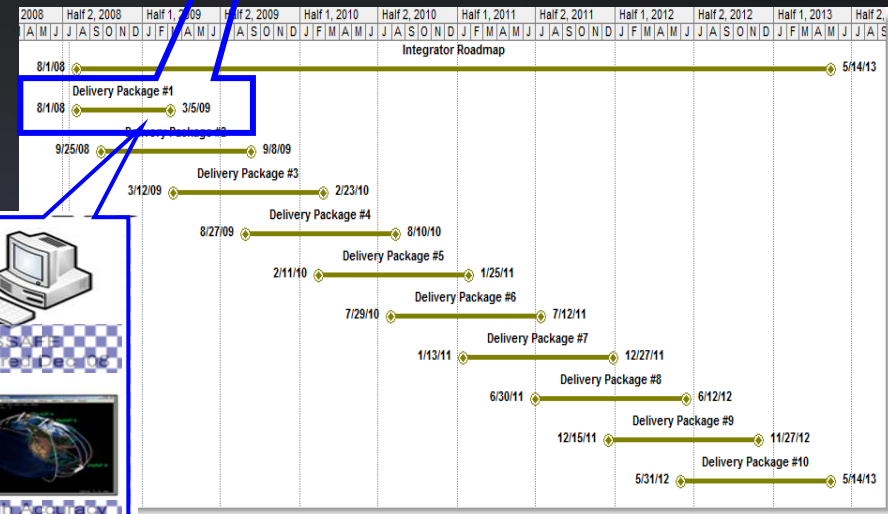
Service Portfolio & Roadmap

XYZ Service Package (Release 1.0)
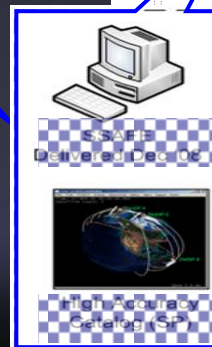
Acquisition Roadmap

Key Success Factors

- Government-owned interoperability architecture and specifications
  - Including interface, information, behavior, and performance specifications
- Engage the community
  - "Social engineering" is equally critical
- Check and balance in acquisition strategy
  - Separate integrator and developer roles
  - An "Enterprise Capability Architect" role
- Strong system engineering processes