Software Delivery Modernization
Modernizing software through the implementation of cloud native solutions that can deliver at the speed of your mission

Organizational Challenges
- We have tried to adopt an Agile lifecycle with mixed results. We often encounter bottlenecks and rely on old practices.
- Our large monolithic systems are no longer meeting mission needs and need to be modernized.
- Successful modernization efforts at other organizations have set the standard for where we would like to be.

SDM Principles
Deliver speed, resilience, and scale built on a set of core principles that govern software and infrastructure modernization.

SDM Solution & Services
- Lifecycle: Agile
- Architecture: Microservices
- Automation: DevOps
- Platform: PaaS

Potential Benefits
- Speed: Reduce time to market with rapid reaction to evolving customer needs
- Resilience: Gracefully adjust to changes in operating conditions and environment
- Scale: Automatically handle increases or decreases in load without impact to performance

- Integrated modernization across technology disruptors to enable mission success
- Transformation Playbook
- Community of Excellence
- Cloud Native Advice Model
- Refactor Legacy Modernization
- Full Cloud Native Development

Leverage containerization using a microservices architecture
Rapid feature development and increased system resiliency
Integrate and automate the software delivery pipeline with core IT operation processes
Increase delivery speed and quality
Use event-driven software architecture patterns
Develop highly fault-tolerant systems that scale horizontally

Organize around mission capabilities using Domain Driven Design
Understand the level of granularity of services to support the mission
Focus on products, not project
Teams own product delivery from planning through production
Leverage infrastructure automation by standing up runtime platforms
Facilitates consistent error-free deployments across environments

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**Lifecycle: Agile**

Higher quality, predictable planning, and increased stakeholder engagement

Agile development lifecycle sets the pace for rapid delivery of feature-rich releases across scheduled iterations.

- **Rigid, Step-Oriented Methods**
  - Waterfall
  - RUP
- **Flexibility and Adaptability**
  - Interactive
  - RAD
  - Agile

**Automation: DevOps**

Modern capabilities, efficiency, and faster delivery to market

DevOps merges Development and Operations through an automated pipeline that continuously builds, tests, and deploys code.

- **Traditional Manual Process**
  - Manual Code, Compile, Test, and Deploy
- **Partial Build Automation**
  - Code, Plan, Build
- **Fully Automated Pipeline**
  - DevOps
  - Develop, Plan and Deploy the final product
  - Support and Hand-off the deployed solution
  - Witness the client’s success

**Architecture: Microservices**

Simplicity, reduced risk, and increased control to help ensure high-quality releases

Microservices, autonomous web services, can be orchestrated to quickly integrate new features and functionality to existing applications through containerization.

- **Mainframe**
- **Client Server**
- **SOA**
- **Microservices**

**Platform: PaaS**

Efficiency gains and mission focus to quickly adapt to changing customer needs

PaaS provides a range of managed infrastructure services, enabling organizations to focus on their core mission through application delivery.

- **Locally Managed Platform**
  - Manually Develop & Maintain
- **Provider Managed Platform**
  - PaaS: Automated & Event Triggered

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