

**UNITED STATES  
PATENT AND TRADEMARK OFFICE**



# Modernizing USPTO IT Systems and Emerging Technologies in IP Ecosystems

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PATENT AND TRADEMARK OFFICE ®

Impact of Emerging Technologies in IP Ecosystems

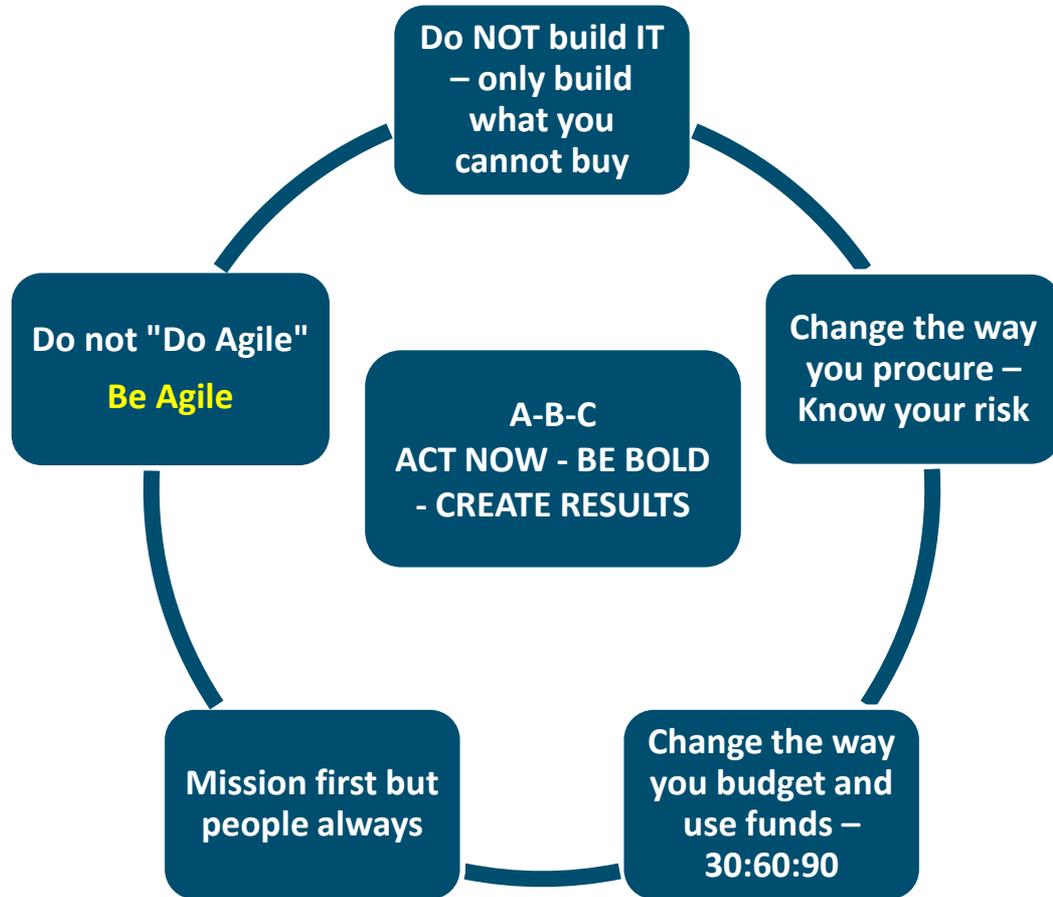
# **Foundations of IT Modernization**

# Modernizing IT systems

- Foundational practices for results
  - **Services ecosystem** — service centricity as we decouple monolithic applications for new agility
  - **Platform-as-a-service** — efficiency from common standards & practices
  - **Optimized operations** — for faster delivery
  - **Next generation security** — DevSecOps and monitoring
  - **Cloud-native** infrastructure — reduced costs and more agility
  - **Data as an asset** — AI automates data-driven decisions
  - **AI-augmented processes** — new efficiency for applicants and teams



# ABC's of IT guiding principles



# Putting into practice: Platforms and community

## Align



**Align** product teams to our technology, development, security, and operations vision, ensure they use reference pipelines and the target state architecture (TSA) for cloud solutions.

## Collaborate



Continuous feedback loop accelerates improvement as teams **align and collaborate**. Our enterprise community of developers source common code via GitLab, reference libraries and more.

## Accelerate



To **accelerate**, automated code generates **platform archetypes** resulting in compliant, **working code** with automated, CI/CD deployments and pipelines for building cloud native solutions. All new efforts start with these archetypes.

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# Putting into practice: Cloud migration

## WHY CLOUD?

Accelerating innovation at USPTO with modern enterprise services.

### CURRENT STATE

- Overprovisioned, inflexible capacity
- Inability to self-provision resources
- Consulting and acquisition costs for additional services



Enable Staff



Engage Staff



Ensure Progress



### SUPERVISOR RESPONSIBILITIES



Utilize



Monitor



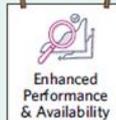
Adopt



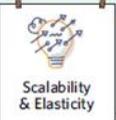
Execute



### STAFF RESPONSIBILITIES



Enhanced  
Performance  
& Availability



Scalability  
& Elasticity



Increased  
Operational  
Efficiency



More for  
Less



Improved  
Business  
Continuity



Faster  
Time to  
Production

### ENTERPRISE WIDE BENEFITS



Impact of Emerging Technologies in IP Ecosystems

# Leveraging Artificial Intelligence

# AI grows more capable each year

## 2022-2023 Generative AI

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- First large-scale commercialization of Generative AI

## 2024 Reasoning

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- Rise of “reasoning” to scale model capabilities

## 2025 Current State

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- U.S. AI labs release “Gen3” models trained with  $10^{26}$  math ops



# AI in transformation and IT modernization

United States AI agenda:

- *"[T]o promote human flourishing, economic competitiveness, and national security"*

Our task as IP offices:

- Deliver mission-aligned value to our stakeholders through **smart** and **efficient** use of frontier AI technologies while maintaining public trust in our offices and the IP ecosystem.



# AI playbook: the right hammer for the nail

## AI for Business

Deliver AI solutions supporting granting patents and registering trademarks

- Search & classification
- Process automation
- Quality assurance
- Expert augmentation

## AI for Technologists

Leverage AI for modern, secure, resilient, and efficient agency IT systems

- Legacy code analysis
- Code generation
- Language translation
- Telemetry analysis

## AI for Everyone

Broadly empower agency personnel and public users with flexible and adaptable AI tools.

- General-purpose Generative AI
- Virtual assistants
- Productivity tools

# Foundational building blocks for AI

- **Sandboxes** facilitate discovery, prototyping, and new capabilities
- **Modern cloud infrastructure** can serve AI at scale
- **Subject-matter expertise** both in the AI technology and problem domains
- **Education and policies** empowers our workforce to use AI effectively and accountably
- **Singular focus on mission:** always put business value over technical novelty



