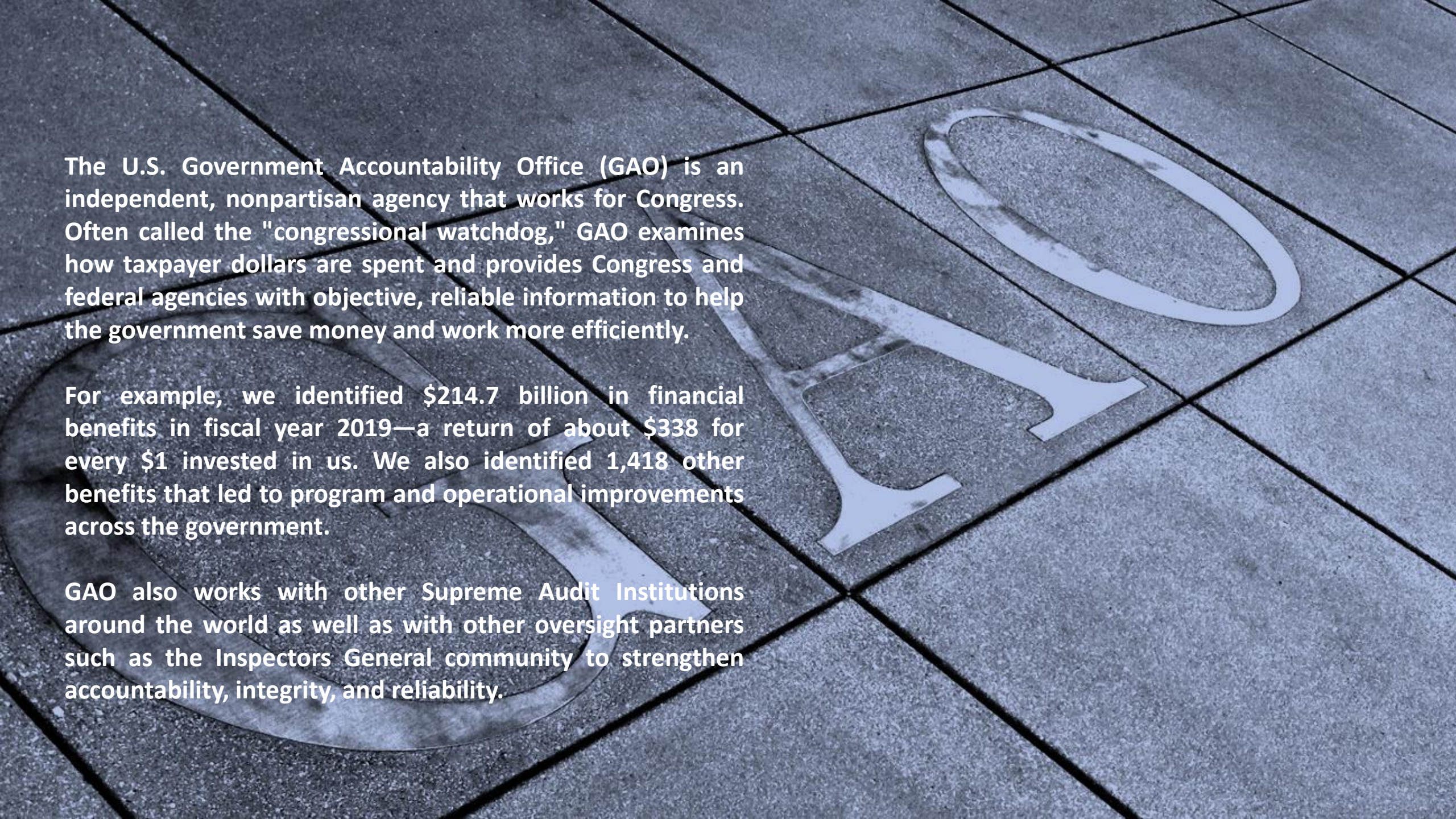
Sailing or Flailing? Driving audit Innovations in the Digital World

NOVEMBER 2020

Innovation Lab
U.S. GOVERNMENT ACCOUNTABILITY OFFICE



The U.S. Government Accountability Office (GAO) is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog," GAO examines how taxpayer dollars are spent and provides Congress and federal agencies with objective, reliable information to help the government save money and work more efficiently.

For example, we identified $214.7 billion in financial benefits in fiscal year 2019—a return of about $338 for every $1 invested in us. We also identified 1,418 other benefits that led to program and operational improvements across the government.

GAO also works with other Supreme Audit Institutions around the world as well as with other oversight partners such as the Inspectors General community to strengthen accountability, integrity, and reliability.

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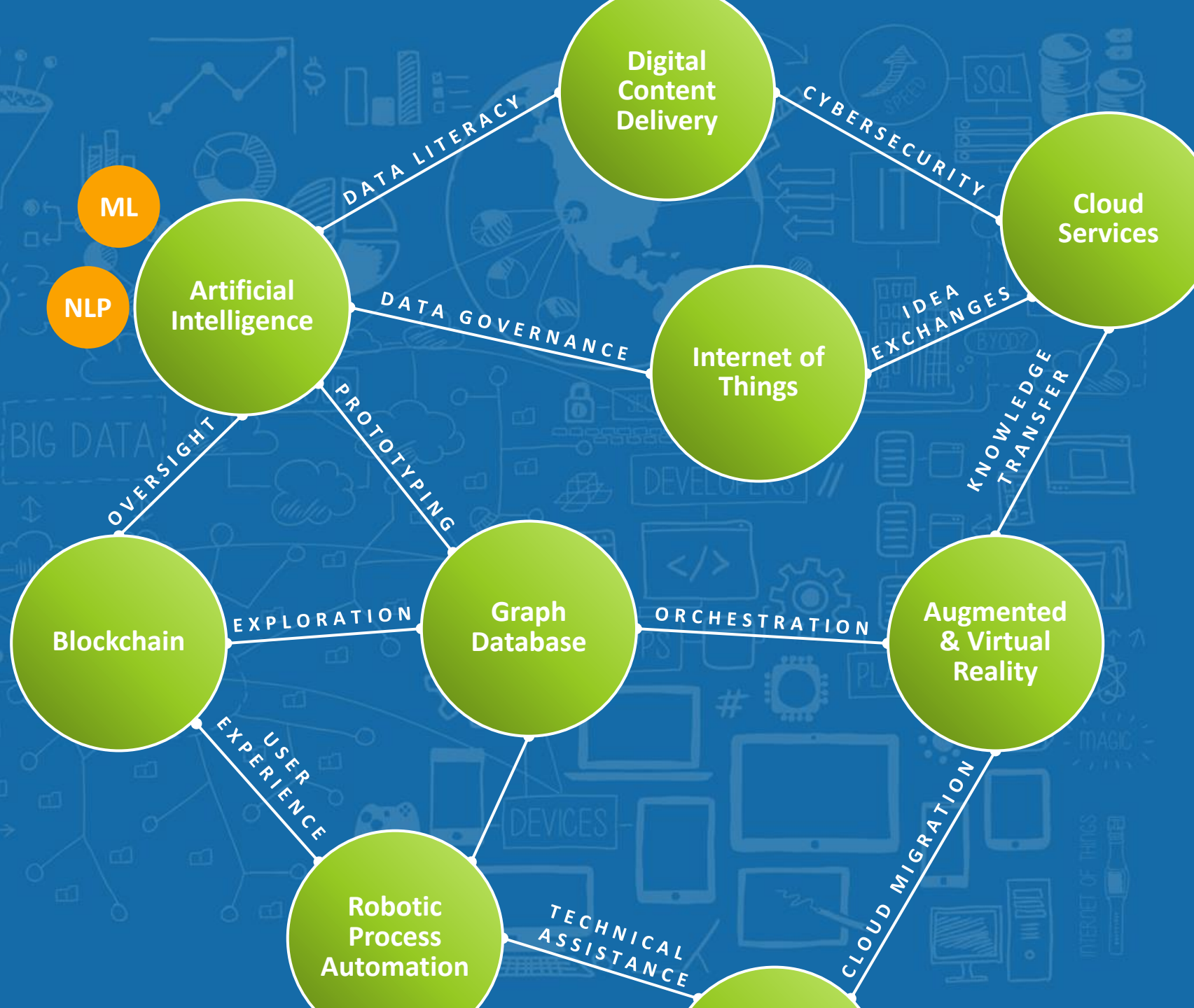
How do we equip GAO with new capabilities to tackle emerging oversight challenges of the fourth industrial revolution?

The Innovation Lab applies leading-edge capabilities to ideate, incubate, iterate, and evaluate the art of possible. Our aim is to develop prototypes that help GAO mission teams operate with greater speed, scale, and depth.



Innovation sounds great but doesn't happen *automagically*

1. Hammers looking for nails approach to innovation does not work
2. De-risk focus on art of possible with the right incentives
3. Practice agility by iterating on Minimally Viable Products
4. Solve basic data challenges and democratize technology functions
5. Do not hoard knowledge

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Guiding principles on enablement

CLOUD FIRST

- Leveraging commodity services to reduce cost of ownership
- Enabling access leading edge services
- Providing real-time cost transparency and usage metrics

MISSION FOCUS

- Enhancing user experience through self service
- Scaling capacity based on needs, not wants
- Focusing expertise on mission, not infrastructure
- Enabling re-use and collaboration

ACCOUNTABLE SLA

- Maintaining high availability
- Right-sizing computational resources
- Shifting to on-demand consumption
- Enabling rapid support response

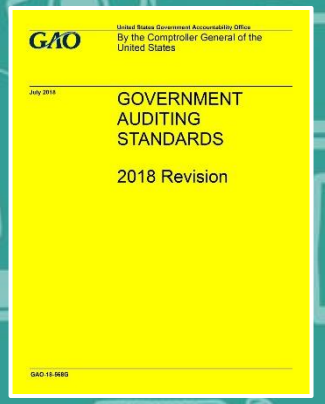
ENHANCED COMPLIANCE

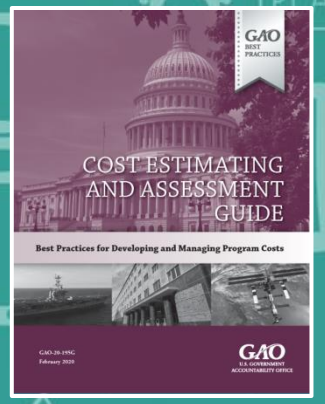
- Enforcing governance and security controls
- Optimizing access and data policies
- Scaling cybersecurity best practices

Digital content delivery

Enhance user experience of the Yellow Book beyond the current PDF format with modernized digital features using open-source capabilities.

- Fully adaptive to a variety of consumption models, including smartphones and tablets
- Integrated keyword, reference, and footnote highlights
- Elastic search to support concepts, synonyms, and misspellings
- Embedded Google Analytics to track user behaviors
- Automated 508 compliance





AI accountability

Convening a cross-sectoral panel of experts to develop an oversight framework of models and algorithm aligned with the Generally Accepted Government Audit Standards (GAGAS).

The forum under the Comptroller General's authority will evaluate assessment criteria and identify related technical artifacts necessary to provide assurance on AI systems.

Relationship-based analyses

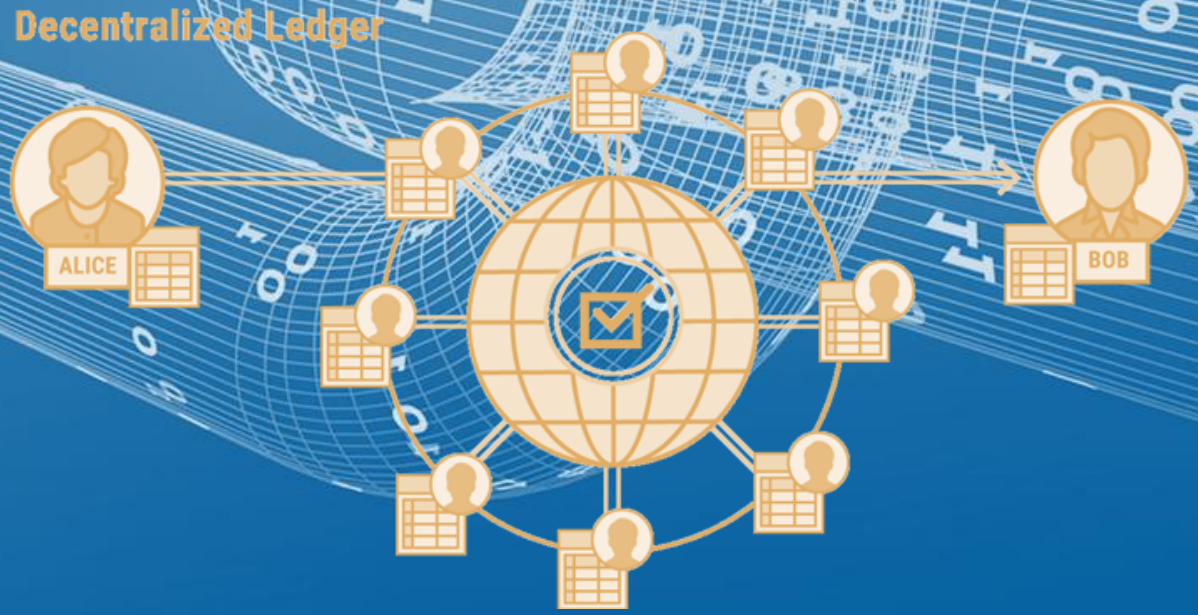
GAO's audit of the US General Fund is a prototypical accounting review – scaled to $14 trillion. How might we take a novel application of graph database technology to persistently and scalably manifest transactional analyses?

- Mapping relationships of posting logics to evaluate inconsistencies
- Pivot away from sample-based selections by ingesting all data points
- Enhance the ability to identify outliers, anomalies, and other audit-relevant issues with greater speed, depth, and scale

Blockchain (distributed ledger)

Beyond cryptocurrency applications, a distributed ledger's decentralized transparency and security features are starting to find use cases across federal agencies.

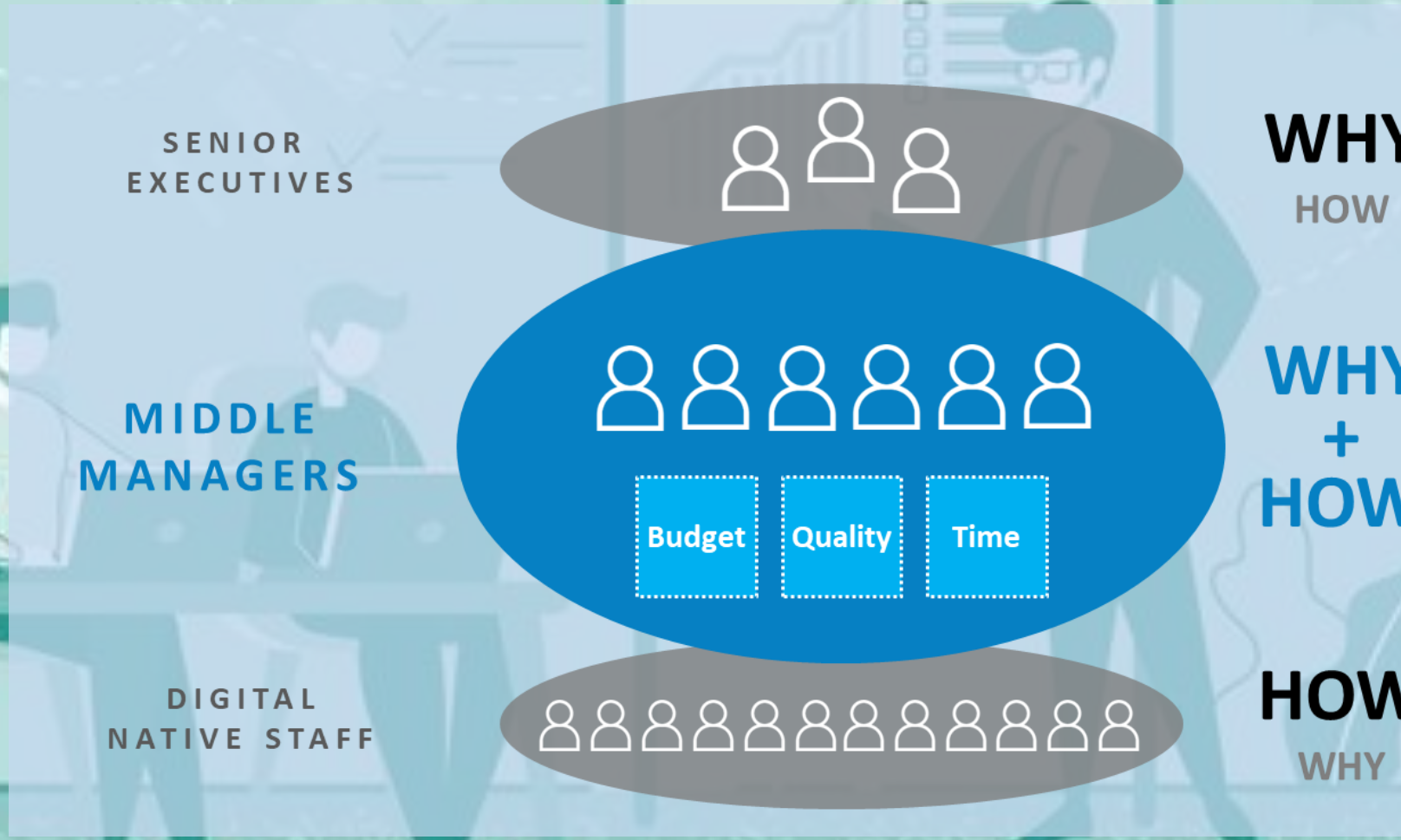
- What is the current state of technologies (e.g., open-source vs. proprietary platform vs. –as-a-service)?
- How might we think about future audits of blockchains?
- What are the inherent change management challenges?



Natural language processing

Soliciting public comments is an important element of rule making. However, dealing with the volume, cacophony, and variety of inputs solicited through sites like Regulation.gov is no small challenge.

- Leverage AWS's Comprehend service to perform topic modeling at scale
- Develop knowledge wheels to help user quickly navigate through relevant contents
- Design the architecture in ways that can extend use case to a variety of unstructured data

Transforming audit tradecraft through data literacy

- ***Empower*** you to ask what's analytically possible in meeting mission/operational objectives
- ***Think differently*** – shifting mental energy from manual work to distilling novel insights