GAO Agile Assessment Guide

September 2020

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GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Outline

- About GAO
- GAO Best Practice Guides (Overview)
- Agile Guide
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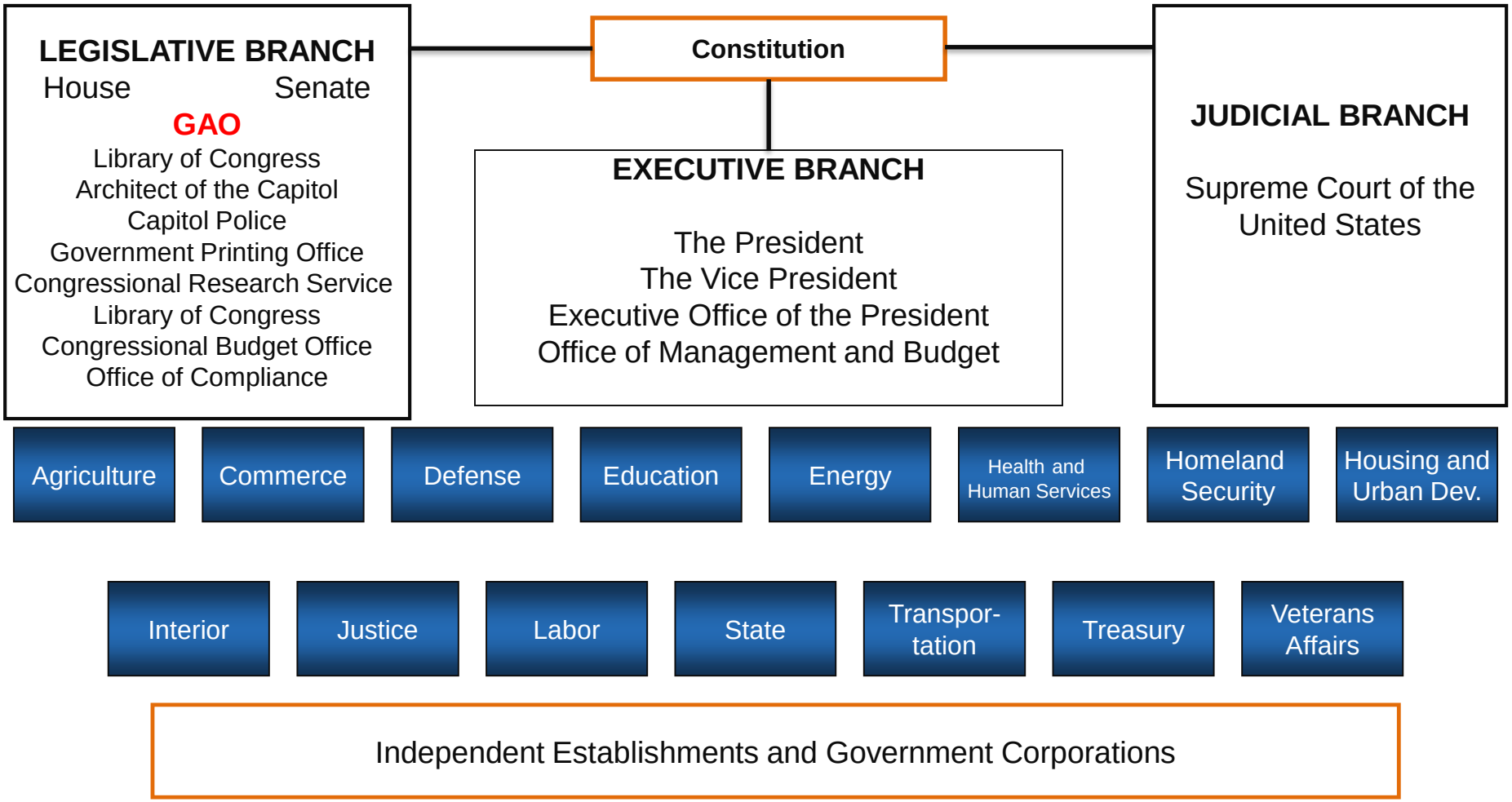
  - Agile Execution
    - Requirements Development and Management
    - Contracting
  - Agile and Program Monitoring and Control
    - Cost
    - Schedule
    - Earned Value Management
  - Agile Metrics
  - Recent Case Study

GAO's Place in the Federal Government



About GAO

- GAO is an independent, nonpartisan agency serving the Congress and helping to improve the performance and ensure the accountability of the federal government.
- Core values are Accountability, Integrity, and Reliability.
- To ensure independence, the Comptroller General (CG) is appointed to a 15-year term by the President. Other than the CG, there are no political appointees at GAO.

Oversight, Insight, Foresight

About GAO: Our Work

- GAO work is primarily done at the request of congressional committees or subcommittees or is mandated by public laws or committee reports. We also undertake research under the authority of the Comptroller General
- Some examples of our work include:
  - Auditing agency operations to determine whether federal funds are being spent efficiently and effectively
  - Investigating allegations of illegal and improper activities
  - Reporting on how well government programs and policies are meeting their objectives
  - Performing policy analyses and outlining options for congressional consideration
  - Issuing legal decision and opinions, such as bid protest rulings and reports on agency rules
- In 2018, Congress directed the formation of STAA, recognizing that the accelerating pace of innovation has created a need for more and deeper analysis of science and technology

More information about GAO can be found at www.gao.gov

GAO Best Practice Guides (Overview)

GAO Guides and Best Practices

- **Cost Estimating and Assessment Guide** (March 2020, GAO-20-195G)
- **Schedule Assessment Guide** (December 2015, GAO-16-89G)
- **Technology Readiness Assessment (TRA) Guide** (January 2020, GAO-20-48G)
- **Agile Assessment Guide** (Planned release FY2020, GAO-20-590G)

GAO Agile Assessment Guide (Exposure Draft)

GAO Agile Assessment Guide: Exposure Draft

- What is an “exposure draft”?
  - An initial product, published with a 1-year open comment period, providing an opportunity for anyone to comment on the guide’s contents
  - After the comment period is over, GAO reviews the comments received and updates the guide based on those inputs and additional insight we have from audits
  - Quantity of comments often dictates how long it takes to update the exposure draft

GAO Agile Assessment Guide: Contents

- Chapter 1 – Background
- Chapter 2 – Agile Adoption Challenges and Responses in the Federal Government
- Chapter 3 – Agile Adoption Best Practices
- Chapter 4 – Agile Execution and Controls
- Chapter 5 – Requirements Development and Management in Agile
- Chapter 6 – Agile and the Federal Contracting Process
- Chapter 7 – Agile and Program Monitoring and Control
- Chapter 8 – Agile Metrics
- Appendices

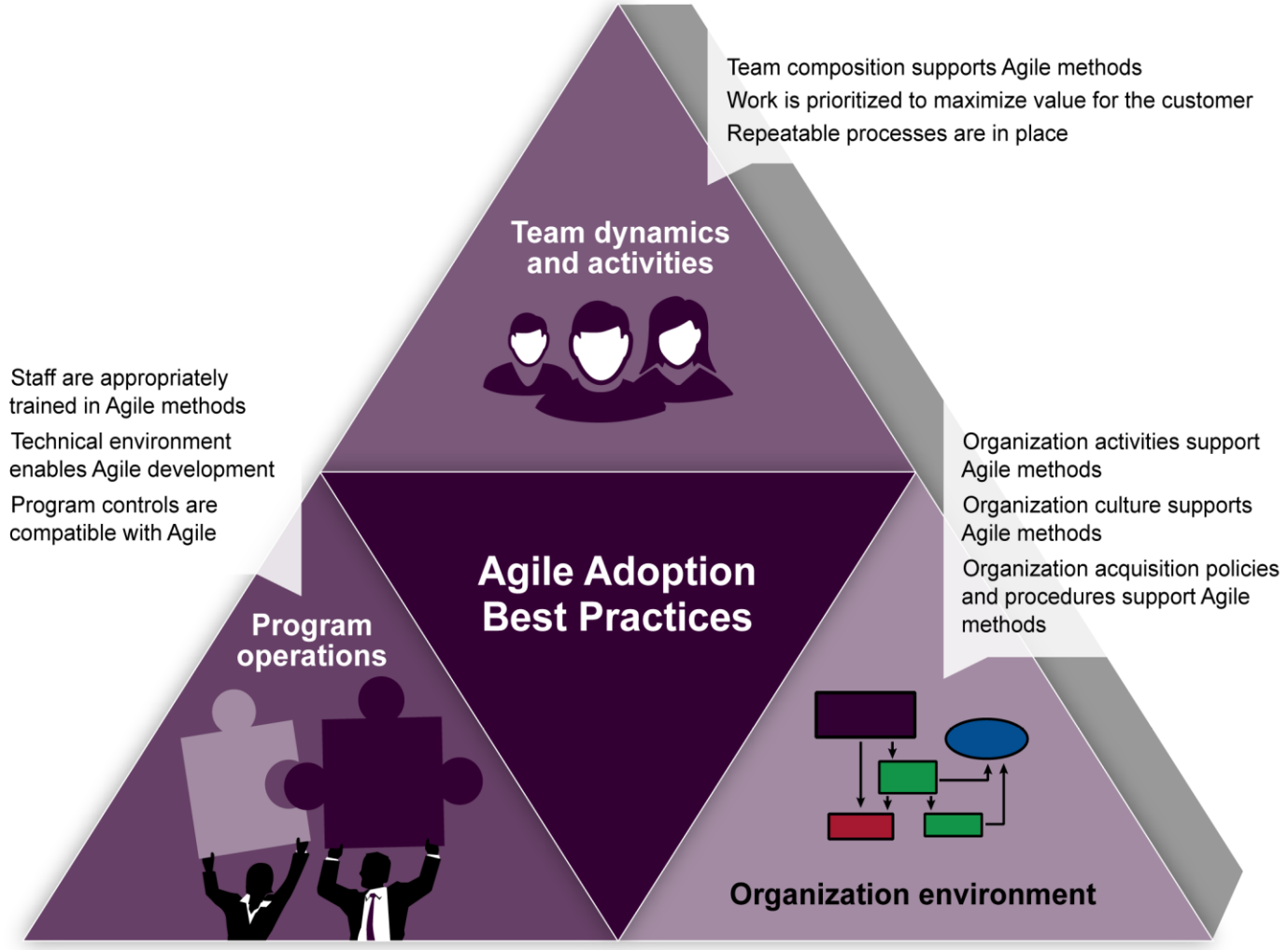
Agile Assessment Guide exposure draft expected out on the GAO webpage: September 2020

Agile Adoption

- Nine best practices divided into three categories
  - Team Dynamics
  - Program Operations
  - Organization Environment
- Presented in Chapter 3 of the Guide

Agile Adoption: Best Practices related to transitioning to an Agile software development framework

Agile Adoption



Source: GAO. | GAO-20-590G

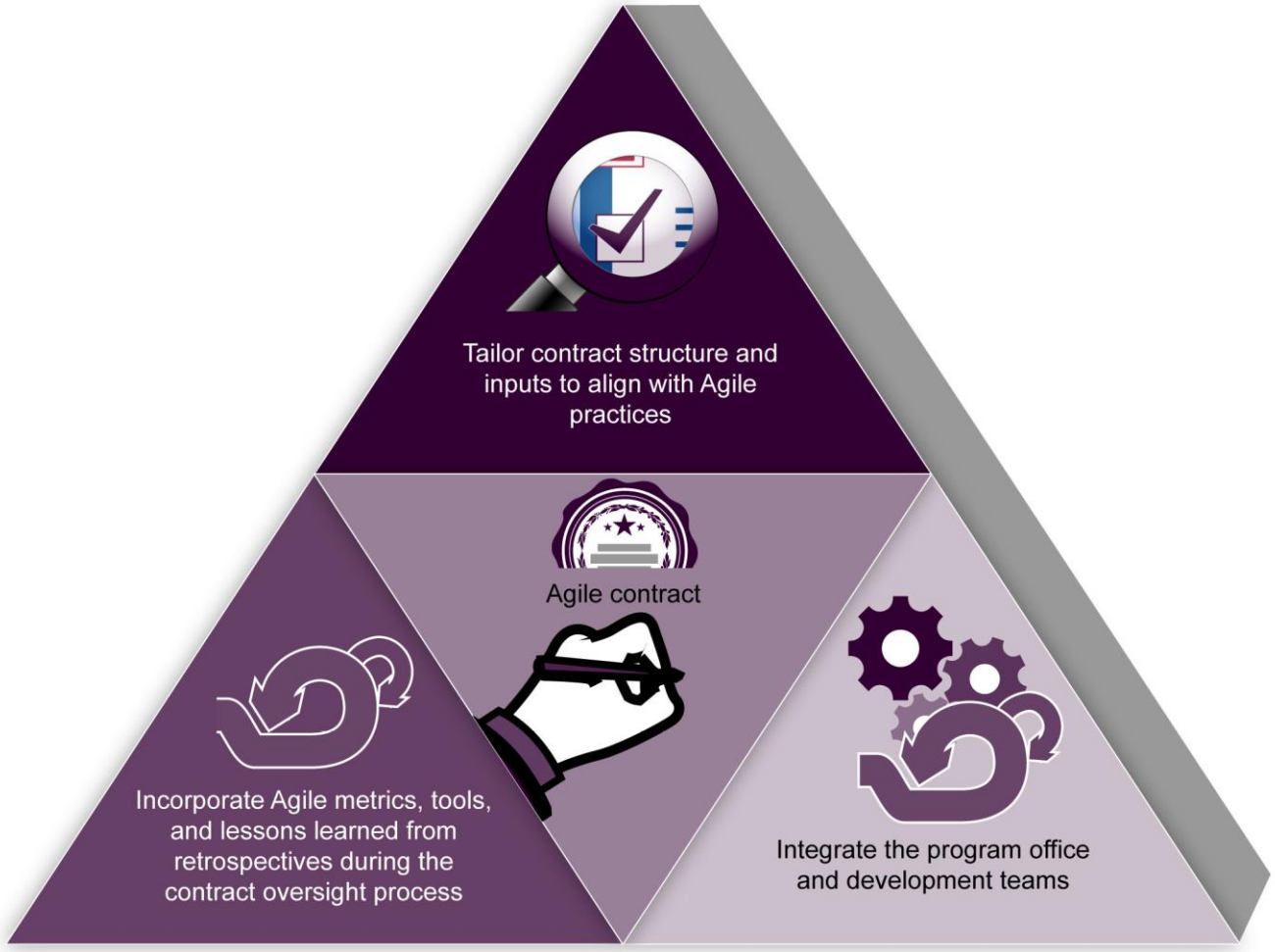
Agile Execution

- Best practices presented for the following
  - Requirements development and management
    - Eight best practices
    - Presented in Chapter 5 of the guide
  - Contracting for Agile programs
    - Three best practices
    - Presented in Chapter 6 of the guide

Agile Execution: Best practices related to executing an Agile program

Requirements Management

Agile Contracting



Agile and Program Monitoring and Control

- Relates best practices for cost, schedule, and Earned Value Management presented in previous GAO best practice guides for Agile software development programs
- All best practices established in previous guides still apply to Agile programs
- The guide discusses considerations for each topic related to Agile

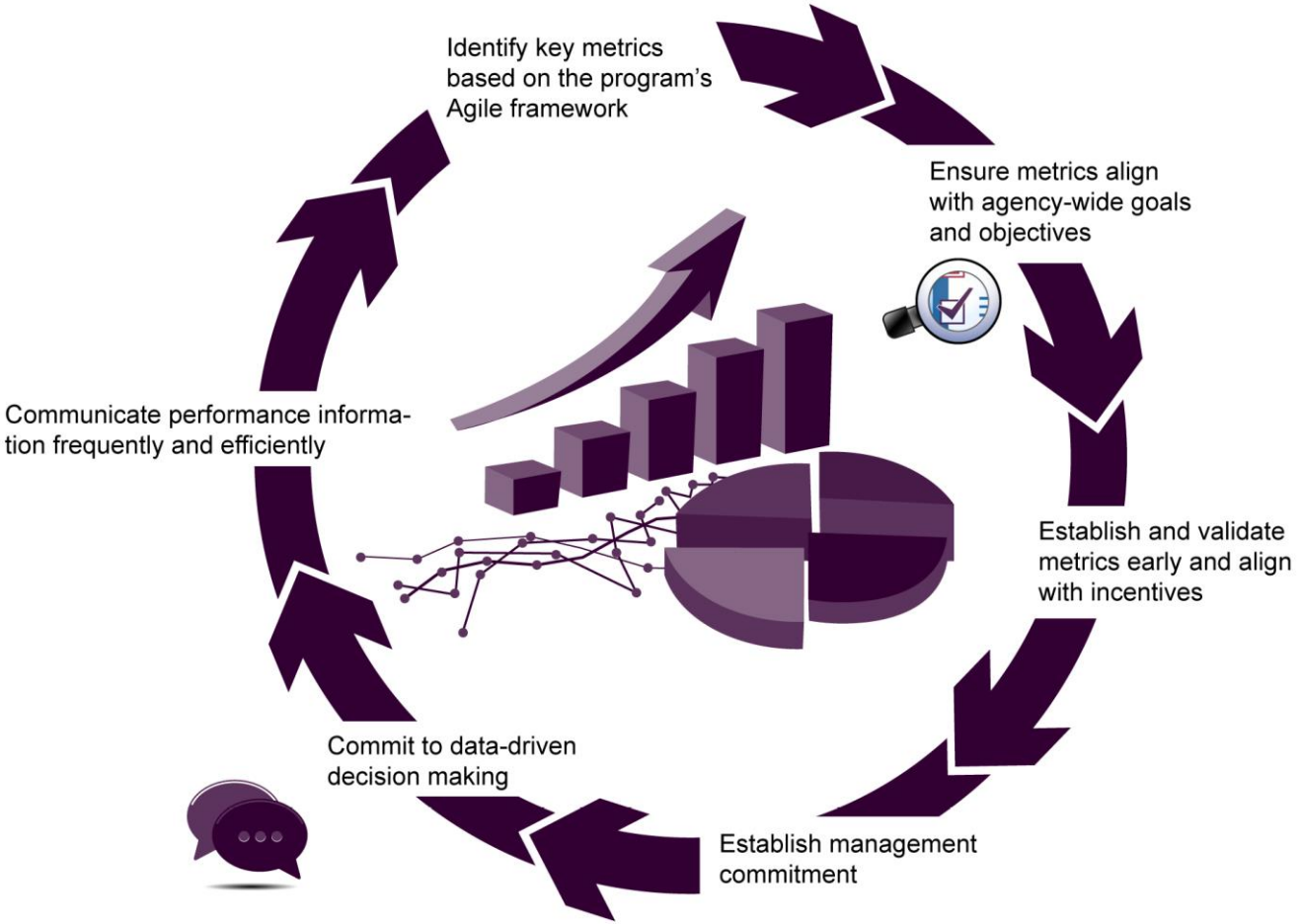
Agile Program Monitoring and Control: best practices related to program management

Agile Metrics

- Six best practices are presented in Chapter 8 of the guide

Agile Metrics: best practices for developing and using metrics for an Agile program

Agile Metrics



Recent Case Study

GAO Report: AGILE SOFTWARE DEVELOPMENT GAO-20-213

CASE STUDY: DHS HAS MADE SIGNIFICANT PROGRESS IN IMPLEMENTING LEADING PRACTICES, BUT NEEDS TO TAKE ADDITIONAL ACTIONS

Case Study

AGILE SOFTWARE DEVELOPMENT GAO-20-213

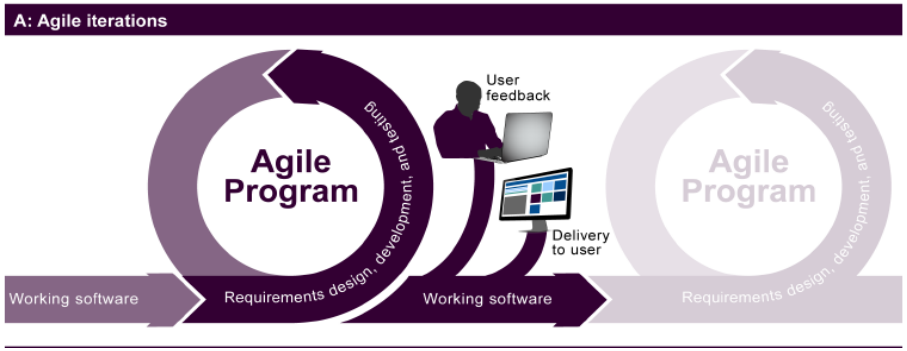
- Many of DHS's major IT acquisition programs have taken longer than expected to develop or failed to deliver the desired value.
- In April 2016, to help improve the department's IT acquisition and management, DHS identified Agile software development as the preferred approach for all of its IT programs and projects.
- Objective:
  - 1) examine DHS's adoption of Agile software development to assess the extent to which DHS has addressed selected leading practices for its transition to the use of Agile software development

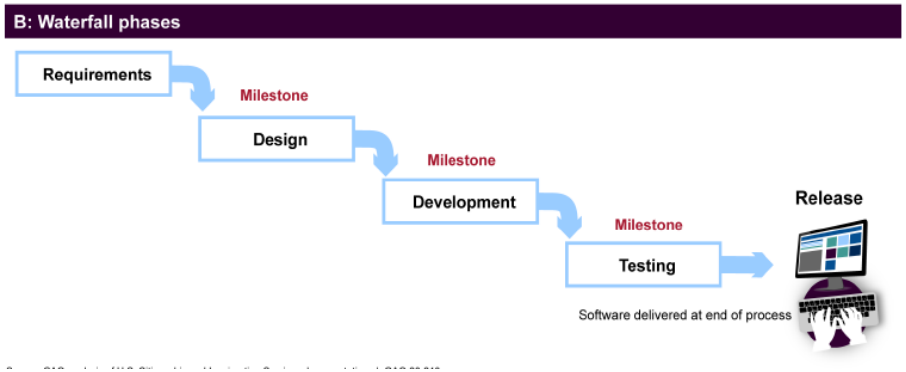
Case Study

AGILE SOFTWARE DEVELOPMENT GAO-20-213

- GAO analyzed DHS documentation, such as policies, guidance, plans, and working group artifacts and assessed them against the selected leading practices.

- GAO made 10 recommendations to DHS to implement selected leading practices for its transition to Agile software development





Case Study

AGILE SOFTWARE DEVELOPMENT GAO-20-213

Recommendation	Agile Assessment Best Practice
Recommendation 5	Ensure that the CIO, in collaboration with the Chief Procurement Officer, through the Homeland Security Acquisition Institute, establish Agile training requirements for senior stakeholders
Recommendation 6	Ensure that the Chief Human Capital Officer, in collaboration with the CIO, consider modifications to the current employee recognition and performance management governance to ensure that teamwork and team performance of Agile programs and projects are incentivized
Recommendation 7	Ensure that the CIO, in collaboration with the Chief Procurement Officer, through the Homeland Security Acquisition Institute, establish Agile training requirements for staff outside of the acquisition workforce but assigned to Agile programs
Recommendation 8	Ensure that the CIO, upon establishing a set of core performance metrics, tracks and monitors the pace of Agile team development
Recommendation 9	Ensure that the CIO, in collaboration with the Executive Director of the Office of Program Accountability and Risk Management (PARM), update or develop new guidance on Agile methodologies to describe how Agile teams can estimate the relative complexity of user stories
Recommendation 10	Ensure that the CIO, upon establishing a set of core performance metrics, sets expectations for automated testing and code quality, and tracks and monitors against those expectations

Note: GAO found that the agency offers guidance, not policies, which afford its programs to dictate the practices they do and do not want to employ.

Thank you

Guides Available Online and Downloadable in PDF:

GAO Cost Estimating and Assessment Guide:
http://www.gao.gov/products/GAO-20-195G

GAO Schedule Assessment Guide:
http://www.gao.gov/products/GAO-12-120G

GAO Technology Readiness Assessment Guide:
http://www.gao.gov/products/GAO-20-48G

GAO Agile Assessment Guide (FY2020):
https://www.gao.gov/products/GAO-20-590G

GAO STAA Cost Engineering Sciences

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GAO on the Web

Web site: http://www.gao.gov/

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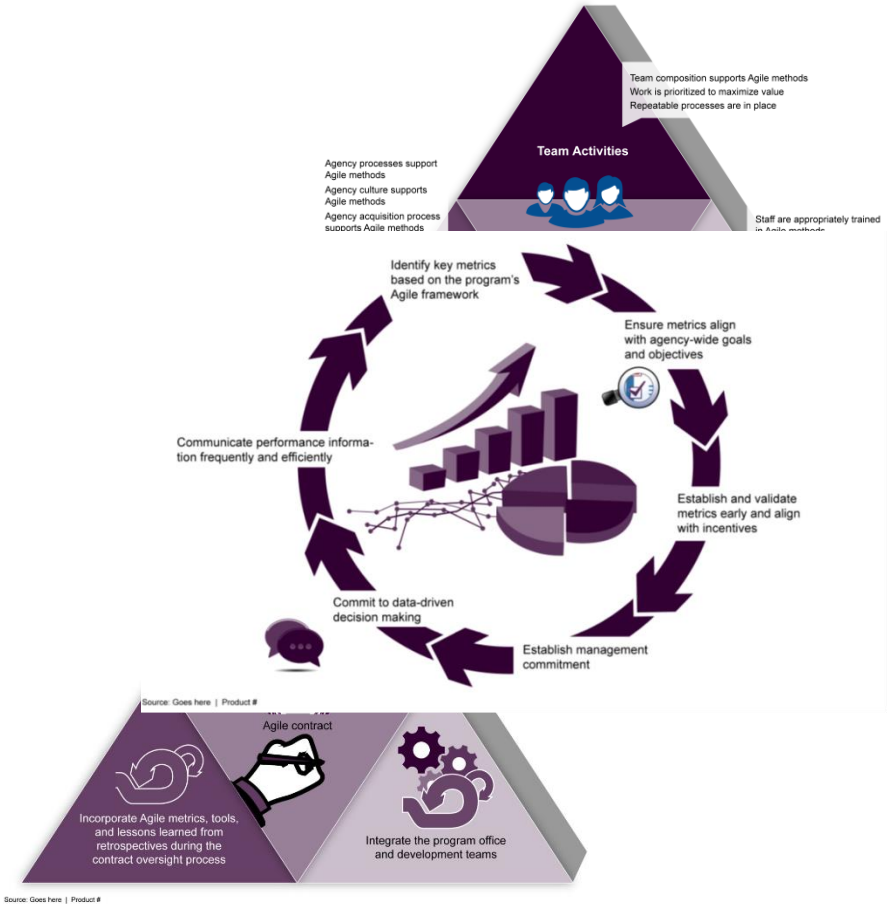
Backup slides

GAO Agile Assessment Guide: Best Practices

- Best practices for Agile adoption, execution, and program control and monitoring are included in the exposure draft
  - Chapter 3: Agile Adoption best practices
  - Chapter 5: Requirements best practices
  - Chapter 6: Contracting best practices
  - Chapter 7: Tailoring program control and monitoring best practices from previous GAO guide (cost, schedule, earned value management)
  - Chapter 8: Metrics best practices



Appendices

- Agile Key Terms (Glossary)
- Agile Related Terms (Rosetta Stone)
- Questions for Auditors and Managers and Effects of not following best practices
- Agile Frameworks
- Debunking Agile Myths
- Case Study Descriptions