

Maturing Cost Estimation in Rapid Acquisitions

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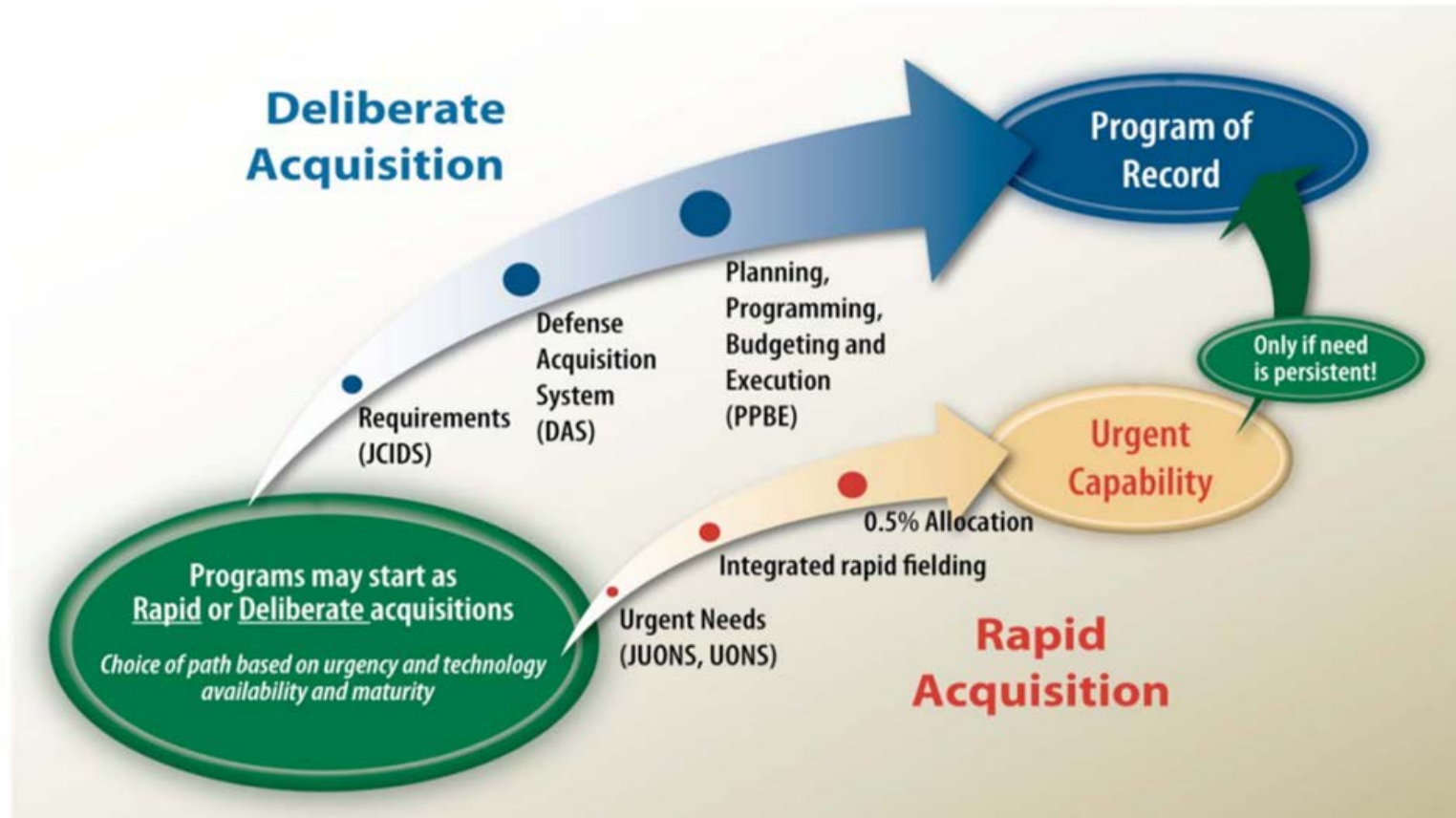
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Research Idea

- **Agencies are searching for ways to deliver critical mission functionality more quickly and with less risk**
- **Generating confident and credible cost estimates is a challenge when programs may have less definition, greater uncertainty, and fast timelines**
- **Research Goals:**
 - Provide a deeper understanding of cost implications in rapid acquisition environments
 - Develop methods of costing rapid acquisition projects in a consistent and repeatable way

Rapid vs. Deliberate Planning

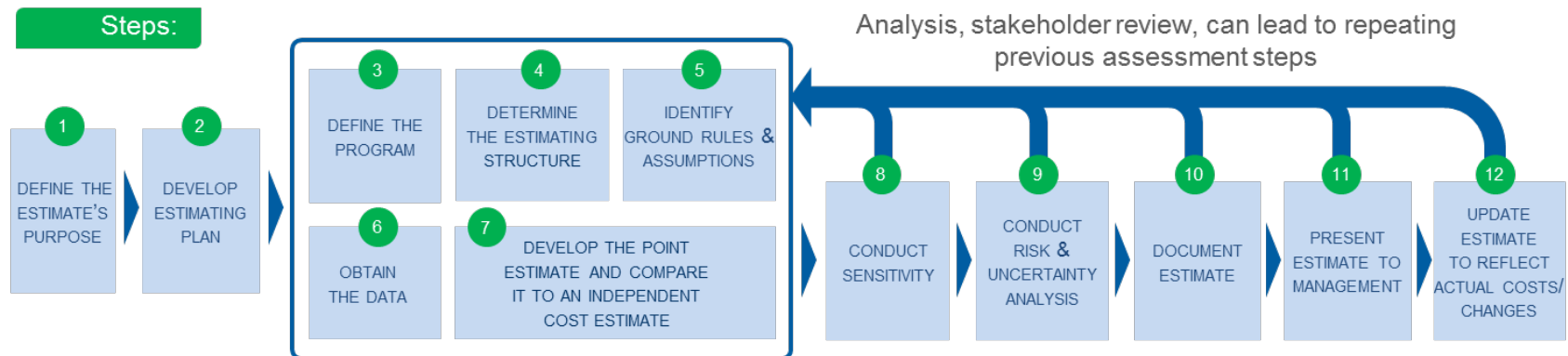


“Rapid” generally entails reduced documentation, empowered decision making, and less oversight to meet shortened schedules

Case Studies Methodology*

- **Applied research design and methods specific for case study research**
 - Established theoretical framework to guide research and map findings
 - Standardized data process and collection tools
 - Removed unintentional bias; ensured recommendations and findings are applicable to the broader community
- **Theoretical Framework is based on best practice in cost estimating community**

GAO Cost Estimating and Assessment Guide¹



*Adapted from Case Study Research Design and Methods by Robert Yin (2014)

¹ References: GAO Cost Estimating and Assessment Guide (GAO-09-3SP) (March 2009)

Findings: Cost Estimating in a Rapid Environment

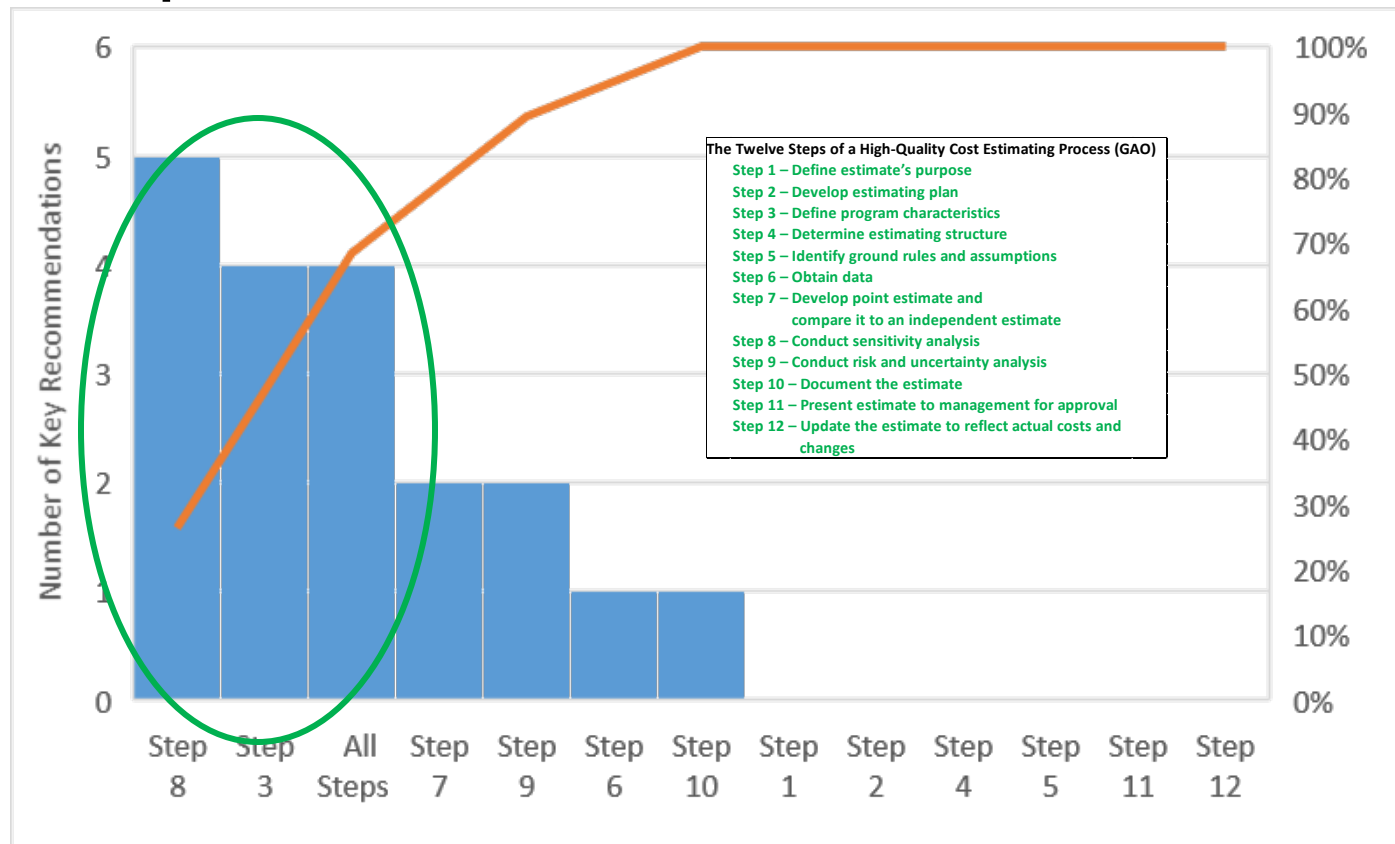
- **Findings identified rapid acquisition characteristics that impact cost methods**
 - Rapid acquisition emphasizes delivery of a capability quickly which causes very short acquisition timelines
 - In order to achieve these shortened timelines, rapid programs operate at a fast pace and have a great concurrency of efforts
 - Schedule is the top priority; cost and capability are flexible to support desired schedule
 - There are many rapid acquisition approaches that vary in solution maturity, size, type, timeline, and acquisition strategy
- **Rapid acquisition compressed timelines pose unique challenges to the cost estimating process**
- **Recommendations were made to specifically address these challenges while considering the constraints of rapid environments**

Findings: Cost Estimating Challenges

Little time to collect data
Quick turnaround initial estimates
Adjusting for abbreviated processes
Fast pace
Increased uncertainty/risk
Many trade-offs required
Technical baseline maturity
Documentation not top priority
Transition planning varies

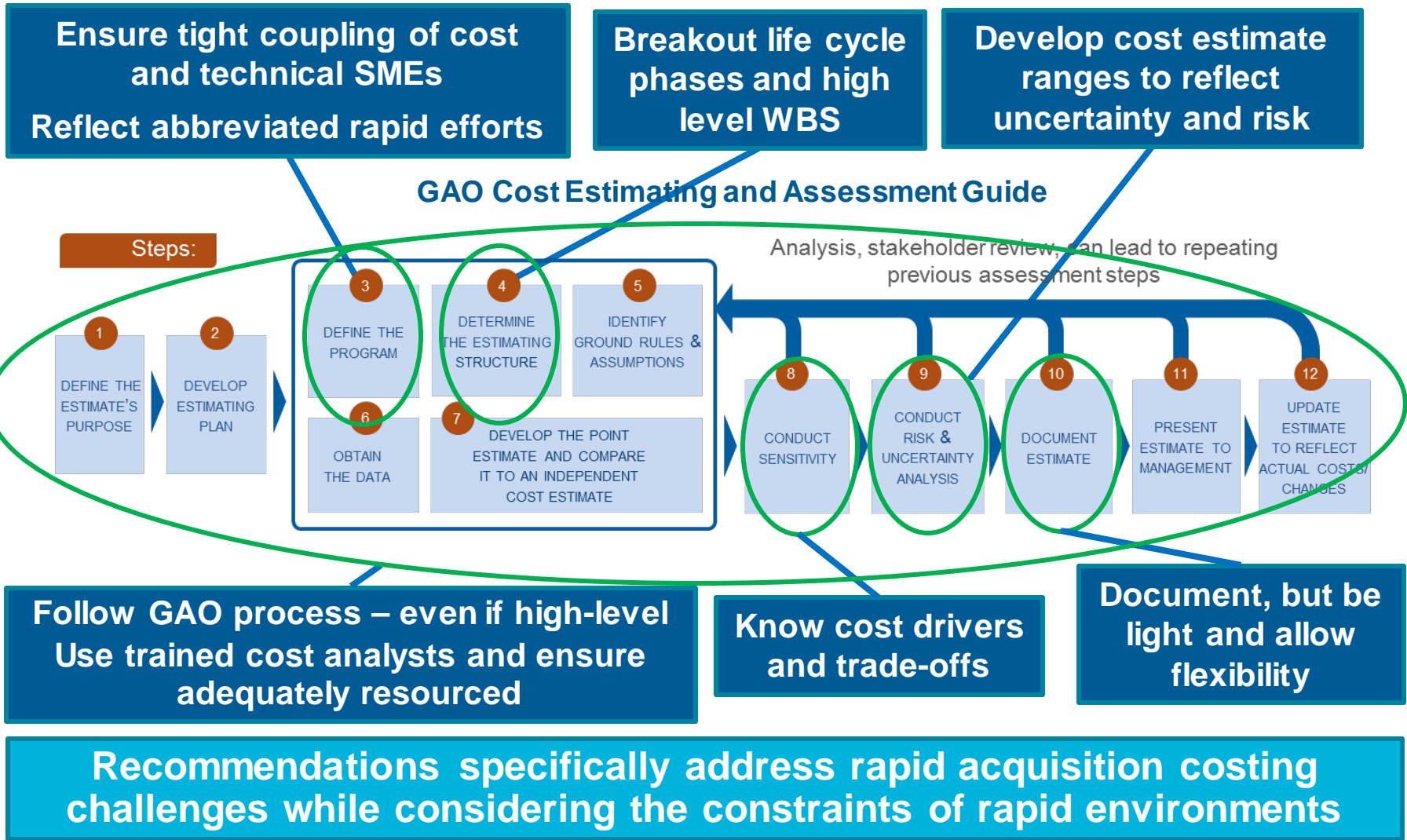
Recommendations by GAO Step

- Number of key recommendations counted for each of the 12 GAO Steps



- Step 8, Step 3, and 'All Steps' had greatest number of key recommendations

Recommendation Summary



Application Considerations

- **Consider the following factors when applying recommendations:**
 - Rapid acquisition approach
 - Size of program (\$)
 - New program start vs established program
 - Timeline
 - Solution maturity
 - Solution complexity

Summary

- **Multiple programs and SMEs were interviewed across a variety of rapid acquisition program types and solutions**
- **Key recommendations include:**
 - Apply the GAO 12 step process – even if high-level
 - Use trained cost analysts and engage them early and ensure they are adequately resourced
 - Develop cost estimate ranges to reflect uncertainty and risk in rapid acquisitions
 - Know cost drivers and trade-offs
 - Understand and reflect abbreviated acquisition and technical efforts
 - Document, but be light and flexible
- **Recommendations are easily applied and adaptable to the variety of rapid acquisition approaches**
- **Recommendations align with established cost estimating best practices that help ensure confident, credible, and reliable cost estimates are developed**