

# Information Technology: Acquisition Best Practices

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# Research Question and Issue

## ■ Question:

- What best practices can I apply to my agencies Information Technology (IT) acquisition?



## ■ Issue:

- There is a plethora of best practices, frameworks, models, and methodologies
- Government acquisition professionals can become overwhelmed, when trying to select the most appropriate path to execute their IT requirements and to modernize their IT systems
- Government Program Managers struggle not only to buy new IT systems, but to modernize existing systems and avoid high operation and maintenance (O&M) costs of legacy systems

# Research Methodology

## ■ Methodology:

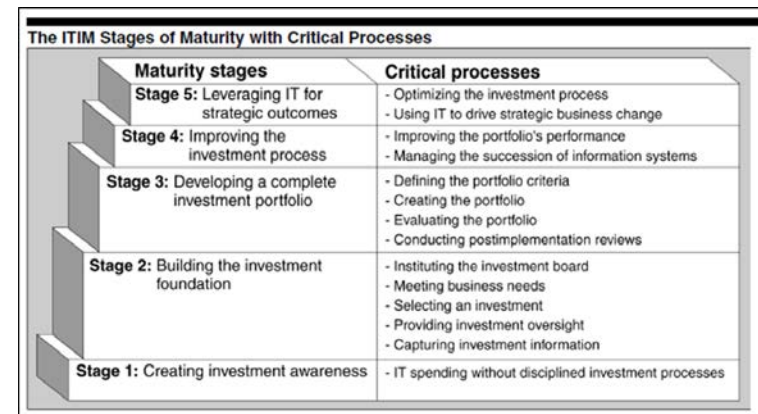
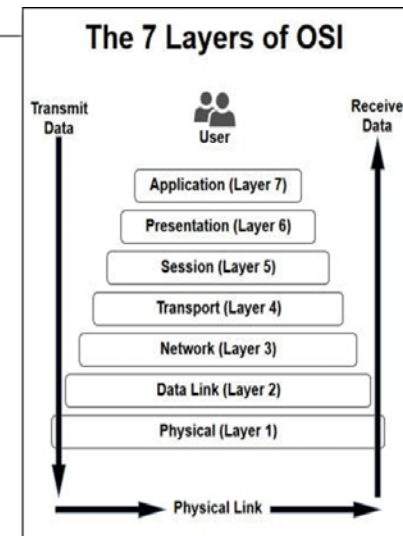
- Analyze current literature - glean best practices and approaches
- Synthesize into practical and tactical materials
  - Analysis and recommendation for models, frameworks, and taxonomies
  - Checklist to assess organizational readiness for IT modernization
  - Checklist to assist Integrated Product Team (IPT) in pre-acquisition
  - Exemplars (PWS/SOW, eval criteria, instructions, SLAs, QASPs, etc.)
- Enable federal acquisition professionals to implement IT acquisition strategies that fit their situation on lifecycle spectrum

### Key Reports:

- GAO-14-183T-IT-Leveraging Best Practices
- GAO-17-8-IT Workforce Key Practices for Strong IPT
- GAO-17-251SP-IT Opportunities for Improving Acquisition and Operation
- GAO-18-326-DoD MAIS Adherence to Best Practices

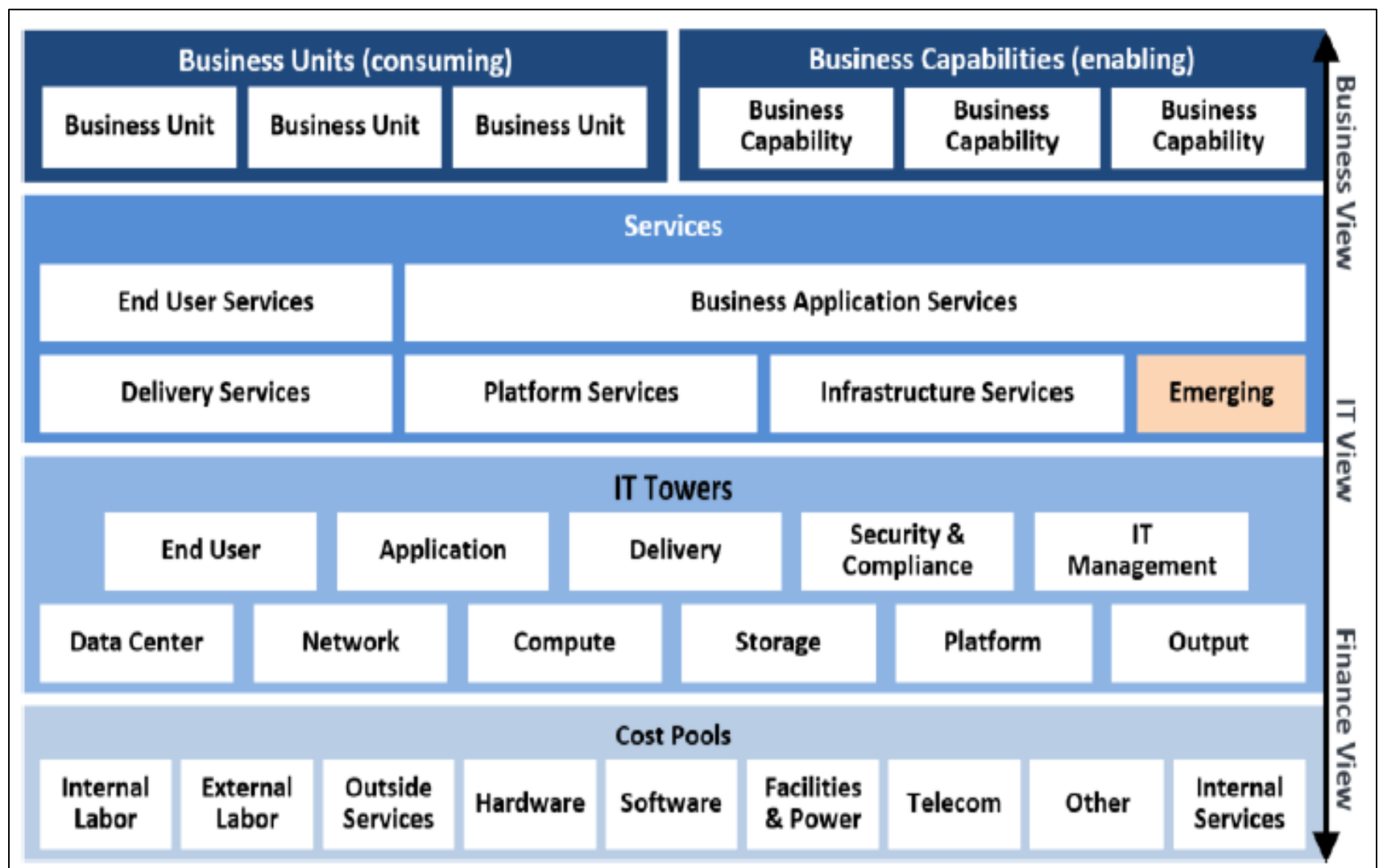
# Results1a: Models, Frameworks, and Taxonomies

- **Open Systems Interconnection (OSI) 7-Layer Model, [1984]**
  - Engineering model
- **IT Infrastructure Library (ITIL), [1989]**
  - Align IT services to business needs
- **IT Investment Management (ITIM) Framework, GAO, [2004]**
  - Measures IT maturity of an organization across 5-stages
- **Technology Business Management (TBM), [2016]**
  - Facilitates business aligned decisions and enables cross-organizational analyses
  - TBM is mandated by Office of Management and Budget (OMB) for all federal agencies
  - Phased implementation by FY22



**Apply TBM, use others where needed**

# Results1b: TBM Taxonomy (v2.1)



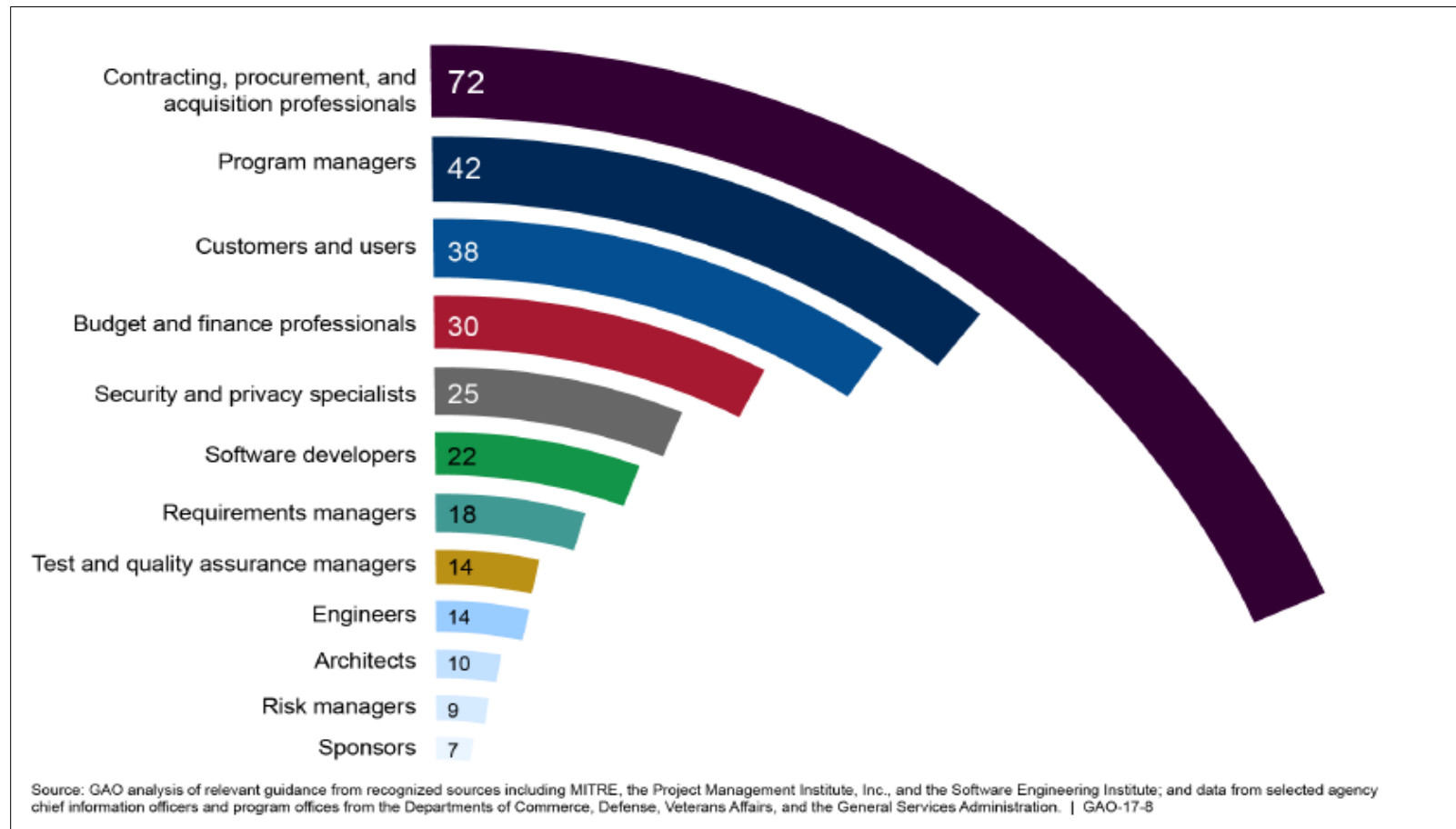
# Results2a: Organizational Readiness Checklist

Note: Checklist includes references for each item

#	Best Practice
1	Assess IT Investment Management maturity using ITIM
2	Analyze IT workforce for Skill Gaps; develop plan to fill them
3	Program staff has necessary knowledge and skills
4	Properly Staff Integrated Product Team (IPT)
5	Program staff are consistent and stable
6	Senior Department/Agency executives support program
7	CIO role is following FITARA. CIO: <ul style="list-style-type: none"> <li>a) has significant role in decision making for IT budgets,</li> <li>b) approves IT budget for agency,</li> <li>c) certifies compliance with OMB inc. dev. Guidance,</li> <li>d) reviews and approves IT contracts,</li> <li>e) approves appointment of agency employee with CIO title</li> </ul>

Team &  
Skills

# Results2a: Organizational Readiness Checklist - Properly Staffing the IPT



# Results2b: Organizational Readiness Checklist

Note: Checklist includes references for each item

#	Best Practice
8	Program receives sufficient funding
9	Agency uses IT spend plans to improve budgets
10	Agency develops and maintains an IT Strategic Plan <ul style="list-style-type: none"><li>a) Use a strategic approach for legacy system migration</li><li>b) Migrate more services to cloud</li><li>c) Buy more and develop less</li><li>d) Mitigate job impacts when closing data centers or purchasing services</li></ul>
11	Agency provides oversight for IT purchased as a service
12	Attract and invest in IT workforce



# Results3a: Pre-acquisition Checklist for IPT

Note: Checklist includes references for each item

#	Best Practice
1	Use the TBM Taxonomy from the outset; map the scope of your effort to the appropriate IT Towers and Cost Pools
2	Develop a modular contracting approach consistent with requirements of FAR 39.103-104
3	Use performance-based outcomes specified through SLAs. a) SLAs developed by IPT (to include contracting), reviewed by legal
4	Identify and actively engage with the stakeholders/users throughout the acquisition (especially in development of requirements)
5	IPT manages and prioritizes requirements
6	Focus on cyber; convey IT/cyber issues early to leadership
7	Work more closely with the procurement (contracting) organization

# Results3b: Pre-acquisition Checklist for IPT

Note: Checklist includes references for each item

#	Best Practice
8	<p>Contract Structure/Type</p> <p>a) Determine readiness for a Managed Service Provider (MSP) approach. Requires detailed understanding of current systems and metrics. If not ready, consider a hybrid contracting strategy.</p> <p>b) Determine readiness for Firm Fixed Price (FFP);</p> <p>1) If FFP, consider an outcome-based payment plan;</p> <p>2) If not FFP, investigate Incentive Fees (IF) over Award Fees (AF)</p>
9	Leverage common contracting templates
10	Leverage common evaluation factors
11	<p>Buy as an Enterprise</p> <p>a) Leverage existing contract vehicles (GWAC, MAC, Agency IDIQ, etc.)</p> <p>b) Get a free scope evaluation (e.g., GSA Alliant 2)</p>
12	Implement a strong risk management program

# Checklists

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## Appendix A. IT Acquisition Best Practices – Organizational Readiness Checklist

Item	Best Practice	Reference
1.	Assess IT Investment Management maturity using ITIM	<ul style="list-style-type: none"> <li>GAO-04-394G-IT Investment Management (ITIM) Guide, Mar 2004; p. 1-19</li> </ul>
2.	Analyze the IT workforce for Skill Gaps and develop a plan to fill them.	<ul style="list-style-type: none"> <li>GAO-17-8-IT Workforce Key Practices for Strong IPT; p. 5-10, 45</li> <li>GAO-17-494T-Implementation of IT Reform Law and Related Initiatives Can Help Improve Acquisitions; p. 1, 7-10</li> </ul>
3.	Program staff has necessary knowledge and skills.	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. All</li> <li>GAO-17-8-IT Workforce Key Practices for Strong IPT; p. 2, 45-68</li> </ul>
4.	Properly Staff Integrated Product Team (IPT).	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. All</li> <li>GAO-17-8-IT Workforce Key Practices for Strong IPT; p. 25</li> <li>Presidents-Management-Agenda, 19 Mar 201; p. 20</li> <li>OMB Guidance for specialized acquisition cadres, 13 July 2011; p. A-2 to A-4</li> <li>IT Procurement Practices That Clients Apply and the Best Practices That Gartner Recommends 2009; p. 7-12</li> </ul>
5.	Program staff are consistent and stable.	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. All</li> </ul>
6.	Senior Department and Agency executives support the program.	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. All</li> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 7, 13</li> <li>GAO-18-326-DoD MAIS Adherence to Best Practices; p. ES, 7-11</li> <li>Procurement Practices That Clients Apply and the Best Practices That Gartner Recommends 2009; p. 11-12</li> </ul>
7.	CIO role is following FITARA. CIO: 1) has significant role in decision making for IT budgeting, 2) approves IT budget for agency, 3) certifies compliance with OMB incremental dev guidance, 4) reviews and approves IT contracts, 5) approves appointment of any agency employee with title of CIO.	<ul style="list-style-type: none"> <li>GAO-17-494T-Implementation of IT Reform Law and Related Initiatives Can Help Improve Acquisitions; p. 4-5, 11-18</li> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 4-7</li> </ul>
8.	Program receives sufficient funding.	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. All</li> </ul>
9.	Agency uses IT spend plans to improve budgets.	<ul style="list-style-type: none"> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 9</li> </ul>
10.	Agency develops and maintains an IT Strategic Plan. 1) Use a strategic approach for legacy system migration. 2) Migrate more services to cloud. 3) Buy more and develop less. 4) Mitigate impacts on jobs when closing data centers or purchasing services.	<ul style="list-style-type: none"> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 15, 20-21</li> </ul>
11.	Agency provides oversight for IT purchased as a service.	<ul style="list-style-type: none"> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 15</li> </ul>
12.	Attract and invest in IT workforce.	<ul style="list-style-type: none"> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 16, 19</li> </ul>

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## Appendix B. IT Acquisition Best Practices – Pre-RFP Checklist for the IPT

Item	Best Practice	Reference
1.	Use the TBM Taxonomy from the outset, map the scope of your effort to the appropriate IT Towers and Cost Pools.	<ul style="list-style-type: none"> <li>Presidents-Management-Agenda; p. 40</li> <li>FY2020 IT Budget Capital Planning Guidance-A-11-Draft; p. 5-8</li> <li>TBM Council-TBM-Taxonomy-v2.1; p. All</li> </ul>
2.	Develop a modular contracting approach consistent with requirements of FAR 39.103-104.	<ul style="list-style-type: none"> <li>FAR 39.103-104</li> <li>Contracting Guidance to Support Modular Development, 14 Jun 3012; p. 3-7</li> </ul>
3.	Use performance-based outcomes specified through SLAs. 1) SLAs developed by IPT (to include contracting), reviewed by legal.	<ul style="list-style-type: none"> <li>IT Procurement Practices That Clients Apply and the Best Practices That Gartner Recommends 2009; p. 9</li> <li>GSA-18-326-DoD MAIS Adherence to Best Practices; p. 7</li> </ul>
4.	Identify and actively engage with the stakeholders/users throughout the acquisition (especially in development of requirements).	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. ES, 4, 6, 13</li> <li>GAO-18-326-DoD MAIS Adherence to Best Practices; p. ES, 7-11</li> <li>IT Procurement Practices That Clients Apply and the Best Practices That Gartner Recommends 2009; p. 11</li> </ul>
5.	IPT manages and prioritizes requirements.	<ul style="list-style-type: none"> <li>GAO-14-183T-IT-Leveraging Best Practices; p. ES, 4, 6, 13</li> <li>GSA-18-326-DoD MAIS Adherence to Best Practices; p. ES, 7-11</li> </ul>
6.	Focus on cybersecurity; convey IT and cyber issues early to leadership.	<ul style="list-style-type: none"> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 6-8, 21</li> </ul>
7.	Work more closely with the procurement (contracting) organization.	<ul style="list-style-type: none"> <li>GAO-17-251SP-IT Opportunities for Improving Acquisitions and Operations; p. 9-11</li> <li>CIO-Council-State-of-Federal-IT-Report-January-2017, p. Rec-9</li> </ul>
8.	Determine if program is ready for a Managed Service Provider (MSP) approach or plan. 1) Requires detailed understanding of current systems and performance metrics. If not ready, consider a hybrid contracting strategy 2) Determine readiness for Firm Fixed Price (FFP); <ul style="list-style-type: none"> <li>If FFP, consider an outcome-based payment plan; only pay for services delivered</li> <li>If not FFP yet, investigate use of Incentive Fees (IF) over Award Fees (AF)</li> </ul>	<ul style="list-style-type: none"> <li>DoDI 5000 Series for Major Weapons Systems</li> <li>Contracting Guidance to Support Modular Development, 14 Jun 3012; p. 10-14</li> <li>Comp-Econ-How to Evaluate IT Procurement Contracts, Nov 2008; p. 1-11</li> </ul>
9.	Leverage common contracting templates	<ul style="list-style-type: none"> <li>IT Procurement Practices That Clients Apply and the Best Practices That Gartner Recommends 2009; p. 9</li> </ul>
10.	Leverage common evaluation factors	<ul style="list-style-type: none"> <li>IPT guidance from Contracting Officer</li> </ul>
11.	Buy as an Enterprise 1) Leverage existing contract vehicles (GWACs, MAC, Agency, IDIQ, etc.). 2) Get a free scope evaluation (e.g. GSA Alliant 2)	<ul style="list-style-type: none"> <li>CIO-Council-State-of-Federal-IT-Report-January-2017, p. F-5</li> <li>Presidents-Management-Agenda, 19 Mar 201; p. 34</li> <li>GSA Website, Agency websites</li> </ul>
12.	Implement a strong risk management program	<ul style="list-style-type: none"> <li>GSA-18-326-DoD MAIS Adherence to Best Practices; p. ES, 7-18</li> </ul>

# Results4: Exemplars

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## ■ **General Services Administration (GSA) Websites:**

- GSA Acquisition Gateway: <https://www.gsa.gov/tools/supply-procurement-etools/acquisition-gateway>.
- GSA Technology Products and Services has examples of statements of work for various IT functions; <https://www.gsa.gov/technology/technology-products-services/how-to-get-help/sample-technology-statements-of-work>.

## ■ **Defense Acquisition University (DAU) Website:**

- <https://www.dau.mil/cop/it/SitePages/About.aspx>. They provide more than 30 documents that offer lessons learned on various military IT systems. They also have a tools section that offers best practices in assessing risk and compliance.

## ■ **MITRE Website:**

- Acquisition in a Digital Age (AiDA) provides extensive references for acquisition guides and acquisition templates helpful to PMs and IPTs. Has a section specific to IT acquisition (<https://aida.mitre.org/references/it/>) that offers extensive information on IT, with policies, guides, reports, and articles.
- Email: [tleary@mitre.org](mailto:tleary@mitre.org).

# Recommendations

- **Select the appropriate model, framework, or taxonomy:**
  - More than one may apply.
- **Adopt the TBM taxonomy:**
  - Map to IT towers and IT cost pools.
  - Reflect IT towers in budget exhibits.
  - Reflect IT cost pools in deliverables or CLINs
- **Utilize checklists to help guide the Agency and IPTs through the process:**
  - Is the Organization ready for IT acquisitions; fill gaps where identified
  - IPT needs to be properly skilled and staffed
- **Leverage Exemplars:**
  - Obtain from local contracting office or reference sites



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