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Qualitative Data Analysis of PPBE Reform Recommendations in the Open Literature

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Abstract

The Acquisition Innovation Research Center (AIRC)—in support of the Commission on Planning, Programming, Budgeting, Execution (PPBE) Reform (ppbereform.senate.gov)—extracted and analyzed reform recommendations from 144 sources (e.g., open literature reports, podcasts, and articles). Our paper summarizes the findings from the qualitative data analysis (QDA) of the recommendations found in these sources. This analysis provides an overview of primary and secondary themes found in the literature along with their frequency of occurrence in our sample. Our results provide a comprehensive summary and overview of the community's ideas and thoughts related to improving PPBE and the primary areas that are ripe for improvement. We will discuss the approach taken to identify sources, extract the 262 recommendations, conduct



clustering to identify themes, and assess if the recommendations were deemed actionable or not. We will also quantify how this corpus aligns with the recommendations from the PPBE Reform Commission in their March 2024 final report as well as the range of other ideas and recommendations remaining for consideration by the Department of Defense.

Introduction

There has been a significant number of reports on, and opinion pieces about, the Department of Defense's (DoD's) Planning, Programming, Budgeting, and Execution (PPBE) process, with a significant number contributed to just the last few years. In the Fiscal Year 2022 (FY22) National Defense Authorization Act (NDAA) section 1004, Congress established an independent "Commission on Planning, Programming, Budgeting, and Execution Reform," with the following purpose:

[. . .] is to—

- (1) examine the effectiveness of the planning, programming, budgeting, and execution process and adjacent practices of the Department of Defense, particularly with respect to facilitating defense modernization;
- (2) consider potential alternatives to such process and practices to maximize the ability of the Department of Defense to respond in a timely manner to current and future threats; and
- (3) make legislative and policy recommendations to improve such process and practices in order to field the operational capabilities necessary to outpace near-peer competitors, provide data and analytical insight, and support an integrated budget that is aligned with strategic defense objectives.(Congress, 2022)

The Stevens Institute of Technology's Systems Engineering Research Center (SERC)/Acquisition Innovation Research Center (AIRC) was tasked by the PPBE commissioners to research the following areas:

1. Conduct case studies of technology transition.
2. Provide PPBE process research and analysis with recommendations to determine the following:
 - a. if the process should be the same for programs that breach their Major Defense Acquisition (MDAP) threshold (10 USC 4201), their Major Systems threshold (10 USC 2302d), and non-major systems;
 - b. how the DoD uses acquisition pathways;
 - c. the legal foundations that drive PPBE and develop a matrix outlining how PPBE components are directed (i.e., statute, regulation, policy, or practice).
3. Explore ways to restructure budgets and artifacts (Portfolio Budgeting, J-Books, and SARs) around threats, missions, operations, and portfolio levels rather than the level of acquisition programs.
4. Explore potential reform areas that rely on coordinated changes in all three of the PPBE, Requirements, and Acquisition communities.
5. Explore options for restructuring the DoD's President's Budget (PB) Proposal including potential groupings or combinations of budget activities (Bas) pay particular attention to how authorizers and appropriators can still understand the program's phase within potential new structures providing historical insight into how and why the current budget structure was created and evolved.
6. Explore alternative Obligation (Obs) and Expenditure target curves/profiles instead of linear targets. (This task was minimally expanded to investigate the impact of Continuing Resolutions [CRs] with the same analysis.)



Keeping in mind the stated purpose of the Commission and our tasks, one of our early goals was to review the open literature for reports and opinion pieces containing explicit recommendations on how to improve the PPBE process to identify “need to fix” themes.

The next section discusses our methodology and approach. This section is followed by our results and conclusions sections. Our paper concludes with a suggestion for future research.

Methodology

Literature Search: Identification

An initial list of potentially applicable PPBE reports, podcasts, and online opinion piece articles was identified from our experience working various DoD related contracts. This list was expanded using extensive Google searches, and additional recommendations from AIRC personnel and our executive panel¹. This initial list was supplemented using Google searches, for example, using various forms of PPBE, the PPBE phases, and acquisition reform to find additional reports and online articles, focusing on articles that were published in the last ~5 years; however, if Google provided a link to an older than 5-year report or article that still seemed pertinent, it was also included. While we tried to be thorough, it is possible there are articles and reports that are missing.

This search resulted in a list of 144 sources excluding the 809 Panel² and the National Security Commission on Artificial Intelligence (NSCAI)³ recommendations as previously described. We did look at the 809 Panel and NSCAI recommendations, however we did not have sufficient resources to also analyze the recommendations found in those two sources. Of the 144 sources, 10 of these were identified as being primarily historical in nature, leaving 134 articles, podcasts, reports, and links to PPBE articles. After a concerted effort to “divide and conquer” to carefully review the 134 sources, we decided to prioritize less than half based on a quick review of the remaining articles as most pertinent. A full list of the final 134 reports and articles (including podcasts) can be found in Appendix A of our published report (Buettner et al., forthcoming).

Literature Search: Analysis Methodology

The primary focus of our literature review was to identify PPBE reform recommendations. From our review of the 134 reports, we identified 262 recommendations and, in some cases, just observations or suggestions. The list of recommendations is found in Appendix B of the published report (Buettner et al., forthcoming) with our subjective assessment on the actionability of each. This assessment was reviewed by another team member to determine whether “the recommendation is understood and well-defined,” noting that in a few cases the recommendation may have already been implemented. This is understandable given that several of the literature sources were dated. Note that in Appendix B of the published report (Buettner et al., forthcoming) we summarized several of the recommendations for brevity, but just copying the recommendation from the literature source was our preferred approach. Our review and assessment of the 262 recommendations resulted in a final list of 222 recommendations that we used for further analysis.

Initially, we tried to use ChatGPT-3.5 and ChatGPT-4 from OpenAI, however we eventually abandoned its use for analyzing data for this report. The full details and our reasoning can be found in Buettner et al. (forthcoming). In parallel with the ChatGPT-4 analysis

¹ Executive panel members can be found in Cardon et al. (forthcoming).

² Found at <https://discover.dtic.mil/section-809-panel/>

³ Found at <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf>



approach, we reviewed the recommendations for most affected entity, settling on categories of *Congress*, the *Pentagon/Office of the Secretary of Defense (OSD)*, and some *Other Decision Authority (DA)*⁴, or some combination of these three categories. We also attempted to identify the impacted PPBE phases in this review and performed a qualitative data analysis (QDA)⁵ to identify primary and secondary themes.

Results

Literature Search: Distribution Results

The goal was to find open-source reports, articles, blogs, opinion pieces, and podcasts that were not older than 5 years in order to minimize the possibility that recommendations had already been implemented. Figure 1 shows a distribution of the source’s published years⁶.

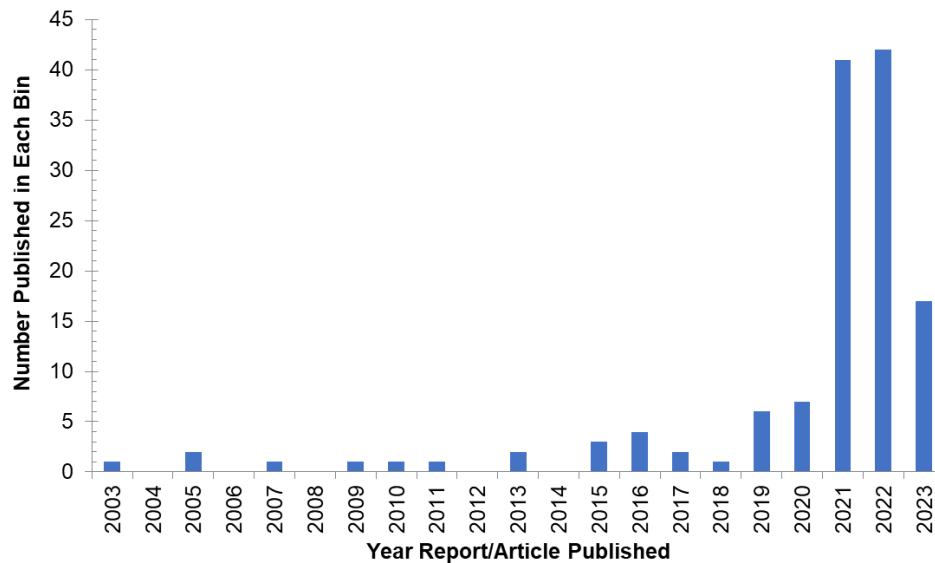


Figure 1. Distribution of Years for Identified Reports/Articles Published

We observed a significant jump in published reports and articles in 2021 and 2022, where we only analyzed reports from 2023 prior to July. The significant increase after 2022 may be due to pending NDAA language that became law in December of 2021.⁷ Note that we found several articles and podcasts trying to influence the Commission, where these typically included subject matter experts (SMEs) in various aspects of PPBE. In Figure 1, we truncated our analysis to articles prior to July of 2023; hence the total number represents sources from half the year. Figure 2 displays the distribution of *recent* reports, podcasts, and articles by month.

⁴ Other DA is outside of the two primary entities, e.g. the White House.

⁵ QDA is a method to extract themes from qualitative information to provide quantitative data. For additional information on QDA see for example: https://en.wikipedia.org/wiki/Qualitative_research

⁶ Note, for three sources we could not identify a published year. In these cases, for two we simply list the years as unknown, and in one case as varied because the source was a list of articles with a PPBE theme.

⁷ Found in Congress (2022).



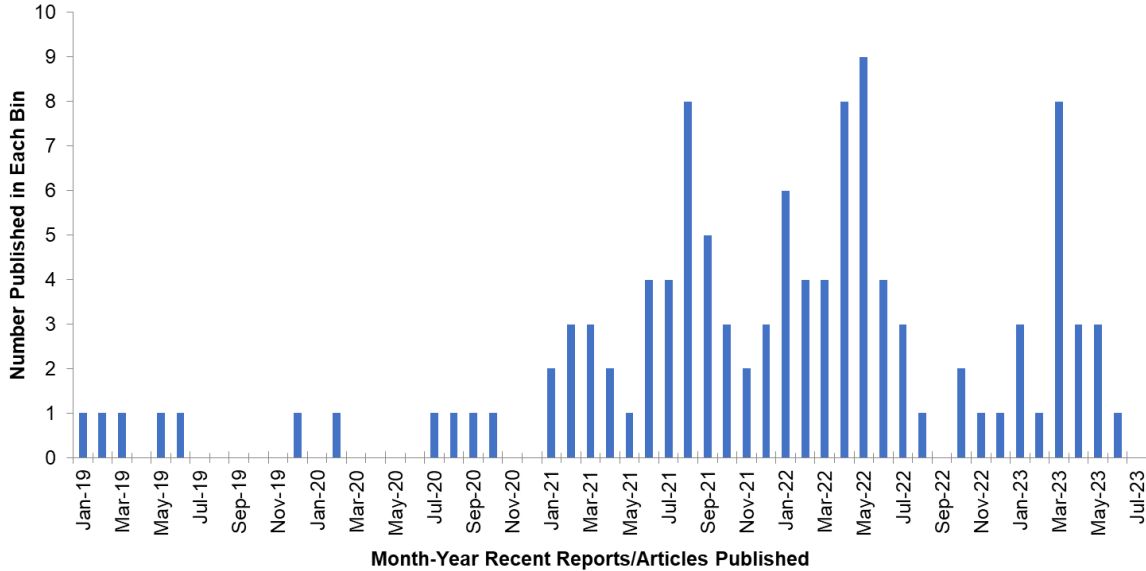


Figure 2. Distribution of Months-Years for Recently Published Reports/Articles

From the distribution, we saw a significant increase in published articles starting in January of 2021. We speculate that the DoD work to respond to the 809 Panel recommendations, other similar DoD work to address acquisition challenges, or maybe pending NDAA language regarding the establishment of a PPBE commission may be causes for this significant increase. Testing these hypotheses requires establishing the timing of the DoD’s public efforts, and when the NDAA language became known to those authors.

Literature Search: Analysis Results

Figure 3 shows the result of our assessment of the affected entities in the 222 recommendations.

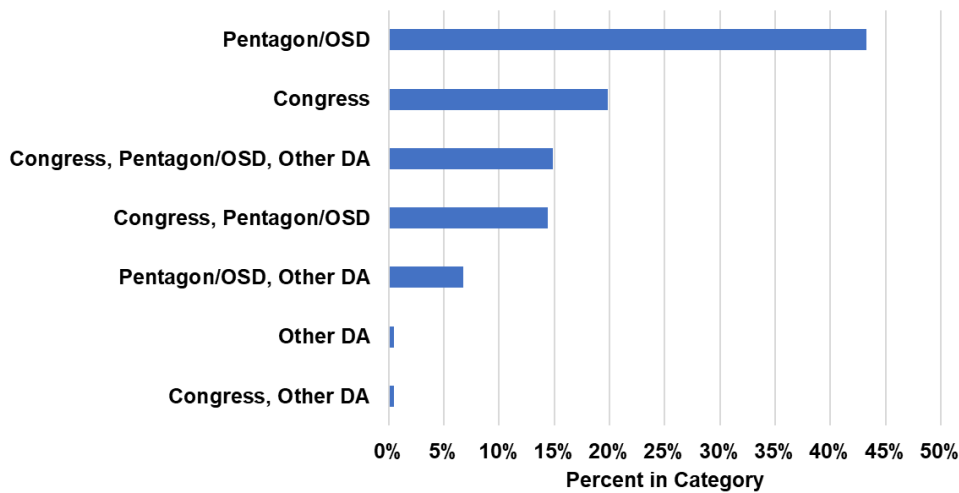


Figure 3. Recommendation’s Affected Entity

This distribution resulted in our first finding, which was that the majority of the recommendations suggested that a number of the DoD’s PPBE issues could likely be self-corrected. We noted that these results could however be biased by the backgrounds of the authors as having been primarily from DoD backgrounds.



In the affected PPBE phase distribution analysis, in several cases, the impacts on the PPBE phases was clear, however there are several recommendations where the impact on each of the phases was less clear, in which case the entire PPBE list was selected as our conservative analysis approach. Hence, the selection of phases impacted are somewhat subjective as the actual implementation details may result in less of an impact across the entire PPBE process. Figure 4 shows the results of this analysis.

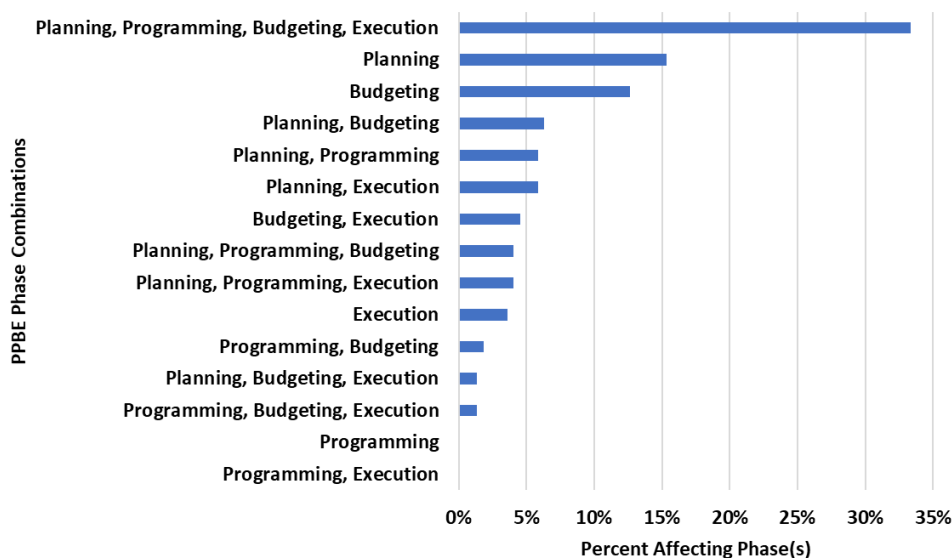


Figure 4. Graph of Phase Combinations Affected by the Recommendations

Finally, for our QDA of the 222 recommendations, we selected the primary and secondary themes found in Tables 1 and 2 respectively. Secondary themes are tied to the primary themes through grouping. The *Others . . .* primary theme was a “catch all” gathering of areas where the primary theme didn’t fit into the identified themes of *Budgeting*, *PPBE Commissioners Should*, *Workforce*, *Data Analytics & Metrics*, and *Transparency and Oversight*. Note that in some cases a primary theme shows up in the secondary themes category. This occurs when a recommendation covers both subjects areas, and it becomes a subjective judgement call on which is the primary and which is the secondary theme.

The *PPBE Commissioners Should* theme is from papers, podcasts, and articles where the authors/contributors appear to want the commissioners to address various PPBE pain-point areas and discuss criteria for their desired outcomes. The interested reader can identify those media by tracing the reference numbers to the articles from the tables in the appendices of (Buettner et al., forthcoming).

Table 1. Primary Themes of Actionable Recommendations

Primary Themes	Frequency	%
Others . . .	80	36%
Budgeting	73	33%
PPBE Commissioners Should	28	13%
Workforce	17	8%
Data Analytics & Metrics	12	5%
Transparency and Oversight	12	5%



Table 2. Leading Secondary Themes of Actionable Recommendations

Secondary Themes	Frequency	%
Portfolio Management and Budgeting	27	12.2%
Buy/Use Commercial Technology	10	4.5%
Flexibility	10	4.5%
Data Analytics & Metrics	9	4.1%
Training & Engagement	6	2.7%
Transparency and Oversight	5	2.3%
Accept Tension	3	1.4%
Align Work to Primary Mission	3	1.4%
Empower Senior Leadership Team	3	1.4%
Innovation & Funding	3	1.4%
National Service Programs	3	1.4%
PE Consolidation	3	1.4%
Analyze PPBE Processes	2	0.9%
Nontraditional Industrial Base	2	0.9%
Predictive Analytics	2	0.9%
Rapid Acquisition	2	0.9%
Revise Reprogramming Processes	2	0.9%
Use Agile Requirements	2	0.9%
Wishlist Awareness	2	0.9%

Appendix C of the full report (Buettner et al., forthcoming) contains a full list of the primary, secondary, and tertiary coding themes. Tertiary themes were the result of attempting to accumulate secondary themes into logical groupings of primary themes, such as *Budgeting*, and are provided for additional reference in the appendix. No attempt has been made to complete the coding of the tertiary themes category.

Relevance Alignment with the PPBE Commission’s Final Report

In this section we attempt to align the intent of the literature’s recommendations found in Appendix C of the full report (Buettner et al., forthcoming) against the Final Report’s 28 Recommendations (PPBE Commissioners, 2024). Here our goal is to identify those recommendations from the commissioners that are the most relevant to the open literature’s recommendations. First, we will manually correlate our coding themes against the five critical areas that the commissioners have grouped their recommendations into. Then we will attempt a more ambitious (and time consuming) approach of having ChatGPT-4 attempt the relevance alignment for each of the 222 open literature recommendations to the specific 28 recommendations in the final report (PPBE Commissioners, 2024).

Alignment of Relevance of Our Coding Themes to the Reform Commission’s Five Critical Areas

After concluding that the DoD required a new process, the commissioners identified five critical areas in their final report with a total of 14 key recommendations in a total of 28 recommendations (PPBE Commissioners, 2024). The five critical areas, with their recommendations, are provided in the following list. Roman numerals in bold identify the critical



areas with their associated recommendations in the numbered sub-list. Key recommendations are in the sub-list are in bold.

- I) **Improve the alignment of budgets to strategy**
 - 1) **Replace the PPBE process with a new defense resourcing system**
 - 2) **Strengthen the defense resourcing guidance**
 - 3) **Establish continuous planning and analysis**
 - 4) **Transform the budget structure**
 - 5) Consolidate RDT&E budget activities
- II) **Foster innovation and adaptability**
 - 6) **Increase availability of operating funds**
 - 7) Modify internal DoD reprogramming requirements
 - 8) **Update values for below threshold reprogrammings**
 - 9) **Mitigate problems caused by continuing resolutions**
 - 10) **Review and consolidate budget line items**
 - 11) **Address challenges with colors of money**
 - 12) Review and update PPBE-related guidance documents
 - 13) Improve awareness of technology resourcing authorities
 - 14) Establish special transfer authority around milestone decision
 - 15) Rebaseline OSD obligation and expenditure benchmarks
 - 16) Encourage use of the defense modernization account
- III) **Strengthen relationships between the DoD and Congress**
 - 17) **Encourage improved in-person communications**
 - 18) Restructure the Justification Book
 - 19) **Establish classified and unclassified communication enclaves**
- IV) **Modernize business systems and data analytics**
 - 20) **Create a common analytics platform**
 - 21) Strengthen governance for DoD business systems
 - 22) Accelerate progress toward auditable financial statements
 - 23) Continue rationalization of the OSD resourcing systems
 - 24) Modernize the tracking of congressionally directed actions
- V) **Strengthen the capability of the resourcing workforce**
 - 25) **Continue the focus on recruiting and retention**
 - 26) Streamline processes and improve analytic capabilities
 - 27) **Improve training for personnel involved in defense resourcing**
 - 28) Establish an implementation team for commission recommendations

At a high level, we can align these critical areas to our primary coding themes as shown in Table 3.

Table 3. Alignment of the Five Critical Areas to Our Primary Coding Themes

#	Critical Area	Primary Coding Theme	#
1	Improve the Alignment of Budgets to Strategy	Budgeting	73
2	Foster Innovation and Adaptability		
3	Strengthen Relationships Between DoD and Congress	Transparency and Oversight	12
4	Modernize Business Systems and Data Analytics	Data Analytics & Metrics	12
5	Strengthen the Capability of the Resourcing Workforce	Workforce	17
Total Open-Source Literature Recommendations			114



From this alignment we see that the commissioners for the most part agreed with our primary groupings of areas to target. The area that do not align well is the second critical area, *Foster Innovation and Adaptability*, to our primary coding themes; further, the “Others . . .” and “PPBE Commission Should” primary coding themes can align across any of these critical areas. To identify the alignment of these two primary themes to the critical areas we manually aligned the secondary coding themes to these critical areas in Table 4.

Table 4. Alignment of “Others . . .” and “PPBE Commissioners Should” Primary Themes to the Five Reform Commission’s Critical Areas

#	Critical Area	Others ... Theme	PPBE Comm. Should Theme
1	Improve the Alignment of Budgets to Strategy	29	7
2	Foster Innovation and Adaptability	32	3
3	Strengthen Relationships Between the DoD and Congress	0	2
4	Modernize Business Systems and Data Analytics	1	10
5	Strengthen the Capability of the Resourcing Workforce	7	1

This assigns an additional 98 of the open-sourced literature recommendations to these five critical areas. This leaves a total of 16 unaligned recommendations. Of these, we classified six of these recommendations as resulting in the work the PPBE commissioners did. This leaves 10 unaligned secondary themes, which are Establish Task Force Review of Missed Opportunities, Fundamental Scrub of MDAPs, use Micro-services Architectures, Strengthen Capital Market Programs, Acknowledge Pork Barreling, two cases of Use Agile Requirements, and three cases of Accept Tension.

The final alignment by percentages are provided in Table 5.

Table 5. Manual Alignment of the Critical Areas to our Open-Source Literature Coding Themes

#	Critical Area	%
1	Improve the Alignment of Budgets to Strategy	49%
2	Foster Innovation and Adaptability	16%
3	Strengthen Relationships Between the DoD and Congress	6%
4	Modernize Business Systems and Data Analytics	10%
5	Strengthen the Capability of the Resourcing Workforce	11%
6	PPBE Commission’s Work	3%
7	Unaligned recommendations	5%

ChatGPT-4’s Alignment of Relevant Reform Commission Recommendations

Using ChatGPT-4, which allows us to upload the PPBE Reform Commission’s Final Report, we requested that it perform an assessment of the alignment of the intent of the literature’s recommendation against the Final Report’s 28 Recommendations (PPBE Commissioners, 2024). However, due to ChatGPT4 limitations on the number of questions that can be asked of it within a specified period based on system load considerations, we could not complete the entire analysis prior to the deadline for this paper. Hence, the results in Figure 5 are not completely representative, but do provide insight into the fraction assessed in this analysis.



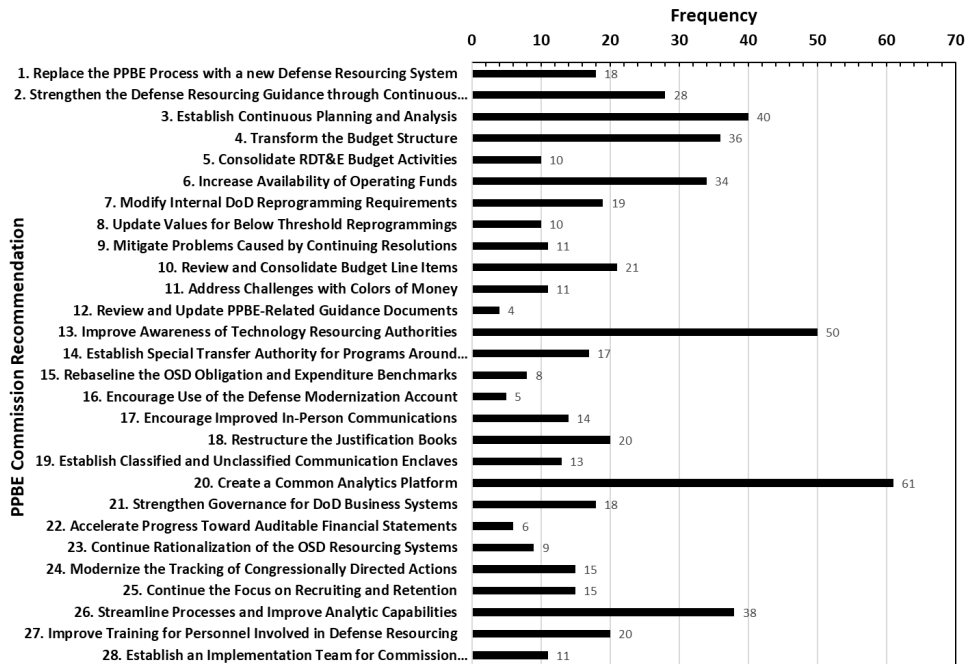


Figure 5. ChatGPT-4 Assessment of the Alignment of Intent From the Open Source Recommendations (Buettner et al., forthcoming) Against the 28 Recommendations from the PPBE Reform Commission’s Final Report

Finally, when doing the analysis for Figure 5, ChatGPT-4 typically returns about two or three of the commissioner’s 28 recommendations depending on the wording in the open literature’s recommendation. In some cases, ChatGPT-4 could return more if the open literature recommendation is in the form of a list, for example. In a spot check of ChatGPT-4’s answers after one or two days of doing the analysis, we found in several cases the recommendation alignment would change. For example, if the LLM indicated that it did not find any of the reform commission’s 28 recommendations that met the intent recommendation we were checking it would say so. However, a few days later it provided answers that were somewhat reasonable. Hence, we believe for this case, the analysis should only be used as a guide.

Even though ChatGPT-4 has consistency issues and sometimes needs to have areas of alignment pointed out, these results suggest (based on the currently analyzed open literature recommendations) that the most important recommendation for the DoD to implement for this fraction of recommendations is recommendation 20, Create a Common Analytics Platform. With ChatGPT-4 looking for alignment across primary themes, we expected the alignment percentages to differ. This can be seen by comparing the results in Table 8 to those in Table 7.

Table 6. ChatGPT-4 Alignment of the Critical Areas to our Open-Source Literature Coding Themes

#	Critical Area	%
1	Improve the Alignment of Budgets to Strategy	23%
2	Foster Innovation and Adaptability	34%
3	Strengthen Relationships Between the DoD and Congress	8%
4	Modernize Business Systems and Data Analytics	19%
5	Strengthen the Capability of the Resourcing Workforce	15%

Conclusions



The results suggest that a significant fraction (almost half) of the Pentagon's problems can be "self-corrected," thus we consider this to be our first finding. There may, however, be some underlying bias based on an inherent clustering of SMEs associated with writing these recommendations having worked the PPBE process from within the OSD and Pentagon; without an analysis of the backgrounds of the authors and their contributors we cannot rule this out. Yet, there were also several recommendations suggesting actions that can be unilaterally taken by Congress or in collaboration with the DoD in support of obtaining a responsive-agile PPBE process.

From the QDA of the recommendations in Tables 1 and 2, we noted that there were several proposed actions to foster trust and transparency through modernized business systems, using, for example, real-time data analytics. As a result, we provided a proposed reference architecture that could digitally enable access to an acquisition program's data and models. Figure 5 is a notional reference architecture of an integrated modeling environment showing the interacting processes, models and data in a modern digital engineering ecosystem supporting a weapon system's acquisition. Figure 6 reorientates this notional reference architecture to show how data could flow to various external stakeholders.

These figures can be used as a starting point to discuss the data needs of the various external stakeholders. It is presumed that the realized (actual) cost and schedule data (earned value management [EVM] with performance against the integrated master plan [IMP] and integrated master schedule [IMS]) are the primary information that external stakeholders (e.g., congressional staffers) would need. In a modern digital acquisition, we should only have to identify the type, format, periodicity, and integrity assurances of the data that is required for Congress to fulfill its oversight role. Once identified, a proper mixture of enabling technology with policy and statute can support the visibility needed.

In addition, referring to the recommendations in Tables 1 and 2, we also observed that the 809 Panel's Portfolio Management and Budgeting recommendation, Buy/Use Commercial Technology, and Flexibility (under Budgeting) were significantly repeated themes, as were various workforce themes, including training and retention.

A comparative analysis of the open literature's recommendations identified in Buettner et al. (forthcoming) currently suggests that the most important recommendation for the DoD to implement is PPBE Commission's Create a Common Analytics Platform from the viewpoint of the literature's intended areas for improvement. A more comprehensive and detailed manual analysis of these sources against the final report may provide different results, while completing the entire list of 222 recommendations from Buettner et al. (forthcoming) may result in a different prioritization.

Furthermore, no effort has been made to cross-check the recommendations found in the open literature against existing DoD efforts to implement them. For example, we are aware of DoD initiatives to implement 809 panel recommendations, and the Defense Civilian Training Corps (DCTC)⁸ where AIRC staff are supporting other on-going research efforts.

Figure 6 and Figure 7 provide different views of the same SERC/AIRC digital engineering reference architecture.

⁸ See <https://dctc.mil/> for more information on the DCTC initiative.



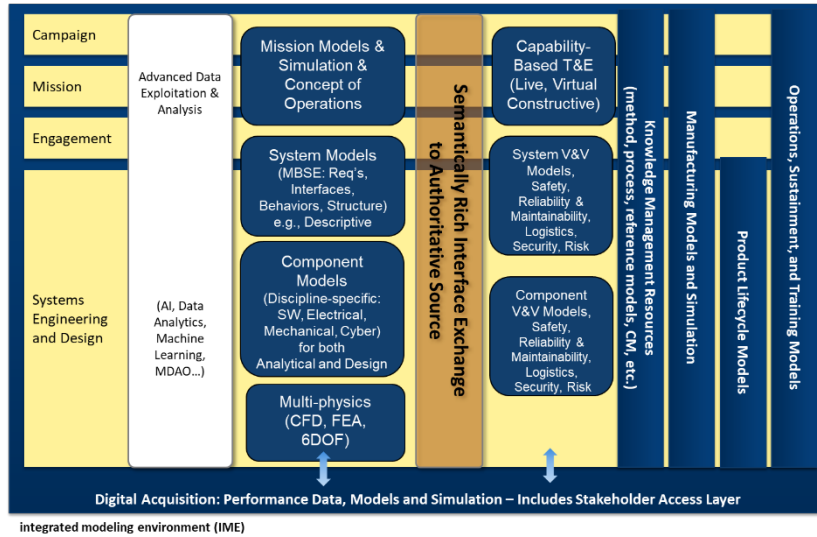


Figure 6. View of a Reference Architecture for an Integrated Modeling Environment (IME) Which Typically Supports the Digital Engineering of Modern Systems

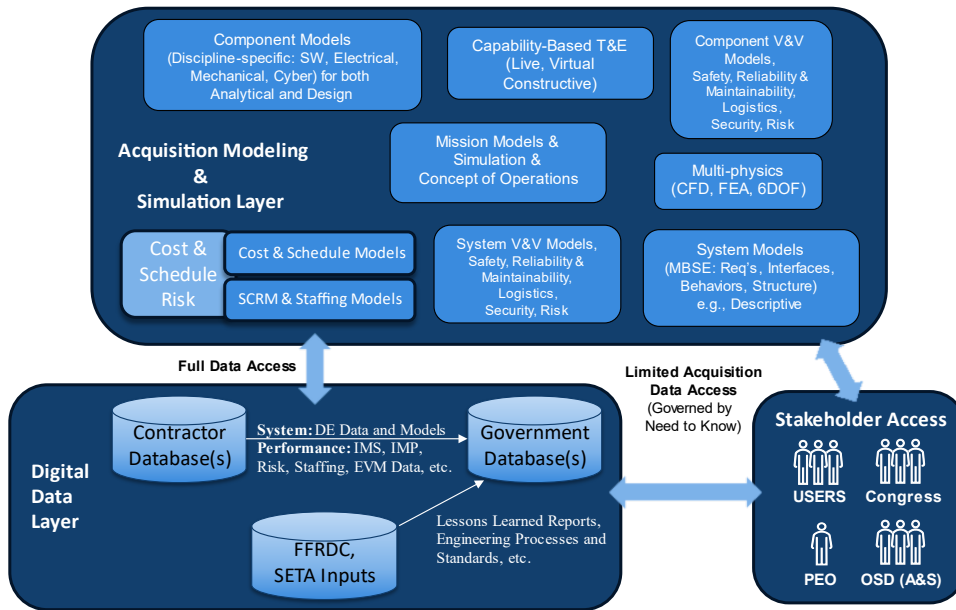


Figure 7. View of the Reference Architecture in Figure 6 Showing the Proposed Data Communication for a Major Defense Acquisition Program (MDAP) that Could Foster Rapid Data Exchange and Support Trust Between All Stakeholders

Figure 6 is intended to show the modeling and data in the various swim lanes of a modern digital acquisition. Figure 7 modifies this view slightly to show a possible digital transformation communication infrastructure that could more rapidly support information flow between success critical stakeholders of the MDAP, the program office, and the contractor.

Finally, in this paper we did a cross-comparison of the recommendations found in the open-literature (Buettner et al., forthcoming) and found a reasonable alignment to the recommendations found in the PPBE Reform Commission's Final Report in theme (PPBE Commissioners, 2024). In fact, there are cases where the open-literature and the PPBE Reform Commission's recommendations are identical.

Appendix A: Secondary Themes for “Others...” and “PPBE Commission Should” Primary Themes

Table 7. “Others...” Category: All Secondary Themes

Others...: Secondary Themes	%
Buy/Use Commercial Technology	13%
Empower Senior Leadership Team	4%
Align Work to Primary Mission	3%
Analyze PPBE Processes	3%
Nontraditional Industrial Base	3%
Rapid Acquisition	3%
Revise Reprogramming Processes	3%
Use Agile Requirements	3%
Supply Chain Capacity Focus	1%
Accountability	1%
Acquisition Based Risk Tolerance	1%
Appropriate All-Phase Performance Based Competitions	1%
Clearly Articulated Leadership Role in PPBE Processes	1%
Contingency Planning	1%
Continuous Cybersecurity Verification	1%
Contracting	1%
Create Supply Chain Intelligence Center	1%
Cycle Time Based Contracting	1%
Dedicated Reform Team	1%
Delegate Authority to Emphasize Speed	1%
Digital Engineering	1%
Empower PPBE Process Czar	1%
Establish Informal Strategic Analysis Forum	1%
Establish Long-term Forum	1%
Establish Task Force Review of Missed Opportunities	1%
Evaluate Effectiveness of BA-8 Pilots	1%
Expand SDA Model	1%
Fundamental Scrub of MDAPs	1%
Implement Review Process for Resource Based Needs	1%
Industrial Base	1%
Industrial Base Requirements Transparency	1%
Integrated Business Analytics Platforms	1%
Micro-services Architecture	1%
Modernize Defense Research Laboratory	1%
Modular Multiple Award Contracting	1%
Move PEOs and PMs to System Commands	1%
PAF Acquisition Acceleration Tool	1%
Pilot Alternative Allocation Resource Process	1%



Others...: Secondary Themes	%
Pilot Efficient Streamlined MDA Processes	1%
Prioritize Customers	1%
Proactively Prioritize Joint Needs	1%
Reduce ID/IQ Contract Scopes	1%
Reestablish ADCP as a DMAG	1%
Reform Leadership Structure	1%
Require AI Readiness in MDAPs	1%
Requirements	1%
Research China vs US Processes	1%
Reset Reprogramming Authorities	1%
Resource Allocation	1%
Return Acquisition Oversight to Services	1%
Revise Executive Branch Processes	1%
Revise Requirements Management Processes	1%
Senior Leadership Own & Integrate PPBE Processes	1%
Standardize PPBE Processes	1%
Standardize Printed Parts	1%
Strategy Based Priorities	1%
Streamline Regulations & Implement Authorities	1%
Strengthen Capital Market Programs	1%
Strengthen Concept to Fielding Activities	1%
Strengthen Defense Planning Guidance	1%
Strengthen PPBE Execution Processes	1%
Use Customer Focused Cross-Functional Teams Model	1%
Waive Competition for No Cost/Innovation Advantage	1%

Table 8. “PPBE Commissioners Should” Category: All Secondary Themes

PPBE Commissioners Should: All Secondary Themes	%
Accept Tension	11%
Budgeting	11%
Data Analytics & Metrics	11%
Predictive Analytics	7%
Transparency and Oversight	7%
Use Historical View	4%
Acknowledge Pork Barreling	4%
Address Planning Processes Lack of Analytical Framework	4%
Change Timing/Sequencing	4%
Civil-Military Integration	4%
Digitally Transform Business Systems	4%
Equities as a Package	4%
Establish PPBE Lessons Learned Feedback Processes	4%



PPBE Commissioners Should: All Secondary Themes	%
Identify Business Accountability Processes	4%
Prioritize Expanding Specific Programs	4%
Provide Impactful Recommendations	4%
Rebuild Strategic Analysis	4%
Recommendations Enabling Speed & Agility	4%
Rent Technologies with Marketplace Enabled Sustainment	4%
Simplify Financial Management	4%

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