



In seeking to increase the understanding and adoption of the 2023 Data, Analytics, and AI Strategy, the Defense Department's Chief Digital and Artificial Intelligence Office commissioned Useful Fiction LLC to create future narratives, drawn from real-world technology and trends. The narratives are not predictions, but fictional scenarios designed to provide envisioned examples of the intent, expectations, and ramifications of the strategy and its principles.



The following fictional narrative explores the strategic and operational perils should the DoD-wide adoption of the Data, Analytics, and AI Adoption Strategy fail to take hold. Bridging gaps in data management, technical capabilities, interoperable infrastructure, workforce talent, acquisition, and partnerships are all elements of either mission success or, in this vision, mission failure. The mechanism for envisioning an unsuccessful future is an imagined artifact from the future: a late 2020s GAO Report explaining how slow progress in adopting and applying data, analytics, and AI capabilities led to both unsuccessful programs and battlefield losses.

Defense Data

PW SINGER + AUGUST COLE

The story within is fiction; It has been produced with the aim to spark discussion and creative insight which might challenge established thought.



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DEFENSE DATA:

Operational Failures Underscore Critical DoD Data Management Challenges

NOT HAPPY ABOUT THIS!
Please ensure this is on the agenda for the next front office huddle.

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Why GAO Did This Study

The Defense Department's current data management efforts for US and allied forces have significantly contributed to the spate of recent operational failures, most particularly last year's defeat of US forces in the INDOPACOM theater. While previous GAO reports focused on areas such as oversight and authorities with data and artificial intelligence (AI), this report highlights insufficient commitment among DoD civilian and military personnel to such efforts, inadequate outreach and collaboration on external investment and data access, and confusion over data certifications and standards.



What GAO Recommends

GAO recommends that the Secretary of Defense:

- 1) establish new organizational and individual budget and professional incentives for data, analytics, and AI programs;
- 2) align the pace of DoD data fusion and distribution implementation with commercial sector best practices;
- 3) collaborate on technology development and capital expenditure efforts across industry and academic sectors that align with Defense Department investments and data priorities on data analytics and AI; and
- 4) increase data certification and standards utilization across DoD.



What GAO Found

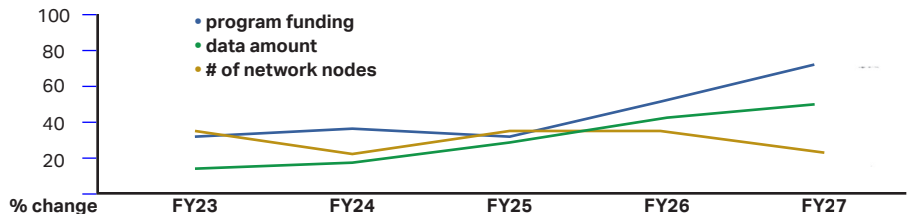
Despite years of effort, the repeated failures of data-driven logistics, maintenance, and intelligence systems experienced by US forces, as exemplified during last year's South China Sea crisis, have demonstrated low deficiencies in data-sharing and distribution policies and practices have had a negative operational impact on US military performance. The Department continues to fall short in providing timely data, analytics, and AI-enabled capabilities to warfighters. While there are many factors in play, interviews with stakeholders indicate recent Defense Department efforts to accelerate data reforms have largely not succeeded due to misaligned incentives, lack of conviction among leadership and mid-level managers to see these reforms through, poorly understood data certification and standards processes, and an absence of collaboration with DoD-relevant commercial- and academic-sector investment.



These are not new challenges, and the necessity of solving them is well-known. The Department's failure to thoroughly implement the Chief Digital and Artificial Intelligence Office's (CDAO) 2023 strategy led to a multiyear period of policy confusion and stalled investment. Critical AI-enabled warfighting capabilities, such as in-theater resource management and integrating commercial Internet of Things (IoT) datasets, faced delays in fielding as a result. During this time, the armed services each developed their data investment priorities as intended by the CDAO. This was done, however, without modernizing legacy policies and procedures, resulting in stovepiped, insular, and often duplicative outcomes.

The Department's 2027 creation of new DoD-wide data-sharing agreements appeared promising initially, but the services once again failed to embrace their intent. Despite allocating 65% more program funding toward data-centric systems over the past five fiscal years, many underlying software architectures remain immature and many data sets are difficult to access. An independent cost analysis from the Office of the Secretary of Defense estimates that continued spending will not meaningfully improve outcomes in terms of scale and scope of deployable AI-enabled capabilities.

Figure 1:



Source: Chief information officer responses to GAO survey. | GAO-29-651

Time is not on the Department's side. GAO estimates that by the next fiscal year, the Department will be managing 53% more data than the current fiscal year, but it will have 40% fewer available deployed data mesh network nodes due to attrition and unscheduled dataset repair and maintenance. Figures for the INDOPACOM area of responsibility will likely see greater demand if current military operations conclude as expected.

Operational Failures Underscore Critical DoD Data Management Challenges



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The GAO noted that, although having been identified in the 2023 DoD Data, Analytics, and AI Adoption Strategy as a priority area for immediate action, legacy DoD culture and processes supporting large systems development activities continued to complicate, data, analytics, and AI development efforts. Faced with pressure to achieve a perfect or "100%" solution, an artifact of major hardware weapons systems development, personnel lack confidence in their judgment when collecting and curating data, conducting analytics, or building AI tools. Additionally, if an unconventional approach does not meet with immediate success, personnel fear that taking such initiative can have negative career consequences. This trepidation leads to delays and reduced utility for mission-critical systems.

Finding: Risk Aversion Toward Delivery, Action, and Sharing Among DoD Personnel

In interviews with more than two dozen data and AI personnel across the Department, GAO found they lack confidence in their actions and the current data architecture approach. Interviewees primarily attribute this tentative attitude to three factors: excessive expectations, risks to career progression, and misaligned incentives for sharing.



Interviewed personnel noted that the same factors also inhibit the good "data stewardship" essential for broad and effective data sharing across platforms and communities. DoD managers interviewed by GAO consistently indicated their reluctance to share maintenance data with other departments. This reflects their concerns that doing so could jeopardize their budgets or risk violating data management best practices due to the difficulty of providing a complete accounting of how shared data will be used. During recent INDOPACOM operations, this led to delays in sharing mission availability data needed to update operational planning models. This in turn led to the generation of outdated US Navy and Air Force strike aircraft availability rates, sometimes resulting in unnecessary mission constraints.

Similarly, interviewed personnel cited their reluctance to accept DoD logistics data from outside an organization when full accountability for its use would rest with the user receiving it, even if that individual did not generate it or clean it. This expectation led to a lack of confidence among DoD managers. When sharing occurred, it was often ad-hoc. Program managers acknowledged that successful implementation of DoD's data mesh initiatives would require establishing extensive Application Programming Interfaces (API) to facilitate real-time data transfer, particularly regarding theater or global logistics operations.

Within DoD, GAO also found a reluctance by components to partner and pool or share resources between current and existing data programs. DoD program managers, according to GAO interviews, avoid sharing budget resources with other entities who are working in similar areas. Though there are well-established acquisitions mechanisms, such as a Military Interdepartmental Purchase Request (MIPR), for one department or Component to support the acquisitions efforts of another by allocating budgeted funds to them, interviewees cited concerns that doing so may result in reduced allocation levels in future budgets. To the detriment of the warfighter, many managers are incentivized to develop their own siloed solutions, even if they are duplicative, delayed, or less operationally effective.

View [GAO-29-651](#). For more information, contact: Useful Fiction

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Finding: Insufficient Collaboration with Commercial and Academic Sectors

As acknowledged within the 2023 DoD Data, Analytics, and AI Strategy, the Commercial Sector has continued to advance state-of-the-art technology and production. The rapid pace of development and readily available nature of commercial and open-source solutions continue to provide an accelerant to adversarial and less sophisticated nations, directly contributing to the modernization and increased lethality of their military systems. Building on the CHIPS Act of 2023, the ALGO Act of 2026 greatly increased the pace and diversity of private-public partnership on algorithm development, and opened the means for more responsive procurement. Despite this authorization and associated appropriation, DoD managers interviewed by GAO consistently indicated the persistence of dated FAR regulations and processes routinely blocked their ability to move at the pace and time their respective missions required, and the new act authorized. A market sample of commercial vendors corroborated this finding, saying they were regularly required to participate in lengthy acquisition processes, consistent with procedures used before the signing of the ALGO Act.

GAO found that the Department has maintained a slight lead or persisted at parity against adversary nations in its data, analytics, and AI capabilities. Yet the Department's conservative, incremental approach to risk in these capabilities continues to miss the opportunity to take advantage of a potentially catalyzing resource: the commercial and academic sectors. DoD personnel interviewed by GAO said four factors limit collaboration with industry and academia: inability to match commercial-sector capabilities, lack of contracting best practices, duplication of effort with the commercial sector, and a systemic inability to allow for adaptation.

Despite a DoD Data, Analytics, and AI Strategy document and the commitment of considerable funding toward data-oriented capital investment in software, hardware, and datasets, Defense Department program managers were not well prepared with contracting best practices and standards to benefit from potential collaboration with AI and data efforts underway outside the Department. Of the 18 program managers in DoD interviewed by GAO, over half of them stated that the Department overall regularly invests in its programs without studying comparable investment plans underway in the commercial and academic sectors. A GAO market research study indicates that industry participants consistently reported possessing commercially available and at times open-source mature software solutions that they believe the DoD is recreating with defense contractors, rather than licensing.

Furthermore, a survey of DoD personnel involved in data, analytics, and AI programs identified the risk of potential duplication of their efforts with existing programs in the private sector or academic sector — yet there is no policy guidance to resolve such overlap. On top of inefficiency, this duplication means time and resources are spent catching up with existing efforts, a dynamic that leads to warfighters not receiving the capabilities they need, even if those capabilities are readily available from commercial sources. GAO also found that the Department's capital investment programs typically lag private sector outcomes in terms of deployable capabilities by 18 to 24 months. This stems from an incomplete understanding among personnel about policy for collaboration and coordination with the commercial and academic sectors, as well as an excessive conviction that the Department's priorities when it comes to data and tools are unique, sensitive, and not aligned with potential external partners.

However, in multiple cases identified by GAO, such as unstructured logistics data management, the Department could deploy existing technologies that have already been developed and successfully deployed by the commercial sector and academic organizations. By partnering or following the development of specific technical capabilities, the Department can benefit from existing efforts outside of government. Crucially, this will allow further technology or data services access in areas where the Department needs to surpass what is available from the private sector due to the mission-specific nature of certain capabilities, such as the identification of cross-domain targets..

Operational Failures Underscore Critical DoD Data Management Challenges



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Finding: Confusion Over Certifications and Data Standards

In its review of commercial- and academic-sector data technology and activities, GAO also noted that a survey of best practices across multiple industries repeatedly showed deploying initial data platforms, products, or services before full development and certification can be successful in improving quality, the probability of delivery, and time to market. Indeed, those commercial sector cases surveyed by GAO demonstrated that appropriate policies and procedures can ensure that initial users and their associated mission equities can be safely and effectively integrated into an early-launch data service or product. GAO found that such early integration of mission users enabled refinement and iteration at the rapid pace required by commercial markets. This early integration, GAO documented, also resulted in less rework and shorter total delivery times for working software. While GAO acknowledges that economic incentives drive this commercial-sector approach, it assesses that many, but not all, DoD programs would benefit from these more rapid user-integrated methodologies.

GAO discovered that data quality and standards continue to be an inhibitor of greater efficiency and effectiveness for the department, despite the direction provided in the 2023 DoD Data, Analytics, and AI Strategy. Some DoD program managers noted that, although initial exploratory or limited sharing of intelligence-related datasets did occur between Components, further sharing at scale or as part of consistent service tended to stall when their peers would seek to reduce organizational risk and label the majority of their data as low quality. Despite a tiered DoD data-quality rating system, program managers regularly described pooled datasets as having inadequate metadata granularity and incomplete certification. This complicates normalization and transformation routines and keeps datasets from being awarded a gold, silver, or bronze quality threshold. The GAO also found that the mislabeling impaired downstream statistical weights and calculations, skewing machine-learning model outputs, and distorted or compromised the ability to properly maintain the pedigree of the data and its algorithms. Many of those interviewed by GAO said they preferred not to share or accept data from outside their organizations if they could not fully explain its sourcing or if there was a risk that accessing that data could lead to reprimands or jeopardize budget integrity.

Below are some of the key takeaways embedded within this narrative:

The DoD Data, Analytics, and AI Strategy seeks to build upon the DoD's historic culture and expertise in developing and sustaining large systems to one that can also support the more dynamic needs of a rapidly evolving, technology-driven world.

The Department should move with speed now, guided by strategy, policy, and risk-adjusted governance approaches, to bridge gaps in data management, interoperable infrastructure, workforce talent, acquisition, and partnership, to avoid operational failures in the future.

In order to harness the human and capital resources across the DoD to enable the use of data, analytics, and AI capabilities, culture, processes, and potential regulation need modernizing to enable and encourage Components to more readily partner and pool or share resources to create jointly fielded and interoperable technology solutions.

The DoD Data, Analytics, and AI Strategy also identifies the imperative for the DoD to increase collaboration and cooperation with the commercial and academic sectors.