Data Management at the Tactical Edge
Building a Unified Data Platform with Simple Management

Information technology modernization is a top priority for the U.S. federal government, and as one of the largest agencies, the Department of Defense (DOD) is paying especially close attention. Modernization benefits include better customer engagement, cost savings and efficiency—uncoincidentally in alignment with the Cross-Agency Priority Goals of the President's Management Agenda. All of these elements have a common denominator: data. Whether the goal is to increase telework and remote access or to optimize next-generation technologies such as artificial intelligence, DOD needs a unified data management platform.

The challenge is that a literal disconnect known as mass data fragmentation often trips up DOD on its path toward modernization. The root causes of mass data fragmentation include the spread of data assets, which are stored in disparate places. In the past decade, innovation has provided optionality with the cloud, managed services providers and enterprise data centers, but has compounded the fragmentation problem. With over 10,000 operational systems, thousands

of data centers, and millions of endpoints, DOD has no shortage of ways for data to splinter.

"Not only do all of those individual point solutions generate a lot of complexity, but they also cause this whole notion of mass data fragmentation because you're not doing things in a consolidated fashion," said Steve Grewal, federal chief technology officer at Cohesity, a software-defined data management company. "You end up with these individual islands and individual footprints of data."

Three Strategies

DOD has issued three main and interconnected strategies that emphasize data—and shared access to it—as the key to keeping the department on a forward trajectory.

The first is the DOD Cloud Strategy. Released in December 2018, its second sentence reads, "Data and our ability to process data at the ready are differentiators to ensure mission success." It goes on to focus cloud implementation on two types of work, including the establishment of platforms that can receive data and applications.

The second strategy is DOD's

Artificial Intelligence (AI) Strategy. It calls for a common foundation of shared data and unified data stores and establishes the Joint AI Center to accelerate DOD's use of AI.

Currently, mass data fragmentation inhibits the department's ability to use next-generation technologies such as AI and machine learning (ML). "The AI/ML outcomes are only as good as your data, so have the data accessible and then make sure you have data accuracy so you can start to overlay these AI/ML initiatives on top of that," said Grewal, who was deputy CIO at the General Services Administration from 2016 to 2018.

The third strategy—the DOD Digital Modernization Strategy—ties the other two together and draws on a Defense Information Systems Agency strategic plan to create "a more secure, coordinated, seamless, transparent and cost-effective architecture for the DOD that transforms data into actionable information and ensures dependable mission execution in the face of a persistent cyber threat."

But DOD is an inherently disjointed organization with more than 430 components. That

fragmentation affects DOD's tactical edge because there is no consistent architecture and consumption across solutions.

The salve for these cuts is a unified data management platform that brings data together and adds a management layer to ease access and analysis, overcoming the fragmentation while letting DOD maintain its legacy assets. This commonality brings many benefits, but also its own challenges.

Stronger together

The main goal of consolidating data is making it more available and usable so that agencies can gain insights that can help them meet their missions. But unification brings other benefits, too.

For instance, data lays a foundation for AI and ML—and the automation they enable. AI and ML tools, which inherently rely on accessible data, are poised to affect every aspect of DOD, especially AIOps, or AI for IT operations. That's the notion that many tasks IT workers typically do manually can be automated.

"If you can do a good job automating the commodity and infrastructure functions leveraging next-gen technology, then it really gives you the resources to start focusing on the mission or the business side of the house," Grewal said.

Consolidating data silos also enhances cybersecurity. The proliferation of point solutions increases the number of environments that require protection and oversight.

"As agencies move these silos to one platform, they gain greater visibility into their data end to end and into the movement of that data across the organization, whether authorized or unauthorized,"

Grewal said. "This gives them greater visibility and reduces the organization's attack surface."

Despite these benefits, challenges persist. At DOD, many organizations compete for the same kind of service portfolio. What's needed are better-defined roles and responsibilities and empowerment of those organizations to take on initiatives that promote data consolidation.

"An ideal environment would be a consolidated data-management-as-a-service architecture—having a service provider organization in DOD and then having a variety of organizations that are consuming that service would be best because it will reduce duplication, it will reduce complexity, it would obviously save the taxpayer money, and then it would give you that optimal not only technology architecture, but also that optimal service provider model," Grewal said.

Conclusion

DOD has already made progress with data management. The department hired its first chief data officer in 2018, and it finalized in fiscal 2018 a data tagging strategy in recognition of the importance of metadata.

Late last year, the Army released a data plan that applies to all of the service's data and describes "a global, standards-based environment where data and information are visible, accessible, understandable, trusted, interoperable, and secure." The Army also set a cloud strategy that emphasizes using real-time data to support operations.

Still, additional opportunities exist for technology and process improvements at DOD. By applying a common data management platform that can ingest data from many sources—cloud, servers, storage

and backup—DOD can take legacy applications and datasets and enable the application of next-generation capabilities, greater security and set the stage for future success.

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