



**Defense, Security & Justice**

Data models and master data  
management in ERP



Amid a whirlwind of geopolitical and technical changes, warfare has drastically evolved over the past century, and countless military operations have proven that joint warfighting is at the heart of cutting-edge digital capabilities.

Recognizing rapid changes in the global landscape and contested environments, the Department of Defense (DoD) has continued to make efforts to gain a competitive advantage in the modern battleground through a number of modernization initiatives that include a Digital Modernization Strategy released in 2019<sup>1</sup> and a Software Modernization Strategy in 2023.<sup>2</sup> While the drastic growth of IT landscapes opened new opportunities for innovative solutions through different systems, applications, and technologies, this fragmented environment also created significant data problems, which remains a fundamental challenge.

Data comes from many places. When an organization has many legacy systems and data storage has been siloed, it is extremely challenging to aggregate data into an integrated platform to accelerate data-driven decisions or even deploy or scale advanced

technologies. Generally, for large federal and DoD agencies that operate with more than 100 logistics systems, having each of the nodes share the consistent and updated information to build an interconnected network and provide end-to-end services is not easy. Especially when you add the realization that key pieces of data within each of the thousands of logistics systems is constantly changing, this creates additional complexities and difficulties in maintaining data usefulness. Hence, the lack of a single authoritative data core causes inconsistency, inaccuracy, and redundancy across the organization, which ultimately affects its ability to optimize business processes and make informed decisions. What critical capability is needed to create, collect, and share logistics data, while increasing the speed and scale to exploit that data optimizing business processes and providing a competitive edge outpacing our adversaries? Master data management.

Master data refers to the unique business data entities (i.e., products, locations, sites, bases, time, codes, identifiers) that support the transactional and analytical operations of the organization and combat the potential risk of information falling out of sync among its disparate sources and systems. The practice of creating and maintaining master data through an effective master data management (MDM) strategy establishes a foundation for a successful enterprise resource planning (ERP) implementation. This enables an organization to utilize advanced technologies like automation to maximize operational value and enhance visibility into various business functions with better data and systems integration.

Primarily aimed at managing accurate, consistent, and standardized data across the organization, effective MDM practices bring the following benefits:

Implementing an effective MDM capability is not a one-size-fits-all approach—it requires incremental steps including digitizing the data objects, standardizing master data creation/update policies, and developing foundational data models to ultimately empower the organization to employ strong analytics capabilities. To further enhance the effectiveness of a logistics-focused MDM capability and pave the way for a smoother and more successful transformation journey, the organization should utilize strategic planning and advanced tools and applications to design an architecture tailored to its needs.

### Integrated logistics data ecosystem

Serves as a single source of truth producing a “clean core” business/operational view of logistics data that provides assurance and efficiency to make timely, data-driven decisions through faster financing closing/reporting and transaction processing with minimal manual interventions.

### Data integration/interoperability

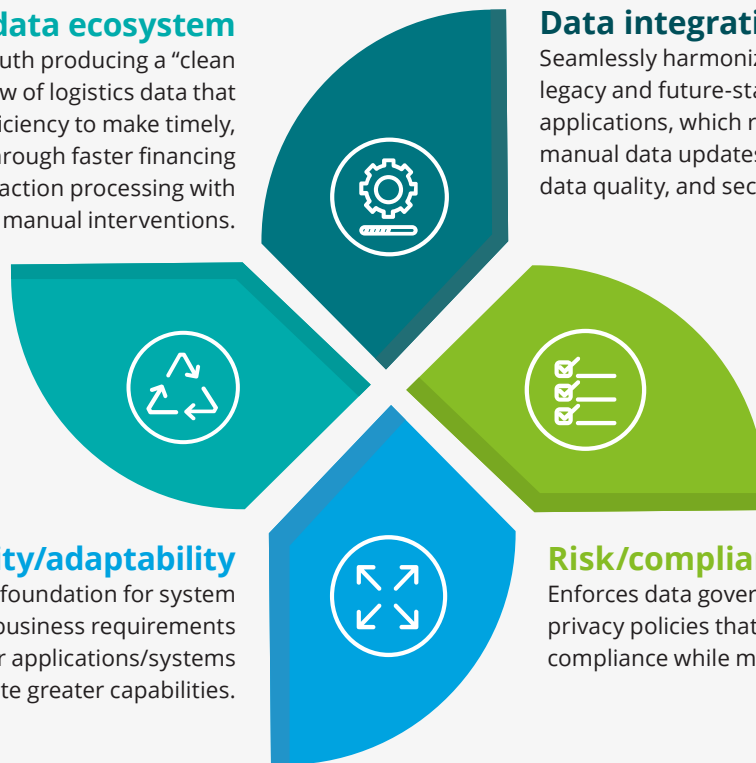
Seamlessly harmonizes master data across legacy and future-state systems, processes, and applications, which removes data silos, minimizes manual data updates across systems, increases data quality, and secures data flows.

### Scalability/adaptability

Provides a solid foundation for system flexibility to changing business requirements or integration with other applications/systems to create greater capabilities.

### Risk/compliance management

Enforces data governance as well as data privacy policies that improve the organizational compliance while mitigating potential risks.



1 US Department of Defense (DoD), [DoD Digital Modernization Strategy](#), July 12, 2019.

2 DoD, [Department of Defense Software Modernization Implementation Plan Summary](#), March 2023.



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