Toward an Intelligent, Agile, and Responsive Supply Chain

By Mark Newsome

The U.S. Department of Veterans Affairs (VA) has the daunting mission to provide health care services, benefits, and an honorable final resting place to those who served in the defense of our nation. That mission equates to over ten million veterans per year for the VA and hundreds of millions of dollars for medical and surgical supplies. The provision of care for this magnitude of beneficiaries requires supply chain solution that is intelligent, agile, and responsive to the needs of the organization to achieve cost and time efficiencies.

The COVID-19 crisis stress tested an already burdened medical supply chain system exposing difficulties in obtaining personal protective equipment and tracking of medical supplies. Prior to COVID-19 and as part of its supply chain transformation efforts, the VA chose to implement the Defense Medical Logistics Standard Support (DMLSS) system and other initiatives.

VA has several initiatives underway to modernize its supply chain and prepare for future public health emergencies. These modernization initiatives, considering the associated chronic delays and protracted struggle to succeed, give way to partnerships and ecosystems that can deliver effective technology platforms, robust cybersecurity, and proven change management approaches. The delays of current efforts in effect and by default signal a call for help to industry commercial-off-the-shelf providers to assist with thinking through the problem and assist with solutions.

Antiquated Inventory Management System is Challenge #1

VA's supply chain modernization efforts face enormous challenges to its transformation journey to be a lean and efficient leader. The goal is to develop an enterprise solution that achieves speed to market, scalability, security, technology prowess, and the stakeholder buy-in for a sizable, complex organization.

Among the most pressing of challenges is a true medical supply chain platform that seamlessly integrates the functions of procurement, asset and facility management, warehousing, and commerce—while seamlessly interfacing to the other enterprise resource planning (ERP) initiatives involving financial and health care systems.

At present, the VA is challenged to achieve consistent operational and business execution across its disparate systems today. The root of the challenges today revolves around "long-standing problems with its antiquated inventory management system [that] exacerbated VA's challenge [with COVID-19]."[1]

A 2016 study completed by the IBM Center for The Business of Government, in collaboration with Northeastern University, noted that the 1990s-era VA inventory management system—the Generic Inventory

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Package—proved so difficult to navigate that some employees chose to keep inventory on paper and entered the data later.[2]

This challenge represents a must-prioritize business opportunity for the agency and requires a strategy for information technology deployment that ensures success. To move from antiquated capabilities in place today to the leading supply chain of tomorrow, this requires both mission and funding priority if an intelligent, agile, responsive supply chain system is to be possible. It also requires a partner ethos to leverage market leaders and best-of-breed technologies to accelerate VA's supply chain transformation objectives.

A Call to Action

As with any sizable undertaking to deploy enterprise information technology systems in support of improved business or health care functions, technology is not the sole panacea. Decoupled from IT strategy and management, front-end change management and stakeholder buy-in, and investment prioritization, any technology deployment is destined to be a protracted, if not impossible effort.

The call to action for VA and industry resides at the nexus of supply chain deficiency and industry's mature supply chain

technologies with intentional leverage of partnerships and ecosystems, platforms, and cyber, and front-end change management. Ecosystems are now even more essential for success. The vital nature of these partnerships—between business and government, across industries, and even among perceived competitors—is the optimal path to innovate at non-negotiable pace and scale needed to serve veterans.

Successful assimilation of these approaches, ecosystems, and partnerships is critical. Those veterans who served in the defense of our nation must receive the right care with the right supplies delivered in the right quantities at the right time.

The Department of Veterans Affairs can and should leverage its commercial off-the shelf (COTS) in-hand industry supply chain leading capabilities and vendors to deliver transformative VA supply chain at pace, scale, and cost efficiencies desired of all stakeholders from Congress to the Veteran served. As of June 2021, the system designed, configured, and deployed by a strong VA program office supports:

1. 38 VA Medical Centers, VA Central Office, Office of Enterprise Asset Management, Office of the Inspector General, and more

2. 1.49 million assets distributed across 281,000 locations and valued over $5.2 billion

3. 144,000 end users who submit over 27,000 service requests per month

4. Management of over 91,000 work orders (preventive, corrective, emergent) per month

5. Capture and alignment of costs to work orders for 165,700 labor hours per month.[3]

Successfully leveraging a best of breed industry partner ecosystem ensures experienced, worldwide past performance and top talent combines to provide highest benefit to VA endeavors for an effective supply chain.

The VA can leverage an ecosystem partner to drive requisitioning through the purchase order creation and maintenance processes. Benefits to the VA include:

- End-to-end automated system that removes complexity and allows users to manage the acquisition processes on a single, integrated platform

- Electronic document creation (e.g., goods and services receipts)

- Email notifications to buyers and suppliers

- Single source of the truth in requisitioning and purchase order data and processes

Another key ecosystem partner could assist with prebuilt inventory management, warehouse, and distribution features. Some of the key built-in capabilities that will support the VA are:

- Warehouse management module enables VA to manage warehouse processes. This module has a wide range of features to support the warehouse facility at an optimal level, at any time. Warehouse management is fully integrated with other business processes, such as transportation, manufacturing, quality control, purchase, transfer, sales, and returns.

- Transportation management lets VA identify the most efficient vendor and routing solutions for inbound and outbound orders. For example, you can identify the fastest route or the least expensive rate for a shipment.

An integrated enterprise supply chain solution for the Department of Veterans Affairs requires a transformative cognitive dashboard that provides transparency and insight into all areas of its supply chain, shipping, and warehousing operation. Through existing and/or future partnerships, the VA can map and create visibility with the entire supply chain ecosystem of enterprise applications. Connecting these software solutions to the entire supply chain ecosystem will offer business insights, consolidated enterprise data and analytics reporting, and dashboarding.

A force multiplier in the form of a cognitive dashboard delivers predictive decision support, intelligence, and analytics. It is also the underpinning for intelligent workflows.

Intelligent workflows fuel responsive supply chains. They are AI-driven, embrace automation where possible, and facilitate horizontal integration and adjustments across functions, providing 360-degree visibility of the supply chain and potential disruptions. Intelligent workflows

ultimately generate value by reimagining the way work is done, adding AI and automation to everyday tasks, insights, responses, and actions. Intelligent workflows serve as the "center of gravity" to your supply chain, sitting at the nexus of five supply chain trends that can power responsiveness and flexibility.

To facilitate a complex ecosystem of integrations, implementation of an enterprise service bus (ESB) is necessary for everyday integrations between systems. It can help safeguard that the system can grow as the business requires. The ecosystem is largely modern and able to communicate from system to system, with the latest in communication standards supporting secure encrypted connection over web services as well as other integration and API methods. However, each system is still unique and requires a unique communication process.

The use of an enterprise bus will make system maintenance easier, and allow for rapidly built, resilient, fault tolerant data integrations, to name a few benefits. In cases where an enterprise service bus is not applicable to the business need, direct integrations can be built to support high volume batch or legacy systems. Additionally, the ESB will allow the VA to have a single point of integration for the enterprise and its external partners to connect to all systems related to the supply chain management tools.

The industry ecosystem of partners is charged with shoring up a platform for VA that provides the "now" need, but also remains scalable, secure, and dynamic to "future needs" and crises. This ecosystem must embrace continuous learning and mastery of VA technologies and requisite interfaces to adjacent and supporting systems that enable success across the entire value stream. The ecosystem of partners must be

active participants and, at times, owners in the change management process. Execution of change management is absolute for front-end consideration and deployment if back-end success is to occur within time parameters and achieve fluid sustainment.

Ecosystem partners must engage with a sense of urgency to deliver timely results for the benefit of end customers—veterans who have honorably defended this nation, and veterans who served with a warrior ethos.

Near Term Impacts

The VA initiated an investment in a successful deployment of an enterprise asset management software solution. Completing this deployment will bring immediate benefits to VA:

1. Realize a vision articulated over twenty years ago to retire dozens of legacy, distributed VistA applications with the market leading asset management platform.

2. Consolidate over 130 instances of the AEMS/MERS systems with a single repository, consistent data, and consistent work processes across the VA enterprise.

3. Provide VA leadership with timely and consistent visibility to VA asset data without requirements to operate and maintain a central data warehouse or initiate data calls to each medical center.

4. Expand the capability to analyze maintenance and asset performance to identify areas for systemic improvement based on a vast trove of consistent asset performance data.

5. Establish a baseline for expanded capabilities into additional business processes, organizational function, and supply chain enhancements leveraging modern technologies.

Conclusion

The Department of Veterans Affairs' mission to over ten million beneficiaries per year has an imperative to become a lean, efficient supply chain that is recognized by its peers as being among the best in health care. An effort that draws upon ecosystems, platforms, robust cybersecurity, and front-end change management—to facilitate the right care with the right supplies delivered in the right quantities at the right time for the right patient for those who have served in the defense of our nation—will make the VA's mission achievable and certain.

Footnotes

1. "VA COVID-19 PROCUREMENTS, Pandemic Underscores Urgent Need to Modernize Supply Chain." United States Government Accountability Office. June 2021. Accessed July 2021. https://www.gao.gov/assets/gao-21-280.pdf.

2. Cordell, Carten. VHA needs to fix its inventory management, here's 10 ways it can, June 20, 2016. Accessed July 2021. https://www.federaltimes.com/management/leadership/2016/06/20/vha-needs-to-fix-its-inventory-management-heres-10-ways-it-can/.

3. Mahon, Tom; Newsome, Mark. "Executive Summary: VALOR Strategic Direction Recommendation [Unpublished]." IBM. July 2021.