



9. Smarter Supply Chains: Helping Government Move Better and Faster

By Robert Luby and Tom Glisson

Introduction

The world is changing rapidly, profoundly, and in every direction. For the U.S. federal government, an increasingly challenging political and fiscal environment provides a powerful catalyst for supply chain transformation. In the private sector, political and economic fallout from the 2008 financial crisis have driven commercial enterprises to intensively reevaluate their supply chains and apply top talent to redesign and improve processes, develop new tools and solutions, and quickly implement change to deliver immediate results and become more efficient.

The flurry of private security activity has produced a wealth of lessons learned and best practices, along with an impressive portfolio of new tools and technologies to accelerate and improve transformation. By applying these latest developments, the federal government has a unique opportunity to implement a world-class, smarter supply chain that can meet the challenges of today and capitalize on the opportunities of tomorrow.

Results from modern supply chain initiatives have been impressive and have clearly transformed many businesses and industries. There are several examples, but we highlight two that offer great opportunities and the possibility of substantial near-term results:

- **Enhanced procurement and strategic sourcing.** GAO has reported that the government is not fully leveraging its aggregate buying power. Many companies have enhanced their procurement processes and have aggressively implemented strategic sourcing and commodity councils. These commercial companies routinely manage over 90 percent of their procurement spend via strategic sourcing and commodity councils; they report savings of 10 percent or more. Major leading companies, including IBM, have used strategic sourcing and associated commodity councils for several years, at times achieving savings approaching 20 percent of procurement spend. In contrast, the federal government has adopted the Federal Strategic Sourcing Initiative (FSSI). Most agencies have actually decided not to adopt this program. Those federal agencies that have attempted strategic sourcing report savings of less than one-half of one percent of procurement spend. Additionally, they only leverage a small percentage of their procurement spend. There is great opportunity in this area. FSSI deserves senior leadership attention and a focus on managing procurement spend via commodity councils and known strategic sourcing techniques.
- **Modern transportation and distribution systems.** Several companies have worked with third party logistics providers (3PLs), shippers, carriers, and other partners to create world-class transportation and distribution networks. The federal government has experienced some initial success in this area via the Defense Transportation Coordination Initiative (DTCI) program at U.S. Transportation Command (TRANSCOM). This program was established to have TRANSCOM partner with a world-class transportation services provider to manage continental United States (CONUS) distribution of freight for selected service and Defense Logistics Agency (DLA) shipping locations. TRANSCOM was able to leverage the existing volume of the transportation provider, with DoD's large freight volumes

using best commercial practices to achieve distribution and associated cost savings. The program to date has achieved \$158 million in gross cost avoidance. These savings have been achieved while delivering the following attractive performance results:

- On-time pickup: 98.1 percent
- On-time delivery: 97.7 percent
- Loss/damage free: 99.7 percent

DTCI demonstrates the potential of a modern transportation and distribution system and the associated savings and performance improvement.

Aggressive pursuit of the two programs highlighted above, along with a focus on the drivers and characteristics of the smarter supply chain described below, can rapidly deliver substantive savings and performance improvement throughout the federal government.

A fully integrated, digitized, cloud-based supply chain management system could make our government supply chains quick, flexible, and highly efficient.

Five Drivers that Improve Supply Chain Management

To navigate the economic turbulence of the last five years, private enterprise has focused heavily on improving supply chain management. Much of this focus on supply chain transformation has been influenced by the following five drivers:

Driver One: Emphasis on customer service. An absolute requirement for any enterprise: understand customer needs and expectations, then deliver the right product at the right place at the right time, every time, at a fair cost with the requisite quality.

Driver Two: Cost control. The key driver in any supply chain transformation effort. Supply chain improvement efforts have been attractive to leaders for the last five years because of the opportunity to quickly deliver results to the bottom line. Identifying the appropriate cost metrics and implementing the supply chain processes and solutions to monitor these metrics in near-real time are a significant part of this challenge.

Driver Three: Supply chain planning and risk management. Modern supply chains must be continually assessed and improved. A recent report by McKinsey comments not only on this need and challenge, but also the current situation: “Many global supply chains are not equipped to cope with the world we are entering,” McKinsey says. “Most were engineered, some brilliantly, to manage stable, high-volume production by capitalizing on labor-arbitrage opportunities in China and other low cost countries. But in a future when the relative attractiveness of manufacturing locations changes quickly—along with the ability to produce large volumes economically—such approaches can leave companies dangerously exposed.” New products, global sourcing, and supply chain security (physical and IT) are only a few of several issues that need to be continually reviewed and assessed.

Driver Four: Enhanced supplier/partner relationship management. Proper relationship management, precise definition of processes, collaboration, and developing trust are key issues for the federal supply chain leader. Limited suppliers for unique items, obsolete weapons platforms, and constantly changing bills of material (BOM) are common in the federal market. Close relationships with suppliers are partners are critical to mitigate these issues.

Driver Five: Talent. Experienced supply chain leaders are vital to success in this challenging environment. This is especially true in the federal arena, where personnel assignment policies and operational requirements often dictate constant movement of key leaders, creating significant challenges in maintaining continuity and in recruiting, developing, and retaining top talent to manage and operate the supply chain.

In this chapter, we explore the nine characteristics of a *smarter supply chain*—designed and structured to meet the challenges described above, while delivering improved performance and return on investment in an increasingly demanding fiscal environment. We then describe a real-world example of a successful supply chain deployment by a federal entity.

Nine Characteristics of a Smarter Supply Chain

While every organization faces unique challenges, requirements, and considerations, most successful modern supply chains share a common core of best practices and characteristics that transcends entity size and nature. These include:

- Efficient enterprise integration
- Well-defined functional integration
- Development of customer-driven processes
- Cloud-based supply chain solutions and tools
- Asset visibility
- Inventory planning and optimization
- Transportation planning and delivery optimization
- Predictive intervention
- Robust and agile information assurance and cybersecurity

While not all-inclusive, the above list comprises those characteristics we have most frequently observed across a broad spectrum of public, private, military, and civilian supply chain management engagements. Moreover, each action on the list can help to reduce the number of steps in a given supply chain, accelerate the time it takes to move from producer to customer, make better and faster design and deployment decisions, and mitigate risks that can impede rapid action—all of which can help the government move faster.

Characteristic One: Efficient enterprise integration. Every single item procured by NASA, the Department of Agriculture, or any of the hundreds of other federal departments, agencies, offices, and commissions, belongs to the public. In a smarter federal supply chain, one with total visibility of assets, inventory management is integrated across the enterprise to not only improve agility and responsiveness but also to eliminate unnecessary redundancy in effort, inventory, and use of scarce funding. Thus, items needed by the Federal Emergency Management Agency (FEMA) for disaster relief could be identified from Department of Defense (DoD) inventory, seamlessly transferred to FEMA control, and efficiently deployed to affected areas rather than FEMA purchasing, maintaining, and distributing its own items.

Case Study: U.S. Marine Corps Global Ammunition Inventory Management

The U.S. Marine Corps' (USMC) global ammunition system, designed in the 1970s and tightly integrated to legacy systems, did not provide the visibility and capability required to meet the dynamic battlefield environment of today. USMC sought to rapidly modernize its existing capabilities without initially replacing or losing integration to existing legacy systems. In addition to a short implementation schedule, the Marine Corps required an extensible platform that would provide for future business transformation opportunities and supply chain capabilities.

The USMC turned to One Network to provide the following integrated solutions and services via its Demand Driven Value Network (DDVN):

- Inventory planning
- Inventory management
- Requisition management
- Lot tracking
- Serialized item tracking
- Master data management
- In-transit racking

By applying One Network technology to its Ammunition Automated Information System (AAIS), USMC was able to achieve total asset visibility across 124 sites with over \$6.4B in inventory. And in impressive time: One Network delivered very competitive supply chain time-to-value, with the primary milestone go-live just five months after contract award. In addition, One Network's smarter supply chain solution reduced transaction error rates from 60 percent to less than one percent, while improving customer satisfaction, maintaining over 99 percent uptime, and reducing total systems costs.

The success of One Network's smarter supply chain implementation led to the Marine Corps being awarded the Department of the Navy Information Management IT (DON IM/IT) Excellence Award.

An integrated federal supply chain also presents significant opportunities for strategic sourcing, virtual supply chains, and supply chain optimization. Enterprise integration on the scale required by a smarter federal supply chain requires modern technical architecture that provides a real-time, responsive supply network that is optimized to concurrently plan demand, supply, and capacity across diverse entities and geographies.

Characteristic Two: Well-defined functional integration. There are numerous opportunities for functional integration throughout the federal government. Processes and cloud-based solutions have been developed to create interdependencies and real-time information-sharing between procurement, manufacturing, supplier, logistics, and end-user activities. Successful functional integration is a vital requirement to meeting the challenge of enterprise integration (Characteristic One).

Characteristic Three: Development of customer-driven processes. Demand planning and demand mastery become a major focus and characteristic of the federal supply chain. A cloud-based "sense and respond" supply chain enables end users to rapidly place orders and

track fulfillment. Proper demand planning also facilitates improved configuration management and modernization of bills of material (BOM). BOM obsolescence is a major challenge for the DoD and other federal entities.

Characteristic Four: Cloud-based supply chain solutions and tools. Next-generation, cloud-based community platform solutions enable real-time planning, collaboration, execution, and business intelligence. Several such solutions are now available, including Dallas-based One Network, which supports over 30,000 companies connected to a unique supply chain network that concurrently manages demand, supply, and lead time variability. Each year, One Network handles over 680 million transactions worth over \$100 billion in retail trade. With a single interface and scalable horizontal grid-processing capability, One Network integrates multiple companies' ERPs to drive optimization on a scale not previously possible. Companies supported by One Network benefit from a real-time value network, "a single version of the truth," which supports end-to-end business process management, compliance, planning, and optimization.

Characteristic Five: Asset visibility. Near-real-time asset visibility is vital to a smarter supply chain, supporting enterprise integration and facilitating:

- Effective shipment planning
- Load consolidation
- Shipment optimization
- Shipment tender
- Contract management
- Carrier management
- Invoice management

In addition, real-time asset visibility improves customer relationship management and contributes to improved inventory planning and optimization.

Characteristic Six: Inventory planning and optimization. Proper inventory strategy, planning, and execution are vital in the federal sector. Excessive and expensive inventory is a challenge for many departments and agencies. As shelf life and expiration dates pass, federal organizations lose millions on worthless inventory; obsolescence and ineffective configuration management further compound these costs. Modern inventory planning tools, such as IBM's Dynamic Inventory Optimization Solution (DIOS), use complex algorithms that dynamically adapt to calculate optimal inventory levels—even in environments with high variability of demand. Coupled with well-defined inventory processes and disciplined inventory execution, such tools can help identify opportunities for reducing inventory investments and improving service levels.

Characteristic Seven: Transportation planning and delivery optimization. Transportation planning and management are vital to a successful supply chain network. Solutions are now available to implement multi-party Transportation Management Systems (TMS) with flexibility, scalability, and appointment scheduling across many suppliers, carriers, and service organizations. A modern TMS allows an organization to take control of freight and leverage buying power to drive down costs; when combined with proper distribution center control, such control enhances visibility and predictability, reduces variability, and empowers a supply chain leader to provide better support at a reduced cost.

Characteristic Eight: Predictive intervention. Addressing supply chain issues after they arise is generally costlier—in dollars and sometimes, i.e., for public safety or military operations,

lives—than proactively resolving them before they arise. Predictive intervention, another key characteristic of a smarter supply chain, depends on a network solution’s ability to provide business intelligence, visibility, and analytics.

Promodel Corporation has developed, in partnership with U.S. Army Forces Command (FORSCOM), a tool to better manage the Army’s Force Generation Synchronization (ARFORGEN) process. The Army Force Generation Synchronization Tool (AST) is the authoritative system FORSCOM uses to conduct its unit planning and sourcing process. It provides the Army with the means to view the predicted impact of today’s sourcing decisions on tomorrow’s utilization of the Army inventory moving through the ARFORGEN cycle. AST on-screen capabilities consolidate data from multiple sources, apply existing or “what if” business rules, predict the outcome, and automatically depict results, thereby eliminating lengthy manual, linear, and presentation-based methods previously employed. AST cut single courses of action development time from days to minutes while enabling multiple courses of action within the same time frame.

Promodel is developing another tool for the U. S. Army Material Command, giving them the capability to visualize total equipment demand and all supply sources over time. The powerful sourcing engine matches validated, prioritized equipment demands with available Army inventory in depots, non-deployed units, and other sources and provides the ability to run different courses of action to evaluate and trade off multiple equipping options. These options will help equipment managers consider the impact of delivery times and transportation costs and the long term effects of any decision, enabling the Logistics Materiel Integrator to create better sourcing solutions based on policy and Army priorities.

There are also myriad other off-the-shelf tools available today to assist with and support predictive intervention:

- Real-time dashboard
- Hot items—exceptions

For More Information on Faster, Smarter Supply Chains

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IBM Global Chief Supply Chain Officer Study. “The Smarter Supply Chain of the Future.” IBM Global Business Services. 2009.

Bradt, Gary and Heinrich, Grant. One Network Case Study. “United States Marine Corps Achieves Total Asset Visibility and Automates Flow of Ammunition to Warfighters Worldwide.” 2011.

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MSB, LLC. “Security i-Cue, An Automated Continuous Monitoring Analysis Tool.” 2012.

- Root cause analysis of problems
- Corrective action recommendations
- Execution links
- Exception-driven workflows

Characteristic Nine: Robust and agile information assurance and cybersecurity—Modern supply chain leaders face increasingly complex and challenging information assurance and cybersecurity threats, hard-to-quantify risks, and limited actionable data. For federal supply chain leaders, the situation is significantly more demanding due to:

- Higher authority data calls
- Myriad mandates (e.g., OMB, FISMA, NIST, DICAP)
- Manual data analysis
- Frequent security assessments
- Controls testing (monthly, quarterly, yearly)
- Ad-hoc remediation

Fortunately, tools do exist to help manage these additional challenges unique to the federal supply chain environment. One such tool is Security i-Cue, developed by MSB of Alexandria, Virginia, which provides automated continuous data collection and dynamic risk analysis. The tool provides quantifiable risk assessments and actionable security intelligence, enabling immediate action to mitigate or eliminate information risk. Moreover, Security i-Cue provides compliance reporting and on-demand assessments to reduce the burden of federal information assurance and cybersecurity protocols.

Conclusion and Recommendations

Meeting the challenge of creating and implementing a smarter, faster supply chain is now readily achievable. Many of the key characteristics and attributes of smarter supply chains are well-known and continue to improve in a rapid and thoughtful manner, while innovative solutions and tools are readily available in both the private and public sectors.

A world-class supply chain that meets the challenges of today with adaptability to the opportunities of tomorrow can be designed and implemented government-wide. A fully integrated, digitized, cloud-based supply chain management system could make our government supply chains quick, flexible, and highly efficient. Of course, building and implementing such a solution, a smarter federal supply chain, is no small task. It will require collaboration, strategic planning, creativity, commitment and, most of all, focused leadership. Overcoming the organizational inertia and myriad cultural, legal, administrative, and resource barriers in the federal environment will be a significant endeavor, but it can be done.

Recommendations

Areas	Implementers	Recommendations
Leadership	Department and Agency Heads, Functional Leaders	<ul style="list-style-type: none"> • Make supply chain transformation a top-three priority and establish clear vision, strategic goals, objectives, and measurable metrics (i.e., balanced scorecard) for success. • Take the lead in communicating to employees and other stakeholders why the change is happening and what the benefits of these changes are in terms they will understand.
Architecture	Department and Agency Heads, Functional Leaders, CIOs	<ul style="list-style-type: none"> • Identify promising cloud-based platform solutions and initiate small pilot programs to demonstrate capabilities, scalability, and usefulness of a real-time value network-based supply chain; then • Adopt and implement solutions across the enterprise in an expedited manner, using commercial, off-the-shelf software that requires limited changes to existing business processes, rather than designing and developing custom, in-house systems.
Integration/Coordination	Department and Agency Heads, Functional Leaders	<ul style="list-style-type: none"> • Reengineer business processes first, then identify improved processes and cloud-based solutions which can create interdependencies and real-time information sharing between procurement, manufacturing, supplier, logistic, and end-user activities. • Take advantage of the numerous demand planning and predictive analytic models that are available in the commercial market.
Human Capital	Department and Agency Heads, Functional Leaders	<ul style="list-style-type: none"> • Train and retain for longer periods of service those key supply chain leaders who will lead the transformation and change management required to be successful. • Tie performance evaluations and reward systems to goal achievement.
Overcoming Barriers	Department and Agency Heads, Functional Leaders	<ul style="list-style-type: none"> • Identify and champion, as part of the business processes review, those regulatory, policy, and legislative impediments to creating the desired supply chain environment. • Champion change agents, protect them during transformation, and reward them for implementing changes that improve processes.

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