

The Global Government Supply Chain

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Introduction

National government supply chains and logistics capabilities are exceptional and complex components of global supply chains. The exceptional characteristics are manifested when critical operations need to shift from steady-state operations to surge-based support of global crisis and expeditionary missions for humanitarian, natural disaster and military purposes. Moreover, scale and complexity are consistently among the most urgent challenges facing supply chains and logistics. These challenges are attributable to several factors, including a broad array of stakeholders and participants, each with their disparate business processes and systems; a lack of adequate governance around process ownership that makes collaboration and sustained transformation difficult to achieve; and finding the massive scale of investments needed to address the continuing need for improving operational efficiencies and effectiveness and providing adequate physical infrastructure and capacity to enable economic growth. These challenges are exacerbated by the risks of natural disasters, global terrorism and the rapidly escalating cost of fuel – the lifeblood of supply chains. In the government supply chain and logistics domain, these challenges are amplified still further where daily operations have to be ready to surge for disaster or expeditionary responses and contend with political barriers and inadequate infrastructure when operating abroad.

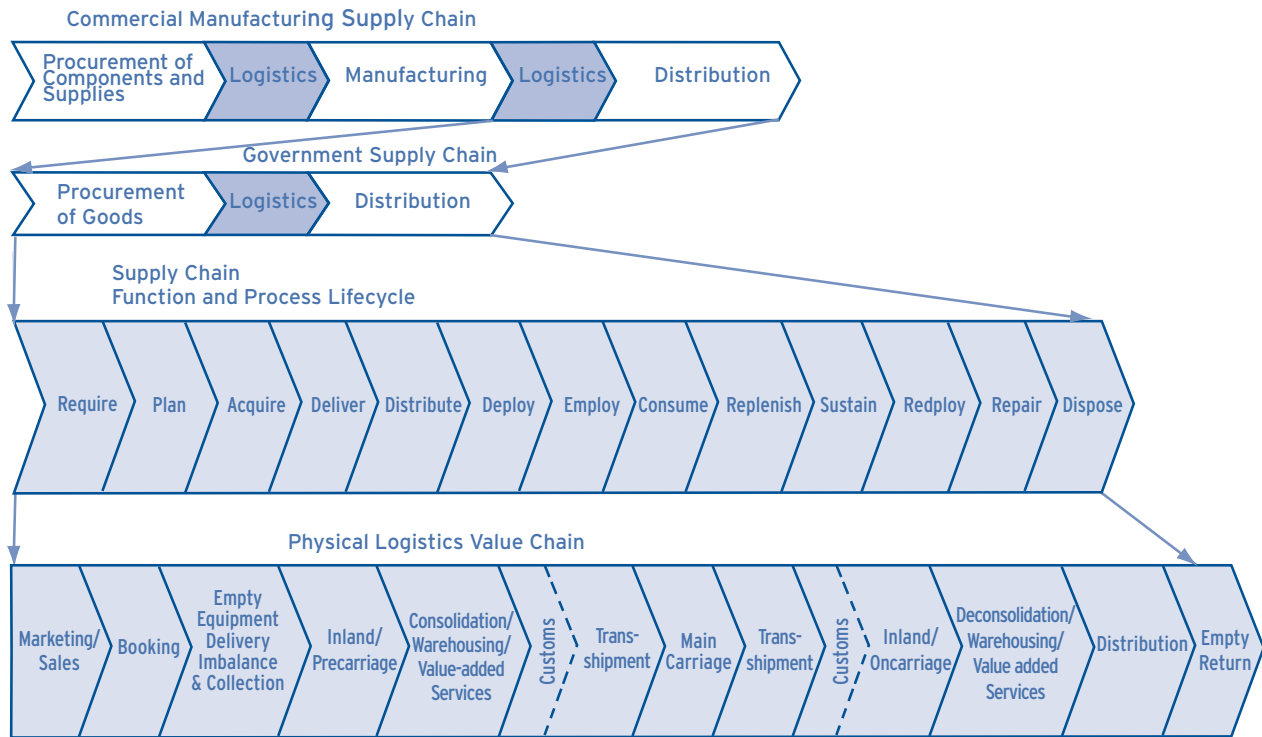
It is not just the breadth but rather the integrated and interconnected nature of all these challenges that is driving the need for a unified point of view on how government supply chain and logistics should operate and how information technology (IT) should contribute to overall efficiency and effectiveness. One overarching objective is to establish a unified platform for achieving supply chain and logistics effectiveness during steady-state operations, national security, disaster and emergency response situations. Desired capabilities of supply chains and logistics include interoperability with multiple and disparate players, agility and resilience to meet various demands, as well as situational awareness and comprehensive and integrated visibility of people, shipments and assets in the context of events. The desired outcomes are high-class operating capabilities in both steady-state and surge modes, a focus on the users' needs, and a unified operations control to mobilize and manage resources across a variety of players.

Background

If a global or national disaster occurs, the government supply chain and logistics essentially provide the backbone for surge of response and recovery operations. However, the domain of supply chain and logistics does not just provide support and linkage in abnormal and crisis situations. Its capabilities sustain day-to-day operations by serving citizens and a broad range of commercial and government customers. The role of government supply chain and logistics is critical in functional areas such as defense, ports, postal and in situations where it is important to manage distribution of critical supplies such as food, pharmaceuticals, energy products and spent nuclear fuels.

For normal, daily operations, as illustrated in **Figure 1**, the steady-state government supply chain is similar to a commercial supply chain. The supply chain encompasses planning and managing the sourcing, procurement, as well as delivery of supplies and services. However, when an exceptional or expeditionary event occurs, the government

Figure 1. The Government Supply Chain and Logistics Domain



supply chain ratchets up to a surge of complex activities requiring the highest levels of coordination and process rigor.

Government logistics includes the movement, handling and storage of cargo and the movement of people. The government logistics value chain is the integration between government procurement or acquisition and ultimate distribution similar to the commercial manufacturing supply chain.

The primary difference between static, steady-state operations and the response to an exceptional or expeditionary event is the dynamic, if not extreme and unplanned, operations necessary in the latter case. In times of crisis, the needs of the hour are flexibility and the ability to rapidly reallocate resources to unforeseen and atypical areas and functions. In surge mode, high volumes and incredible tonnages need to be delivered within very tight timelines to places that may pose significant political barriers and have little or no infrastructure to receive and distribute the goods. The design for these “extraordinary” situations is

what sets government supply chain and logistics apart from commercial ones.

Government Supply Chain by the Numbers

No words can do justice to the massive scale of supply chain activities across the world and the compilation of facts and figures below just begins to paint a picture.

- Globally, governments spend an estimated \$1.4 trillion per year on supply chain services and goods.¹
- 7.2 billion tons of total cargo volume (TCV) and 261 million twenty-foot equivalent units (TEUs) of container traffic pass through the world’s top 50 ports.²
- China’s Port of Guangzhou is the world’s fastest-growing port, with growth of 178 percent from 2004 to 2007. In addition, China tops the world with nine ports in the top 50 of the world’s busiest and boasts the largest share of port traffic.³
- The Port of Singapore is the world’s busiest port with 27.9 million TEUs in 2007.⁴

1 Estimate based on EDS analysis of GDP information found at <http://en.wikipedia.org/wiki/GDP>.

2 EDS analysis based on information from the American Association of Port Authorities, available at http://www.aapa.files.cms-plus.com/Statistics/worldport_rankings_2006.xls.

3 List of the World’s Busiest Container Ports. Available from http://en.wikipedia.org/wiki/List_of_busiest_container_ports; Internet, accessed 3 December 2008.

4 Ibid.

Table 1. 2007 Global Government Supply Chain Spend

Rank	Country	GDP ¹³	Est. Government Supply Chain Spend	Est.% of GDP
-	World	\$54,584,918,000,000	\$1,364,622,950,000	2.5%
1	United States	\$ 13,807,550,000,000	\$ 371,025,247,719	2.7%
2	Japan	\$ 4,381,576,000,000	\$ 87,631,520,000	2.0%
3	Germany	\$ 3,320,913,000,000	\$ 66,418,260,000	2.0%
4	China (PRC)	\$ 3,280,224,000,000	\$ 82,005,600,000	2.5%
5	United Kingdom	\$ 2,804,437,000,000	\$ 63,099,832,500	2.3%
6	France	\$ 2,593,779,000,000	\$ 51,875,580,000	2.0%
7	Italy	\$ 2,104,666,000,000	\$ 42,093,320,000	2.0%
8	Spain	\$ 1,439,983,000,000	\$ 28,799,660,000	2.0%
9	Canada	\$ 1,436,086,000,000	\$ 35,902,150,000	2.5%
10	Brazil	\$ 1,313,590,000,000	\$ 32,839,750,000	2.5%
11	Russia	\$ 1,289,535,000,000	\$ 32,238,375,000	2.5%
12	India	\$ 1,100,695,000,000	\$ 27,517,375,000	2.5%
13	Mexico	\$ 1,022,816,000,000	\$ 20,456,320,000	2.0%
14	South Korea	\$ 969,871,000,000	\$ 19,397,420,000	2.0%
15	Australia	\$ 908,990,000,000	\$ 22,724,750,000	2.5%
16	Netherlands	\$ 777,241,000,000	\$ 15,544,820,000	2.0%
17	Turkey	\$ 659,276,000,000	\$ 13,185,520,000	2.0%
18	Sweden	\$ 454,839,000,000	\$ 9,096,780,000	2.0%
19	Belgium	\$ 453,283,000,000	\$ 9,065,660,000	2.0%
20	Indonesia	\$ 432,944,000,000	\$ 8,658,880,000	2.0%

- Germany is the world's largest exporter in terms of U.S. dollar amount at \$1.35 trillion.⁵
- Russia is the world's largest exporter of natural gas at 182 billion cubic meters.⁶
- Saudi Arabia is the world's largest exporter of oil at 8.9 billion barrels per day.⁷
- The world's largest net exporter of coal, accounting for 29 percent of global coal exports, is Australia.⁸
- Canada is the United States' largest foreign supplier of energy, including oil, gas, uranium and electric power.⁹
- The U.S. military alone spent approximately \$200 billion in 2007 on supply chain logistics and \$15 billion on fuel.¹⁰
- For every \$1 increase per barrel of oil, there is an additional \$130 million annual charge to U.S. Department of Defense (DoD).¹¹
- With the largest fleet of alternative-fuel capable vehicles and one of the largest fleets with 219,522 vehicles in the United States, the U.S. Postal Service saw transportation costs, driven by fuel prices, increase 20 percent to \$6.5 billion from 2005-2007, while mail volume in this period remained flat with only a 0.2 percent increase. The U.S. Postal Service spends nearly \$1.8 billion in fuel, or 74 percent of its \$2.4 billion total energy costs, to process, transport and deliver mail.¹²

Table 1 outlines the economic scale of the global supply chain

5 U.S. Central Intelligence Agency. "2007 World Factbook--Germany." Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/gm.html#Econ>; Internet, accessed 3 December 2008.

6 Ibid, Russia. Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/rs.html#Econ>.

7 Ibid, Saudi Arabia. Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html>.

8 Ibid, Australia. Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/as.html#Econ>.

9 Ibid, Canada. Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/ca.html>.

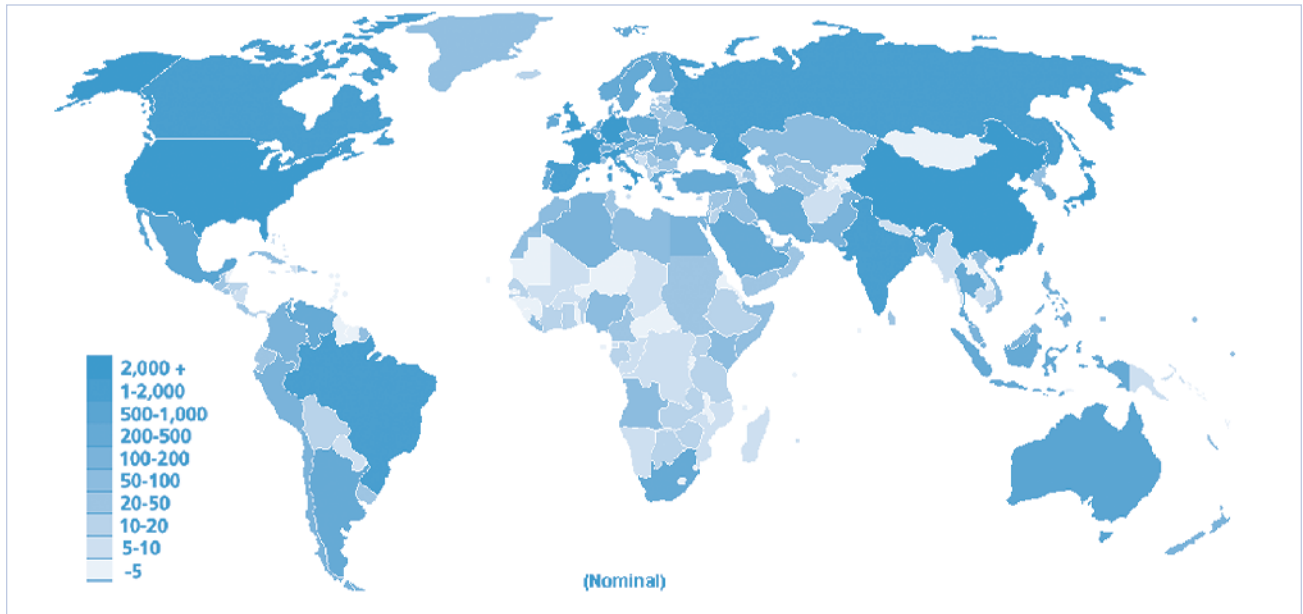
10 EDS analysis.

11 McChesney, John. "Oil Prices Squeeze Pentagon's Budget." 1 July 2008. Available from <http://www.npr.org/templates/story/story.php?storyId=92060075>; Internet, accessed 31 October 2008.

12 EDS analysis based on information found in the U.S. Postal Service 2007 Annual Report, available at www.usps.com/financials/_pdf/AR2007_final.pdf.

13 EDS analysis of GDP data from International Monetary Fund from Wikipedia.com and U.S. supply chain estimate from federalspending.com

Figure 2. Global Supply Chain Scale As Measured By Gross Domestic Product



and the \$1.4 trillion transfer of currency between nations.

Across the globe, nations consume, spend and conduct commerce at a wide variety of scale and pace. From a scale perspective, gross domestic product (GDP) is an effective and well-adopted measure of supply chain activity.

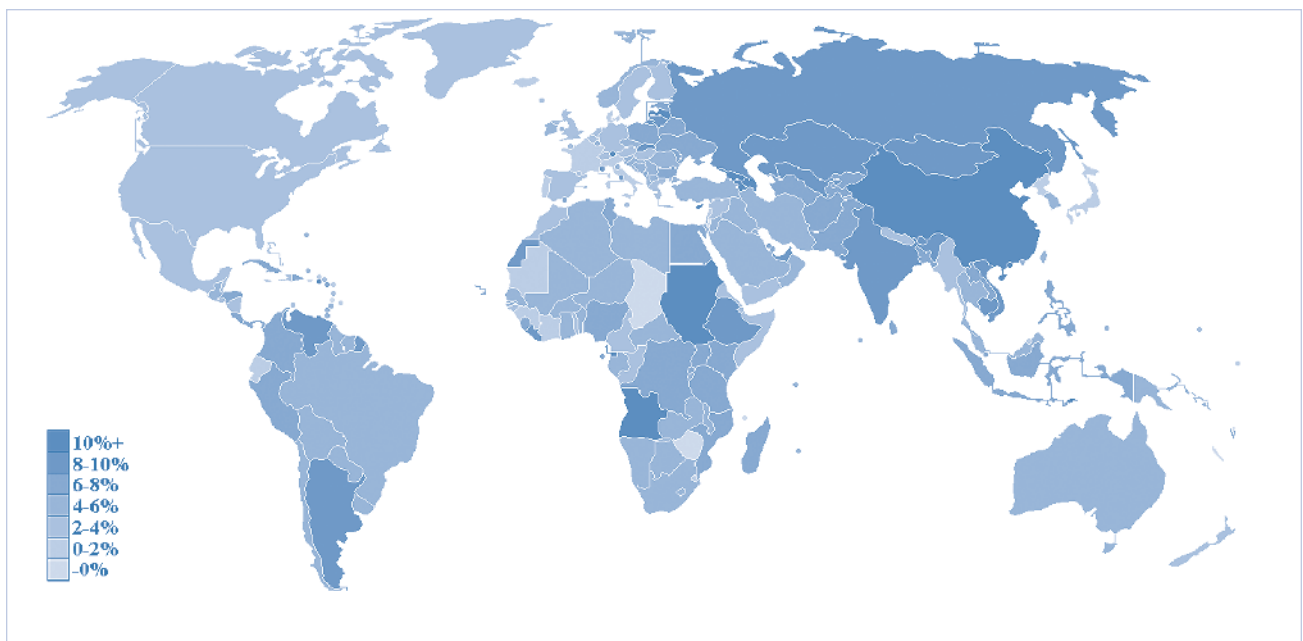
Figure 2 depicts the global picture of GDP by country. Countries with the highest GDP include the United States,

the United Kingdom, France, Germany, Italy, China and Japan. Select countries in Africa, Southeast Asia and Indonesia and South America have the lowest GDP.

Of equal or greater interest is where GDP is increasing over time, or the growth of consumption, spending and commerce. Figure 3 depicts growth across the globe.

Countries with high growth in GDP – including China, Russia,

Figure 3. Global Supply Chain Growth As Measured By Percent Real Growth in GDP



India, Sudan, Angola, Ethiopia, Argentina, Venezuela, Cambodia, Vietnam, Mongolia, Kazakhstan and Uzbekistan – will be challenged in keeping up with the scale and pace of supply chain activity, such as the modernization of infrastructure and efficient and secure operations of ports and borders.

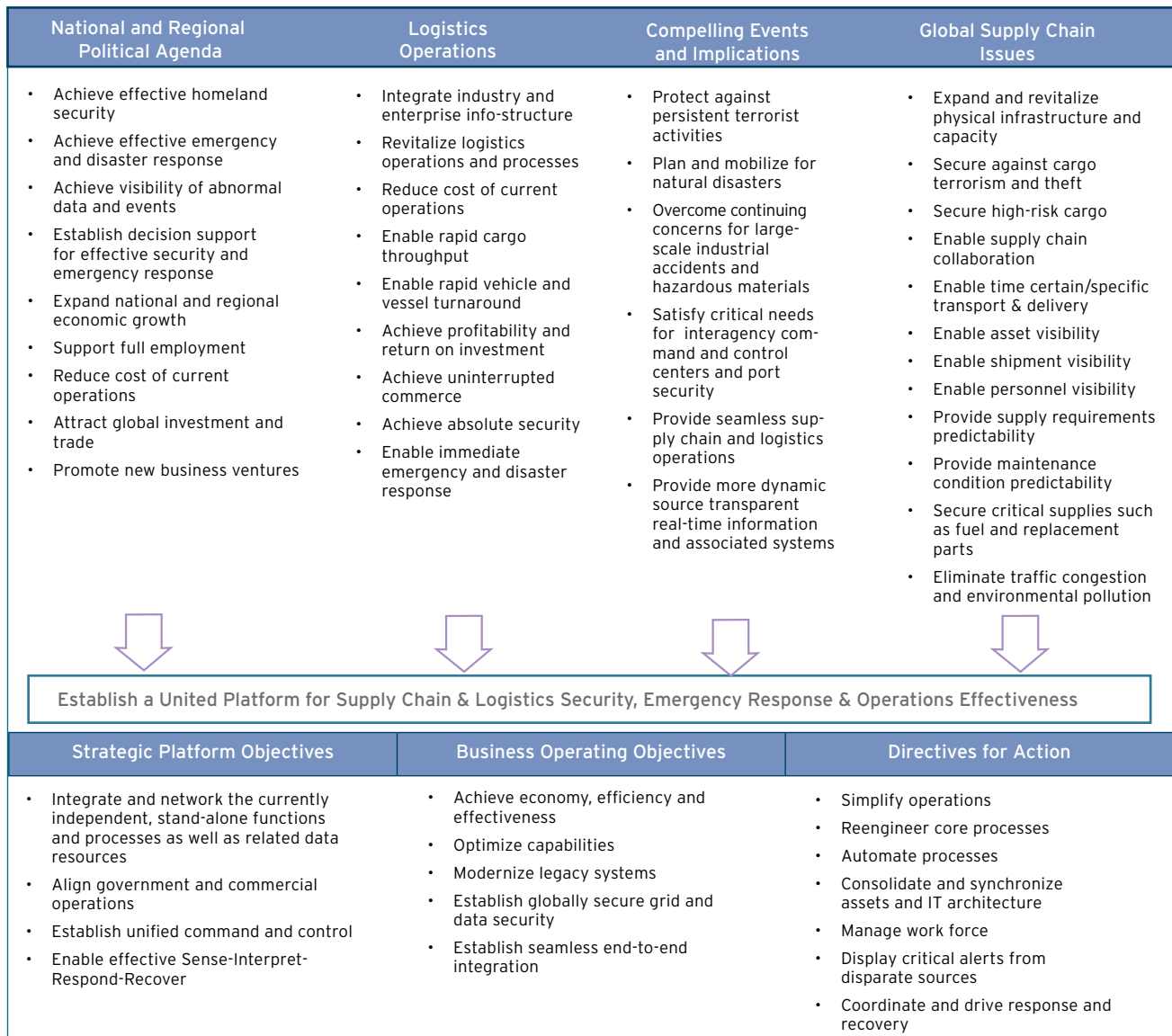
Challenges and The Need for a Common Platform

As illustrated in Figure 4, pressures and demands are imposed upon the global supply chain and logistics by national and regional political agendas, disparate logistics operations, implications of compelling current events as

well as recurring and notable issues. These challenges drive the need for establishing a unified platform for achieving supply chain and logistics effectiveness in national security, disaster and emergency response and steady-state operations.

The complexity of the government supply chain and logistics is manifest, among other factors, in the range of stakeholders and players that are involved in the operations. These players and stakeholders include the full spectrum of national and local government agencies, emergency responders, commercial suppliers and services, carriers and freight operators, and the ultimate consumers. This complexity introduced by the vast array of entities is

Figure 4. Challenges of the Global Government Supply Chain and Logistics



further amplified by the intensity of 24x7 physical operations, variability and differences in the stand-alone and legacy policies, processes and systems each key player brings to the game. These silos of fragmented, hard-wired, rigid IT systems and business processes are rife with redundancies, data errors and they do not provide a reliable foundation for decision-making. The inability for and impediments to easy exchange of information create operating inefficiencies within and between entities and form a fundamental barrier to achieving the desired state of effectiveness.

There are similarities in the government supply chain and logistics, particularly regarding the business functions, processes and data associated with acquisition, distribution, maintenance and repair operations, and managing the distribution to the final customer whether it be a business, a citizen or a warfighter. From a systems perspective, the keys to success are data quality and timeliness that are achieved through data standardization and data integration across multiple players. Success requires an ability to manage change, drive consensus, and maintain a commitment and the willingness to share information across organizational boundaries.

However, the drive toward fundamental transformation typically encounters a significant roadblock - that no one government department owns the overarching objective of driving efficiency and effectiveness of supply chain and logistics across government segments. While the long-term goal continues to be to achieve completely pervasive and distributed supply chain and logistics systems that enable interoperability and connectivity with suppliers, government agencies and end users or customers, each department or ministry is centered on its own separate objectives or role. However, mere recognition of the long-term goal is not enough. Important solutions in such areas as identity management, access control, edge technology and visualization have been developed, and acceptance and integration of these disparate solutions into a cohesive platform must be pressed. A special effort must be made to ensure continuity, but the pathway for reaching the goal is obscured and delayed by regular periodic changes in leadership, personal egos, job protection, perceptions of functional differences rather than similarities, changes in technology, preoccupation with imminent crisis response, and quite simply, not sticking to plan.

Obtaining focused direction and collaboration to formulate and commit to a sustainable transformation plan for supply chain and logistics operations and technology will likely be driven by the imminent threat of terrorism, the rapid escalation in the cost of the “factors of production” and the need to find innovative solutions to address the undeniable limitations of critical infrastructure. One goal is to balance security with uninterrupted and effective throughput of goods through the supply chain. These often conflicting needs are quite evident in global ports around the handling and movement of high-risk cargo. Likewise, ensuring access to competitively adequate physical infrastructure and trade capacity is centered not only on design-build but also on optimizing operational efficiency and security.

What follows are several points of view on how to manage the complexity of the government supply chain and logistics. The articles within this Journal will present thought leadership on the major issues involved in today’s supply chain and logistics environment, including how to significantly improve the efficiency of cargo movements and asset utilization, combine strategic procurement and strategic logistics planning, expand the capacity of physical transport infrastructure, promote increased trade volumes, and enable commercial profitability while effecting national security, defense, disaster and emergency response capabilities. In addition, the application of agile and lean capabilities and a unified strategy for exceptional emergency situations to daily operations are presented as critical components to the success of supply chains and logistics within the government space. Our hope is that these articles will foster communication toward more efficient and effective supply chains around the world. ■