

Chapter 9

Managing DoD Supply Chains

Implementation of the SCM concept in DoD will entail overcoming many obstacles. This effort will require establishment of common objectives across multiple organizations with significantly different current processes, systems, and cultures. In some respects, Chapters 1 through 8 of this *Guide* imply that SCM implementation is a mechanical process that can be achieved by accomplishing several predetermined actions. Although the tasks suggested in this *Guide* are essential for implementation, however, they are not the only elements that are necessary for long-term success.

To reap full benefits from the substantial amounts of time and resources required to implement SCM, DoD must institutionalize the transition to the new way of doing business in the day-to-day management and operation of the end-to-end logistics process. The military services and DLA will spend large sums of money and devote significant amounts of time just to acquire the hardware and software infrastructure needed to operate a minimally effective supply chain. Achieving notably improved performance and cost benefits will require even more resources and commitment over an extended period. This long-term commitment, particularly on the part of higher-level management, is so critical to success that proceeding without such assurances is tantamount to dooming the effort to failure.

If the organization's key management personnel are truly committed to implementing an SCM approach for the logistics process, there should be a significant change in the way the process is managed. Logistics managers at all levels typically feel hopelessly trapped by the problems of day-to-day operations, coupled with the continued downward pressure of resource reductions. Managers often are unable to effect the changes needed to relieve near-term problems. Breaking this vicious cycle requires a new approach to managing the process.

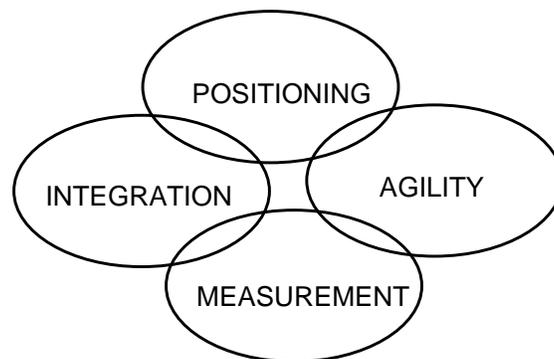
Today's logistics managers focus largely on overseeing operation of their assigned functional segments of the process. For example, managers may be primarily concerned with materiel management, maintenance, transportation, budgeting, order processing, or other functional areas.

Cross-functional issues are raised only at the highest levels of the organization.

In 1995, researchers at Michigan State University (MSU) developed an approach for logistics managers that facilitates a more corporate or universal perspective on a customer-/performance-oriented logistics process. The MSU approach outlines a new way to address an organization's objective of achieving "world class" status. Although not all elements of the proposed approach are directly applicable to DoD logistics organizations, the model is broad enough to suggest a workable strategy to effect and ultimately manage required changes.

The MSU research advanced the idea that to attain world-class status in logistics, an organization must move toward a high level of competency in several areas. Competency is defined as "a state of being sufficient to gain and maintain selected customers."¹ There are four essential competencies, as shown in Figure 9-1.

Figure 9-1. Logistics Competency Model



Positioning. The positioning competency involves creation and implementation of strategies and process approaches to achieving supply chain objectives. Effective supply chain managers focus directly on building these competencies and allocating resources to implement approved strategies.

¹ Global Logistics Research Team, Michigan State University, *World Class Logistics: The Challenge of Managing Continuous Change* (Oak Brook, Ill.: Council of Logistics Management, 1995).

Integration. This competency relates to establishing and maintaining all of the necessary mechanisms (rules, processes, and infrastructure) across the supply chain to implement desired strategies.

Agility. This competency entails establishing an organization's ability to identify and satisfy customer requirements through accommodation and flexibility.

Measurement. This competency involves focusing management's attention on establishing quantitative measures of actual and desired achievement, using functional assessment, benchmarking, and quantification of results.

Effective management of a DoD supply chain requires managers at all organizational levels to embrace these competencies as critical factors for accomplishing their responsibilities for particular supply chain elements. In their day-to-day activities, logistics managers must continuously assess ongoing and proposed individual activities, projects, and initiatives in the context of their relevance to one or more of these competencies. Clearly, this effort will require a significant cultural change on the part of many managers. In the future, simply having a good understanding of assigned functional processes will not be sufficient for effective management of the supply chain. In addition to subject matter knowledge and expertise, the logistics manager must fully understand and work toward enterprise-wide objectives by tracking actual progress in attaining increasing degrees of improvement in supply chain competencies.

To help identify specific required actions, the MSU researchers identified 17 specific capabilities that represent activities required to attain world-class levels of performance.² Although no organization can be expected to achieve perfect success in all of these capabilities, the collective grouping of these factors provides an excellent shopping list of target objectives and guidelines for managing the operation of the total supply chain. Table 9-1 outlines these 17 capabilities in DoD terms.

² Ibid., 28.

Table 9-1. World-Class Logistics Model—Implementing Capabilities

Capability	Description
Positioning	
Strategy	Set customer-oriented goals and objectives and put in place implementing processes/enablers
Supply chain Network	Create working partnerships with all supply chain participants Implement physical infrastructure and facilities to manage total supply chain
Organization	Structure, relationships, and application of human resources to support supply chain operation
Integration	
Unification	Promote establishment of working, effective interfaces among supply chain participants
Information technology	Evaluate and select technical enablers to permit effective supply chain process results
Information sharing	Build and operate automated capability to share all logistics and related management information required by all supply chain participants
Connectivity	Implement capability for data exchange interoperability among supply chain partners
Standardization	Establish common support conventions and responsibilities across organizations
Simplification	Streamline procedures and eliminate unneeded or redundant process elements
Discipline	Enforce adherence to approved policies and procedures
Agility	
Relevancy	Understand and satisfy customer-generated requirements
Accommodation	Ensure that supply chain process is designed to respond to changing customer requirements
Flexibility	Manage supply chain on the basis of providing timely response to dynamic customer requirements
Measurement	
Functional assessment	Implement comprehensive measures of performance of discrete process elements or logical functional groupings
Process assessment	Implement comprehensive quantification of performance against customer-oriented metrics
Benchmarking	Compare and assess organizational performance against specific measures of world-class supply chain organizations

Table 9-1 provides a good supply chain operational checklist for DoD logistics managers at all organizational levels of DoD. Coincidentally, there is a significant resemblance between the competency list developed by the MSU researchers and the DoD supply chain guiding principles discussed in Chapter 2. The similarities are understandable even though the lists were developed independently. The MSU researchers concluded that there is a universality of required supply chain capabilities not only in North America but throughout the developed world.³ If this conclusion is correct, and if most of the findings of research conducted for this *Guide* are in agreement, implementation and long-term management of the supply chain in DoD must follow the same pattern and exhibit the same characteristics as in private-sector experiences. Clearly, implementation of SCM on a large scale in DoD will require a significant reevaluation of management approaches in most logistics organizations. In addition to developing an effective SCM strategy, DoD logistics managers require a more comprehensive and accurate way of determining and assessing the costs of the logistics process.

ACTIVITY-BASED COSTING

In the financial management area, DoD organizations traditionally have focused primarily on budget development and execution. GAO and Congressional committees often have criticized the Department for lacking an effective cost accounting process. In Chapter 4 we suggest that the SCM implementation team explore the possibility of building an ABC capability concurrent with its analysis of SCM implementation requirements.

Although cost accounting is not a principal responsibility of the SCM implementation team, cost assessment—and, ultimately, allocation of financial resources—is of direct interest to supply chain managers. For the foreseeable future, DoD logistics processes and organizations can expect to be considered “bill-payers” in support of the Department’s weapons and equipment modernization programs. Faced with continuing reductions in available resources, logistics business managers need greater visibility and analytical understanding of where scarce resources are being expended. The need for changing processes and systems to accomplish SCM provides a unique opportunity to promote concurrent implementation of ABC capabilities in logistics processes.

³ Ibid., 13.

A workflow model is designed to represent a business process as a set of activities that flow horizontally across the organizational structure. This approach for viewing business processes allows the manager to understand the sequence of “how work gets done” in the organization and how products and services are produced for the customer. In the same manner, understanding and analyzing the costs incurred by these activities is necessary for optimizing the cost-effectiveness of an organization’s business processes. Association of costs with specific activities is known as ABC.

ABC requires a shift in thinking away from the historical assignment of costs to departments or organizations. (Such thinking associated monthly or annual costs with the production department, the finance department, the sales and marketing department, etc.) Cost-containment efforts in the past requested a lowering of expenses in an organization such as the production department. This request was based on an assumption of inefficiencies, but it provided no direction about how to achieve the cost reduction targets.

ABC requires cost analysis to go beyond typical operation and maintenance (O&M) expenses such as salaries, materials, depreciation, travel, and facilities. Traditional cost accounting methods assign overhead costs to products or services by using allocation calculations that are based on irrelevant labor or material costs. ABC identifies actual costs incurred by a business process’s component activities as they are being performed. ABC provides that information by using multiple sources to assign costs on the basis of consumption of resources. Instead of lumping logistics costs into standardized categories, ABC breaks the accounting general ledger into homogeneous resource categories and assigns those costs to the specific activities performed, such as purchasing, receiving, warehousing, and order processing.

Because ABC can assign activity costs to the consuming customer, commodity, or supply chain activity, ABC information can provide considerable insight into how different customers or products affect the operation of logistics activities and drive total costs. Coupling ABC with process simulation can provide a useful tool in analyzing how proposed logistics process changes may affect the performance of services or activities provided to the customer, as well as how these changes will alter resource consumption.

An extension of ABC called activity-based management (ABM) has emerged recently. This process analysis methodology uses the cost data aspects of ABC to help assess the quantitative impacts of process improvement activities.

ABC enables activity costs to be examined and assists in optimizing costs individually and across the supply chain. Once changed, the model of the business process is reanalyzed to determine the effects on the entire process. As a result, a true picture of the cost of doing business is produced. The cost of doing business may be calculated for specific products, services, business processes, market segments, distribution channels, projects, and so forth. The uses for ABC are many and varied. The following list provides typical efforts in which ABC has been successfully employed:

- o Developing benchmarks of current process/product/service costs
- o Identifying areas that are not cost-effective in current processes
- o Analyzing value-added versus non-value-added costs
- o Determining the cost impact of outsourcing decisions
- o Supporting redeployment, cost-cutting, and right-sizing decisions
- o Determining costs for improved or redesigned business processes
- o Verifying the cost-effectiveness of business process improvement efforts
- o Determining cost targets and budgets for business processes.

Experience in DoD logistics management has shown that using subjective judgments in efforts such as those listed above often has been inadequate, misleading, and extremely costly. ABC provides a quantitative means for evaluating process change when the objective is meaningful improvement in cost-effectiveness. By following a structured approach to analyzing expenditures, ABC can support the essential analysis needed to make key decisions.

The cost and staffing required to implement ABC clearly is the most common reason for not considering ABC or deciding not to implement it. In DoD, obtaining approval for ABC implementation on a stand-alone basis may be very difficult. DoD managers traditionally have given only lip service to the requirement for a comprehensive, modern accounting process. Not only is such an implementation costly, the need for it is obscured by the fact that government organizations are not bound by the requirement to maintain tax records; nor are they concerned with accurately quantifying an annual profit and loss balance sheet.

One approach to ABC implementation involves combining adoption of ABC with the supply chain process reengineering initiative. This approach begins with diagramming logistics activities the organization performs in the operational node connectivity diagram. Then the ABC effort attempts to assign costs to each of the detailed activities identified during the process charting. Compared with a pure costing approach, a reengineering-linked approach requires significantly more time, effort, and funding to implement because it requires a much larger number of cost drivers for the assignment of resource costs to a very large number of activities. It also must determine how each activity is actually “consumed” to allow assignment of the activity costs. Yet reengineering approaches provide considerably more insight into the elements driving process costs. The chief drawback is the amount of time required to obtain cost information and link it to actual process activities.

For the SCM team, an ABC implementation strategy initially may have to focus on a small-scale pilot project to determine the viability and value of a cost analysis capability for logistics activities. For the long term, the team should press for acquisition of commercial software packages that have imbedded ABC modules or accommodate ABC “bolt-on” capability.

Besides building a more effective approach to evaluating logistics costs, using ABC would support the need for future supply chain managers to increase their focus on the performance of the total supply chain.

PERFORMANCE MEASUREMENT

In the future, the effective supply chain manager must have a customer-centered view of the logistics process. The manager also must have a holistic perspective that comprehends the end-to-end process, regardless of the manager’s specific niche in the supply chain. Therefore, up-to-date

and accurate information on the operational status of all segments of the supply chain must be readily available to all process participants. The importance of supply chain managers having ready access to performance metrics information cannot be overemphasized. In addition, overall performance metrics reports for all participants in a supply chain, regardless of their functional responsibilities, should be consistent, timely, and accurate.

Although many of today's metrics provide useful information, they generally do not provide senior managers with a sense of how well the overall supply chain is performing. In summary, current metrics

- o Do not measure *total supply chain performance*. Many metrics measure only wholesale performance. Others simply measure the implementation of an initiative without any link to performance metrics that should indicate resulting supply chain improvement.
- o *Are not linked or correlated* to one another so managers can consider important supply chain relationships. For example, reducing inventory to save money may not be beneficial if readiness rates are declining.

In Chapter 5 we propose implementation of measures designed to portray the results of total supply chain performance as an essential part of the SCM strategy. Traditionally, DoD logistics managers assess performance metrics individually, with little regard to causative relationships between metrics. Furthermore, some metrics are measures of size rather than performance. For example, inventory turnover measures performance, whereas value of inventory measures size. Using size or capacity measures as surrogates for performance often is misleading and in some instances results in establishment of initiatives that have little relevance to—or can even be counterproductive to—achieving performance objectives.

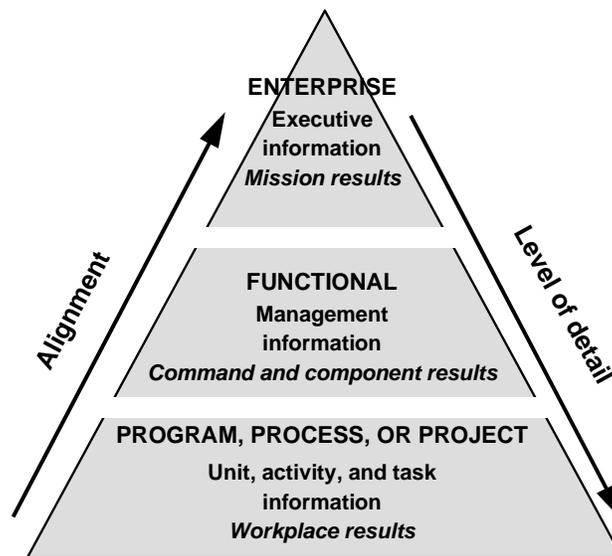
Supply chain managers must operate with full understanding of the applicability and utility of the metrics they are tracking.

Figure 9-2 shows three levels of DoD performance measurement.⁴ The top level of the pyramid is the enterprise level. This level should

⁴ Logistics Management Institute, *Logistics Functional Requirements Guide*, Report LG806S2, James Reay and Jim Kimberley, August 1998, 5-13.

encompass the comprehensive supply chain metrics. The next level of the pyramid is the functional level (e.g., supply, maintenance, and transportation). The bottom level of the pyramid is the process level.

Figure 9-2. Three Levels of DoD Performance Measures



Enterprise metrics measure the overall effectiveness of the supply chain. In this architecture, the metrics are linked. The metrics selected for the enterprise level typically are cross-functional and measure overall performance. Functional metrics are linked to at least one enterprise metric and measure a major function's performance. Through analysis, logistics managers should recognize that successful attainment of valid performance goals at each level of the pyramid should contribute to accomplishment of performance goals at higher levels of the pyramid. Process (e.g., warehousing, requirements planning) metrics are related to one or more functional metrics and are diagnostic in nature. Process metrics are used to monitor day-to-day effectiveness or to assess problems of individual segments of the supply chain but should not be the primary focus when managers review overall supply chain performance.

As the SCM team constructs the organization's supply chain design, mechanisms to collect, summarize and evaluate the enterprise metrics data must be fully integrated into the process, and the management

information capability to provide metrics performance reporting to all levels of management must be fully operational.

To be successful, future DoD supply chain managers must adopt an end-to-end strategy for managing the supply chain and continuously focusing on customer requirements. They also must acquire and use the tools necessary to manage supply chain costs and assess progress toward performance objectives. Finally, an effective supply chain manager must recognize where his or her organization is in the path toward the goal of implementing a world-class supply chain operation. This perspective is essential because supply chain managers must recognize that implementation of SCM will be accomplished over time as required changes to current processes are put into place.

Several studies focusing on SCM implementation in the private sector have concluded that there are definable and distinctive stages of evolution in organizations that adopt the SCM approach. Charles Poirier of Computer Sciences Corporation has articulated one of these perspectives.⁵

After conducting a long-term review of several hundred companies engaged in SCM implementation, Poirier concluded that the stages or “levels” of progression are as follows:

- o **Level 1: Sourcing and logistics stage.** At this level, the focus is on individual process improvement initiatives in various areas of logistics management. The objective usually is to redesign or modernize certain segments of the supply chain or to reduce corresponding costs. Projects tend to concentrate on improving internal operations in the organization. Performance metrics tend to be fragmented or not directly related to process improvement efforts. Substantial emphasis is on technological modernization. There may be no overall master plan. Improvement results tend to be marginal.
- o **Level 2: Internal excellence stage.** In this stage, improvement initiatives often are prioritized and tied to improvements in performance metrics. Initiatives are more integrated, and the concept of continuous process improvement is introduced. An

⁵ Charles C. Poirier, *Advanced Supply Chain Management* (San Francisco: Berrett-Koehler Publishers, 1999), 24.

overall strategic plan is developed. Cost savings remain a primary emphasis. Improvement initiatives are still largely aimed at individual processes rather than customer satisfaction. Little attention is given to the total supply chain network. Only limited development of long-term partnerships outside the organization is pursued. Training is largely process or technology oriented.

- o **Level 3: Network construction stage.** This stage represents a major transition in the organizational objectives, culture, and focus of improvement activity. Customer-centered enterprise performance metrics are implemented throughout the supply chain. Partnerships and alliances are developed with external suppliers and customers. Initiatives focus on adding value rather than technological modernization. Process elements are coordinated across all supply chain activities and aim at network performance and total cost reduction. Core competencies are reviewed and evaluated on the basis of maximizing customer satisfaction and contributing to overall supply chain performance. Activity-centered cost models are implemented. Process improvement initiatives are cross-functional, targeting enterprise metrics improvements. Shared data is a common capability. Supply segments of the chain are linked more closely and directly to demand elements to minimize cycle times, increase accuracy of requirements, and eliminate non-value-added activity.
- o **Level 4: Industry leadership stage.** At this stage, the organization becomes the supplier of choice to the vast majority of its customers. World-class performance is identified through benchmarking, and the supply chain moves significantly closer to meeting these high levels of performance and value. Traditionally compartmentalized and narrowly focused attitudes are changed through value-oriented training programs. The global communications network and integrated databases extend from supplier to customer organizations and encompass all supply chain elements. Cultural values are modified to promote innovation and imaginative thinking at all levels. Customer support is highly customized.

Nearly all DoD logistics organizations now operate at level 1 or, to a minimal degree, level 2. The transition from level 2 to level 3 is by far

the most difficult in an organization's progression toward fully implementing SCM at level 4. In fact, relatively few private-sector companies have made this transition successfully. The SCM team and the managers of the logistics organization should make an objective and realistic appraisal of the status of their supply chain transformation program as soon as possible. Unfortunately, in any organization there often is a strong tendency to set lower targets to assure success. Sometimes, political realities or other factors require such machinations. As Abraham Lincoln said, however, "You can fool some of the people all of the time; all of the people some of the time; but you cannot fool all of the people all of the time." Nor should DoD logistics managers fool themselves.

The road to implementation of SCM in DoD promises to be long and challenging. An unbiased assessment of the location of the starting point is essential for responsible logistics managers to make rational and effective decisions regarding the major investment in time and resources required to implement SCM. In the private sector, only a small number of leadership companies have reached the pinnacle of success in the supply chain hierarchy. Clearly, there is still plenty of room at the top.