

operational, tactical, and strategic.<sup>2</sup> Operational and tactical decisions generally involve choices or decisions about current business processes. Although strategic decisions may relate to the current business process, they often focus on significant changes that are required to alter the direction of the enterprise, its basic objectives, its organizational structure, or its way of doing business.

SCM implementation in DoD is a strategic decision. It is a fundamental change in the way the Department accomplishes its material support to the warfighting customer. The SCM implementation team must approach its task from a strategic perspective. SCM implementation does not involve merely acquiring new software, shortening processing cycles, and dealing with suppliers and customers in a new way. The key to successful implementation of SCM in DoD is identification and, ultimately, integration of key elements of the supply chain into an effective end-to-end process. This integration factor is the single most essential characteristic of SCM.

### **STRATEGY 1: DETERMINE DESIRED PERFORMANCE METRICS**

In documenting the strategy for SCM implementation, the team must identify and stay focused on strategic changes required to accomplish the transition to the desired supply chain environment. As Figure 5-1 shows, the implementation strategy begins with the determination of supply chain performance metrics.

Leading organizations today are rigorously assessing their supply chain performance by establishing a baseline profile, identifying strengths and weaknesses, and targeting opportunities for improving service while reducing costs. Doing that requires a structured program that evaluates current performance and sets a future path.<sup>3</sup>

In their efforts to develop meaningful supply chain measures in the private sector, world-class companies have recognized factors that help quantify significant process improvements that directly benefit customer service levels and reduce operational costs.

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<sup>2</sup> Donald Hicks, "Next Generation Supply Chain Strategic Planning Technology and Applications," Achieving Supply Chain Excellence through Technology (ASCET) Project, Andersen Consulting.

<sup>3</sup> John M. Hill, "Grading Your Supply Chain," *Modern Materials Handling*, November 1, 1999.

To assess the performance of the supply chain and its component processes completely and accurately, the implementation team should adopt objective performance measurement information. Examples of such areas include the following:

- υ Accurate identification of products and services offered
- υ Sales volume
- υ Product/service cost
- υ Quality
- υ Customer service
- υ On-time delivery
- υ Cycle times
- υ Asset utilization
- υ Responsiveness

The SCM implementation team must advocate the strategic decision to transition the organization's supply chain from existing functionally oriented performance metrics to customer support metrics and total process cost measures. The team also must lead the effort to obtain management approval of the proposed supply chain metrics. Ultimately, metrics will be required for the full spectrum of supply chain segments. As the implementation effort progresses, high-level performance/cost metrics will be developed and supporting or diagnostic metrics determined. Diagnostic metrics are measures that relate to specific segments of the supply chain that must be quantified, managed, and improved to ensure achievement of overall performance/cost goals. Initially, however, the team should identify higher-level metrics required to monitor the overall performance of the supply chain. After implementation, those metrics will become barometers of success for future supply chain operations. To select appropriate metrics, the team should assess the applicability of potential performance measures in light of the following criteria:<sup>4</sup>

- υ Use customer-focused measures to assess how well customer needs are being met.
- υ Link functional performance measures and goals to overall DoD business and mission objectives; promote mutual execution of functional responsibilities and discourage functional conflict.

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<sup>4</sup> U.S. Department of Defense, Deputy Under Secretary of Defense (Logistics), *Logistics Functional Requirements Guide*, August 1998, p. 5–8.

- o Establish process measures that monitor use of DoD resources.
- o Establish baselines to provide a context of historical performance for evaluating improvement initiatives.
- o Establish comparison benchmarks to provide clear performance targets and feedback; facilitate progressive improvement.
- o Establish measures to prevent the cost of information collection and analysis from exceeding the benefits derived.
- o Assist managers in managing current operations and facilitating future planning by providing tools that evaluate program performance, cost, and management; provide a basis for changing the program; support planning, programming, and budgeting.

Management information that currently is available to DoD logistics managers usually falls into one of three categories: workload, current resource expenditure and outputs, and performance compared to standards and goals. Current metrics often focus on performance or resources used by individual segments of the supply chain. As its first action, the SCM implementation team must identify and support measures that will give DoD logistics managers, suppliers, and customers a consistent and quantified picture of total supply chain performance and related costs. Although no single set of performance measures is universally appropriate for every organization or every process level, significant strides have been made toward identifying basic enterprise-level supply chain metrics for DoD activities. Once metrics are identified and a baseline of credible data is accumulated, the team will use these metrics to help design the process that will deliver the required level of performance in future logistics operations. We propose that the SCM implementation team begin with metrics that have been developed through recent research that uses the “balanced scorecard” approach<sup>5</sup> and industry experience as documented by the Supply Chain Council in its SCOR model. The balanced scorecard approach requires measures in the following areas:

- o Meeting the strategic needs of the enterprise

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<sup>5</sup> Robert S. Kaplan and David P. Norton, “The Balanced Scorecard—Measures that Drive Performance,” *Harvard Business Review* 70, no. 2 (January–February 1992).

- Meeting the needs of individual customers
- Addressing internal business performance
- Addressing process improvement initiative results.

A more detailed listing of performance metrics suggested by the Supply Chain Council is included in Appendix D. These metrics will be useful as the SCM team explores the supply chain design in greater detail. Initially, however, the team should focus on developing and obtaining approval for a concise set of enterprise metrics that are oriented to total supply chain performance.

A study by the Logistics Management Institute (LMI) applied the balanced scorecard concept to basic industry-oriented performance and cost measures as documented in the SCOR model.<sup>6</sup> LMI's study assessed numerous factors that are applicable to the military supply chain and recommended a set of performance measures developed for DoD use:

*Perfect order fulfillment.* A perfect order meets the following standards:

- Delivered complete: all items delivered in the quantities requested
- Delivered on time, using the customer's definition of on-time delivery
- Complete and accurate documentation (including packing slips, bills of lading, and invoices) to support the order
- Delivered in serviceable condition and in the correct configuration to be used by the customer; correctly installed (as applicable).

*Supply chain response time.* The total average length (measured in days) of the supply chain. This metric is derived from the average plan, source, maintain (repair), and deliver cycle times. Generally speaking, the "best" supply chains are the "shortest" supply chains. DoD managers recently have focused on a variation of supply chain response time: "customer

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<sup>6</sup> Logistics Management Institute, *DoD Supply Chain Management: A Recommended Performance Measurement Scorecard*, Report LG803R1, Larry Klapper et al., March 1999.

wait time” (CWT). The CWT measure also captures the time from input of the customer requirement to delivery of the required materiel.

*Percentage change in customer price, compared to inflation.* This customer-focused cost metric measures the combined impact of material costs (getting the best price) and SCM costs. The metric would be computed by using a “market basket” approach similar to that used to compute the consumer price index.

*SCM costs as a percentage of sales (at standard price).* This metric is a measure of overhead to operate the logistics system with respect to the amount of materiel that moves through it. SCM costs include costs for the supply chain-related management information system, finance and planning, inventory carrying, materiel acquisition, and order management.

*Weapon system logistics costs as a percentage of the acquisition price (adjusted for inflation).* This metric represents the cost of ownership of individual weapon systems as a function of their acquisition price.

*Inventory turns.* This metric is total sales at acquisition price divided by the value of inventory at acquisition price; it measures how effectively assets are managed. Excluded from the computation are assets held in war reserve accounts (because they are not for peacetime consumption).

*Upside production flexibility.* This metric is the number of days required to achieve an unplanned sustainable increase in production, including repair to support most-demanding current operational scenarios.

*Weapon system not mission-capable (NMC) rates.* This metric represents the percentage of time a weapon system fleet is not mission-capable because of problems relating to supply (lack of parts), maintenance (lack of maintenance resources), or both. NMC rates should be produced for key weapon systems and used with other performance metrics that can be filtered by weapon system (e.g., perfect order fulfillment and supply chain response time).

*War reserve ratio.* This metric is the ratio of war reserve assets on hand to the war reserve requirement. This measure is an indication of readiness to sustain most-demanding current operational scenarios until the industrial base is mobilized (as measured by upside production flexibility).

The LMI report also describes a series of more detailed functional performance metrics that could be used as analytical diagnostics of the enterprise measures outlined above. The SCM implementation team should review the detailed analysis contained in the LMI report and assess the applicability of the proposed measures to its particular supply chain development effort. There are ongoing initiatives within each DoD component to determine the valid family of performance metrics for modernized logistics processes. The SCM team should review and build on these efforts and seek to influence management's ultimate selection of logistics metrics toward measures that will have meaning in the future supply chain environment.

In addition to influencing the selection of enterprise-level SCM metrics, the implementation team should include in its strategic planning an initiative to determine the availability of data required to compute and track trends for these measures. Ultimately, a new or modified corporate data repository should be put in place to act as the authoritative source of the enterprise and supporting functional process measurement history. The SCM team should not necessarily prejudge the technical solution for the metrics data repository. Recent innovations in data warehousing and virtual data storage concepts may lead to significantly different solutions regarding the requirement to provide online, real-time, universally accessible sharing of metrics and other supply chain information. In accomplishing step one of the implementation strategy, the SCM team should concentrate primarily on identifying essential enterprise metrics and assuring that this information is readily available for all appropriate supply chain suppliers, participants, and customers.

### **Strategy 1 Actions**

*Action 1*—Select and define enterprise supply chain metrics and supporting functional measures. Obtain management approval.

*Action 2*—Determine sources and updating methodology of actual metrics data.

### **STRATEGY 2: ASSESS REQUIRED PROCESS CHANGES**

Once the SCM implementation team has made a preliminary selection of enterprise-level performance measures, it should proceed to documenting fundamental changes required to implement SCM. In keeping with the