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CHAPTER

Core Discipline 4: Build the Right Collaborative Model

Collaboration is the cornerstone of effective supply chain management. As companies continue to narrow their strategic focus to a smaller number of core competencies, the skills and talents of outside partners become more critical. This creates a growing reliance on resources that you may not control directly and on strategies that you may have no hand in developing.

A recent survey of more than 100 international business leaders found that as companies migrate toward more extended supply chains, collaboration becomes their most strategic activity.¹ Despite its importance, there is little consensus about what collaboration means. If you asked 100 supply chain executives for a definition, you'd likely get 100 different answers. Certainly most would agree that collaboration is important, that technology and relationship building are critical components, and that companies with effective collaboration skills are likely to have a competitive edge. However, few executives would be able to offer a clear, unambiguous definition.

Why is it so hard to define *collaboration*? Because it can be many things and involve many types of partners. It can refer to a wide range of joint activities, from information sharing among business units to complex, long-term product development and marketing projects. We define *collaboration* as “the means by which companies within the supply chain work

together toward mutual objectives through the sharing of ideas, information, knowledge, risks, and rewards.”

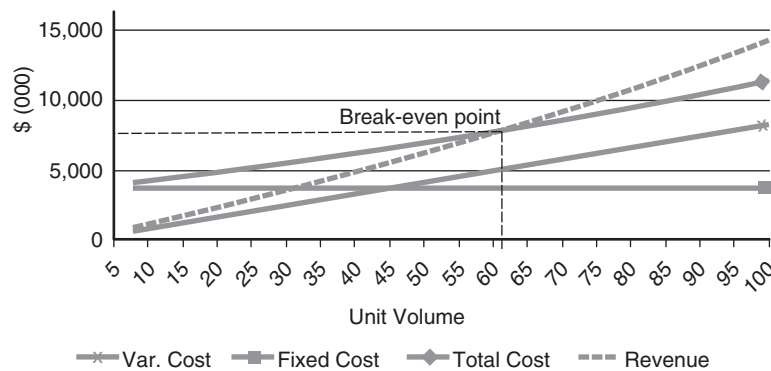
Why collaborate? Very simply, an effective collaborative relationship can have major strategic and financial benefits. It can accelerate entry into a new market, increase flexibility, and provide access to expertise not available within your own company. It can deliver cost savings or increased revenues—or a combination of both. Collaboration is a business arrangement that changes the overall dynamics between two or more partners. Drivers of collaboration include the desire to access

- ♦ A technology owned by another company
- ♦ A technology that is too capital-intensive for one company to invest in alone
- ♦ A competency that is too costly to acquire, develop, or maintain
- ♦ A new market effectively closed off by high entry costs or pre-conditions (trade barriers, legislation, etc.)

Collaboration changes the most fundamental of all economic models—the relationship among cost, volume, and profit (C/V/P). For example, a company that needs specialized, capital-intensive equipment for production of a key component might have a C/V/P model with high fixed costs and low per-unit variable costs, as shown in Figure 4-1. This company needs a high volume of sales to be price-competitive and profitable. If an economic recession cuts into volume, the company could soon be operating at a loss.

FIGURE 4-1

C/V/P model with high fixed costs.



Collaborating with a partner that focuses on the production of specialized materials similar to the component might allow this company to offload some of its fixed costs, as shown in Figure 4-2, but with an accompanying increase in variable costs associated with the increase in the level of external sourcing. To make this approach pay off, the company must be willing to share any proprietary technology needed to manufacture the component, and its collaboration partner must be willing to invest in developing the additional capabilities needed to produce it. Since break-even volume is lower, the company can compete across a wider range of volumes—albeit at the expense of gross margin at high volume.

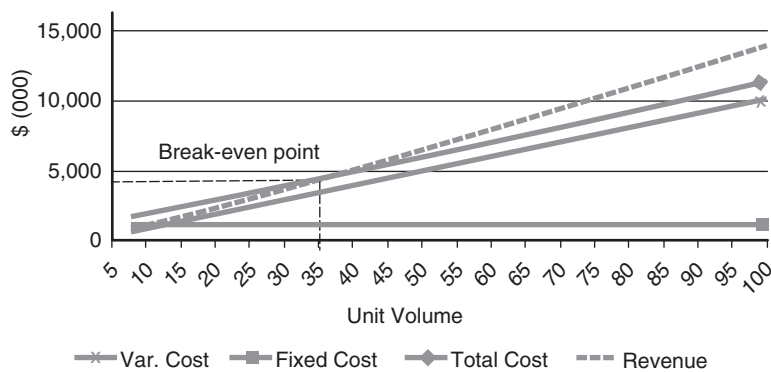
Ongoing collaboration on product designs and production planning can make the company even more agile while continuing to add volume to the specialized manufacturer's business. Both collaboration partners will benefit economically.

As you can see, collaboration is *not* an altruistic activity. While it may seem a best practice to provide “seamless integration” and “extended visibility” to your supply chain partners, the fact is that true collaboration is very difficult, and there's no point in doing it unless you can achieve financial or strategic gain. For collaboration to be truly successful, therefore, it must deliver quantifiable economic benefit to all partners.

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FIGURE 4-2

C/V/P model after outsourcing some fixed costs.



Despite the highly touted benefits shown in Figure 4-3, supply chain collaboration has the dubious distinction of being one of the most sought after but disappointing aspects of supply chain strategy. What's going on? To start with, the promise of effective, efficient collaboration is based on Internet technology and its ability to provide new levels of visibility and information sharing. The Internet bubble of the late 1990s gave rise to hundreds of software products that promised seamless interaction and endless visibility among supply chain partners.

Do these tools work? Some do, and some don't. Technology doesn't ultimately determine the success or failure of a collaborative relationship. Nor do the underlying processes that govern the use of technology—at least not on their own. Successful collaboration requires two additional components: sharing information and sharing benefits.

Information is at the heart of any collaborative relationship. To collaborate effectively, all partners must provide timely, accurate, and complete information—whatever is needed to achieve their mutual objectives. And each partner must respect the confidentiality and security requirements of the other. Mutual trust is key to a successful collaboration. Just as important, each partner must commit to a joint sharing of benefits—not necessarily an equal sharing but an equitable sharing. The success or failure of a collaborative relationship depends on clearly identified mutual gain.

FIGURE 4-3

Commonly cited benefits of collaboration.

Customers	Material Suppliers	Service Suppliers
<ul style="list-style-type: none"> • Reduced inventory • Increased revenue • Lower order management costs • Higher gross margin • Better forecast accuracy • Better allocation of promotional budgets 	<ul style="list-style-type: none"> • Reduced inventory • Lower warehousing costs • Lower material acquisition costs • Fewer stockouts 	<ul style="list-style-type: none"> • Lower freight costs • Faster and more reliable delivery • Lower capital costs • Reduced depreciation • Lower fixed costs
<ul style="list-style-type: none"> • Improved customer service • More efficient use of human resources 		

COLLABORATION IS A SPECTRUM

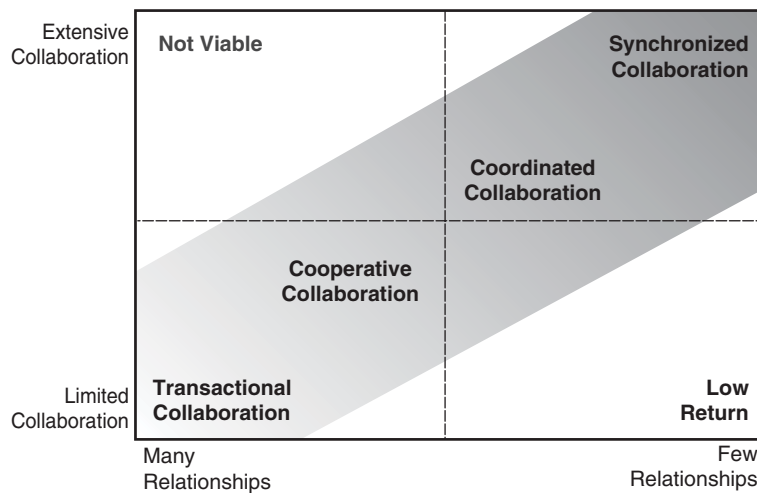
Potential collaboration partners in supply chain management can be classified in three broad groups—customers, materials suppliers, and suppliers of services that support supply chain operations, such as manufacturing and logistics. Although each group requires a slightly different management approach, the relationships are established and maintained in similar ways.

Not all collaborations are created equal. Relationships between supply chain partners can have very different characteristics and still be considered collaborative in nature. And the results of collaborative relationships may vary widely from one set of partners to another. Figure 4-4 offers a framework for differentiating the various types of collaborative relationships and defining the basic characteristics of each. The horizontal axis plots the relative number of relationships, whereas the vertical axis measures the relative depth of collaboration. Within this framework, we define four levels of collaboration:² transactional, cooperative, coordinated, and synchronized.

Note that the boundaries between the different levels of collaboration are blurred. This is so because collaboration is a continuum, not a set of clearly delineated management practices. Note, too, that the dimensions of the two axes are inherently subjective and are used simply to

FIGURE 4-4

The collaboration spectrum.



provide a clear graphic view of the collaboration spectrum. Other models use different criteria, such as level of investment or dependence on technology, to describe the depth and breadth of collaborative relationships. It's possible to create a matrix using any combination of these criteria or even to apply a multidimensional approach.³

The point is not to worry about picking the right labels for your collaborative relationships but to examine the various characteristics that differentiate each partnership. First, choose the degree to which each characteristic contributes to the likely success of the collaborative relationship, and then put a plan in place to achieve it. Every customer-supplier relationship can involve some level of collaboration. The fact that you're buying from a specific supplier or selling to a specific customer implies a relationship between your two companies, but it doesn't necessarily mean that you are collaborating. And just as not all relationships are created equal, not all collaborations are created equal.

Before setting off to systematically establish collaborative relationships with your supply chain partners, take the time to understand the degrees of collaboration along the spectrum and your company's specific needs. Often, a small number of deeply collaborative relationships is preferable to multiple relationships with a wide range of partners. Later in this chapter we'll discuss how to decide which degree of collaboration to set up with each supply chain partner.

Transactional Collaboration

Transactional collaboration aims for the efficient and effective execution of transactions between partners. This isn't to say that transactional relationships between supply chain partners offer no strategic value. However, partners in a transactional relationship rarely focus on reducing supply chain management costs or increasing revenues. The focus is usually on improving the ease at which transactions are conducted—for example, by eliminating the need for constant renegotiation. Transactional collaboration usually applies to customer-supplier relationships in which common or maintenance, repair, and overhaul (MRO) materials are purchased, and the decision to deal with a supplier is based mainly on price. With less strategically important supply chain partners, companies tend to focus on minimizing the effort associated with day-to-day transactions rather than on developing long-term relationships.

Transactional relationships rarely require sophisticated information systems. Indeed, many companies involved in this type of relationship lack the systems and infrastructure needed to provide and

respond to information electronically. Because of this, many transactions are manual.

An example of a transactional relationship is any time a customer and a supplier agree to a set price for a specific product over a set period of time or until a certain purchase volume is reached. The buyer gets a fixed price over the life of the agreement in exchange for purchasing a minimum quantity of products; this also helps the seller's production planning. Transactional collaboration is the most basic and by far the most widely used collaboration model.

Cooperative Collaboration

Cooperative relationships have a higher level of information sharing. Supply chain partners may provide automatic commitments and confirmations or share information on forecasts, inventory availability, purchase orders, or order and delivery status. Usually, one partner posts information that the other partner reviews and acts on—

a one-way communication in which data are sent either manually or electronically (“pushed”) from one partner to the other or published in a manner that's accessible by the recipient (“pulled”).

In a cooperative collaboration, the type and format of data provided usually are standardized. While more sophisticated technologies are available, electronic data interchange (EDI) is the primary method of communication used today, through either a proprietary EDI network or the Internet. For companies without an EDI capability, Internet-based supplier portals or extranets are an excellent alternative. Most of these tools enable document and content management and include embedded workflows to automate the routing of documents, forms, and certain data and tasks.

Cooperative relationships have a higher level of information sharing.

Coordinated Collaboration

In a coordinated relationship, supply chain partners work more closely together and rely more on each other's capabilities. As such, a coordinated relationship requires a two-way flow of information between partners and tightly synchronized planning and execution processes. Because the infrastructure and processes needed to support this type of information sharing are more complex than in the cooperative model, coordinated collaboration usually is reserved for more strategically critical supply chain partners.

Coordinated collaboration requires a high level of negotiation and compromise.

Unlike transactional and cooperative relationships, coordinated collaboration requires a high level of negotiation and compromise. Given the more strategic nature of these partnerships and the high level of data sharing, proprietary systems are needed for exchanging information. Because of this complexity, a coordinated relationship requires a long-term commitment by both partners and is rarely undertaken lightly.

Putting the required processes and tools in place takes time and money; the expectation is that both parties will benefit from the expected efficiencies created as part of the ongoing execution of the relationship.

Vendor-managed inventory (VMI) programs are a commonly used method of coordinated collaboration. In a VMI relationship, the supplier is responsible for making sure that the customer never runs out of materials. While some VMI programs are manual—the supplier walks through the customer’s site to monitor inventory levels—most programs in place today are automated. In some cases, the supplier can remotely manage inventory at the customer’s site based on forecasts and usage. In other cases, the supplier uses current consumption rates and inventory levels to determine if more inventory is needed. In either case, effective data transmission is the key to successful VMI, a hallmark of coordinated collaboration.

Synchronized Collaboration

The greatest degree of collaboration on the spectrum occurs at the upper right quadrant of our framework—synchronized collaboration. In this model, the collaborative relationship moves beyond supply chain operations to include other critical business processes. Partners may invest in joint research and development projects, supplier development, and intellectual property (IP) development. The sharing of both physical and intellectual assets may even extend to shared personnel. Synchronized collaborations are often called *strategic alliances*.

In a synchronized relationship, information is developed jointly rather than just transmitted or exchanged.

In a synchronized relationship, information is developed jointly rather than just transmitted or exchanged. Moreover, synchronized collaboration tends to focus on a

strategic vision of the future rather than on near-term planning and tactical execution. Long-term commercial commitment is a hallmark of this type of collaboration.

Development projects that consider supply chain requirements when developing the product strategy are good examples of synchronized collaboration. A company that includes key materials suppliers or manufacturing partners as an integral part of its development team is far more likely to have product designs that are compatible with best-in-class supply chain performance. Unlike other types of collaboration, in which partners are apt to exchange product data, synchronized relationships usually include a shared product data management system.

FINDING THE RIGHT PLACE ON THE SPECTRUM

Each relationship with a supply chain partner has its own place on the collaboration spectrum. As you architect your collaboration strategy, you must identify which partners are best suited for each type of relationship. The collaboration spectrum offers a set of options—there’s no “right” or “wrong” place to be along the diagonal. But there are areas within the matrix that should be avoided when choosing a collaboration model (see Figure 4-4).

First, there’s the area labeled “Low Return.” In this quadrant, companies collaborate on a limited basis with a set of supply chain partners. The investment and risk involved in this model are relatively low—and so is the return. While financial benefits certainly can accrue from limited collaboration, the “Low Return” model is not a commercially effective basis for a collaboration strategy, for the benefits are not worth the required investment.

The second area to avoid is that labeled “Not Viable.” In this quadrant, the objective is deep collaborative relationships with many supply chain partners. Interestingly, developers of collaboration tools often describe this as the optimal model, asserting that advanced technologies enable collaboration that is both broad (many supply chain partners) and deep (extensive collaboration with each). While this level of integration is possible theoretically, it’s not practical—mainly because aligning a large group of partners with your business objectives is extremely difficult.

Despite the hype around technologies that claim to support flawless integration among supply chain partners, most of today’s collaborative relationships are transactional or cooperative. They tend to focus on basic supply chain activities—typically procurement and manufacturing. And even though transactional and cooperative relationships are considered

“collaboration,” they rarely deliver the benefits of lower inventory levels, better customer service, more efficient use of human resources, and faster, more reliable delivery. Why not? Because the investment required of each partner is low, and the resulting value is not enough to advance either company’s strategy, enable entry into new markets, or provide access to new technologies or skill sets. Transactional collaboration and cooperative collaboration simply deliver modest improvements in how day-to-day transactions are executed.

This is not to say that transactional and cooperative relationships are without value. They’re merely a first step in developing more complex, strategic relationships that create a true bond between partners. Advanced collaboration needs a greater investment, continuing maintenance, and ongoing vigilance against circumstances that could harm the relationship.

As companies move away from the traditional model of vertical integration, the need for deeper collaboration with select supply chain partners intensifies. Deciding to divest an internal competency doesn’t eliminate the need—it simply moves the source of the competency beyond your company’s direct control. As we saw in Core Discipline 3, the ability to manage these external relationships successfully can become a critical competency.

It’s a major challenge to balance what’s theoretically possible, what’s needed to support the business strategy, and what’s practical in terms of managing day-to-day operations. The fact that the collaboration spectrum is different for every company means that what’s “optimal” in terms of number and type of collaborative relationships varies widely. Although most companies today are still a long way from their optimal range, the number of cooperative and coordinated relationships is growing (see Figure 4-5). The ability to reach an optimal state of collaboration is limited by the availability of partners prepared to work with you.

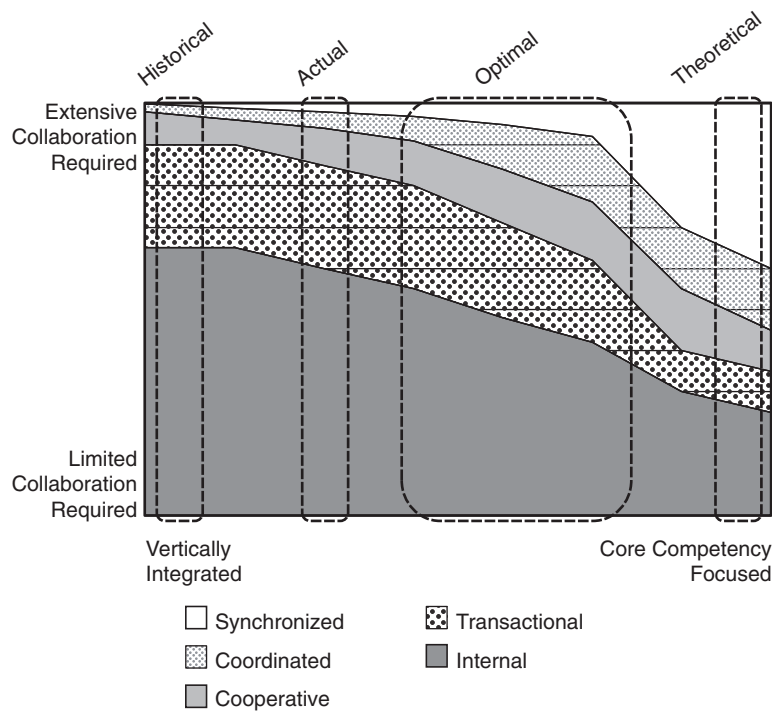
THE PATH TO SUCCESSFUL COLLABORATION

Your success depends on the ability of both you and your partner to execute according to your mutual agreement. While every partnership is different, the following guidelines for success apply to all:

- ◆ Master internal collaboration before trying to work with external partners.
- ◆ Define the appropriate degree of collaboration for each partner segment.

FIGURE 4-5

The evolution of collaboration.



- ◆ Be sure that each party has a stake in the outcome of the collaboration. Share benefits, gains, losses, and risks.
- ◆ Be prepared to share information you once considered proprietary. Mutual trust is integral to successful collaboration.
- ◆ Set clear expectations for each party.
- ◆ Use technology to support your collaborative relationships.

Master Internal Collaboration First

If you can't collaborate within the four walls of your own company, your chances of success with external partners are small. Internal collaboration helps to test your company's "readiness" to achieve common goals by aligning processes, systems, and organizational structures—all in a low-risk environment. And internal success provides proof positive that the benefits of collaboration are real.

A key requirement of effective collaboration is shared metrics, but all too often these are missing.

The fact is that many companies don't collaborate particularly well, even internally. Departments or functions may be unwilling to compromise, even if a proposed concession is for the greater good of the company. The idea that successful collaboration will result in lower overall costs or improved service levels can be difficult to substantiate, so it may be viewed with skepticism. A key requirement of effective collaboration is shared metrics, but all too often these are missing.

Internal collaboration actually can be more difficult than external collaboration due to a range of complicating factors. For instance, a drive at the highest levels of a company to institute accountability for performance at the business unit or functional level can hinder effective collaboration. Moreover, complex systems for setting transfer prices and cross-charges are designed to allocate costs fairly across the company as a whole but often promote functional performance at the expense of enterprisewide cost performance. And reward structures that link individual compensation to business-unit performance can reinforce business-unit autonomy. These measures can be counterproductive, eliminating many of the key benefits of collaboration: economies of scale and scope, greater efficiency, knowledge sharing, and less duplication of effort.

Articulating the benefits of collaborating with external partners also may be easier than making the case internally. Collaborating with a customer, for instance, can increase revenues and deliver greater customer satisfaction. Collaborating with suppliers can decrease costs, shorten response times, improve reliability of supply, and lower inventory levels. Internally, the benefits may not be as clear.

Why forecast by item instead of product family, for instance? The greater the level of detail, the easier it is for the supply chain organization to plan for material supply and ensure product availability. For the sales group that prepares the forecast, though, this added detail may seem like extra work with no clear benefit. The supply chain organization needs to quantify the inherently qualitative reasons for changing the process and to get the sales force to buy into it.

Finally, business units or functions may have incompatible information systems. Without a common data platform, shared functionality, and standardized metrics, these disparate systems can block effective collaboration.

Despite these challenges, internal collaboration is worth the effort. It can confer a competitive edge—and lay the groundwork for external

collaboration. First you'll need to dispel the perception of internal collaboration as a zero-sum game, where one department's gain is another's loss. This means modeling and clearly articulating the benefits to your company as a whole and making sure that your existing infrastructure doesn't discourage collaboration because of a real or perceived negative impact on a function or business unit.

Logitech is a company where the need for internal collaboration is obvious. It's an international market leader in personal interface products such as computer mice, keyboards, interactive entertainment peripherals, and audio products. The company has a very strong brand presence, selling its products in tens of thousands of retail outlets in over 100 countries, as well as on hundreds of Web-based retail sites and through relationships with original equipment manufacturers (OEMs). Logitech excels at high-volume manufacturing and distributes its products worldwide. The company's supply chain strategy mirrors its emphasis on award-winning designs and price performance and has led to the creation of a highly efficient company-owned manufacturing facility, as well as relationships with numerous supply chain partners, including original device manufacturers (ODMs) and packaging houses. The company's primary manufacturing facility and the majority of its suppliers are located in Asia.

Logitech's product line is both broad and deep. This complexity, combined with the fact that most production is done in a region of the world far removed from many of the end customers, places tremendous emphasis on the need for excellent planning and efficient processes to move products from manufacturing sites to regional distribution centers.

As is typical of many sellers of retail products, Logitech relies on attractive packaging to catch the customer's eye. "Packaging is very important to us," explains Nolan Perry, director of project management services. "The package is really an extension of the product itself. It needs to showcase the product while projecting an image consistent with our strategy of high quality and ongoing innovation." For many products, this means form-fitted, clear packaging that highlights the product's look and feel from any angle. The package also needs to be well suited to retailers' displays, for it may need to stand on a shelf or hang from a rack.

This emphasis on appearance can conflict with "efficient" supply chain operations. Moving product from Asia to other regions of the world is facilitated by easy stacking on pallets and optimization of the quantity that can be accommodated in a standard shipping container. Gray Williams, Logitech's vice president of worldwide supply chain, says, "Unfortunately, what is good for the retailer isn't always good for product distribution. Retail packages come in odd sizes and shapes, and this can make them hard

to fit on a pallet or in a shipping container. Sometimes, a very small adjustment in the packaging dimension can make the difference between fitting 200 units on a pallet or fitting 250.”

This sounds like an easy change to make, but at Logitech, decisions about the look and feel of packaging are the domain of marketing, not the supply chain group. As Perry notes, “Everyone understands the need to keep operations costs low, but not if it means the products don’t sell as a result.” Not only that, but once a product has been sold in a particular package, it is very difficult to modify the design. “Retailers see a packaging change as a whole new product,” says Perry, “so they may want to exchange anything they already have on hand for the ‘updated’ version of the product. That can be extremely expensive for us. We need to get it right the first time—and that wasn’t always happening.”

The process for packaging design was never intended to be serial, with a handoff from marketing to the supply chain group after the design was finalized; it just evolved that way. The solution for Logitech was close collaboration between the supply chain and marketing functions and early involvement of the supply chain group in the product development process. It also meant compromises on both sides. “Our job is to take the desired packaging design and find the most cost-effective way to source and distribute it,” says Williams. “It isn’t to second-guess the design. But we want the marketing team to be open to making concessions that can make distributing the product more efficient.”⁴

A focus on collaboration between the marketing and supply chain organizations resulted in packaging that allows Logitech to get products to customers as efficiently as possible while remaining a reflection of the innovation and quality of the products within.

Define the Appropriate Degrees of Collaboration (i.e., Segment)

A world in which your company is tightly linked to all its supply chain partners—customers and suppliers alike—is highly appealing but virtually impossible and not likely to be very cost-effective. Intensive collaboration is complicated, challenging, and costly, requiring a major investment in resources, processes, and systems. Moreover, not all customers are equally profitable and not all suppliers are equally valuable. And many potential partners may not be capable or even willing to support the level of collaboration you want. Therefore it makes sense to segment your partners before embarking on a collaboration program—much like marketing professionals segment their target customers.

This means deciding on a segmentation approach. No doubt you have a list of customers, suppliers, or commodities that you consider “key” or “strategic.” But what factors cause you to label them as such? Size of company? Price of materials or services? Their dependence on you—or you on them—as a buyer or supplier? Their value to you in terms of revenue generation?

Segmenting supply chain partners is critical to effective collaboration. No matter how much or how little value they contribute to your company, all potential partners have an appropriate place along the collaboration spectrum. Basing your decision of whom to collaborate with on a simple ranking of who your most valuable suppliers, service providers, and customers are is inherently risky.⁵

A better approach is to consider several partner-selection criteria weighted according to your specific needs:

- ◆ *Strategic importance.* How essential are the potential partner’s size, business volume, technology, expertise, materials/components, or market position?
- ◆ *Cultural fit.* How compatible are your people and values, and how well will you work together? Are you equally committed to the relationship, even though business conditions may change? Is there mutual trust?
- ◆ *Organizational fit.* Can the partner respond quickly and fully to requests for information and materials? Is the partner flexible enough to adapt to changes in demand or supply? Are the roles and responsibilities in place for managing a long-term relationship?
- ◆ *Technology fit.* Are your systems compatible and easily integrated? Do you have the same degree of technical sophistication? Are you equally willing to share technologies and innovative solutions? Can your partner provide accessible, integrated data?

Choosing partners is made much more complex by the need to assess the selection criteria along two dimensions: the category of relationship (customer, material supplier, or service supplier) and collaboration type (transactional, cooperative, coordinated, or synchronized).

The best approach is to create an assessment framework before approaching any partners. Start by listing the conditions that a partner must meet to be considered for each collaboration type. To make sure that you’re being objective, develop criteria that are clear and unambiguous. Know how many partners of each type you want to have, based on the needs of your business or previous experience with collaboration. Then

rank the prospective partners by how well they meet the different criteria. You may create a list of “must haves” and eliminate any partners that fail to meet these criteria.

Alcatel, a global manufacturer of telecommunication products and services, applied a deliberate segmentation strategy when it set up collaborative relationships with several major customers and suppliers. In the company’s own words, a relationship with Alcatel “can enable a partner to focus on its own core competencies rather than worrying about the reliability of its telecommunications infrastructure.”⁶

In late 2001, in the midst of a contracting telecommunications equipment market, Alcatel management conducted a comprehensive assessment of its existing planning process. The assessment showed that component suppliers often relied on outdated information from Alcatel in their own production plans. The problem stemmed from a serial, disjointed forecasting process that involved multiple supply chain partners. Alcatel fed its customers’ forecasts into its demand-planning cycle. Planning data were then provided to the company’s contract manufacturers, who had their own planning processes. Finally, up to six weeks after the customers’ forecasts were received, the data—by then out of date—were sent to component suppliers. Moreover, the participants in the process all applied their own interpretations of what actually was needed. By the time responses were received from suppliers, the perceived reality and the accompanying supply plan had very little relationship to the original marketplace demand.

The company had a clear opportunity to better match supply with demand by improving collaboration with its supply chain partners. Notes Burt Rabinowitz, Alcatel’s vice president of sourcing and procurement, “We realized that our supply chain can only respond when it is synchronized with the supply chains of our key trading partners. We needed to jointly address the ‘pinch points’ in the supply chain—the points at which information flows from one supply chain partner to another. To do that, we needed to involve our key trading partners.”

The management team developed a short list of companies considered highly important because they either provided a large volume of business or supplied unique or critical materials to the company. The team then ranked prospective collaboration partners based on three primary criteria: business volume, technical sophistication and innovation, and partner loyalty and willingness. The partners chosen included a major customer and its primary contract manufacturer, primary electronics distributor, and several suppliers of custom ASICs (application-specific integrated circuits) and optical devices.

To initiate the relationships, Alcatel management invited executives from each prospective partner to participate in a business outlook forum. The executives discussed the impact of the severe market changes on their business and how their companies could better collaborate to streamline processes and lower costs. Another goal of the forum was to assess more subjective criteria—including cultural fit and seeming willingness to commit to a collaborative relationship.

“We knew that the key to greater supply chain flexibility would be to better understand the process handoffs and then augment the existing systems with deeper, collaborative processes,” says Danny Wade, senior vice president for quality. Wade notes that applying this approach to all customers and suppliers would not have been practical. “We were very deliberate in crafting our ‘guest list.’ We needed to make sure each partner recognized that we were all in this together, and we needed to avoid unnecessary complexity.”

By the end of the forum, each executive had committed to finding better ways to collaborate and to developing a conceptual design for a coordinated collaboration model to address forecasting, order management, inventory visibility, and performance measurement. The model would include roles and responsibilities, process flows, business interfaces, and operating rules, in addition to information technology (IT).

Then Alcatel senior managers worked with the partners to define the detailed guidelines needed to support the conceptual design. Finally, Alcatel piloted the collaboration model with a key product that created demand for the partner companies, had market momentum, and required the coordination of both internal and external manufacturing operations. Some of the partners helped Alcatel with supporting IT solutions to augment the process guidelines, including new reports, additional logic, and Web-enabled views into work in process. All partners agreed to share data, synchronize their planning calendars, and respond to standard demand requests within three business days.

The new collaboration model reduced planning cycle times by 50 percent and sharply reduced end-to-end inventories. “We’re able to better match our supply to our customer’s demand,” says Mike Quigley, chief executive officer of Alcatel USA. “More important, by involving customers in the problem definition, solution, and pilot, we increased their commitment to broader improvement initiatives. They’re excited about working with us, and we’re enjoying a closer business relationship—one based on facts, not feelings.”⁷

Share Benefits, Gains, and Losses

Our definition of collaboration includes the concepts of mutual objectives and of sharing risks and rewards. Formal gain sharing is a well-known way to distribute the financial benefits of a business relationship. In gain sharing, each partner agrees to work toward lower overall costs and to share the savings. The specifics usually are detailed in a legal contract.

Gain sharing can be a highly effective incentive for continual cost reduction and improvement of services, and there are numerous approaches for implementing a gain-sharing strategy. While we have seen many examples of effective partnerships based on gain sharing, a collaborative relationship can be mutually beneficial even when it is not based on tangible cost savings.

Consider the relationship between Dow Corning and Cabot Corporation. Dow Corning is equally owned by the Dow Chemical Company and Corning, Inc., and is one of the world's largest producers of silicon and silicone-based technologies, offering more than 7000 products and services.⁸ Cabot is a \$1.5 billion plus global specialty-chemicals company. Its primary products are carbon black, fumed silica, inkjet colorants, plastic masterbatch, oilfield drilling fluids, and tantalum capacitor materials.⁹

In the world of specialty chemicals, one company's by-product is another company's key ingredient. Such is the case with Dow Corning and Cabot, and the two companies have established a collaborative relationship that demonstrates clearly how each company's results can be tied to its trading partner's performance.

Dow Corning is a major producer of purified silicon for the silicon wafer industry using a process that results in a by-product known as silicon tetrachloride or chlorosilane. Silicon tetrachloride is a key ingredient used in the manufacture of fumed silica, one of Cabot's key products. Dow Corning uses 20 different grades of fumed silica as a key "filler" ingredient in its sealant (silicone caulking) product line.

The relationship between the two companies is so strong that two of Cabot's primary plants are located directly adjacent to Dow Corning's, and material is transferred between the two entities through a shared infrastructure. To make the process work properly, Dow Corning and Cabot production managers meet to discuss production plans on a daily basis. Dow Corning managers identify the expected amount of silicon tetrachloride that will be made available and the amount and grade of fumed silica that will be required. In response, Cabot identifies the amount of silicon tetrachloride that it will be drawing from Dow Corning and the grades of fumed silica that will be available. If sufficient quantities of the desired

grade are not available, both sides negotiate until a mutually acceptable solution can be developed. The production schedules for each company are then adjusted in response to these inputs.

An additional indication of how tight this relationship is can be found in how each partner pays for the material used. Each company monitors the volume of product flowing between the factories. At the end of each month, the aggregate data are reviewed, any discrepancies are reconciled, and a summary invoice is produced. Since prices are set during negotiation, only the volume requires reconciliation.

An Example of Mutual Gain

Today's technologies offer the opportunity to manage business in ways previously thought impossible or, at the very least, implausible. Even though a capability may be technically feasible, setting up a process that leverages that capability is not always necessary. Indeed, in many cases it is not at all appropriate.

Many effective collaboration strategies are not reliant on technology. Despite the hype associated with business-to-business (B2B) solutions that seems to envelop many supply chain professionals, most companies find that many of their prospective partners simply lack the technical sophistication required to participate in a collaboration process that is based on the use of complex information systems. Remember that transactional relationships are still considered collaborative; just because your systems are not "seamlessly integrated" with every sheet-metal shop and plastics molder who supplies your manufacturing operation doesn't mean that you are not working collaboratively. In fact, relationships all along the collaboration spectrum may be extremely effective but make little or no use of the advanced capabilities offered by supply chain collaboration systems vendors.

Jamba Juice is a San Francisco-based retailer that operates stores in 25 states throughout the United States. The menu at Jamba Juice stores is simple; the chain sells made-to-order all-natural smoothies, as well as a variety of freshly squeezed juices, baked goods, and other snacks. All items are created with the goal of balancing "great flavor" with "powerful nutrition."¹⁰

Jamba Juice's suppliers include large fruit and vegetable growers. The company establishes long-term contracts in order to ensure availability of supply. "We can't strike a deal with Mother Nature herself," explains Joe O'Neill, Jamba Juice's chief financial officer, "so we have to get creative when it comes to getting as close as possible to guaranteed availability of the produce we need." And Jamba needs a lot of produce—the

company uses more than 10 million pounds of frozen strawberries, 6 million pounds of frozen bananas, and 27 million pounds of fresh oranges every year.

While this may sound like a huge quantity of fruit, Jamba Juice competes for the growers' attention with many other companies, such as beverage manufacturers who sell fruit-based products and large producers of other products with high fruit content, such as pies and jams. In addition, the same growers who supply fruit for these companies also sell to supermarkets and restaurant industry distributors.

Strawberries are a particular challenge in that they are a very popular choice among supermarket shoppers. The supermarket channel also offers the greatest margin for the growers, so it is no wonder that of the 1.4 billion pounds of strawberries produced each year within the State of California, approximately 75 percent are harvested for the fresh market, whereas only 25 percent are frozen for the processed market.¹¹ There is a common perception that a strawberry's size is directly related to its taste and sweetness, with bigger berries considered sweeter and riper. In actuality, a strawberry's flavor is determined by growing conditions (such as weather), stage of ripeness when harvested, and variety. Despite this reality, much of the agricultural research done by grower consortia is focused on breeding fruits that will be appealing to the retail grocery shopper. This means larger strawberries.

The same strawberries that are so appealing to the retail grocery shopper cause major headaches at Jamba Juice. "They're just too big," explains Anne Kimball, Jamba's director of supply chain management. "They are difficult for our blenders to handle, they don't fit in the scoops we use, and the inconsistency in the size results in variability of texture, flavor, and color of our smoothies."

Since Jamba Juice does not have the ability to influence the development of these new strawberry varieties, they have turned to their processors for help. Frozen fruit processors are the produce industry's equivalent of contract manufacturers: They wash, sort, and package frozen fruits and then sell them to distributors.

Strawberries must be frozen as soon as possible after picking to ensure that the best flavor and appearance are retained. In most cases, the berries are sliced, pureed, or kept whole for freezing. Processors have specialized equipment for these three options. And Jamba needs a fourth "form factor"—berries that are broken up into fairly large chunks but still maintain their fruit identity to the retail customer, who could watch his or her smoothie being created.

“I know it sounds simple,” says Kimball, “but this required a creative process for ensuring that there was a sufficient quantity of frozen berries coming off the processing line that met our growing volume requirements.” Jamba’s supply chain and R&D organizations worked closely with Cleugh’s Frozen Foods, Inc., to develop a proprietary technology to break up the berries prior to freezing in a way that suits the in-store production process. “This was not a small investment by Cleugh’s,” notes Kimball. “However, their ability to ensure that we had fruit that could be portioned solidified our existing partnership with this long-term supplier partner.”¹²

The relationship between Jamba Juice and its strawberry packer is a great example of coordinated collaboration. It’s an example that is not at all reliant on the availability or use of sophisticated information systems.

Trust Your Partners, but Protect Your Interests

Effective collaboration is based on building relationships and on sharing both information and the benefits gained as the relationship progresses. This means that you can’t ask your partners for something without giving them something in return: That “something” can be price concessions, value-added services, or in most cases, information. If you’re willing to set up an infrastructure to automatically send purchase requirements to your suppliers but don’t want to provide your sales projections for the next nine months, ask yourself why not. Sharing information requires trust; it may be that you don’t have the necessary confidence in your partner.

There’s a good reason that many companies are skeptical about making highly strategic information available to collaboration partners: Trust is violated all the time! Confidential pricing data make their way into the hands of competitors, engineering specs are copied, or the “best” supplier terms and conditions are found to be less favorable than those granted to other customers.

Take the experience of a leading network equipment company with healthy margins—due in no small part to its extremely aggressive supplier management. The company demands the lowest price on its key components and insists that these pricing arrangements be kept confidential. To shield prices from competitors, it buys these key components through a central procurement group, which delivers them to a contract manufacturer. The company had established a close relationship with a major supplier and was confident that it was getting the lowest price on an important electronics component—until it acquired a company and found that it had been buying the same component from the same supplier for 10 percent

less! This occurred despite a commitment from the supplier that the price being paid by the network equipment company was the lowest offered to any customer.

Violations of trust related to pricing are not news to Greg Frazier, executive vice president of Avnet Supply Chain Services (ASCS). He sees examples of failed collaboration “all the time.” ASCS is the services arm of Avnet Electronics Marketing, a global distributor of electronic components. Frazier’s organization provides end-to-end supply chain services to original equipment manufacturers (OEMs), electronic manufacturing service (EMS) providers, and electronic component manufacturers. Frazier notes that the pricing problem may stem from the definition provided by the supplier, which may have promised the lowest price, but with fine print clarifying “for a company exactly your size, serving your exact customer base.” Notes Frazier, “In many cases the idea that a ‘best price’ exists is an illusion.”

The fact is that trust does get violated. Instead of using this as an excuse to avoid collaboration, set up your partnership so that you’ll be protected.

The concept of protecting a company from a confidentiality breach also has matured in the last few years. As more companies share forecasts, production levels, delivery schedules, pricing, and product data, security of information becomes a critical issue—and no longer just an internal one. Your collaborative partnerships typically should include a contract or confidentiality agreement that provides a level of legal data protection that transcends the “fuzzier” concept of trust. While a structured contract can minimize risk, don’t assume that it will provide a source of legal recourse should the relationship fail. Instead, use the contract as a tool for clarifying how the relationship will be governed and for specifying roles and responsibilities.

Another concern is transmitting data. Although many technologies can encode data to arrive uninterrupted and uncompromised, the risk of technology failure is very real. As a result, more companies are using comprehensive, pricey security services to minimize this risk. These often require that partners follow certain security practices that specify password types, for instance, and limit access to networked servers and workstations. Although approaches vary, business and IT executives scrupulously analyze their partners’ security as well as their own.¹³

To help companies manage information security risk, the International Organization for Standardization (ISO) created ISO/IEC 17799, a comprehensive set of controls that dictates best practices in 10 critical areas ranging from security policy to business continuity management. Some

companies require that their collaboration partners adhere to ISO/IEC 17799. Because the standard is a framework for best practices in information security rather than a methodology, these companies generally use it to frame the specifics of what they require of their partners. These specifics may include such measures as disaster-recovery plans or the consistent use of antivirus protection within all network-connected devices.

Eliminating all information-security risk is virtually impossible. Your company's supply chain is dynamic. New customers and suppliers are added constantly, and the level of collaboration in current relationships is always evolving. To set the right level of security, first identify the situations that would cause the greatest business disruption. This might be the unavailability of critical systems, loss of data integrity, or disruptions in ongoing communications with your partners. Then assess and put in place the steps or tools needed to minimize the odds of these events occurring.

Use Technology to Support Your Collaborative Relationships

Technology allows you to communicate with your supply chain partners. It breaks down barriers between companies, improves the flow of information, and converts data into useful information. Given the conceptual appeal of end-to-end supply chain management and the ready availability of technology to make it happen, then, why have companies been so slow to embrace real collaboration? We think the answer is simple: They've not been ready.

At the peak of the Internet bubble, many software companies believed that if they installed the right supply chain applications and systems, sales would follow. But things didn't work out that way. Many companies expected to reap the promised benefits without doing the preliminary legwork—the analysis, process redesign, and alignment with the new applications needed to gain the full functionality.

Most early e-commerce systems addressed large, long-term collaboration issues such as extended forecasting, demand creation, and operations planning. Many of these were top-down initiatives driven by executives with equity positions in the companies whose technologies they were advocating. And many purveyors of systems and tools made promises they simply couldn't keep. At many companies their processes were too immature, the needed data weren't available, or they were unprepared for the new, collaborative ways of working that the new technologies theoretically could enable.

Moreover, no single e-business standard for transactions and messaging emerged to rally a critical mass of users. Collaboration tools had to

translate multiple data formats, adding to their complexity and further limiting their appeal. In short, the world was not ready for the richness of technology available.

As a result, many of the early B2B “portals” were simply databases for pushing information. Company A would publish data to a site and then notify Company B that the information was available—or assume that Company B would check the site on a regular basis. Company B would view the information, download it to its own system, and choose whether or not to take action. In effect, the Internet became an expensive, sophisticated enabler of electronic data interchange (EDI). The most common application became online auctions for buying and selling products and materials. Why? Because these applications didn’t demand the systems and data integration needed for true collaboration.

After the dot-com collapse, many collaboration tools addressed a narrower focus—supply chain execution rather than long-term planning. This narrowed focus mitigated the risk of information sharing, helped automate many manual processes, and allowed companies to work in real time.

Today’s collaboration tools focus on supply chain event management and on relationships between customers and suppliers. As technology advances and companies become better prepared for the rigorous data maintenance needed for supply chain collaboration, the promise of these new applications may soon become a reality. It’s important to use these tools sensibly. While they can improve the flow of information and aid decision making, they can’t compensate for suboptimal processes or the expertise of a seasoned supply chain professional. A good collaborative system can gather data and make recommendations based on a predefined set of business rules, but it can’t gauge the applicability of those rules to the current situation or calculate the effect of an inappropriate demand on a supply chain partner.

Nonetheless, technology is a critical element of most coordinated and synchronized collaborative relationships and many cooperative relationships. Remember that technology is an enabler, not the driver of success. To make your technology investment pay off, make sure that your organization is set up to leverage it. This may mean changing your organization’s structure, processes, incentive plans, and performance measurement.

Today’s collaboration tools focus on supply chain event management and on relationships between customers and suppliers.

Involve your suppliers and customers in the selection and development of processes and systems. Or at the very least, solicit feedback from them and allow them to influence or enhance the design. Make your technology solution a foundation of service excellence—not an excuse for poor service.

Don't Forget to Compromise

Unless you're Dell or Wal-Mart, don't expect that your requests for customer or supplier collaboration will be met with an immediate flurry of positive activity. When you invite another company to be a collaboration partner, you're asking it to make fundamental changes in how it operates. The farther you go along the collaboration spectrum, the more you're asking of your partner. Only the largest and most powerful companies are in a position to force changes. Other companies must be prepared to sell prospective partners on the idea of collaboration.

We've already made the point that the goal of a collaborative relationship is to realize strategic or financial benefit. As obvious as it sounds, collaboration for the sake of collaboration is simply not worth the effort. Collaboration isn't about shifting costs from one supply chain partner to another. It's about setting up the supply chain to lower overall costs and then sharing the savings. This means that you must be willing to compromise.

Avnet's Frazier sees many electronic-component suppliers and contract manufacturers forced into collaborative relationships at a level that they're not prepared to support. "It's one thing to share forecasts electronically," he notes, "but when these companies are asked to do sophisticated logistics, it can be hard to take on these added tasks and still profit from the relationship."

Frazier's company works with component manufacturers that prefer to sell their products through Avnet rather than directly to the end customer. "Many of these companies have a hard time making money selling direct," he says. "It isn't a matter of competency; it's a matter of strategy and scale. These companies are in business to sell electronic components, not to manage other companies' supply chains."

Collaboration isn't about shifting costs from one supply chain partner to another. It's about setting up the supply chain to lower overall costs and then sharing the savings.

Many of these component manufacturers sell to OEMs that outsource production to contract manufacturers—often multiple contractors in multiple locations. A component manufacturer selling to five OEMs, each with five manufacturing partners with five manufacturing facilities, must support 125 different manufacturing sites. “That means 125 forecasts coming in each week,” Frazier points out. “Without major investments in people, systems, and infrastructure, this is a very difficult model for most component manufacturers to support.”

Often, OEMs or EMS providers develop the “master plan” for a collaborative relationship—a plan that optimizes their own benefits. Suppliers are expected to provide value-added services as the cost of continuing to do business. Yet, if you expect your suppliers to provide additional services and to take on additional risk at no additional cost to you, your chances of getting them on board are small. And even if you do succeed in getting them to “sign up,” you may find that they’re unable to meet the requirements you’ve set for them. Instead, work closely with your partners to develop a value proposition they can understand and buy into. Create an agreement that fairly values the added services you want them to provide—and pay them an appropriate premium.

Successful collaborators make a major effort to bring their partners up to speed. Some of the best practices involved in offering a compromise include providing a technology solution to them at little or no cost and working closely to get them up to speed with any new technology. Purchasing a license and having it installed at your supplier, however, is not collaboration.

Finally, be sure to set up a way to monitor the results of your collaborative relationships. Work with your partners to establish a set of metrics that is consistent with the value proposition and can be updated and reviewed on a regular basis.

NEXT-GENERATION COLLABORATION

A critical aspect of collaboration is the need to capture and react to changes in a partner’s planning data. Most of today’s collaboration tools are built on centralized databases. Since it can take hours to assimilate and process data collected from numerous sources, companies often make decisions based on historical data. If you’re an international company with headquarters in the United States, that might be where you keep your central database. The tools need the data to be centralized in order to do global analysis—otherwise, they are just optimizing local information. To

get the data into the database, they have to be “piped in” from all over the world, which can take several hours. Thus, even though you think that you can run real-time analysis, you can’t. This is the reason companies run their analysis using information from yesterday (or earlier). Before centralized databases, analysis took a lot less time but was suboptimal because it only used a portion of the available data.

The next generation of collaboration takes us “back to the future”—to the late 1990s, before the bubble burst, when Internet technology promised complete visibility of operational information across the entire supply chain network. In many ways the future is already here. Most of the technology needed for end-to-end visibility already exists and has for some time. However, you can’t fully leverage this technology until the process maturity at your organization catches up. Most companies are not there yet, but they’re getting there fast.

In the next generation of supply chain collaboration, technology advances will be overshadowed by changes in individual attitudes. There’ll be an evolution toward collaboration as a joint investment rather than the more one-sided, “if we build it, we can make them use it” attitude that characterizes many of today’s collaborative efforts. Changes will include the following:

- ◆ Companies will focus on collaborating to achieve long-term customer satisfaction rather than internal cost reductions.
- ◆ Distributed data architecture will become the most common platform for collaboration tools, allowing companies to respond in real time to planning and execution data.
- ◆ Companies will explore the security policies of their collaboration partners more closely, and new technologies will enable in-depth electronic audits of security provisions.
- ◆ True integration among disparate systems will become a reality, allowing companies to monitor all their production and logistics assets from a central system.
- ◆ Instead of simply automating routine transactions, systems will be able to look ahead, predict unplanned events, and trigger the correct response as needed.

In the next generation of supply chain collaboration, technology advances will be overshadowed by changes in individual attitudes.

- ◆ Software applications will be extended to multiple tiers of suppliers and distributors. While collaborating with multiple customers and suppliers will be the norm, companies will still reserve deeper planning and forecasting efforts for a select set of partners.
- ◆ Collaboration with materials suppliers will continue to be transaction-focused, whereas relationships with service suppliers will be more strategic and focused on planning.
- ◆ Applications will be built on top of an Internet-based architecture hosted externally.
- ◆ Collaboration increasingly will focus on the front end of the supply chain, with heavy emphasis on collaborative forecasting and replenishment models.
- ◆ Use of industry-standard tools, such as RosettaNet PIPs and CPFR, will become the dominant forms of collaborative communication in the electronic and consumer products sectors.

As a management discipline, collaboration is still in its infancy. We believe that it will change the economics of all companies as business practices, rules, and conventions are adjusted to reflect the realities of integration and increasing visibility across supply chains. Collaboration will allow smaller companies to compete with larger companies, making scale less critical as a competitive differentiator. Collaboration will become an essential discipline—and an inevitable part of your supply chain strategy. See Figure 4-6 for a collaboration guideline.

FIGURE 4-6

A collaboration guideline.

- You may have a grandiose vision for the future, but your chances of success are small if you try to go for “collaboration nirvana” from the start. Start with tactical improvements.
- Focus on a single, unambiguous vision for your collaboration strategy, including clear goals and a purpose.
- Clearly understand your company’s current and future desired core competencies, and ensure that the collaboration strategy is wholly consistent.
- Start small, focusing on a limited set of capabilities, on selected partner candidates, and on selected tasks.
- Recognize that early efforts can be supported by a manual infrastructure (phone/fax/email); more extensive efforts will certainly require more advanced supporting systems. So pay close attention to how the systems will need to evolve.
- Let your business drivers and economic realities shape the nature of your collaborative relationships and the way they will be managed.
- Advance your technological capabilities only to the level that you expect your partners to be able to manage.
- Assess the organizational changes that will be needed to support collaboration on a larger scale in parallel with your initial efforts.
- Align your company’s compensation and reward structure to the goals of the collaboration strategy.
- Effectively manage your collaboration partners; have a comprehensive metrics program in place that allows you to monitor their performance—and your own—on a regular basis.
- Don’t take people out of the equation. Stories abound about companies who “flipped the switch” on new collaboration tools, only to find that the system was recommending actions that made no sense from a business perspective. As your effort gets underway, make sure your organization is populated with skilled professionals that can monitor progress and make necessary midcourse corrections.

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U.S. Department of Defense Profile: Making the Tail Smaller and the Tooth Stronger

As the U.S. military enters the 21st century, the Department of Defense is recrafting its approach to warfare. It's creating a new blueprint called the Forward-centric Logistics Enterprise (FLE) which will take the best practices of business and integrate them with the best practices of the military, creating a more vital partnership than ever for more agile supply chain performance.

“There is no parallel in commercial industry for what we do today. If we were a private enterprise, we would be number 1 on the Fortune Global 500,” noted Diane K. Morales, U.S. deputy under secretary of defense for logistics and materiel readiness, at the time of our interview. She was responding to a question about the scope of the largest supply chain in the world—that of the U.S. Department of Defense. At our request, she continued with the stats: “Our dollar volume of business is more than double that of Wal-Mart, which is currently number 1 on the global Fortune list. Our supply chains cost nearly \$80 billion a year to operate. We employ over 1 million people and deliver more than \$400 billion in value to our customers.

“Every U.S. soldier, sailor, aviator, and Marine is a customer, and every American citizen is a stockholder. We have an active and vocal 535-member board of directors [the House and the Senate]. And we’re number 1 in our marketplace—the dominant market position that our stockholders demand.”

We get the picture. Yet, although mighty indeed, the U.S. Department of Defense's (DoD's) supply chain apparatus is facing a transformation on a scale never before attempted. Morales's invocation of Wal-Mart (\$246.5 billion in annual sales) is appropriate. Besides shoelaces and toothbrushes, frying pans and motor oil, though, the DoD has to supply missile subassemblies, vehicle engines and transmissions, microcircuits, x-ray machines and magnetic resonance imaging (MRI) equipment, aircraft frames, heavy industrial machinery, and jet fuel, to name a few of the 4.6 million items stocked by the Defense Logistics Agency (DLA). Every SKU must be delivered on time—no stock-outs, no rainchecks—in whatever quantities the customer requires, wherever the customer happens to be in the world at any particular moment.

That “customer,” as we all know, is what the military calls a “warfighter.” And he or she is liable to be anywhere, anytime these days. As Morales notes, the pace and modus operandi of warfighting have changed considerably even over the past decade. “In 1991, in Desert Storm, General Norman Schwarzkopf wanted 60 days of supplies on hand before he would launch an assault with a quarter million troops. In Operation Iraqi Freedom (OIF), General Tommy Franks wanted just two weeks' worth of supplies for 150,000 troops.”

WHEN PUSH COMES TO PULL

Morales has spearheaded one of the biggest transformation programs ever launched at the DoD. It was called the Future Logistics Enterprise during its policy-planning phase and was renamed the Force-centric Logistics Enterprise (FLE) during the implementation phase. She describes the program as “an integrated plan to transform logistics to a more flexible force to meet the requirements for agility and responsiveness.” The characteristics of this vision for a modernized logistics capability are fivefold:

- ◆ *Speed.* General Tommy Franks's battle plan called for a lightning advance on Baghdad, for instance. Never before has an army advanced so far so fast: The army covered more than 300 miles in 22 days.
- ◆ *Flexibility.* When Turkey balked at supporting a second front from the north in Iraq, the United States advanced successfully, solely from the south, changing its strategy in a matter of hours.
- ◆ *Precision weaponry.* In the Gulf War, 8 percent of weapons used were precision-guided. In OIF, that figure was 66 percent.

- ◆ *Increased reliance on unmanned aerial vehicles.* These are useful for both surveillance and combat.
- ◆ *Joint operations.* Coordination of the different service “components” is essential for effectiveness in today’s defense environment. In OIF, 78 percent of the sorties flown were in direct support of special operations forces.

Of course, the Army, Navy, Air Force, and Marines are not fighting any battle alone. They are dependent on what’s called the “tail”: the vast infrastructure that supplies them, from product development of weaponry and machinery to transportation and other services sustaining them. As Morales says, “Traditionally, defense logistics has been thought of as supply, transportation, maintenance, and supporting information systems and infrastructure. But actually, it’s supply chain management, integrated weapon system support, and integrated, shared data (the knowledge environment), plus materiel readiness.” Since the scope is so broad, the concerns range from rightsizing the infrastructure to rightsizing the inventory and from transforming the overall logistics processes to demanding performance standards and accountability from a very young military force.

Because of the scope and speed required to transform the military to a higher state of readiness, tomorrow’s defense supply chain will be very different from yesterday’s.

Because of the scope and speed required to transform the military to a higher state of readiness, tomorrow’s defense supply chain will be very different from yesterday’s. To use the parlance of supply chain management, it will move from a push to a pull model of customer order fulfillment. One of the most critical of its characteristics is a shift from vertical integration to a strategy of virtual value-chain management based on deep collaboration with customers, partners, and suppliers.

Today, the “tail” that supports the “teeth” of the military is drawing on best practices from private industry.

The “tail” that supports the “teeth” of the military is drawing on best practices from private industry. It is creating greater partnerships with the private sector than ever

before. It's being organized differently because more horizontal processes are being instituted incrementally. The end state will be the largest enterprise system in the world. It is designed to be more flexible, transparent, and simultaneous—to be an agile infrastructure. It will, in itself, be a lean, mean fighting machine. It won't get there overnight, but the FLE has been the launching pad for total transformation.

Unfortunately, the DoD cannot mimic the private sector in transforming its supply chain to effect these changes, for the scope and significance of its activities and obligations vastly exceed those of any private enterprise. It must answer to changing legislative mandates and, unlike private enterprise, to the changing mandates of different presidential administrations. Its very motive—readiness or preparedness rather than profit—forces it to cope with logistical complexities and uncertainties unknown to private business.

THE BLUEPRINT FOR CHANGE

The FLE defines three drivers of change:

- ◆ *Total life cycle systems management.* This type of management is well established among manufacturers of complex products and among advanced industrial users of complex, mission-critical capital equipment but not so developed in the military.
- ◆ *End-to-end distribution.* This initiative is aimed at providing faster and more reliable delivery by synchronizing the flow of materiel across the entire supply chain—from factory to foxhole. It calls for breaking down the barriers and seams between the “stovepipes” or “silos” among the organizations involved in demand planning, acquisition, sourcing, positioning, and transportation (e.g., DLA, and the U.S. Transportation Command, or TRANSCOM, etc.). This may well be the biggest challenge of the plan.
- ◆ *Enterprise integration.* All the aforementioned initiatives require the close integration of information systems and processes among all the entities in the national defense supply chain. DoD must have interoperable information systems that deliver comprehensive operational data, aggregated information, and logistical “situational awareness.”

These initiatives obviously have far-reaching consequences for logistics, personnel, weaponry, technology, and supplier relationships through-

out the DoD—for the “components” (i.e., the Army, Navy, Air Force, and Marines), as well as for the policy-making offices. As Morales describes it, “We must build processes from the supplier base (both public and private) through the distribution agents to enable rapid movement of materiel. We must collaborate and build partnerships with industry to achieve this responsive, end-to-end delivery capability. This involves real-time information and tools such as radio frequency identification (RFID) tags to track assets and more accountability and integration in the lifetime support of weapons systems.”

Transformation at the DLA

Execution will not be for the faint of heart. A case in point is the Defense Logistics Agency (DLA). The DLA has served for over four decades as the DoD’s “logistics combat support agency.” With its nearly \$25 billion in sales and services for fiscal year 2003, it would occupy the no. 65 spot on the Fortune 500, just ahead of New York Life. The agency operates in 48 states and 28 foreign countries and is staffed by 21,000 civilian and 500 military personnel.

“We run the world’s largest warehouse distribution system,” says Vice Admiral Keith W. Lippert, the DLA’s director. “We also run a defense energy support center that supplies all the fuel for the Department of Defense. We run a national defense stockpile composed of strategic materials that we gradually sell into the market if they’re not needed. The stockpile is big enough that we have to watch the world markets, because we can end up affecting world prices through our volume of sales.”

Admiral Lippert addresses the shift in thinking as it affects his agency: “DLA was put together to manage consumable items that were common to all the services. What DLA did—and this dates back to 1962—was to buy material, put it in a warehouse, and then basically say to its customers, ‘OK, I bought it, so you had better come get it.’ The shift we’re going through right now is toward understanding our customers’ requirements and being responsive to them, even when there are problems in the industrial base [that affect us].” In other words, the DoD is extending the supply chain to include the customer’s customer and the supplier’s supplier.

With its nearly \$25 billion in sales and services for fiscal year 2003, the DLA would occupy spot no. 65 on the Fortune 500.

Lippert is a member of the Joint Logistics Board (JLB), which Morales established and which oversees the FLE. The JLB consists of the most senior-ranking logisticians from the four service branches, the U.S. Joint Forces Command, the DLA, and TRANSCOM. Three working groups have been created to expedite the FLE's initiatives: The Best Business Practices Group ("*Reengineer for Success*"), focused on logistics architecture and process reengineering; the Program Implementation Group ("*Do It Right*"); and the Change Management Group ("*Make It Stick*"). Assisting all three groups is an advisory team drawn from industry.

THROUGH THE LOOKING GLASS: LIFE CYCLE MANAGEMENT

"I look at the FLE as a cross within a circle," explains Morales. "The vertical bar is the requirement for integrated weapons system support over the life cycle of a weapons system, which is something we don't have today." To reach this goal will require accountability, says Morales. "Today, we don't know what the lifetime cost of supporting a single weapons system is, for example. No one person is accountable. You have the program manager who is responsible for the design, development, and fielding of a weapons system. The system then gets thrown over a fence to somebody else to sustain it over its lifetime. Reliability, maintainability, and mobility have not been key considerations, yet they have to be built into a system.

"We then need to have the people who are accountable for building those features into a given weapons system also be the people accountable for the sustainment of that system over its lifetime. Once we have these dual accountabilities, we'll see better up-front decisions being made."

Right now, the DoD is building the partnerships, protocols, and systems that will get us to the goal of end-to-end capability, says Diane Morales, who launched the FLE initiative.

Morales refers to end-to-end distribution as the horizontal line of the cross within the circle. This line encompasses a spectrum of partners: industry partners, coalition partners, public-sector partners—partners who range from the supplier, the manufacturer of the part, all the way through to acquisition, contracting, and the fulfillment agents who actually deliver that weapons system to the warfighter. "The horizontal line includes the operational planners who develop the system requirements. It includes the financial community,

and it includes the acquisition community. The point is that you have a world of partners who are being called on to deliver this end-to-end capability. It's the extended supply chain," Morales says.

"Nobody owns all the partners," she continues. "There is no single manager of this supply system or owner of that system. Right now, the DoD is building the partnerships, the protocols, and the systems that will get us to the goal of end-to-end capability. And we're starting to see some amazing successes in this area."

THE INTEGRATED ENTERPRISE INITIATIVE: FROM EXCESS TO ACCESS WITH INFORMATION TECHNOLOGY (IT)

Enterprise integration is the circle around the cross and the enabler of integrated weapon system support and end-to-end distribution. The fast-track evolution of the DoD's data enterprise from hundreds of cold-war legacy systems and their hundreds of millions of lines of code to state-of-the-art information systems and processes integrated across the national defense supply chain has been one of the most ambitious programs in the FLE agenda.

Laura Faught, cochair of the Program Implementation Group, one of the FLE's "triangle groups," and assistant deputy under secretary of defense for logistics systems management, talked to us about the process and progress of logistics systems modernization: "First, and most obviously, we developed the overall enterprise data strategy collaboratively with parts of our logistics domain. A basic lesson in change management is that you don't stuff an architecture, especially a process-oriented architecture, down the throat of an \$80 billion supply chain. We pulled in from across the DoD logistics domain, business process owners and key stakeholders from the Defense Logistics Agency, the Army, Navy, Air Force, Marines, Joint Forces Command, and TRANSCOM. This gave us an anchoring in our customers' perspectives, just as the SCOR model anchored us in a process orientation."

Faught says her group leveraged the IT community's technical views of the standards and focused on architecture, data strategy, portfolio management, and "a scalable, repeatable process to ensure that we're very smart acquirers of commercial technologies to support our system and process integration." She thinks the key to success in

"You don't stuff a process architecture down the throat of an \$80 billion supply chain," says Laura Faught.

integrating systems is data strategy: “Our basis is motherhood and apple pie: It’s to have accurate and operable data available to whoever has authorized access to it, whenever they need it.” This meant a single point of entry into the logistics data enterprise, as opposed to all the point-to-point interfaces provided by the legacy systems. The DoD accomplished this in a test case with the Joint Strike Fighter. “It’s a matter of transparency: access to accurate data as the weapon moves through its life cycle,” says Faught.

The work of Faught’s group evolved into an enterprise integration toolkit that has wide applicability beyond logistics: “It’s a framework for how anyone can develop the business case, how you can select and do contracts with the integrators and the commercial off-the-shelf (COTS) software vendors, how you can do your blueprinting, how you can map the whole life cycle of this process or of that project,” says Faught. “In it, you have an entire set of compliance criteria tied back to all the architecture products at the component level.”

Application of IT Principles at the DLA

The DLA has built on the work of Faught’s group and its “integrate the enterprise” mandate. As Admiral Lippert explains, DLA runs on a system called the *Standard Automated Materiel Management System* (SAMMS). It’s a system that was designed in the 1960s and implemented in the early 1970s. SAMMS is written in COBOL, and it has about 6 million lines of code associated with it. It’s probably five generations behind the systems at world-class private-sector companies. The DLA tried on five different occasions to replace the system and failed five different times, according to Lippert. “So we’re now on our sixth attempt to replace it, and this time we’re going to succeed,” he asserts.

The new system went up in August 2003, with 170,000 of the 4.6 million items the DLA handles, on a SAP backbone solution, an enterprise resource planning system that’s being customized for the DLA’s volume and requirements. SAP is the core for financial management and requisition fulfillment, but the DLA is using an application from Manugistics as a bolt-on for demand planning, and a separate system, called the *Procurement Desktop 2* (PD2), for procurement.

“Collectively, this is the biggest development in our business in 34 years,” says Lippert. “I think we’re on schedule for the new system to pay for itself by 2008 or 2009 through fewer IT people, reduced inventories, better forecasting, and better data accuracy than we’ve ever had before.”

Lippert speaks proudly of the executive information system that has been instituted at DLA as well: “I get a daily update of key statistics on

my PC, as does the entire management team. The results are color-coded: red, yellow, or green, depending on whether we're on plan, or behind plan, or starting to fall behind plan. One of the first things I do in the morning, after I get through my e-mails, is click onto this thing and find out exactly how we did yesterday."

The DLA handles 45,000 requisitions and issues 8,000 contracts *a day*, on average. To improve its performance, it has simultaneously embarked on programs of strategic distribution, competitive sourcing, and strategic supplier alliances in addition to business systems modernization. Are the programs working? And if so, how well? The agency is aggressively implementing performance metrics and benchmarking to answer these questions. DoD always has struggled with what metrics the staff should be looking at to measure performance within the logistics operation. It realizes that it's important to get the right metrics—the transformational metrics—so the current effort is to develop what's called a "balanced scorecard." The Joint Logistics Board is working together to finalize the metrics to implement this scorecard.

The bottom-line results are already impressive: By paying attention to the metrics and taking corrective actions, the DLA has reduced its back orders by 22.2 percent since October 2001 and has achieved the lowest cost recovery rate (operating costs as a percentage of total sales) in its history. The agency is also operating at close to an all-time low in terms of personnel—just under 22,000 people—versus an all-time high of three times that from 1989 to 1992. "We're working to improve the tooth-to-tail ratio," notes Lippert.

THE END-TO-END INITIATIVE: CREATING POLICIES FOR CHANGE

The champion for the end-to-end initiative is Alan Estevez, assistant deputy under secretary of defense for supply chain integration and the chair of the FLE's Best Business Practices Group. Estevez characterizes the biggest challenge in supply chain integration as getting supplies to the end customer without his having to even order them: "Why should my soldier out on the battlefield—who is out in dust and dirt and getting shot at and fixing things so [that] he can keep fighting the enemy—have to worry about ordering if he can pull the supply he needs and then have the backfill for that supply just show up?"

To effect this kind of change, Estevez has been working on revisions to the military's 4,140 materiel management regulations. The revisions call for accountability on all sides for delivering supply to customers wherever they are in the world. Everyone is accountable. There are no handoffs of

“It’s not about end-to-end *distribution* but about end-to-end *supply*,” says Alan Estevez.

responsibility, as in the past. “It’s not about end-to-end *distribution* (which implies sequence) but about end-to-end *supply*,” says Estevez. The mechanism for this accountability is performance agreements—with original equipment manufacturers (OEMs) and suppliers and internally with customers. The metrics that Estevez is looking at—*time-definite delivery*, *customer wait time* (a measure of the velocity in the pipeline),

etc.—have everything to do with the end customer, not with the distribution network. Three pilot programs have shown that calibrating to the customer can pay off: with the Naval Air Systems Command and Naval Sea Systems Command and their depots, with the Army’s installation activities for the Black Hawk helicopter and the Abrams Tank, and with the Air Force/DLA collaboration on supply for the F15, F16, and KC135.

With the imprimatur of the Joint Logistics Board, Estevez’s group is also using a balanced scorecard to track performance to key metrics. One of the quadrants of the scorecard—the anchor quadrant—represents the warfighter perspective. There are two high-level metrics in that perspective. One is getting the combat capability to where it needs to be, and the other is force readiness and the operational availability of weapons systems. However, there’s also a quadrant for “sustained capability” that goes beyond the warfighter’s perspective, says Estevez. That quadrant takes into account such matters as development cycle times for weapons platforms—concerns that would not have been considered supply chain issues in the military world before FLE. They’re indicative of the new end-to-end perspective.

Part of the policy set forth by the Best Business Practices Group calls for “mobility force structure.” More than any other single concept, this explains the critical role that logistics play in supporting warfighters today. Earl Boyanton, assistant deputy under secretary of defense for transportation policy and previously a career transportation officer in the Air Force, describes it as “a three-legged stool: airlift, sealift, and prepositioning.”

“Just as combat units have force structure—the Army has so many divisions, the Navy has so many carriers, and the Air Force has so many air wings, fighter wings, and bomber wings—we think of mobility force structure in the same way. How many air mobility (airlift and aerial refueling) wings do we need, how many transport ships? In Iraq, prepositioning—

where you have everything from combat equipment like tanks and helicopters to consumables all stashed in places other than the United States, a sizable portion of them on ships in different oceans of the world—allowed more rapid reaction and less reliance on airlift and sealift to get materiel to a distant location. All of that paid off dramatically.”

Much of the afloat prepositioning Boyanton is talking about uses specially commissioned 900-foot-long medium-speed ships with large roll-on, roll-off ramps to more efficiently load and unload the military’s wheeled and tracked equipment. These ships, crewed by civilian merchant mariners, were procured by DoD after Operation Desert Storm, when the military realized that greater flexibility and quicker reaction were imperative and could be realized through increased afloat prepositioning.

Boyanton thinks that another major factor for success during the Iraq engagement was in-transit visibility. And this, we learn, is related to advanced technology. With a fast-moving force, the challenge on the logistics side is to keep up and keep it supplied without putting too much of a “logistics footprint” on the ground. One of the ways this was accomplished in Iraq was with RFID tags, which can be read by a computerized interrogator. General Franks had requested that all materiel entering the central command theater of operation in ocean containers or on aircraft pallets have a robust data tag so that military personnel at any point in the distribution process could read it without having to access a remote database or physically break into cargo to find out what was “in the box.”

The challenge for the future, says Boyanton, will be providing in-transit visibility “from source to foxhole.” In addition to enabling the customer and other materiel managers to determine status at any time, the military needs to collect consumption data to be recorded in such a way that it automatically triggers resupply, similar to point-of-sale data collection and inventory/reorder triggers in the consumer products industry. The abiding question for the DoD FLE plan is: “Where is the end of the supply chain for this purpose?” Each of the military services has somewhat different practices, and situational variables can cause modifications within those practices.

Special Partnerships with Commercial Transport

Part of Boyanton’s responsibility is the Civil Reserve Air Fleet (CRAF) and the Voluntary Intermodal Sealift Agreement (VISA). Each of these programs gives the DoD a contract-based authority to mobilize U.S. flag civilian air and ocean transportation resources, respectively. The air and ocean carriers that make up CRAF and VISA were employed extensively

on a voluntary basis during the operations in Afghanistan and Iraq after 9/11. In addition, a portion of CRAF was formally mobilized to support the force buildup prior to OIF.

Boyanton describes the contribution of DoD's commercial transportation partners, including highway, rail, and integrated carriers such as FedEx and UPS, as well as ocean and air, as "nothing short of outstanding—we simply can't do without them."

However, long-held perspectives here are changing as well. Says Boyanton, "Part of our job right now is convincing people [in the military] that they have the transportation options they think they *don't* have." These misunderstandings stem from what has been a kind of schizophrenia in transportation policy. For example, there's this presumed "rule" that if you're a DOD shipper and you're shipping to a customer overseas, you need to move your air cargo, the priority stuff that qualifies for air movement, through DoD's organic air transport. "But that's contradictory to what we're doing right now with the supply chain," says Boyanton. "We're telling sources of supply to collaborate with their customers and all prospective fulfillment agents to pick the supply chain design that adequately fulfills the customer's requirements for time-definite delivery. I'm having to disabuse the notion that cargo that moves by commercial air transport is leakage from the defense transportation system. Commercial air transport is emphatically a part of the DoD's air transportation capability."

During peacetime, the DoD maintains its fleet of cargo aircraft—the C17s and the C5s—and aircrews, aerial ports, and a worldwide air mobility infrastructure to respond immediately to the orders of the President and Secretary of Defense. This readiness requires constant international flying for training and to exercise the system. Thus international air transport capacity is created in the process. "We need to carefully rationalize our decisions of when we bypass that capacity in favor of another option," explains Boyanton. "On the other hand, the providers of that capacity, TRANSCOM and the Air Force's Air Mobility Command, need to offer best-in-class service and reliability to convince suppliers and customers that they are a viable supply chain."

THE CRITICAL ROLE OF PERFORMANCE-BASED AGREEMENTS

What supports the immense number of decisions that have to be made is performance-based agreements (PBAs). Boyanton's new policy documents, like Estevez's, will make one point crystal clear: "The customer and

the source of supply will design the supply chain for whatever is best for that customer's requirement. The decisions will be made by the participants to the agreement."

Boyanton cites a sterling example of the success of this approach. It's a weapons system known as JSTARS on a 30-year-old platform called the C135, a Boeing 707-type airplane equipped with this highly sophisticated radar suite that provides ground-situation information such as movements of vehicles and helicopters, much as the AWACS provides air-situation information. There's a performance agreement between the integrating contractor who put the electronics on the plane and the Air Force, as well as with the OEM who manufactured the electronics.

"When JSTARS deployed for Afghanistan, they had a 100 percent sortie rate," says Boyanton. "They generated 148 sorties during the combat phase of OIF, and all of them launched. A 100 percent launch reliability rate is unheard of for such a complex weapon system. Now, what was responsible for the success? I believe it was the PBA in addition to some very dedicated and skilled Air Force people at the far end of the pipe that were saying, 'We're going to get this airplane off come hell or high water. We're going to find a way to make sure this mission flies.'"

IN SUMMARY

Although Diane Morales stepped down as deputy under secretary of defense for logistics and materiel readiness in January 2004, the life of the FLE likely will be a long one. Its characteristic will be continuous change. How will anyone know whether it has been successful? Morales summed it up for us: "The greater logistics community will be measuring success through the balanced scorecard. It balances the risks among operational requirements, cost-effectiveness or affordability, and performance by the service providers."

Some of the measures of success will be

- ◆ Increased capability at no transformational cost
- ◆ Increased weapon system operational availability
- ◆ Consistent, reliable, time-definite delivery of support to the customer
- ◆ Efficient supply chain business operations

The defining change in perspective is the accent on effectiveness over efficiency. As Boyanton puts it, "Effectiveness says we're going to get the job done because that's our job. And sometimes it's going to cost

more than if we did it the most efficient way. To some degree that's done to mitigate risk to the supply chain—but we can't completely eliminate risk because you never have enough resources to be in a zero-risk game. Our job in logistics is to make as certain as we can that the operator, the shooter, has at his disposal everything he needs. But also, as we implement standard processes—integrate the enterprise—we will achieve efficiencies because we'll all be operating from a common set of business rules and information at the enterprise level.”

THE MARINES TAKE ON THE FLE

The U.S. Marine Corps, which throughout its history has practiced the art of doing more with less, is actively engaged in numerous logistics modernization and transformation initiatives. Focused on providing more effective support to the war fighter, these efforts range from improving internal supply chain practices to participating in joint and DoD enterprise logistics improvement initiatives—such as the Force-centric Logistics Enterprise (FLE).

We talked with Susan C. Kinney about the Marines' logistical direction and initiatives. Kinney is deputy director of the logistics plans, policies, and strategic mobility division, Headquarters, U.S. Marine Corps (HQMC).

“The increasing number of dynamic threats to national security objectives dictate a leaner, more focused logistics effort from the Marine Corps, one that replaces footprint with precision and volume (the ‘iron mountain’) with information and speed,” she says. Why? “Because we learned that setting that iron mountain and working from that point were no longer good enough; it's too difficult to sustain the forces from that vantage point today,” she says. “This has never been more apparent than in recent conflicts, where Marines have been forced to maintain supply lines extending 500 or 600 miles. If you are going to move that far inland, you have to be lighter. So we're looking, in our acquisitions programs, to make less of a footprint so that we can become more agile.”

In fact, the Marine Corps is moving toward the concept of sea-basing, replacing those mountains of iron with information and

speed. Major Ken Lasure explains how the concept worked in Afghanistan: “Due to political considerations, we couldn’t maintain a permanent presence on the beach in Pakistan or operate during the daytime. As a result, we had to establish a temporary beach support area three to four times a week and shuttle equipment and supplies from the ships to an airfield in Pakistan at night, and then we’d fly it forward. But at the same time, we were muscling through some significant communication challenges. More often than not, the only way I could talk to our personnel in Pakistan was when that LCAC [Landing Craft Air Cushioned—a hovercraft that transports personnel, equipment, and supplies ship to shore] went ashore and I was able to grab someone and say, ‘I need you to do this.’ Nevertheless, the sea-basing operations enabled us to adjust to the access limitations and still move inland 400 to 500 miles—something the Marine Corps really isn’t designed, sourced, or organized to do.”

To make the logistics chain organization operate more responsibly end to end, the Marine Corps has now blended the functions of distribution, transportation, materiel management, and supply management under one umbrella. It is mapping its logistical and supply chain processes at the enterprise level for the first time in its history. To do this, it has depended on the Supply-Chain Operations Reference-model (SCOR) described in Chapter 2.

Mapping the processes across the enterprise was no easy matter. As Keith Rineaman of the Log[istics] Vision Center explains it, it all starts with the customer, the supported unit—the Marine battalion that needs products or services. They go through a process called request management, involving the identification of needs; they then pass those demands to a supporting unit, which is their first line of logistics support, their “bellybutton,” as the Marines call this single point of contact.

A role called *order management* accepts all those demands from supported units and turns them into orders and then manages those orders through to fulfillment. The order manager sources orders to a set of functional units or activities within the supporting unit. It could be inventory, maintenance, food—or any product or service. And they have their own functional management and execution roles and

processes. The processes include activities at the wholesale level, where there are depot operations, and in commercial industry through the procurement role.

These processes create an “operational architecture” that is role-based. After documenting the processes, often it’s necessary to restructure. Thus there’s the need to define new roles and make policy changes, doctrinal changes, organizational changes, and information technology changes.

Then there’s the special attribute of the Marine Corps: It moves in groups, in what’s called *Marine Air Ground Taskforces* (MAGTFs). As Kinney explains, “When you go into a situation, you go with a MAGTF. You don’t go anywhere without the whole group. There is no splitting aviation or logistics off by itself, for instance.” Because of the special role of the logistics element, it has become a fifth element in the MAGTF, historically comprised of four elements: a command element, a ground combat element, an air combat element, and a combat service support element. The fifth element is now considered the supporting establishment. A MAGTF can range from 100 people to a Marine expeditionary force, which could be 18,000 strong.

What will be the metrics of success for the FLE program in the Marine Corps? Having just finished its process reengineering, the Corps is now readying to buy empowering applications and other IT, using the enterprise integration toolkit developed through one of the three “triangle groups” of the FLE. The attributes it expects all its programs to have are reliability, responsiveness, flexibility, expense containment, and asset utilization. All these are embedded in the SCOR model. However, the Marines have added a sixth attribute: readiness. “It wasn’t in the SCOR model [developed for industry], but it’s obviously critical to the DoD,” says Gavin McCarthy of the Log Vision Center.