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# Bending the Chain: The Surprising Challenge of Integrating Purchasing and Logistics

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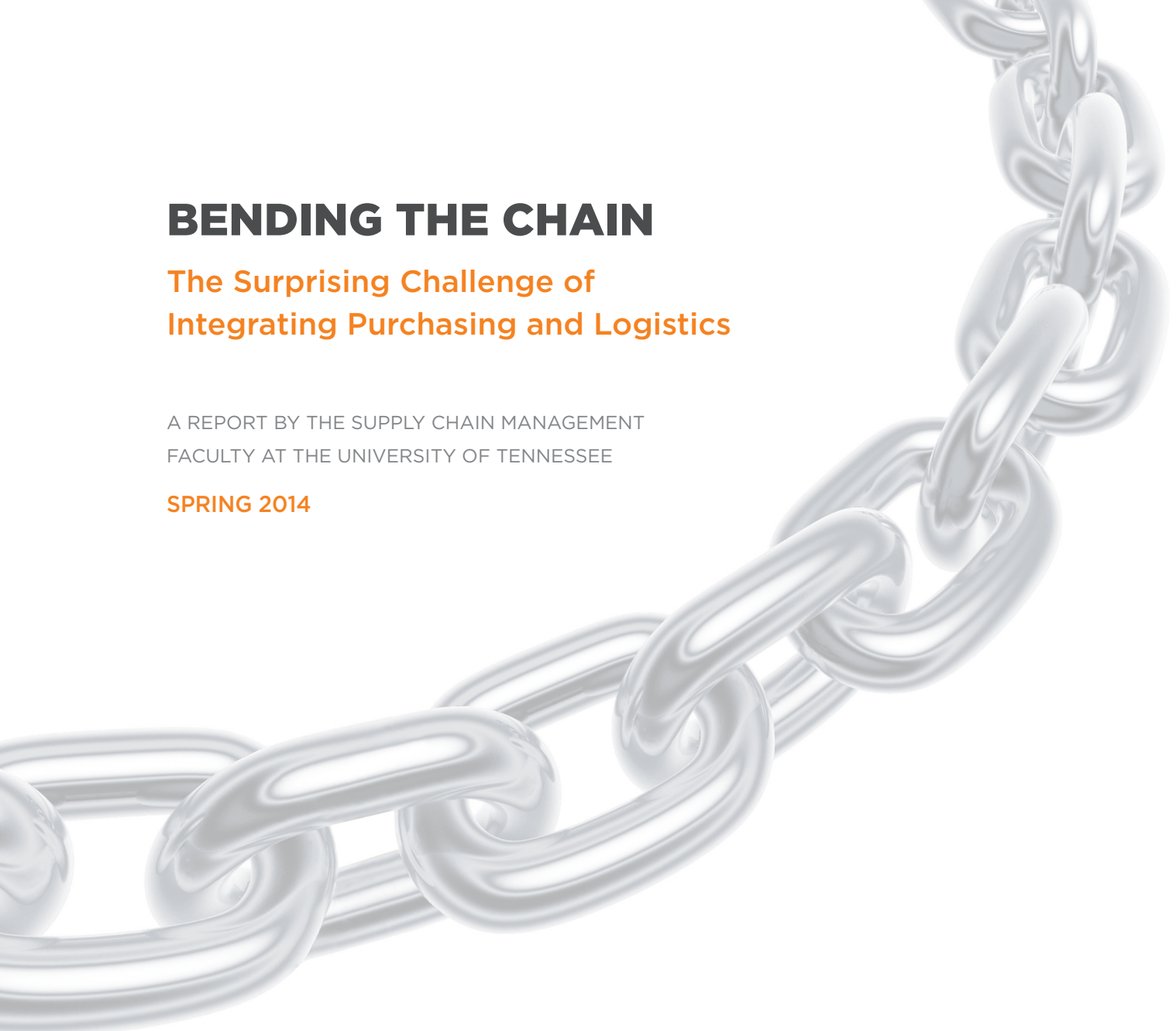
Theodore Stank, J Paul Dittmann, Chad Autry, Kenneth J. Peterson, Mike Burnette, and Daniel Pellathy

# BENDING THE CHAIN

## The Surprising Challenge of Integrating Purchasing and Logistics

A REPORT BY THE SUPPLY CHAIN MANAGEMENT  
FACULTY AT THE UNIVERSITY OF TENNESSEE

SPRING 2014



THE UNIVERSITY of TENNESSEE   
KNOXVILLE  
GLOBAL SUPPLY CHAIN INSTITUTE



The Surprising Challenge  
of Integrating **Purchasing**  
and **Logistics**

# BENDING THE CHAIN



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# GAME-CHANGING TRENDS IN SUPPLY CHAIN

## **BENDING THE CHAIN: THE SURPRISING CHALLENGE OF INTEGRATING PURCHASING AND LOGISTICS**

A REPORT BY THE SUPPLY CHAIN  
MANAGEMENT FACULTY AT  
THE UNIVERSITY OF TENNESSEE

**SPRING 2014**

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## Executive Summary

**O**ver the last several decades, supply chain (SC) professionals have focused on performance issues that have emerged from a lack of commercial/business alignment with supply chain operations. Significant improvements have been made, and systemic processes (IBP—integrated business planning—and S&OP—sales and operations planning) have been developed to drive a fully integrated business. As business integration has continued to improve, the biggest SC opportunities have shifted.

Every year, the University of Tennessee's Global Supply Chain Institute networks with hundreds of companies, requesting information on emerging supply chain issues. Our recent research shows that one of the greatest business integration opportunities is found within the traditional supply chain functions themselves. ("We have met the enemy and he is us!"). Specifically, we believe a major strategic integration opportunity exists between purchasing and logistics, and failing to capitalize on this opportunity is very clearly causing many firms to miss important opportunities to create value.

Based on our research, we believe it is probable that your firm is organized, measured, and incentivized in ways that essentially prevent you from deriving the full benefits of collaboration. In fact, it is highly likely that your company encourages behaviors that destroy value, both in the short term by sub-optimizing total system costs and in the long term by generating superficial gains from functional cost reductions while failing to leverage asset investments.

We have also uncovered strong evidence that organizations that align procurement and logistics decisions not only vertically with business unit strategy but also horizontally between functions enjoy heightened levels of both functional and financial performance. In essence, these high-performing companies are able to **bend the chain** of plan, source, make, and deliver to enable alignment between purchasing and logistics. The result is that they serve customers better with lower operating expenses, cost of goods sold, and inventory.

## Executive Summary

Our research also sheds light on the structures, processes, and tactics top firms employ to enable this type of functional integration. Data from over 180 supply chain leaders (firms ranging in size from over \$20 billion to under \$100 million) were collected and have allowed us to draw the following high-level conclusions:

- Procurement and logistics frequently are found in a broader supply chain or operations organization but really exist as two separate (disconnected) functions.
- Both procurement and logistics are well aligned independently to their business unit's strategy and activities but not nearly as well aligned to each other.
- Despite formal organizational links between purchasing and logistics, interaction between these functions is typically informal and unstructured.

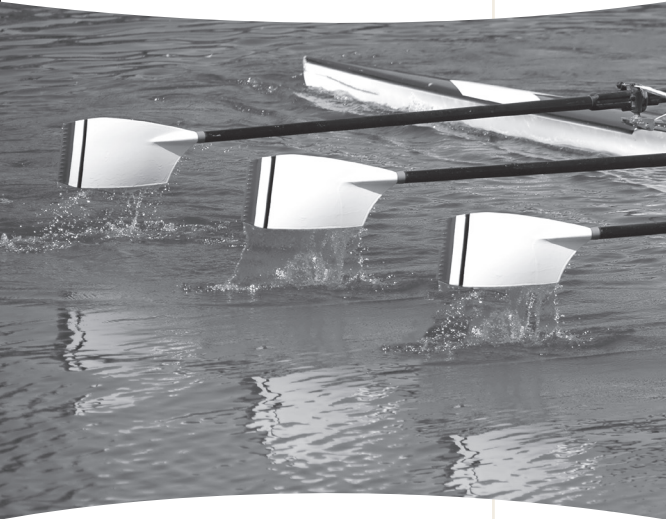
Similarly, in our own experience we have found that when functional elements of the supply chain align with each other, improvements in firm financials and earnings per share invariably follow. Without integrated decision-making, financial performance is at best sub-optimized and at worst value is destroyed. Clearly firms must refocus organizational design, metrics, talent, and incentives to align activities across the value chain.

Finally, we conducted an analysis to determine whether the data provided any indication as to whether procurement-logistics integration (referred to as PLI in this paper) was perceived as being an important lever of overall business success. The data clearly show that

*integrated purchasing/logistics organizations deliver better business results (i.e., cost productivity, working capital productivity, and product availability).*

Additionally, the many interviews we conducted with leading supply chain firms clearly suggest that companies with "best in class" supply chains consistently deliver the strongest business results. These best in class organizations tend to employ a set of four best practices:

- 1. Fully integrated end-to-end supply chain organization integrated with common metrics.**



**ALL OF THE FUNCTIONS  
IN THE COMPANY  
WORK TOGETHER AND  
ARE PERFECTLY  
ALIGNED TOWARD  
A COMMON PURPOSE.**

## Executive Summary

**NET: INTEGRATED  
PURCHASING/LOGISTICS  
ORGANIZATIONS  
DELIVER BETTER RESULTS.**

**2. A talented supply chain organization that rewards people for in-depth mastery and end-to-end supply chain leadership.**

**3. A purchasing and logistics network with an operating decision framework based on best overall total value of ownership (TVO: total cost of ownership plus level of customer value creation).**

**4. Effective information systems and work processes that enable superior business results by providing multifunctional supply chain teams with the proper tools and information.**

Finally, through our research and best in class interviews, we have been able to define a short list of actionable steps supply chain leaders can take today to make a difference.

**1. Get it on business leader scorecards.** Change the business reward system and culture from “sub-optimal functional goals to total value creation for the enterprise.”

**2. Champion TVO.** It is not enough to talk use of total value of ownership with your direct reports. Personally lead the change in the supply chain.

**3. Make R&D your best friend.** Create a seamless technical community that is aligned on total business value creation between R&D and supply chain. New product supply chain design should be a seamless technical community deliverable.

**4. Set clear expectations on the use of multi-discipline teams in analysis and decision making.**

**5. Champion an end-to-end and integrated supply chain organization.**

In the short term, align on a common direction if the purchasing and logistics teams have different leadership. Ensure that both organizations have a common supplier direction, scorecards, and rewards.

**6. Build supply chain talent that includes end-to-end supply chain mastery.**

**7. Partner with finance.** Work with finance leadership to align on how your multi-discipline teams quantify value for quality, customer service, environmental, sustainability, delivery, cost, and inventory.



## **The Surprising Challenge: Purchasing and Logistics Integration**

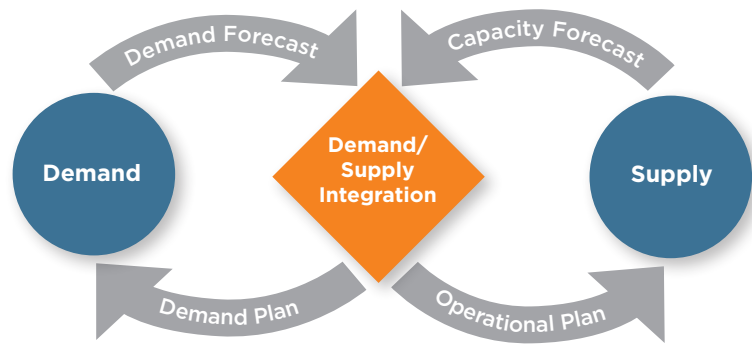
**Q**uality management icon W. Edwards Deming asserted over 30 years ago in the first of his famous 14 points that a business enterprise needs constancy of purpose to succeed. Without this consistency of purpose, the business is not an organization but just a collection of functions acting in disjointed and contradictory ways, impeding or even destroying value. Obvious improvements cannot be implemented, and ultimately business activities fail to create a chain that produces value for the company and its customers. Deming's solution to this fundamental problem was very clear: "Collaboration is our salvation: functions and entities must work together to achieve a common objective." However, as our research shows, most companies still fail to follow through on his prescription.

Instead of adopting this advice, all too often organizations have focused on developing technical centers of functional expertise to drive scale and meet short-term financial and market expectations.

In the past five years, we have conducted over 700 interviews with managers across all industries as part of the University of Tennessee's College of Business supply chain audit program. At the end of every interview, we always ask a "wish list" question: If you could change the world, what would you do to improve things in your company? By far the most common answer to that question is the desire for a utopia in which all of the functions in the company work together and are perfectly aligned toward a common purpose. People we interview pine for an environment where the functional silo walls have come down. They intuitively know that these disconnects are the real reason things are not improving faster.

In this white paper we discuss the results of a large-scale research initiative, along with real-life industry examples, which point to the fact that collaboration across functions and between enterprises is woefully missing from the value chain practice despite at least three decades of focus in the popular and academic press. More importantly, we show that when processes are integrated and silo walls eliminated, the results can be very significant.

**INTEGRATION ACROSS THE SUPPLY CHAIN**



**Addressed by S&OP, SIOP, IBP**

As research by consulting firm Oliver Wight has already shown, when companies integrate

- Revenue goes up 10 to 16 percent
- Fill rates go up 10 to 48 percent
- Logistics costs go down 10 to 32 percent
- Inventory goes down 15 to 46 percent.

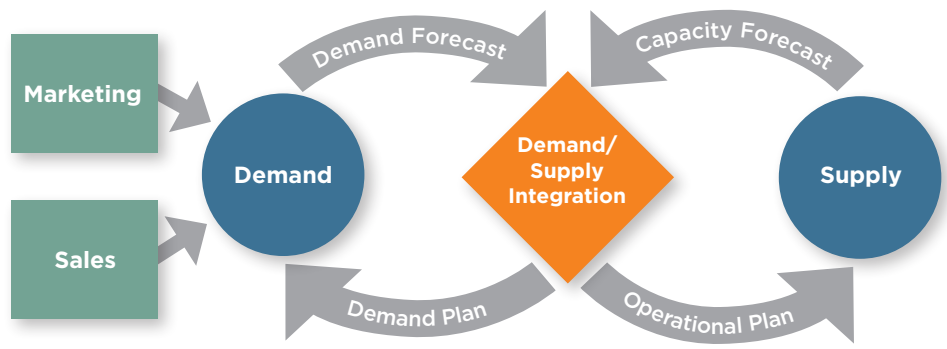
Similarly, in our own experience we have found that when functional elements of the supply chain align with one another, improvements in firm financials and earnings per share invariably follow. Without integrated decision making,

financial performance is at best sub-optimized, and at worst value is destroyed. Clearly firms must refocus organizational design, metrics, talent, and incentives to align activities across the value chain.

**SUPPLY AND DEMAND DISCONNECTS**

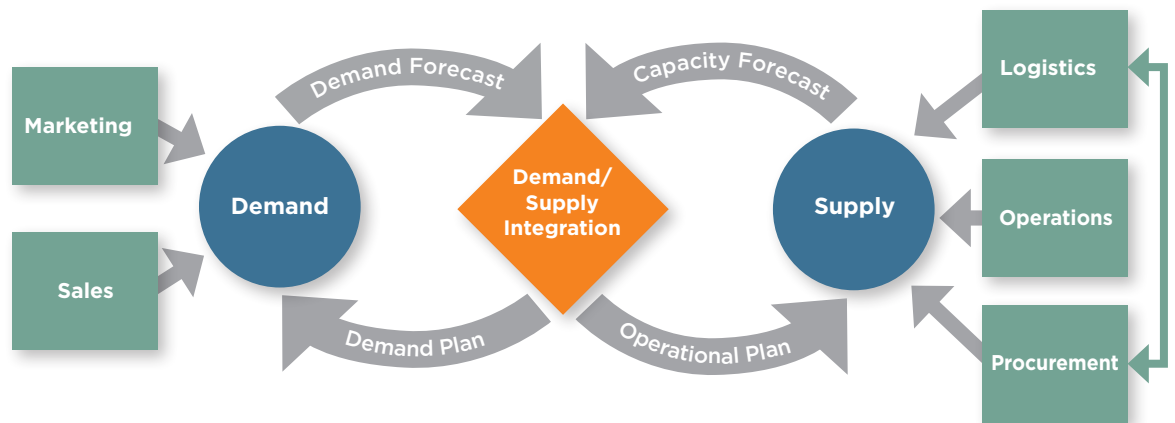
Supply chain leaders have debated and discussed for years the disconnect between the supply and demand sides of business organizations. This lack of integration between sales and operations has spawned entire industries around ideas like S&OP (sales

**DEMAND SIDE DISCONNECTS**



**But the problem is even more complex. Sometimes sales and marketing on the demand side are disconnected.**

## SUPPLY SIDE DISCONNECTS



And sometimes there are disconnects on the supply side.

and operation planning), SIOP (sales, inventory, and operations planning) and IBP (integrated business planning).

But the disconnects go far beyond this macro level. For example, there is often a lack of integration within the demand side of the firm. Sales and marketing in manufacturing companies are not always aligned (or sales, marketing, and merchandising in retailers).

### SUPPLY SIDE DISCONNECTS

And there are similar disconnects on the supply side, between logistics, operations, and procurement.

Indeed, our research shows that one of the greatest opportunities for “lack of integration or dis-integration” lies within areas traditionally thought of as supply chain functions. (“We have met the enemy and he is us!”). Specifically, we believe a major strategic integration opportunity exists between purchasing and logistics, and failing to capitalize on this opportunity is very clearly causing many firms to miss important opportunities to create value.

### THE SURPRISING GAP BETWEEN PURCHASING AND LOGISTICS

Ideally, the supply chain functions of plan, source, make, and deliver are aligned and focused on serving the customer while simultaneously delivering world-class cost and working capital levels. The two functional areas of purchasing and logistics each have a major impact on these goals. Together, purchasing and logistics can represent up to 70 percent of total organizational costs and influence 80 percent of working capital through inventory and payables.

Yet decisions made in these two areas are rarely made in concert with each other. In fact, purchasing often focuses decision making on optimizing metrics associated with purchase price and cost of goods sold, while logistics is focused on optimizing metrics associated with delivery and storage efficiency and effectiveness. Neither area tracks performance to higher-level financial value creation.

Example: A logistics executive for a large global consumer durable goods company hosted a “supply chain management advisory



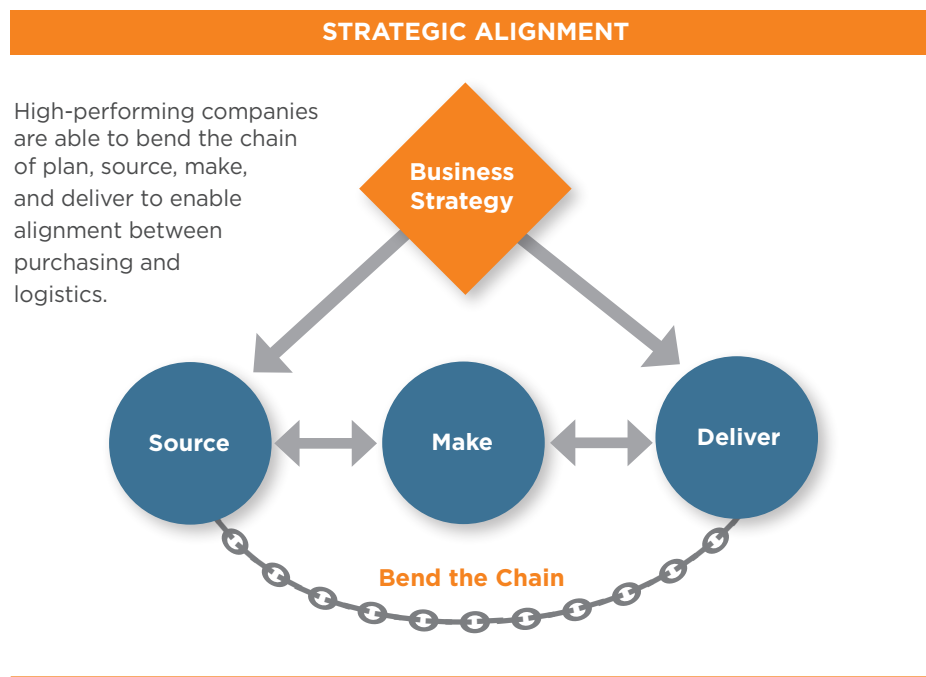
board.” During dinner at a local restaurant, the executive leading this group noticed another group from their firm with a group of visitors in another private room in the restaurant. It turned out this other group consisted of the company’s purchasing executives hosting their own “supply chain management advisory board.” Neither group, to their collective surprise and chagrin, had any knowledge that the other group was meeting nor what they were talking about.

What’s the takeaway from this story? As both sides thought about it, they realized that it was symptomatic of a purchasing group making decisions about purchasing locations globally with no insight into costs of movement. At the same time, the logistics group was focused on how to reduce costs of global warehousing, inventory, and transportation with no insights into future locations of supply

and manufacturing. The ideal plan-source-make-deliver model morphed into a new disconnected reality.

Based on our research, we believe it is probable that your firm is organized, measured, and incentivized in ways that prevent you from deriving the full benefits of collaboration. In fact, it is highly likely that your company encourages behaviors that destroy value, both in the short term by sub-optimizing total system costs and in the long term by generating superficial gains from functional cost reductions while failing to leverage asset investments.

We have also uncovered strong evidence to suggest that organizations that align purchasing and logistics decision making not only vertically with business unit strategy but also horizontally between the functions enjoy heightened levels of both functional



and financial performance. In essence, these high-performing companies are able to **bend the chain** of plan, source, make, and deliver to enable alignment between purchasing and logistics. The result is that

they serve customers better with lower operating expenses, cost of goods sold, and inventory. Our research also sheds light on the structures, processes, and tactics top firms are employing to make this happen.

COLLABORATION  
IS OUR SALVATION:  
FUNCTIONS AND  
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WORK TOGETHER  
TO ACHIEVE A  
COMMON OBJECTIVE.

—W. EDWARDS DEMING



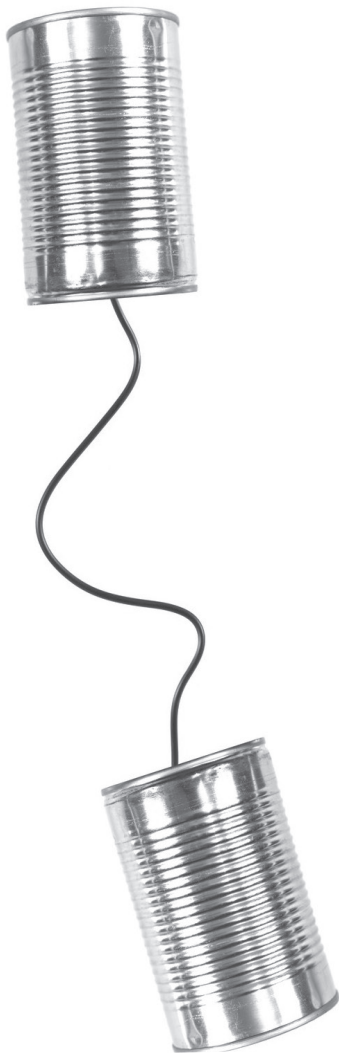


## The Research: Linking Purchasing and Logistics Integration (PLi) to Improved Functional and Financial Performance

**A** survey was sent to purchasing and logistics managers from the University of Tennessee Global Supply Chain Institute and Forums mailing list, resulting in over 180 responses from managers, ranging from CEO's and presidents to analysts. The respondent firms ranged in size from over \$20 billion to under \$100 million. The industries included the following:

- Aerospace/defense
- Apparel/textile
- Automotive
- Building materials
- Chemical, oil, and gas
- Commercial printing
- Components and systems
- Conglomerate
- Construction
- Consumer electronics
- Engineering
- Environmental services
- Facilities management services
- Financial institutions—banking
- Financial institutions—insurance
- Food, beverage, and nutrition
- Food service
- Government—national
- Government—local
- Health-care delivery services
- Heavy machinery
- High-tech network infrastructure
- Hotel/hospitality
- Household, personal care, and cosmetics
- Industrial equipment
- Media/entertainment
- Medical equipment
- Metals/glass processing
- Mining
- Office equipment
- Packaging
- Pharmaceuticals
- Plastics processing
- Professional/information services
- Pulp and paper
- Retail
- Telecommunications services
- Transportation services
- Utilities
- White goods.





**DESPITE FORMAL ORGANIZATIONAL LINKS BETWEEN PURCHASING AND LOGISTICS, INTERACTION BETWEEN THE FUNCTIONS IS TYPICALLY INFORMAL AND UNSTRUCTURED.**

Respondents were first asked to identify whether they worked primarily in purchasing or in logistics. Purchasing was defined as including the following:

- Sourcing direct materials
- Procurement of maintenance, repair, and operating supplies
- Contracting services with outside suppliers
- Procurement of capital equipment/facilities
- Procurement of finished goods (completed items for resale)
- Supplier evaluation and selection
- Management of continuous supplier relations
- Supplier performance measurement
- Establishment of goods/services specifications
- Contract negotiations over materials supplies/services
- Global sourcing/sourcing strategy.

Logistics was defined as including the following activities:

- Inbound/outbound transportation
- Owned fleet management
- Warehouse operations management
- Materials handling
- Packaging
- Order fulfillment
- Logistics information systems management
- Inventory management
- Management of third party logistics services providers
- Customer service
- Reverse logistics flows
- Supply/demand planning

Next, the respondents were asked a series of questions related to their perspective on the nature and level of integration between their department and overall business strategy as well as between the purchasing and logistics functions. For example, if respondents indicated they were purchasing managers, they were asked about the purchasing group's alignment with business strategy and the group's relationship with the logistics group.

Major findings from the survey include the following:

- 1. Purchasing and logistics frequently are found in a broader supply chain or operations organization but really exist as two separate (disconnected) functions.**
- 2. Both purchasing and logistics are well aligned independently to their business unit's strategy and activities but not nearly as well aligned to each other.**
- 3. Despite formal organizational links between purchasing and logistics, interaction between the functions is typically informal and unstructured.**
- 4. Maintaining open lines of communication is the most widely supported method of interaction between the functions.**

More detail on these findings is provided below.

**MAJOR FINDING 1**

**Purchasing and logistics frequently are found in a broader supply chain or operations organization but really exist as two separate (disconnected) functions.** (Table 1)

While nearly 58 percent of respondents reported that purchasing and logistics were part of a common supply chain organization, over 45 percent felt that they exist as separate functions. Fourteen percent still viewed purchasing and logistics as separate functions that are not part of the same supply chain organization, and 28 percent reported some other organizational structure.

<b>TABLE 1</b>	
<b>Which of the following best describes the organizational structure for purchasing and logistics?</b>	<b>Percent Responding</b>
Procurement and logistics are separate functions and are not part of a common supply chain organization	14.0%
Procurement and logistics are separate functions but are part of a common supply chain organization	45.5%
Procurement and logistics are part of the same function and are part of a common supply chain organization	12.2%
Other/not applicable	28.4%



## MAJOR FINDING 2

**Both purchasing and logistics are well aligned independently to their business unit's strategy and activities but not nearly as well aligned to each other.** (Table 2)

The respondents provided a very strong indication that both purchasing and logistics functions are well aligned to business unit strategy and activities. That means both groups essentially agreed with the statements supporting the alignment of purchasing and logistics with business unit strategy (1 = strongly disagree and 5 = strongly agree).

**TABLE 2**

<b>My Functional Area:</b>	<b>Purchasing</b>	<b>Logistics</b>	<b>Total Sample</b>
Identifies opportunities to support the company's strategic direction	4.28	3.99	4.08
Understands the strategic priorities of the company's senior leadership	4.17	3.98	4.03
Adapts its strategy to the changing objectives of the company	4.21	3.89	3.99
Adapts its activities/processes to strategic changes	3.96	3.85	3.89
Maintains a common understanding with the company's senior leadership on its role in supporting strategy	3.92	3.70	3.77
Educates the company's senior leadership on the importance of procurement/logistics activities	3.72	3.63	3.66
Assesses the strategic importance of emerging trends in procurement/logistics for the company	3.60	3.51	3.54

### MAJOR FINDING 3

**Despite formal organizational links between purchasing and logistics, interaction between the functions is typically informal and unstructured.** (Table 3)

Respondents were asked the level of engagement with the other function through a series of questions, again where 1 = strongly disagree and 5 = strongly agree.

Of the different ways that purchasing and logistics might engage, informally working together, sharing ideas and information, and working together on a team scored the highest. More proactive approaches to collaboration, such as anticipating operational problems together and sharing resources, were by far the lowest. This supports the belief that purchasing and logistics, even when housed in the same supply chain organization, continue to operate in their own siloed worlds. Interestingly, purchasing managers perceived a much higher level of engagement.

**TABLE 3**

<b>My Function Engages the Other in the Following Ways:</b>	<b>Purchasing</b>	<b>Logistics</b>	<b>Total Sample</b>
Informally working together	3.60	3.52	3.55
Sharing ideas and/or information	3.70	3.46	3.53
Working together as a team	3.77	3.42	3.53
Resolving operational problems together	3.75	3.38	3.49
Achieving goals collectively	3.58	3.30	3.39
Developing a mutual understanding of responsibilities	3.64	3.29	3.39
Making joint decisions about ways to improve overall operations	<b>3.62</b>	<b>3.16</b>	3.30
Anticipating operational problems together	3.32	3.12	3.18
Sharing resources	3.30	2.98	3.07

Bold values have means which are statistically different.

## MAJOR FINDING 4

### **Maintaining open lines of communication is the most widely used technique to foster integration.** (Table 4)

When respondents were asked how purchasing and logistics interact, maintaining open lines of communication emerged as the most important technique. These open lines are informal and typically not systemic. Again, more proactive approaches, such as identifying potential sources of tension and establishing joint prioritization of projects, were ranked lowest (where 1 = strongly disagree and 5 = strongly agree).

**TABLE 4**

<b>Purchasing/Logistics Group Tends to Work With the Other in the Following Ways:</b>	<b>Purchasing</b>	<b>Logistics</b>	<b>Total Sample</b>
Maintaining open lines of communication	3.94	3.52	3.65
Combining efforts on major initiatives	3.72	3.47	3.54
Developing clear lines of managerial responsibility for implementing plans	3.38	3.24	3.28
Achieving a general level of agreement on risks/tradeoffs among projects	3.43	3.20	3.27
Coordinating project development efforts	3.53	3.16	3.27
Addressing potential sources of tension between procurement and logistics	3.21	3.14	3.16
Establishing a joint basis for prioritizing projects	3.28	2.98	3.07

No statistical differences in means.

We also asked respondents to indicate their functional area's performance relative to expectations, where 1 = well below expectations and 5 = well above expectations (Table 5). Not surprisingly, purchasing managers felt their performance relative to expectations was greatest for performance metrics over which they have the most control, such as performing to purchase price/cost objectives, supplier quality, payment terms with suppliers, and supplier responsiveness/flexibility. Performance metrics that require collaboration with logistics to achieve were all well below 3.0 on the 5-point scale.

TABLE 5	
My Purchasing Group's Performance Compared With Expectations for Each of the Following:	
Performing to purchase price/cost objectives	3.28
Supplier quality	3.26
Payment terms with suppliers	3.17
Supplier responsiveness/flexibility	3.11
Supplier on-time delivery	2.87
Total cost of ownership	2.83
Supplier technology contribution	2.57
Inventory investment cost for purchased goods	2.40
Transportation <u>and</u> logistics costs	2.40

**PURCHASING AND LOGISTICS, EVEN WHEN HOUSED IN THE SAME SUPPLY CHAIN ORGANIZATION, CONTINUE TO OPERATE IN THEIR OWN SILOED WORLDS.**



Similarly, logistics managers felt their functional performance exceeded expectations on metrics related to customer delivery, for example, establishing customer service levels; network design/network location; full, damage-free, and on-time deliveries; and inbound/outbound transportation contracting and management—all metrics that fall under their control (Table 6). Performance metrics that require collaboration with other areas of the supply chain, for example, forecasting accuracy, total inventory turns, reverse logistics management, and time on back-order, were among the lowest scores in the entire survey.

**TABLE 6**

<b>My Logistics Group's Performance Compared With Expectations for Each of the Following:</b>	
Establishing customer service levels	3.59
Network design/network location	3.38
Full, damage-free, and on-time deliveries	3.19
Inbound/outbound transportation contracting	3.16
Inbound/outbound transportation management	3.07
Inventory planning	2.92
Logistics information-systems design and implementation	2.86
Transportation costs	2.72
Total logistics costs	2.70
Time between order receipt and delivery	2.53
Warehousing costs	2.47
Logistics performance measurement	2.43
Line-item fill rate	2.34
Inventory costs	2.18
Order fulfillment management	2.03
Finished goods inventory	2.00
Forecasting accuracy	1.98
Total inventory turns	1.93
Reverse logistics management	1.89
Time on back-order	1.63



Finally, we conducted an analysis to determine whether the data provided any indication as to whether PLi was perceived as an important lever of overall business success (Table 7). While this statistic is highly subjective, the table below provides indications that managers from firms in the top 25 percent of PLi in this survey believe their firms significantly outperform their competitors as compared with managers from firms with lower PLi scores (where 1 = well below competitors and 5 = well above competitors). In other words, managers believe their company achieves a significant performance premium from aligning their purchasing and logistics functions.

TABLE 7			
My Firm's Performance in Comparison With My Competitors	Purchasing and Logistics Alignment		
	Firms in top 25% of PLi scores	Firms in bottom 75% of PLi scores	PLi performance premium for highly aligned companies
Growth in sales	3.42*	2.91*	18%
Profit margin	3.51*	2.93*	20%
Growth in market share	3.39*	2.84*	19%
Return on investment (ROI)	3.58*	2.92*	23%
Cost reduction	3.56*	2.84*	25%

\*Means are statistically different.

**NET: INTEGRATED  
PURCHASING/LOGISTICS  
ORGANIZATIONS DELIVER  
BETTER RESULTS.**



## Best Practices

**T**he remainder of this white paper will report the results of a series of field interviews conducted by the University of Tennessee and affiliated faculty of major supply chain leaders such as Caterpillar, Dell, Eastman, Ecolabs, IBM, Mondelez, and P&G. The interview results uncover best practices in purchasing and logistics integration, showing how some companies are “bending the chain.”

This section also provides a helpful short list of effective leadership actions a supply chain leader can take today.

### BEST PRACTICES

Supply chains that consistently deliver the strongest business results have the following purchasing/logistics characteristics:

1. **Fully integrated end-to-end supply chain organization with common metrics**
2. **Talented supply chain organization that rewards people for in-depth mastery and end-to-end supply chain leadership**
3. **Purchasing and logistics network with an operating decision framework based on best overall total value of ownership (TVO)**
4. **Effective information systems and work processes that enable superior business results by providing multifunctional supply chain teams the proper tools and information.**

### BEST PRACTICE 1

#### **Fully integrated end-to-end supply chain organization with common metrics**

We have learned from decades of S&OP work that a business’s *demand creation* activities are most effective when they are housed in a common organization. Similarly, *demand fulfillment* activities are most effective when they are integrated under a common supply chain organization. The best, most enduring results occur when everyone in the supply chain organization is focused on delivering superb SC results (customer service, quality, safety, cost, cash, etc.).

For example, large, successful global consumer goods businesses have learned (the hard way) about the vital importance of fully integrated SC organizations. These companies are structured with an “end-to-end/fully integrated” supply chain organization headed by a common leader. These organizations include purchasing, logistics, operations/manufacturing, engineering, innovation management, quality, and others. The common supply chain leader drives an energizing vision, single direction, common scorecards, and consistent rewards. Thus, 100 percent of the organization is focused on meeting consumer/customer needs and delivering total value to stakeholders.

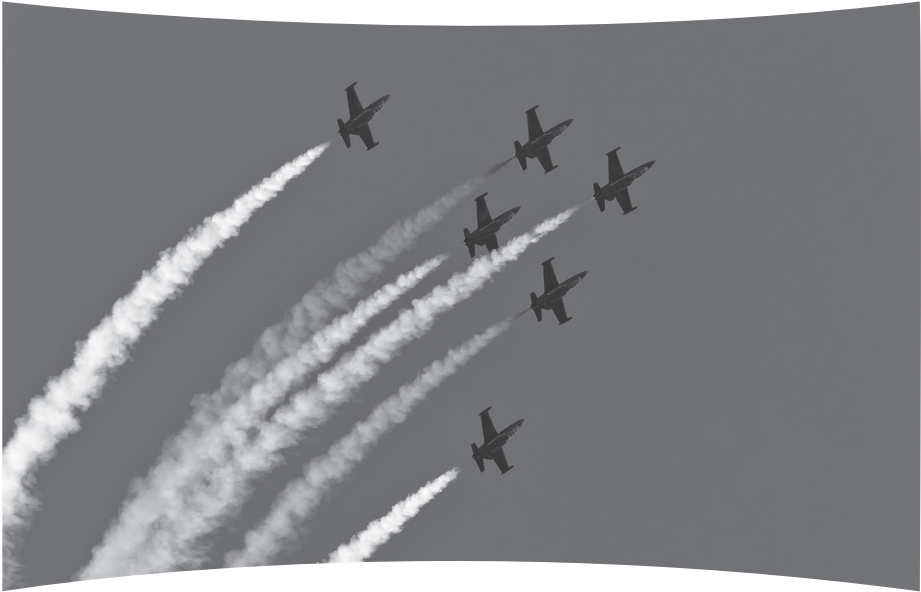
These best in class designs are not without challenges. Frequently purchasing owns results beyond the supply chain, including contracts for marketing spending, indirect spending, R&D suppliers, and external contractors. This creates pressure to have

an executive level purchasing manager who reports to the CEO. One global supply chain has worked through this issue by formalizing the responsibility of the purchasing VP to the global supply chain officer.

■ *A global chemical company has likewise leveraged a partnership between corporate purchases and the supply chain. This company found it necessary to change the language and create a culture called “integrated global supply chain” to highlight the need for purchasing and supply chain teamwork. This partnership between purchasing and the rest of the supply chain ensures a common direction and reward system.*

We have found that in organizations without a fully integrated end-to-end structure, the most effective first step is to develop these types of partnerships. The organization benefits from the partners’ common vision, direction, and rewards until a more long term structural change can be implemented.

IDEALLY, THE SUPPLY CHAIN FUNCTIONS OF PLAN, SOURCE, MAKE, AND DELIVER ARE ALIGNED.





It is important to note that these types of leadership partnerships are by their nature dependent on the individuals involved and will vary as personnel change. Therefore it is critical that leaders view these partnerships as transitions on the path to an organizational solution.

A second challenge involves the depth of integration.

■ *One Fortune 500 global supply chain leader has had an integrated end-to-end supply chain for the last three decades. The company has enjoyed improvements in cost, cash, customer service, and quality. Over the years the integration has been maintained at the top of the organization but has drifted at the category teams (middle level). Functional areas such as purchasing and logistics became convinced that because of internal productivity improvements they needed to become focused on their own “primary measures.” Unfortunately, these middle level (category) teams are where 90 percent or more of the decisions impacting cost, cash, quality, and service are made. A renewal of the original end-to-end vision at all levels of the organization is now necessary.*

■ *Similarly, a successful mid-sized company has recently implemented an integrated end-to-end supply chain design. The driving factor behind the change was the inability*

*to deliver long term business cost goals. After a decade of strong but independent savings work by the purchasing and logistics functions, the “well was running dry.” The biggest ideas were no longer inside the departments but at the supply chain integration points across the departments (e.g., optimizing piece price versus transportation cost, optimizing piece price versus sourcing location). The most systemic solution was to form and reward a fully integrated team. The organization was delivering 2.5 percent net savings but now has strong action plans to deliver the business need of 4 percent net cost savings.*

**The leadership/organizational structure is only one part of the fully integrated end-to-end supply chain. Multi-discipline supply chain teams must be involved in strategic supplier selection and development.**

You have heard the saying “Do it right the first time” your entire life. Best in class supply chains take this to heart. Creating the best total value supply system the first time prevents non-valued added costs, quality defects, customer service defects, and unproductive inventory while most efficiently utilizing your limited resources. This is broadly accepted but difficult to execute. Day-to-day business pressures often push managers into high urgency/low value activities, diverting



attention from those high value activities that can really make a lasting impact.

Best in class supply chains utilize multi-discipline teams to manage supplier selection and development for strategic suppliers and critical materials. This ensures the right resources are involved to develop the best end-to-end supply chain solutions. These supply chains leverage purchasing as the leader of the supplier selection/development teams. The goal is to have a clear, single point of accountability while ensuring an integrated process. These multi-discipline teams include all the relevant elements of the end-to-end supply chain (e.g., engineering, logistics, manufacturing, purchasing, innovation management, quality, six sigma resources, etc.). Moreover, best in class supply chains prioritize the level of resource involvement with the greatest business impact. The full multi-discipline supply chain teams are heavily involved with the most important suppliers/materials while auxiliary teams manage less critical decisions. Additionally, many companies use senior, experienced (in multiple SC components) supply chain leaders in broader supplier selection teams with the expectation that they will resource experts when needed.

■ *A global information technology leader has a simple and transparent expectation for the use of multi-discipline supplier selection and development teams. The first time an employee does not use a multi-discipline team, he or she receives a warning; the second time results in termination. This extreme principle is being utilized to change the culture and ensure the total value of ownership (TVO) requirements are delivered.*

■ *This same supply chain leader requires that all supplier selection teams maintain responsibility for supplier development. “The development of our supplier partners is critical to delivering our long term goals. We want the accountability for selection and development*

*to be consistent. Decisions in the selection process are owned through execution.”*

■ *A major retailer is linking merchandising with its supply chain resources on supplier selection. This same company is forming multi-discipline teams to work with private label supplier development teams. Additionally, a director of supplier collaboration has been appointed to drive faster progress in these areas.*

■ *A major global CPG company has benefited from multi-discipline teams for multiple decades. These teams have facilitated TVO at a category or brand level. The opportunity is to multiply the scale, leveraging strong supplier partner capabilities across categories. The key action plan is to involve “other category” multi-discipline teams in their supplier selection/development processes to harvest scale within a supplier. An example of this is working to align on common chemical specifications across categories to increase supplier scale/volume discounts.*

## **BEST PRACTICE 2**

### **Talented supply chain organization that rewards people for in-depth mastery and end-to-end supply chain leadership**

For years, logistics and purchasing leaders have argued that these two vital elements of the supply chain must be in separate organizations with different recruiting, training, rewards, and rituals. Typical arguments included

- Purchasing is an externally focused organization
- Purchasing is commercial work, not technical work
- Purchasing requires strong entrepreneurial skills
- Logistics must stay focused on delivering this week



- Logistics is busy leading inventory and customer service
- Logistics must have a strong day-to-day team relationship with the manufacturing plants
- Logistics must be expert planners and APEC certified.

The most effective supply chain leaders have created new paradigms. The breakthrough improvements in cost, cash, and service lie in the seams of the supply chain, but integrated approaches are needed to achieve these benefits. Therefore, supply chains must strive for functional depth and the necessary end-to-end breadth of supply chain skills.

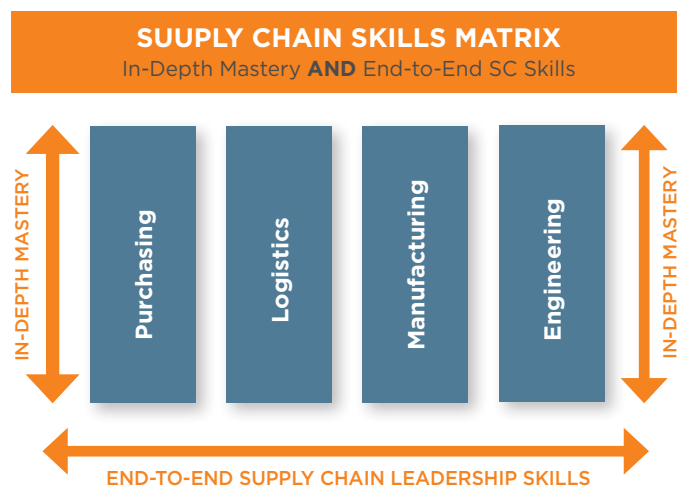
In our research we found multiple examples of best in class supply chains that have broken through to this new paradigm:

- A large industrial equipment company is requiring its purchasing and logistics resources to come to senior business/product managers with integrated action plans and goals.
- A major global chemical company has a system to move all new supply chain

managers through multiple supply chain disciplines.

- Multiple top-tier organizations are now requiring that a single senior supply chain manager with broad end-to-end skills be actively involved in upfront innovation work processes with R&D. As a result of significant corporate productivity goals, the days of sending multiple supply chain leaders are over. As one manager put it, “We must have supply chain leaders with strong purchasing and logistics skills influencing the new product/supply chain decisions of our future.”
- Supply chain executive VPs are requiring that purchasing and logistics leaders do more than create “great purchasing (or logistics)” talent. These disciplines must develop in-depth mastery to drive results for today while simultaneously building end-to-end supply chain skills to meet the complex SC problems and opportunities of tomorrow. The secondary benefit of these senior leadership expectations is the creation of a larger pool of future supply chain executive leadership talent.

**INTEGRATED APPROACHES ARE NEEDED TO ACHIEVE THESE BENEFITS.**



### BEST PRACTICE 3

#### Purchasing and logistics network with an operating decision framework based on best overall total value of ownership (TVO = total cost of ownership plus level of customer creation)

Many purchasing teams have been using broad supplier scorecards in the supplier selection process for years.

Nevertheless, supply chains continue suffering from inaccurate prediction of supplier cost, significant quality issues/rework cost, and capacity issues because of poor supplier reliability.

Our research has shown that the existence of a supplier scorecard is insufficient to drive excellence in supplier driven supply chain metrics.

### SUPPLIER SELECTION METRICS

#### COMPETITIVE VALUE

Cost/Price  
Quality  
Delivery  
Reliability  
Flexibility  
Responsiveness

#### PARTNERSHIP VALUE

Customer Satisfaction  
Supplier Satisfaction

#### LONG TERM VALUE

Innovation/Ideas  
Value of Ownership

#### SUSTAINABLE VALUE

Environmental  
Social/Ethical  
Compliance/Regulatory

Today, most supplier selection and development is led and managed by purchasing, and decision making is largely based on piece price. However, the most effective supply chains have successfully transitioned to decisions based on TVO. This requires broader supply chain involvement (see best practice 1) and a commitment to TVO-based decisions.

■ *A world-class global information technology company uses internal supplier selection consultants to review supplier decisions. This has significantly changed the reward system. In the rapidly changing information technology business, mistakes created by narrow piece price decisions can make or break profit goals for the company.*

■ *A global industrial equipment company found significant defects in its supplier scorecards. The purchasing teams were measuring piece price and supplier on-time delivery. Unfortunately, 90 percent or more of these suppliers do not deliver the materials. This is a great example of having the wrong measures on the scorecard.*

### BEST PRACTICE 4

#### Effective information systems and work processes that enable superior business results by providing multifunctional supply chain teams the proper tools and information

Finally, a supply chain can have a fully integrated structure with talented, well-trained people who focus on total value yet still not deliver best in class supplier results. Empowered teams must have the tools to execute with excellence. Robust and efficient information systems and work processes are required to support total value creation.

We have interviewed many companies that start with a holistic supplier scorecard but struggle with placing a value on customer service/quality issues, cost of inventory, environmental incidents, reliable supply/delivery, etc.

Some of these elements have a cumulative impact. The first environmental issue may have a limited impact, but multiple incidents can cause significant legal costs, time

commitment, and investments and in extreme cases business disruption. How do you place a cost on these types of elements? We have found that the best in class supply chains partner with finance to align on the value of these items. These can be intense debates. Our suggestion is to create a starting point and adjust as you learn.

■ *A medium-size service oriented company recently changed its executive vice president of supply chain. The new executive found that the reported supplier savings were not making it to the bottom line. The reward system was based on gross purchase price savings. The EVP changed the SC reward system, focusing the purchasing cost measure on net savings, thus creating an immediate impact on corporate results.*

■ *Likewise, a large global consumer goods company had to change how it valued quality investments. Historically, investments for handling new materials and suppliers were approached with a “zero capital mindset.” New materials/suppliers were simply brought in, and it was up to the facility managers to utilize their extremely high skilled work force to develop low cost solutions. This had a compounding effect, in which every couple of years a major quality-based capital appropriation was required. Finance and the supply chain leader aligned on including “fair share” capital as part of these types of supplier selections to realistically model the total cost.*

Robust work processes are required for managing these decisions. Clear metrics, decision authority, multi-discipline team criteria, monthly reviews, and leadership involvement are a few of these important processes.

■ *A global chemical company has rigorous quarterly review processes (by chemical*

*segmentation). The quarterly reviews include a full analysis of successes and failures, with action plans to drive continuous improvement. Additionally, the reviews are based on a holistic total value scorecard, including suppliers’ work on innovation (supporting the chemical company’s initiatives and internal supplier innovation).*

■ *A global CPG executive VP requires top SC leadership reviews of critical supplier decisions. “Left alone, the culture reverts to a purchasing process based on piece price. To change this culture, supply chain leaders must be actively involved in the reviews—pushing for total value, driving to determine the cost of quality/service issues, and incorporating the true cost of cash.” The active leadership involvement and reviews are changing the culture, driving better decisions and training the organization on what will be rewarded.*

This is complicated as the world becomes more global. Many of these processes must work across different regions. We now live in a virtual world requiring virtual processes.

■ *A mid-sized global service company has utilized multi-discipline teams. Because of the global nature of its business, these teams are virtual, with participants from around the world. Their inefficiencies come from the virtual work process. Teamwork is a key issue. The virtual team did not have the level of teamwork experienced in co-located facilities. The root causes were little/no informal time for team communication, lack of team building to build trust, and the time lag as the team collectively solved problems. Implementation of improved communication tools for virtual teams is a critical action plan.*





## 7 Actions a Supply Chain Leader Can Take Today

*The value of the research, best practices, and examples is determined by how they can change your supply chain leadership. Below is a list of potential actions you could take today to make a difference in your organization and business results.*

- 1. Get it on business leader scorecards.** Work with your general managers/business leaders to ensure holistic measures are on the business/general manager scorecards. Profit and cost are consistently on these high-level scorecards, but quality, cash, and customer service may not be. Including supply chain excellence measures on the business scorecard enables you to lead based on business priorities.
- 2. Champion TVO.** It is not enough to talk use of total value of ownership with your direct reports. Talk the importance of total value with supplier selection and development as part of your communications (meetings, calls, printed documents, supply chain goals/action plans), participate in supplier selection and development reviews for the most strategic suppliers/materials, and ensure that the rewards for supply chain people are consistent with TVO.
- 3. Make R&D your best friend.** Create a strong partnership with the research and development leader. Consider co-locating your office with the R&D leader to facilitate teamwork and symbolize a seamless technical community. You and the R&D leader should have common expectations, including active, up-front involvement in new initiative supplier decisions and product design to optimize innovation that delivers consumer, customer, supplier, community, and shareholder needs.
- 4. Be clear.** Set clear expectations for use of multi-discipline teams on supplier selection. Ensure people know what process is expected for what type of suppliers. Do this publicly and in written communications. Enable your multi-discipline teams to do the work. Help your global virtual teams get the tools they need to succeed.
- 5. Champion an end-to-end and integrated supply chain organization.** If your supply chain team is not end to end and fully integrated, create a plan to transition. This is not easy or straightforward leadership work in many companies. Barriers to creating your supply chain organizational vision include commercial business leaders who have other ideas, existing acquisition agreements (including personal contacts), and historical systems. Stay committed to achieving the vision, and make progress with every organizational opportunity.

- Align on a common direction. If the purchasing and logistics teams have different leadership, partner with these leaders to ensure both organizations have a common supplier direction, scorecards, and rewards. This alignment can precede more complex organizational structure changes and deliver immediate business improvement. This type of clear organizational direction creates more leadership work, as the two leaders must speak with a common voice. But the investment with your partner to create this common voice will reward both of you with better decision making (until the structural change is made).

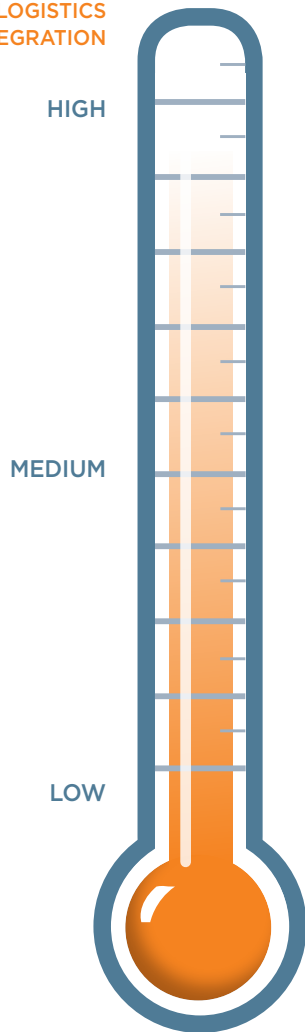
**6. Build talent focused on the end-to-end supply chain.** Create a principle for strong end-to-end supply chain skill requirements for leadership positions in each supply chain discipline. Today's business challenges require supply chain leaders who can build strong "links" in the supply systems and resolve integration problems. Discipline leaders who have demonstrated successful results in multiple disciplines will strengthen the capability of the total supply chain leadership team.

**7. Partner with finance.** Work with finance leadership to align on how your multi-discipline teams quantify quality, customer service, environmental, sustainability, delivery, inventory, etc. A primary leadership role is enabling the organization with clear expectations and aligned measures. Delegation of this leadership work "freezes" most teams. Create a starting point on how to value, learn, and adjust.

**SUPPLY CHAINS THAT  
DELIVER THE STRONGEST  
BUSINESS RESULTS ARE  
FULLY INTEGRATED.**



**PURCHASING  
& LOGISTICS  
INTEGRATION**



## How High Is Your PLi?

Our research shows there is a tremendous benefit when firms align purchasing and logistics activities across the value chain to facilitate collaboration.

So, how integrated are your firm's purchasing and logistics functions? *Very*, you say? Are you sure?

Why not test this with a quick check-up that will answer the question "how high is your PLi?" Perhaps purchasing believes there is excellent collaboration while logistics does not or vice versa.

Send copies of this brief self-test to key members of your purchasing and logistics teams, and ask them to return them to you. See where their answers are aligned and where they're different. This is not a scientific tool but one designed to provide insight into how both groups view their level of collaboration. This eye-opening exercise could lead to valuable process improvements that can raise your PLi.





## HOW HIGH IS YOUR PLI?

Answer the following questions on a 1 to 5 scale.  
Apply the questions based on your business.

Scale:

5 - fully implemented, producing strong results, cultural norm

3 - implemented but not a cultural norm and requires leadership reinforcement

1 - not implemented, being discussed

QUESTION	SCORE	COMMENTS
1. Do you have a fully integrated end-to-end supply chain organization where purchasing and logistics report to the same supply chain VP?		
2. Do you have one common supply chain vision, direction, and rewards system for all purchasing and logistics personnel?		
3. Do you have a common supply chain scorecard where all disciplines in the supply chain report results?		
4. Do you measure supplier selection, development and other operational decisions based on total value to your company?		
5. Does your organization have clear measures for the value of inventory, quality, and customer service to include in the total value equation?		
6. Do you utilize multi-functional teams (i.e., R&D, finance, operations, quality, engineering, logistics, purchasing) appropriate for your business to select and develop strategic suppliers and materials?		

*Continued*

CUT HERE 



## HOW HIGH IS YOUR PLi?

QUESTION	SCORE	COMMENTS
7. Do your multi-functional purchasing and logistics teams have the information system, work process, and communication tools to do the work well?		
8. Does your supply chain organization value in-depth mastery in purchasing and logistics as well as end-to-end supply chain mastery?		
9. Do the R&D and supply chain teams work jointly to create innovation that enables total value to the business?		
10. Would your business and commercial leadership (i.e., general manager, marketing VP) view the supply chain organization as fully integrated (one team) driving for best overall value for the business?		

### How did you do?

26 to 30—Best in class organization benefiting from strong PLi

21 to 25—Headed in the right direction, work to do

16 to 20—Top supply chain leadership's personal involvement needed, significant work to do

10 to 15—New direction needed, significant value being lost



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# W G N GAME H C

## A FINAL NOTE

We hope you have found the material in this white paper helpful and useful. We at the University of Tennessee are committed to translating our No. 1 position in academic research into information useful for practitioners. We believe the real world of industry is our laboratory. It's why we have the largest Supply Chain Forum in the academic world, with over 50 sponsoring companies. We are always looking for industry partners to assist us in this journey. Let us know if you are interested in being one of our valued partners:

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