

# SUPPLYCHAIN

## MANAGEMENT REVIEW®



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**IN THE NEXT FEW MINUTES**, a customer will double her monthly order, and workers in the office, on the assembly line and at the dock will work on the same page to replenish raw goods, reduce queues and speed up the cycle time so supply can meet demand and shake its firm yet happy hand.

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# SUPPLYCHAIN

## MANAGEMENT REVIEW

### FEATURES

#### 14 Anatomy of a Leader

What makes a truly great supply chain leader? For several years now, *Supply Chain Management Review* has been addressing that critical question through our "Profiles in Leadership" column. Probing deeper into the individual stories, we've identified seven characteristics that seem to define supply chain leaders wherever they are found.

#### 22 A Real-world Take on Transformation

Supply chain executives gathered at a summit at Michigan State University to explore how companies can achieve the breakthroughs that enable supply chain—and business—success. They identified one powerful avenue for doing this: a process called supply-leveraged organizational transformation, or SLOT.

#### 30 How Inventory Optimization Opens Pathways to Profitability

Inventory optimization—the process of scientifically determining the right inventory levels across the supply chain—has never been easy. But advanced tools are enabling companies to do the job faster, more accurately, and with greater business impact. In fact, industry leaders are finding that IO can be a driver of profitability, as author Sean Willems explains.

#### 38 A Practical Framework for Strategic Planning

The importance of strategic supply chain planning is generally acknowledged. However, many companies struggle with creating the plans and then executing them. What's needed, say educators Tan Miller and Matthew Liberatore, is a framework that can guide the strategic planning process. This real-world framework is intended to fill that need.

#### 46 Value-Focused Supply: Linking Supply to Business Strategies

Value-focused supply (VFS) is a new way of

thinking about business success. Instead of focusing on improvements within the four walls of the organization, this approach seeks to enlist the support of the supply base in improving efficiency and generating value.

#### SPECIAL SUPPLEMENT

#### S58 2011 State of Air Cargo

Most experts predict an upbeat year for the airfreight industry, fueled by growth in the Asia/Pacific region. The big caveat: the price of fuel.

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## Looking to the Leaders

**L**eadership is one of the most popular topics we write about in *SCMR*. We all seem to be fascinated by individuals who can rally a company, a sports team, a country toward a shared goal. Yet when asked just what makes a good leader, most of us struggle with a precise answer. It's kind of: "Well, I know what real leadership is when I see it."

In our lead article this issue, Special Projects Editor John Kerr puts a face and some attributes around leadership in a supply chain context. Kerr, who writes our regular "Profiles in Leadership" column, revisited the profiles he has written to see if he could come up with a composite picture of a supply chain leader. He found that while the individuals we profiled are different in terms of their background, education, and experience, they do share a number of common attributes—seven to be exact.

Some of the attributes are fairly intuitive—effective communicator, a strong "action" orientation, a knack for engaging others in accomplishing a particular initiative or philosophy. But others are less so. One that I thought fell squarely in this category was a penchant to continually "pay it forward." As Kerr explains it, this is the deep commitment to nurture the future supply chain talent base. The attribute is manifested in the various mentoring, coaching, teaching, and community outreach activities of the leaders profiled.

Leadership was certainly on display at the Executive Summit convened by Michigan State and reported on in this issue. Supply chain executives gathered at the university to explore how companies can achieve the breakthroughs that lead to supply chain—and business—excellence. In particular, they identified one powerful avenue for doing this: a process called

supply-leveraged organizational transformation, or SLOT. This approach entails looking beyond the four walls of the organization to enlist the capabilities and expertise of the entire supply network. The researchers from Michigan State who convened this summit report on the executives' perspective on this strategy.

Execution is one of the most critical components in the leadership equation. The ability to translate strategies into actions that benefit the business has never been more important. Where strategic plans are concerned, however, supply chain managers often have a difficult time executing against those plans. The feature article by educators Tan Miller and Matthew Liberatore offers a practical framework for meeting that challenge.

Reflecting our leadership theme this issue, we're pleased to introduce a new section of the magazine called "Talent Strategies." It's written by the experts at MIT's Center for Transportation & Logistics, which has both a depth of research and hands-on experience in professional development in the supply chain space. We believe their insights and information will help you and the people in your organization ultimately become more effective leaders.

One last word: Analyzing the backgrounds and experience of the successful individuals we have profiled over the years, it's clear that more often than not leaders are made and not born. That's got to be encouraging for anyone seeking to rise up the leadership ladder.



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## My CPFR Journey

***Though Collaborative Planning, Forecasting, and Replenishment may not have played out the way we thought it would, the results to date have been a resounding affirmation of collaboration.***

I recently wrote a column on Collaborative Planning, Forecasting, and Replenishment (CPFR) for a special CPFR issue of the *Journal of Business Forecasting* (Winter 2010-2011). In writing the piece, I came to realize the profound effect that the CPFR phenomena has had on my career. This column reflects many of the thoughts I expressed in that JBF column.

I got on what eventually turned out to be the CPFR bandwagon just as it was starting to roll. Back in the 1990s, there was supply chain industry interest in Efficient Consumer Response (ECR). Essentially, ECR was a concept whereby manufacturers and retailers might drastically reduce inventories, costs, and waste in consumer-product goods supply chains by sharing information. There was a lot of excitement about the potential of ECR, though for a variety of reasons, that potential was never realized.

But the initial excitement generated over ECR did spark an interest in the broader notion of supplier-customer “collaboration”, which eventually led to the development of CPFR as an enabling approach. This innovative approach was offered as a panacea for integrating supply chains to gain huge benefits in inventory reductions and increased sales. Like most technology innovations, CPFR followed the Gartner “Hype Cycle.” That is, early on after a trigger, it experienced a period of inflated expectations, then a period of trough of disillusionment, and eventually enlightenment—leading to its current period of productivity.

### **The Early History**

The potential of CPFR as an electronically enabled capability was brought to my

attention in a 1996 *Business Week* article titled “Clearing the Cobwebs from the Stockroom: New Internet software may make forecasting a snap” (<http://www.businessweek.com/1996/43/b3498166.htm>). The article described a working pilot being conducted by Warner-Lambert and Wal-Mart to co-forecast the retailer’s sales of Listerine mouthwash and to improve retail inventory replenishment of that product. Then, the initiative was called Collaborative Forecasting and Replenishment, or CFAR—the acronym suggesting that it would help you “see far.”

The *Business Week* article noted that a small consulting firm called Benchmarking Partners, with funding from Wal-Mart, IBM, SAP, and Manugistics (now part of JDA Software), had developed CFAR and was trying to establish industry standards for how retailers and suppliers should collaborate over the Internet. In January of 1996, I joined Benchmarking Partners for about a year to play a part in CPFR’s evolution. I continued to track the initiative during my subsequent tenure as a supply chain analyst for AMR Research (now part of Gartner).

Like many others, I felt CPFR was going to be an important way to leverage the Internet to integrate supply chains. And, like the Internet, it was going to change everything and move the industry to a “new economic” model.

In 1998 I wrote a report at AMR Research titled “Are We Moving from Buyers and Sellers to Collaborators?” While the title was posed as a question, the report was bullish on CPFR’s long-term prospects. In that report, I presented Exhibit 1 to depict not just the manufacturer-retailer collaboration (regarding

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demand planning), but also various other opportunities along a supply chain for buyer-seller collaboration. I conjectured that collaboration would be beneficial not only for relationships between manufacturers and retailers (i.e., the focus of CPFR), but also among manufacturers and their multi-tiered set of suppliers to do Synchronized Production Scheduling and Collaborative Product Development. I also addressed the potential for collaboration among manufacturers and logistics providers via Collaborative Logistics Planning for transportation and warehousing services.

The Voluntary Interindustry Commerce Solutions (VICS) Association later that year began developing industry standards and supporting CPFR pilots. The group's website ([www.cpfpr.org](http://www.cpfpr.org)) describes the progress made since: "Since the 1998 publication of the VICS CPFR guidelines, over 300 companies have implemented the process. Numerous case studies of CPFR projects document in-stock percentage improvements of 2 to 8 percent for products in stores, accompanied by inventory reductions of 10 to 40 percent across the supply chain."

### Dot.com Meltdown Changes Everything

CPFR never became the big deal we all thought it would be. Once the Dot.com bubble burst in March 2000, the enthusiasm for CPFR waned despite ample evidence of its benefits from the VICS pilots. Along with the World Wide Web, CPFR went through its trough of disillusionment. Companies decided it was too difficult to scale up the piloted processes to collaborate with larger swatches of their retail-customer bases. Many just wound up implementing it in standardized form with a handful of their major, most-demanding, and capable customers.

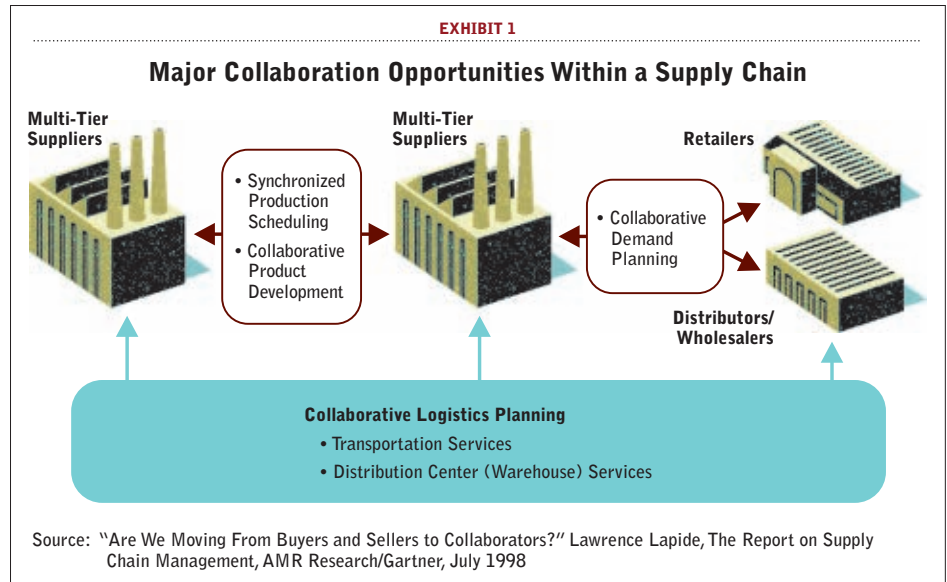
Yet while the standardized form of CPFR may not have been the big deal we all thought it would be, its introduction was an important watershed event for all types of electronic collaboration. In particular, it was instrumental in showing that the collaboration concept could be leveraged throughout the supply chain to improve planning and operations. In fact, the term CPFR became associated with a variety of inventory co-management programs such as Vendor Managed Inventory (VMI) and Supplier Managed Inventory (SMI). It was also being connected with forecast-sharing and other

types of downstream data sharing (including the sharing of channel and warehouse inventories, and warehouse withdrawals).

These types of collaboration programs are very much alive today. Many consumer product companies (General Mills, P&G, and Hershey's, to name a few) have implemented successful co-inventory management programs such as VMI, and to a lesser extent CPFR, with significant portions of their customer bases. High-tech companies such as Dell, TI, and Cisco Systems have important co-management inventory programs with their suppliers. Lastly, many manufacturers have implemented just-in-time (JIT) inventory replenishment programs to support production operations by sharing inventory replenishment forecasts with their suppliers and contract manufacturers.

Going back to the Hype Cycle, we have passed through a period of enlightenment for CPFR and now are in a period of productivity. That's true not just for standardized CPFR, but also for the broader concept of supply chain collaboration. And with the possible exception of Collaborative Logistics Planning, which has yet to gain much traction, the collaboration opportunities today are much as depicted in our graphic from 1998.

Like recent Internet initiatives, such as the Web 2.0 and 3.0, CPFR concepts are being successfully implemented—however, not in the "standardized" ways we thought of during the peak of the hype. The recent growth of mobile devices and wireless communications, coupled with the various social networks, bode well for increased electronic supply chain collaboration in the future. CPFR is alive and well, albeit with a broader manifestation and spelled with a capital "C" for collaboration!





# The Give-Back Guy: Herb Johnson

By John Kerr

John Kerr is a special projects editor for *Supply Chain Management Review*

**H**erb Johnson is not the retiring type—not in any sense of the word. While many of his contemporaries keep busy by perfecting their golf swings, Johnson is heading up a crucial operation that tests his lifetime of supply chain skills: the San Diego Rescue Mission. “There’s no position where I’ve been under more pressure to perform,” he says.

His new job—or rather, the role he has chosen to play in retirement—is as the president and chief executive of one of one of the nation’s busiest Christian-based mission facilities, sheltering the homeless and helping others less fortunate in the San Diego area. With a yearly operating budget of around \$16 million and a largely volunteer-based workforce, Johnson has his hands full. “You’ve got to do a lot more with few staff,” he says. “I’ve had to learn a whole new set of skills—like fund-raising.”

### Always Up to the Challenge

Of course, Johnson is no stranger to having his hands full. And he is clearly hardwired to give back to his community. When he worked in New England as a supply chain executive with employers such as CVS, he helped regularly at the Greater Boston Food Bank, an organization that distributes food and grocery products to the needy across eastern Massachusetts. He has been involved with emergency supplies when disasters have struck

and is a board member of other charities. And this former Boy Scout has led regional scouting operations for a long time, most recently as vice president of the organization’s San Diego executive board.

“Actually, scouting is one of my leadership models,” he says. “It gives a lot of responsibility to young men. A big part of me being able to assume leadership as a teenager was through Scouts—I can trace a lot to those earlier beginnings in Scouts.”

Johnson also inherited the outreach he so ably exemplifies. He recalls his mother and father as active leaders in his church community when he was a boy. “My mom was never the person who sat in the back of the room,” he smiles. So it’s not a big surprise that as an eager teen, Johnson was picked by his pastor to help organize supervisory coverage for the youth fellowship activities at church. “I was always a guy who stepped forward and put his hand up,” recalls Johnson.



**Herb Johnson cites his Boy Scout experience as one the foundational elements of his leadership style.**

Graduating with a business degree from St. Augustine’s College—and later getting his MBA from Harvard Business School—Johnson worked at Wang Laboratories north of Boston for some years before moving to Polaroid in 1992. As the general manager of worldwide logistics for the then \$2 billion-a-year-plus photographic and imaging company, he managed all supply chain



and customer service activities worldwide. His leadership in implementing a supply chain platform and integrating all international operations saved more than \$6 million.

Three years later, Johnson became the chief operating officer and vice president of operations of Safety 1st, Inc., a fast-growing manufacturer and distributor of child safety and hardware products. There, he managed all corporate operations including purchasing, information services, customer service/order entry, human resources, logistics, and distribution.

When he arrived at Safety 1st, he was shocked to find “literally about 100 trucks in the yard” being used as overflow storage to handle work-in-progress inventory. The company had no source inspection on what was being bought from the Far East, he explains, and as a result, many of the parts arrived in the U.S. in need of rework. Johnson assembled a new purchasing and distribution team, and his implementation of a supplier management program helped generate a 50 percent improvement in product availability.

But it was at CVS Corp. that Johnson was to be tested most. Joining the pharmacy and retail chain in 1996 as its senior vice president of logistics, he managed a \$500 million a year budget, \$1 billion in inventory, 5,800 employees (the largest percentage of full-time employees in the company), and the operation of 10 owned and 13 leased warehouses with a combined footprint of nearly 6.5 million square feet.

At CVS, Johnson led the installation of a new warehouse management system—racing the clock for the holiday selling season. He recalls: “It was one of the most miserable programs I ever had to deal with.” Johnson and his team had to work nights, weekends, and holidays to climb their way out of the difficulties. But they finally succeeded: The system cut materials management costs by 8 percent and

boosted throughput by 5 percent. “I learned a big lesson about taking big chances,” he says. “I also learned a lot about managing—and about not being in the sunshine for a while.”

Johnson’s role at CVS also gave him exposure to merger and acquisition activity since he was part of the team responsible for the successful integration of two \$5 billion-a-year pharmacy companies over two years. For instance, the effort involved integrating the 10 owned distribution facilities, which standardized the product offering in more than 4,000 retail locations. He also led the implementation of a comprehensive supply chain management analysis for the company’s distribution network.

In his last top management role before founding his own supply chain and business planning consultancy, Johnson was the executive vice president for supply chain management at Premier, Inc. and president of Premier Purchasing Partners, L.P., a \$14 billion group purchasing organization that served 1,800 hospitals across the U.S. His work generated almost all of Premier, Inc.’s operating revenue and produced a 30 percent-plus gain in sales in one year.

During his years in industry, Johnson also became deeply involved in industry trade groups. At one time, he was president of the supply chain council of the National Association of Chain Drug Stores. He is also a past president of the Council of Supply Chain Management Professionals (CSCMP). An especially sociable individual, Herb Johnson has always made the most of his trade associations. “Of all the things that helped me in my career the most, it was the networking,” he says. “When the field of supply chain management exploded, I was sitting in the middle of the

biggest concentration of bright guys in that field.”

## Taking a Long-term View

So over the course of 35 years as a supply chain leader, it’s fair to say that Johnson has some tips to share. He remembers the years when his field involved mostly men—most white and most without college degrees—who measured their influence by the size of the warehouses that they ran.

**“You’ve got to take care of your employees because over time they’ll take care of you.”**

Today, of course, college qualifications are commonplace, graduate degrees are increasingly common, and women occupy many senior supply chain roles and benefit from the respect of their peers in management.

Although Johnson has been away from the sector for more than five years, he still has a feel for its pulse. He fears a little for the integrity of the profession as it comes up against the short-term expectations of investors. In the recent downturn, he says, many senior leaders were replaced by people with 15 or 20 years less experience. Although he acknowledges that the bad old days of buyers being bought by sharp salesmen are largely behind us, he claims that the demand to perform is so high that corners are being cut. One area that he fears for: sound, long-term talent management practice. “You’ve got to take care of your employees because over time they’ll take care of you,” he observes.

Spoken like a genuine “give-back” guy. As his current role indicates, taking care of others is very much part and parcel of who Herb Johnson is. For up-and-coming managers everywhere, that is a larger lesson in itself.

# S&OP on a Global Scale

***Implementing sales and operations planning (S&OP) on a global scale is a tough task. But done successfully, it can serve as the foundation for supply chain transformation across the enterprise.***

**By Joseph Goksel Goncu**



Continuous improvement initiatives that yield incremental benefits are often not sufficient to bring the supply chain to the desired state. There are times when companies have to consider larger scale changes to transform their supply chains.

This is especially true for those organizations that operate across multiple plants serving multiple regions and business units. More often than not, the business units, regions, or even plants have their own, disparate improvement initiatives. And even the global deployments don't bring out the desired level of value.

Sometimes, the company wants to change direction or introduce a new approach—and to do that a true transformation is needed. An example of this would be a desire to move from a traditional push-based system toward a truly pull-based supply chain system.

So how does a company with a relatively complex supply chain that serves multiple regions and business units transform its supply chain? A proven approach is through Global Sales and Operations Planning (S&OP). Global S&OP:

- Encompasses or touches on all the planning and fulfillment processes, such as demand forecasting, inventory planning, supply planning, and order fulfillment.
- Addresses the end-to-end process, allowing for the deployment and alignment of a new concept or a direction for all the functions participating in that process.
- Can be used to standardize all of these processes across the regions, business units, and plants.
- Incorporates strong tactical elements that

can be used to inject the strategic direction into the supporting processes such as demand forecasting and supply planning.

Global S&OP can be positioned as an umbrella and integrating force for all of the supporting processes. It allows the organization to apply the new strategy or direction while aligning all the processes, technology components, organizations, and responsibilities accordingly.

## Key Challenges

Transformation of a company's supply chain processes through Global S&OP in a multi-plant/multi-business unit/multi-region environment poses a much bigger challenge than improving individual processes, such as demand forecasting and supply planning. When compared to typical forecasting and planning processes, Global S&OP initiatives have far more implications with respect to standardization, organizational structure, and process integration.

Standardization of demand, inventory, and supply planning processes is a typical goal of Global S&OP projects. Driving all of the business units, regions, and plants to a common, standard, and integrated process is a major change-management challenge.

Global S&OP brings forward a standard framework with a calendar that includes the timing of all planning and meeting activities as well as deadlines. This may include several plant or business unit-based meetings. Standardization of the S&OP calendar that lays out the timelines for S&OP events is critical to ensure that all activities are synchronized and that demand, supply, and financial plans are generated.

A Global S&OP implementation typically brings changes to the organizational structure. Global S&OP is a major undertaking and

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involves alignment of both demand and supply side operations to properly support and execute the new processes. New functions such as global demand and global supply planning may emerge. Existing demand and supply functions that are isolated within the regions or plants may be eliminated.

Global S&OP also brings a completely new mindset to most organizations. Plants, business units, and/or regions will have to work together more efficiently and respect the critical S&OP elements, such as agreed upon calendars, agendas, meetings, and metrics. All supporting activities, including demand, supply, and inventory planning must be executed according to the timelines and must produce reliable results. If the demand does not provide a reliable forecast, then supply cannot drive a reasonable plan and the rest of the S&OP process is negatively affected.

### Suggested Approach

So how do you overcome these challenges and not only implement a Global S&OP process, but also sustain it in the long run?

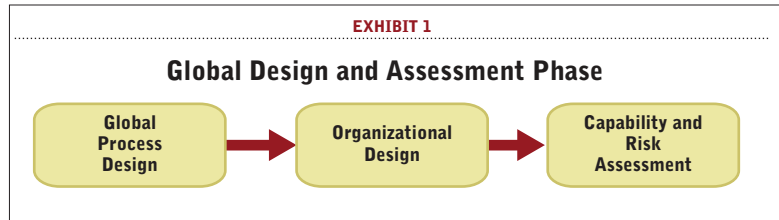
The most fundamental prerequisite is to commit to a “game-changer” as an organization. Global S&OP is not just about introducing a set of meetings and discussing related metrics. It is about full alignment of the organization, supporting processes, and technologies according to a new global process that affects almost all functions, regions, and business units. Contrary to what many perceive, it is not a continuous improvement initiative.

Because of the relatively complex nature of the global S&OP process in multi-BU/multi-region/multi-plan companies, we recommend a two-phased approach: (1) Global Design and Assessment and (2) Implementation and Deployment. Exhibit 1 shows the high level steps for the Global Design and Assessment phase, which we will focus on here.

Initially, we recommended a global business process design that follows a top-down approach. This is a high level process that maps the Global S&OP with all the supporting processes. Most of the time, the supporting functions need to be redesigned so that each process can generate the reliable results that the next process requires. Maturity of the whole process depends on the maturity of each process and how well these processes are integrated.

Here is a list for some of the key questions a global process design must answer:

- How to structure tactical S&OP meetings? Should it be based on plants, business units, regions, or a combination?
- What agenda should be discussed in these meetings and which functions should be mandatory in the meetings? Who should own/facilitate the meetings?
- What type of high level calendar should be followed?



When should demand, supply, pre-S&OP/post-S&OP, and S&OP meeting activities be scheduled?

- Do we need a global or a central demand/supply planning organizations to support the new S&OP process? Can these be handled within the business units, regions, or plants?
- How should supporting processes be integrated?
- What data is a must to support the new processes?

Consistency of message and action are critical as a means of gaining buy-in from a skeptical organization. Start with the most important question and then build on the answer. For example, the answer to the question of what needs to be ultimately discussed in tactical S&OP meetings can be used to draft the agenda and then to consistently drive the participants, metrics, meeting structure, and timing.

Global process design should be followed by an organizational design that lays out the required functional structure to support the global process. It is likely that new functions need to be evaluated for executing the new processes. These new functions will require deployment of newer skill sets. Existing functions in business units, plants, or regions may be eliminated.

Capability and risk assessment is the last step of the global design and assessment phase. Can your organization really enable and sustain the global S&OP process and all the supporting elements, including the new organizational structure? In particular, be wary of roadblocks that could significantly impede deployment of the global design. Good questions to ask here include:

- Can we build the required corporate functions?
- Can we eliminate the redundant functions within the business units?
- Can we enable all of the functions with the required skill sets?
- Can we build the discipline so that all of the functions adhere to predefined calendars and agendas?
- Can we adjust the ERP design for integration with the new demand, supply, and inventory planning processes?
- Can we change the production model across the board?

Although Global S&OP deployment can be a highly challenging initiative for many organizations, it is becoming a more common process in many industries. We are not far from a time when the ultimate question will be: “Can we afford *not* to have it?”



# Three Questions that Define the Leadership Debate

*This issue of SCMR introduces a new column that examines the challenges of identifying, developing, and retaining the talent needed to run a successful supply chain—and the keys to building a successful career. "Talent Strategies" is written by experts on professional development from MIT's Center for Transportation and Logistics.*

**By Chris Caplice**

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Leadership in supply chain management has become a hot topic over the last few years. Many supply chain executives visit the MIT Center for Transportation & Logistics (MIT CTL) for recruiting, executive education, and other reasons, and it is a rare meeting where the topic of leadership (or really the lack thereof) does not come up. The issue usually surfaces in side conversations where supply chain executives lament the shortage of individuals in their organizations who possess leadership skills, both "hard" and "soft." From our discussions it's clear that regardless of their industry, geography, or size, these executives are basically seeking answers to three key questions.

## Three Leadership Questions

The conversation usually opens with the question: ***Can leadership be learned or is it an inherited trait?*** Is there a leadership gene that enables certain individuals to be more effective leaders than others in all situations? Most executives I know agree with me that this is not the case and that leadership skills certainly can be learned. (It would be a very sad world indeed if this were not true.) If leadership was truly defined at birth, then companies should be recruiting their future leaders from kindergartens instead of grad schools.

The conversation then moves to the second question: ***While leadership can be learned, can it actually be taught?*** The argument is that a person can only acquire leadership skills through the scars of long experience. Surely, you cannot teach how to be a leader in the classroom or out of a textbook?

On this question I tend to both agree and disagree. I agree that you cannot learn leadership solely from a book, but disagree that it cannot be taught. At MIT CTL, we have found that the best way to teach leadership is also the best way to teach practically any other topic—through hands-on, interactive, and engaging exercises. In other words, you can get some of the required leadership experience in a controlled environment. For example, you do not need to spend two years of your life working under a poisonous manager to understand how to lead in a dysfunctional team.

These are the two easy questions. The third question is more difficult: ***What, if anything, is special about supply chain management leadership?*** Isn't leadership in one business setting the same as in any other?

There's some truth to this. A great leader in a manufacturing plant will probably perform just as successfully in a distribution center. But, this is not the whole story. I believe that the evolving definition of the supply chain function within a firm has expanded the role so far from its original requirements that the technology, processes, and, most importantly, the people in the profession are still playing catch up.

This evolution from physical distribution to logistics to supply chain management is at the root of why we are becoming more focused on the leadership issue. It is a matter of where the profession came from and where it is heading. The skills that constituted leadership in a silo-ed logistics organization might not be sufficient (or even desired) in a more expansive supply chain role.

The evolution of supply chain management from a silo-ed, largely technical function has been discussed often. But it bears repeating. Most current senior supply chain leaders grew up in organizations where the focus was functional expertise within independent operations. The technology tended to be tied closely to functional requirements and employed intricate optimization within that area. The most important skills tended to be technical. And the leadership style, by and large, was direct or command-and-control because most organizations followed a hierarchical reporting structure.

Compare this to the current situation where the most pressing technology needs are visibility across functions, geographies, and companies. One of the most desired skills is the ability to coordinate across multiple entities. Thus, the ability to influence decisions through indirect or soft skills becomes paramount. The traditional hierarchy is no longer there. The most critical stakeholders in your supply chain no longer report to you; nor do you report to them.

### The Critical Capabilities

So the supply chain role has changed and so have the rules. Leadership skills need to change with the scenery. This brings us back to the four key capabilities that, I believe, make supply chain leadership different from most business functions. These are having a global perspective, being able to use soft leadership skills, retaining strong technical capabilities, and practicing relational leadership. Let me talk about each in turn.

**Global Perspective.** Most companies these days have some operations within their supply chains that are spread across the globe—whether it is manufacturing in the Pacific Rim or distributing into Latin America. Supply chain managers need to understand the cultural and other characteristics of the regions in which they operate. Additionally, supply chain managers need to be able to create and maintain a corporate culture that can be embraced by various regions. This goes beyond the timing of global conference calls to accommodate different time zones to understanding how different perceptions can impact operational performance.

**Soft Leadership Skills.** When discussing business failures with different executives, I always try to find out the root causes of these breakdowns. I very rarely find that the cause of a failed project or initiative is that the optimization did not converge or the simulation did not run. Instead, failure usually lies in a lack of communication, the absence of buy-in from the right VPs, or the improper setting of expectations—in other words, poor “soft” leadership skills. Too often a supply chain expert assumes that the outcome of his or her model will speak for itself and convince everyone to take a specific action. This is rarely the case. I have witnessed several situations where an executive who could have

been a strong ally to a change management project became an enemy simply because he or she was not asked to provide input into the decision-making process.

**Strong Technical Capabilities.** Although this might seem contradictory to the previous point, supply chain managers do need to retain exceptionally strong technical skills. A supply chain manager who cannot explain basic inventory or transportation trade-offs will lack the credibility needed to convince the various stakeholders of any new initiative. Having the technical capability does not mean that you need to be the expert in every aspect nor does it mean that you should actually be doing all of the analysis. The best supply chain leaders know when to step in and when to stay out of the details.

**Relational Leadership.** Because supply chain leaders

## Supply chain managers need to understand the cultural and other characteristics of the regions in which they operate.

work across multiple functions within a firm, they need to have multiple leadership styles. And, they need to know when to use each of those. For example, in the classic sales and operations planning (S&OP) meeting, operations and supply chain executives are meant to work directly with the marketing and sales leaders. Yet it is hard to imagine two more different types of thinkers. Operations leaders tend to be action-oriented with some bias towards proof-based or analytical decision-making. The sales and marketing functions thrive more on “outside the box” type thinking.

Obviously, this is an over-generalization, but anyone who has participated in an S&OP meeting can attest to the differences between these two groups. To be effective, supply chain managers have to understand these nuances and shift their leadership style to match the audience. When in France, speak French. The leadership style used in the S&OP meeting will be very different from the one used in a meeting with, for example, key customers or a wayward supplier or an internal project team. In other words, the supply chain leader needs to be able to assess the audience and adjust his or her style accordingly to be successful.

So, to answer that third question I posed at the top: What is special about supply chain management leadership? I have found that supply chain management leadership is somewhat unique. Certain leadership skills that are “nice to have” in most positions are “must have” in any supply chain leadership role. Because supply chains are connected to all aspects of a firm, the supply chain leaders need to possess a larger set of leadership skills.

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# ANATOMY OF A

By John Kerr

There's a folksy sign hanging in the coffee room not far from Mary Long's office. The sign reads: "Good judgment comes from experience—and experience comes from poor judgment."

Mary Long is the senior director of logistics and customer operations at Campbell Soup Company. The sign is one of her ways of telling her team they should never be afraid to try something new—and always be ready learn from their mistakes.

The bias for action implied by Long's sign is a leadership theme that comes up time and again whenever *Supply Chain Management Review* interviews senior supply chain practitioners or leading academics or management consultants for its regular Profiles in Leadership column. That action orientation is just one of an array of attributes vital to leading successful supply chain operations today.

To paint as nuanced a picture as possible of what supply chain leadership looks like, we drew on the rich repository of information in our own archives—in the Profiles in Leadership columns published in our pages for several years. What we found transcends the conventional literature on leadership because it comes from the voices—and the hearts—of people who have been living it every day. Experience is a better teacher than theory. Stories and anecdotes and colorful turns of phrase are often much better than abstract frameworks at conveying important ideas.

## Meet the Leaders

First of all, it is essential to establish that there is no "typical" leader—nobody from central casting who fits preconceived ideas of the great leader. The profilees we have featured are no more General George Patton than they are Mahatma Gandhi. They do not universally lead large teams of people; many show the way forward with their compelling, carefully crafted ideas and many more get others to follow by example—what Wharton professor Marshall Fisher calls "commando leadership"—rather than by edict.

Our supply chain exemplars come from all sorts of backgrounds—supportive families and others less so, affluent and not so. Some have had unforgettable role models; others have had none—or at least, none they can readily recall. Among the exemplars are many former junior buyers as well as systems analysts, loading-dock jockeys, and math and computer science geeks. Gender has stopped being an issue: Today's leaders are Mary Long and Nancy Dix and Kate Vitasek just as much as they

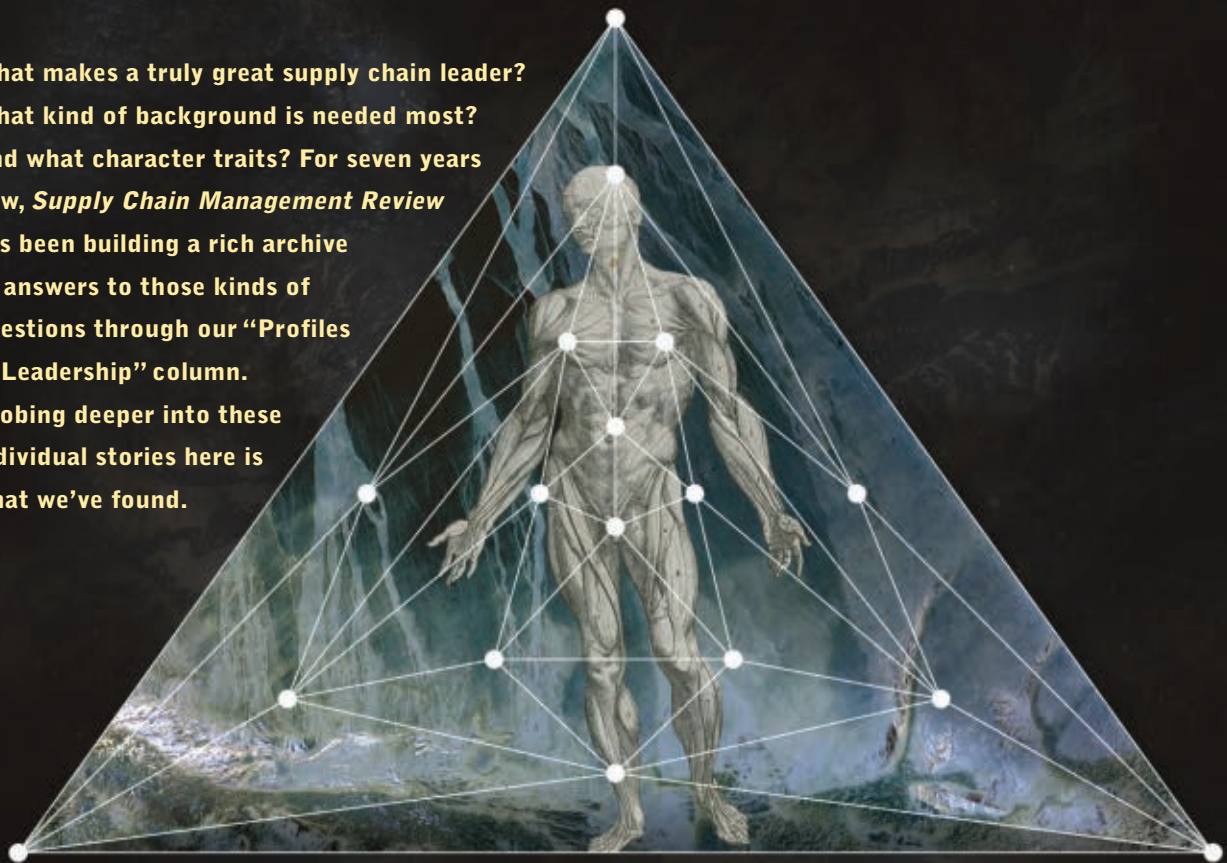
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# LEADER

**What makes a truly great supply chain leader? What kind of background is needed most? And what character traits? For seven years now, *Supply Chain Management Review* has been building a rich archive of answers to those kinds of questions through our “Profiles in Leadership” column. Probing deeper into these individual stories here is what we’ve found.**



are Rob Handfield and Angel Mendez and Jake Barr. And for every one who stood out at school as a sports team captain or debating champion or top-of-the-class star, there were plenty who as teens didn't particularly excite the notice of the adults around them.

Among the leaders are a host of supply chain practitioners, yes, but there are also academics and consultants

and many, many multi-taskers who span two or more of those categories. While John Caltagirone was vice president of global supply chain strategy at The Revere Group consulting firm, he spent at least three evenings a week teaching graduate and postgraduate courses on supply chain management at Loyola University, the Illinois Institute of Technology, and sometimes at

Elmhurst College. And from academia come professors like Stanford's Hau Lee, who regularly consults to businesses and has founded companies of his own. "A lot of academics see consulting and research as two different things," Lee says. "But I was convinced that consulting would only prepare me better for being a good teacher."

Not surprisingly, supply chain leaders can point to substantial wins for their organizations. When he ran supply chain operations at Staples, Paul Gaffney launched a standardized inventory management program that would be centered on high in-stock levels viewed from the customer's standpoint. The initiative lifted Staples stores' average in-stock positions by 3 percentage points, and improved its distribution center service levels by at least 15 percent. The overhaul yielded more than \$300 million in inventory savings and boosted the company's operating profits significantly.

Some have had profound and far-reaching influence—far beyond the four walls of their organizations. The ideas of Penn State professor John Coyle, for example, resonated with student Gus Pagonis, the U.S. Army general who shaped much of the successful logistics initiatives during the first Gulf War. And Norbert Ore, group director of strategic sourcing and procurement for a leading U.S. manufacturer, has the ear of U.S. policy makers and captains of industry every month. Specifically, Ore heads the committee that compiles, writes, and publishes the *Institute for Supply Management's Report on Business*, the monthly report that is widely recognized as a leading indicator of the U.S. economy.

## Defining Leadership

So how do the masters of supply chain conceive of leadership? Consultant and educator Kate Vitasek offers what is perhaps one of the most complete definitions: "It's being able to see a goal, comprehend what is needed to get there, and describe to others a path to the goal," she says. "Then, having described the path, the leader must be able to communicate it to others in a way that generates enthusiasm and a desire to follow."

Consultant and veteran supply chain practitioner Ron Casbon complements Vitasek's core idea with his take on leadership: "It's the ability and commitment to enable others to perform at higher levels by sharing knowledge and experience," he says. Others place a premium on leaders' capacity for what's been called "visioning"—scanning the horizon for big trends, imagining how those trends will affect their worlds, and developing ideas to drive the changes needed to cope with the trends.

So with those definitions putting some boundaries around the concept of leadership, is it possible to determine the set of characteristics that are common to all

leaders? It is and it isn't. As noted earlier, there is no simple blueprint, no checklist to follow to "become" a leader. But nor is it a question of fate. The prevailing view of those whom *Supply Chain Management Review* has interviewed is that true leaders are made, not born.

## Leadership Deconstructed

By reviewing our dozens of interviews over the years, it is possible to glimpse the mastery of core supply chain skills—excellence in demand planning or inventory management or systems analysis, for example—without which leadership cannot exist. A thorough review of the interviews also exposes the hallmarks that are prized by those who recognize great leadership—and who exemplify it themselves.

The hallmarks are less likely to appear in any formal job description than they are to be discussed during performance, promotion, and assignment reviews. Furthermore, while there are indeed common characteristics among supply chain leaders en masse, there is little likelihood that two individuals will exhibit exactly the same characteristics in equal measure. So while one may excel at communicating big ideas, another may be superb at envisioning and creating collaborative networks. But importantly, each would be a standard-bearer in his or her domain.

Our collected profiles reveal seven characteristics that we believe merit particular attention:

**1. Leaders are activists and fighters.** True leaders have a very strong bias for action—prudent action, but action nonetheless. They're not the kind to wait for direction; instead, they are quick to identify needs, whether internal to supply chain and tactical or external and strategic. Ron Casbon is a case in point: He cites the need to "model the way," the first of five key principles espoused in *The Leadership Challenge* by James Kouzes and Barry Posner.

Leaders fight hard for what they believe in. Some years ago, Kate Vitasek threw out this challenge to her fellow board members at the Council of Supply Chain Management Professionals (CSCMP). "How can we not give supply chain practitioners a tool that helps them say whether they're bad or good at what they do?" Vitasek, an inveterate campaigner for supply chain performance measurement and management, argued forcefully that the profession urgently needed standards for its processes. At first, CSCMP's research committee voted down the idea. But Vitasek was not deterred, and her reasoning won out. She and a group of colleagues went on to literally write the book on supply chain management process standards. Drawing on the insights of 50 or so

experts across the U.S., they compiled the first set of reference documents whose guidelines help supply chain leaders self-assess the progress of their organizations.

**2. Leaders are focused on big ideas.** When Angel Mendez interviewed at Cisco some years ago, the company's view of the supply chain function still revolved around suppliers, logistics, and manufacturing. His first responsibility there covered those functions ("symbolic of a narrower view of the supply chain," he says). But Mendez—now senior vice president of customer value chain management—had a view of an end-to-end value chain that links suppliers' suppliers all the way through to customers' customers. With every opportunity he got, he actively voiced his broader vision of what the function entailed, and he began to enlist support from other executives. "I've been driving this from the moment I interviewed for the job," he says.

Today, Mendez' entire organization comprises about 10,000 of Cisco's employee base of approximately 60,000 worldwide. "I approach the supply chain with a different perspective," he says. He insists that supply chain leaders must be able to demonstrate that the supply chain is not only about containing costs; it must be viewed as an engine of growth. So it is not surprising that from early in his career, he has "tried to behave like a general manager first and a supply chain manager second" in his words.

At Procter & Gamble, Jake Barr, global director of supply network operations, puts a premium on his managers' ability to look for and act on the "game-changing" opportunity. Barr himself was one of the primary architects of the Consumer-Driven Supply Network system that has done so much to predict and minimize P&G's out-of-stocks. Implicit in the search for such opportunities: a real willingness to affect change.

As big picture people, supply chain leaders don't see boundaries between their functions and others such as finance, customer service, product development, and manufacturing. Famed supply chain educator Dave Closs of Michigan State University argues that the best supply chain leaders are skilled at understanding and operating cross-functionally. "It's more than just knowing what the other supply chain functions are," the professor says. "It's about having some credibility with them—having some experience of being in purchasing, being in production. Somehow you've got to build some of those experiences into your career trajectory."

Leaders don't limit their perspectives to their value-

chain networks. They look right across their professions, functions, and industries, eagerly tapping into ideas from academia and weaving themselves deeply into the fabric of professional associations such as CSCMP, ISM, and many others. Just one instance: Dee Biggs, the logistics chief at Welch Foods, is former vice president of the New York State Food Processors, and was president of the Western New York and Baltimore/ Washington Roundtables of the CSCMP. And for eight years, he was the chair of the Logistics Committee of the Grocery Manufacturers of America.

Armed with big ideas and abundant information to back them up, the leaders have little trouble with the next part of their jobs: Inspiring others to follow.

**3. They are compulsive communicators.** Shelley Stewart testifies to the fact that it is one thing to identify

**"A good leader will have the courage to manage for the long term despite the constant pressure to focus on short-term priorities."**

—Kate Vitasek, consultant and educator

and conceive of big ideas and another to get others to buy into them. "Finding synergies is hard, but convincing people you've found them is harder," observes the Tyco procurement chief. The teams he deployed as Tyco reorganized some years ago had to be highly effective in a decentralized company that was still reeling from a public thumping.

Although he had the vocal support of Tyco's new CEO, Stewart (a newcomer himself) had to tread carefully around business unit leaders who had long been used to plenty of independence. So he placed a premium on incremental improvement over big audacious gains and emphasized constant crystal-clear communication. "You don't want people to think they know what you're doing—you want them to *know* what you're doing," he says. Part of that communication effort meant developing a common vocabulary so Tyco's leaders could agree on what the savings targets were and so they could get consistent views of progress against those targets.

The other part of sending the right messages is receiving the right messages. That's something that Theo Fletcher, IBM's vice president of import compliance and supply chain security, took to heart at an early age. Growing up in Youngstown, Ohio, he was very active in the Junior Achievement organization and participated in the city's innovative juvenile jury where young offenders,



usually in court for traffic violations, were tried by a jury of their contemporaries. “It was a terrific learning experience,” recalls Fletcher, who was appointed foreman on one case. “We not only had to solicit the opinions of others but we had to reach consensus. It really forced you to do effective listening.”

The communications imperative cuts across all categories of a supply chain leader. Dr. Bill Killingsworth, executive director of the Forum for Supply Chain Innovation at MIT, jokes about his struggle to perfect his messaging skills. “For a geek like me, it’s always easier to talk about the math and the technology as opposed to ‘here’s what we found and here’s why it’s important,’” he jokes. But judging by his extensive consulting work with organizations ranging from the U.S. Army to the National Aeronautics and Space Administration, he has clearly mastered those skills.



“I have tried to behave like a general manager first and a supply chain manager second.”

—Angel Mendez, Cisco

Some of the profession’s best communicators are adept at using many more of the tools at their disposal. Tim Carroll, vice president of global supply chain at IBM Global Services, has been an active blogger since August 2005, delivering a weekly report to his worldwide staff of 5,500. The blogs have restored some of the personal touch that Carroll believes has gotten lost with e-mail. “I keep them to 10 minutes. I don’t prepare for them,” he says. “I always have three or four subjects. For example, I did one recently on teaming. I’d seen a group of people in a team and I’d thought they were compromising their [individual] feelings, so I said what was on my mind. I get a lot of good feedback.”

**4. Leaders are authentic.** With true leaders, what you see is what you get. “First and foremost, leadership is about authenticity,” contends consultant and educator John Gattorna. “You can’t be someone you’re not.” Translated, authenticity means that the true leaders have no hidden agendas, and they are direct and honest in their feedback to suppliers and employees alike, even when the message is not necessarily to the recipient’s liking. They are acutely aware that leadership, and the trust that it involves, can only ever be earned. In fact, they know that it must be earned every week.

Implicit in being authentic is being accountable—and proliferating methods that hold others accountable as well. Today, Tyco’s entire leadership team is held accountable against operational excellence scorecards developed and managed by Stewart’s group: cost reduction targets, facility square footage reduction targets, and more. “The kinds of disciplines you develop when you’re in sourcing and supply chain are the kinds of disciplines that work in operations,” says Stewart. “The real connection point is that all of these things are about improving the business.”

And it ought to go without saying, but authenticity also means being deeply, consistently, unimpeachably ethical.

**5. They are demand-driven.** One hard-to-spot pattern speaks volumes about how leading supply chain proponents think and act. Several have titles that are a world away from conventional nameplates associated with supply chain. Take Campbell Soup’s Mary Long, for instance: senior director of logistics and customer operations. Or Angel Mendez, heading up Cisco’s entire value chain, including customer service.

“Yes, I’m a supply chain person, but I’m matrixed to the president of sales,” Long explains. She jokes that because the two teams are so different in their styles and temperaments, sometimes the interactions with the sales teams are like an “out of body experience.” But she explains that her reporting relationship largely ensures that she appreciates the challenges they face. “It goes back to the structure of this role,” she says. “I need to know what they’re selling. And I try to explain the supply chain to sales. I’m a broker and liaison between the demand side and supply side.”

Specifically, Long leads three customer service teams within the supply chain organization: the operational team, which handles the day-to-day execution of customer order generation and fulfillment; the customer logistics team, responsible for launching and developing supply chain initiatives with key customers; and the service process analytics team, which identifies root causes of system or process errors and provides training to improve customer service processes and procedures. The three teams support order processes for Campbell’s U.S. Soup, Sauces, and Beverages, North America Food Service, and Pepperidge Farm frozen foods businesses.

For his part, Cisco’s Mendez has been identifying ways to grow the business through supply chain capabilities. One of the most important functions that now sits within his orbit: Cisco’s “customer listening” function, using real-time,

state-of-the-art techniques to gather both technical and non-technical feedback. “That allows us to be really accountable to innovation and value,” he says.

One example of how the new approach pays off: Mendez’ organization took its lean production initiative into Cisco’s reseller channel. “What we found was that no one had ever engaged the distributors with opportunities to lean down the product once it left our dock,” he notes. The Customer Value Chain organization has been able to increase the velocity of the chain by implementing lean practices among distributors and value-added resellers.

Those demand-centered ideas sit well with some far-sighted educators too. John Gattorna, who heads his own advisory business, Gattorna Alignment Pty Ltd., has been preaching the gospel of what he calls “dynamic supply chains.” His iconoclastic stance is that supply chains must be configured to suit the behaviors of the customers they are meant to serve. And because almost all organizations have several customer types, then they need to have several concurrent designs of supply chain—designs that can be changed when customer behaviors or buying needs change.

Similarly, Professor Martin Christopher, Professor of Marketing and Logistics at Cranfield School of Management in the U.K., argues that the supply chain is there to support the company’s marketing strategy. “You need to design it not from manufacturing outward but from the customer inward,” he contends.

**6. Leaders are inclusive.** Two decades ago, Tom Stallkamp, then purchasing chief at Chrysler, flew in the face of convention by working collaboratively with suppliers—this at a time when his cross-town counterpart at General Motors was riding suppliers for every last cent. Today, such collaboration is routinely a hallmark of the supply chain leaders. As founder and principal of a consulting firm called Collaborative Management, LLC, Stallkamp still champions the concept. In particular, he advocates the use of metric-driven tactics that result in closer cooperation between the elements of the extended enterprise to drive down current costs as well as forward product development expense and time.

Central to Stallkamp’s philosophy is the need to change accounting systems from a piece-price basis to one based on a system price, or total price. De facto, that calls for commitment to change at senior management levels. “It can’t be done just by a guy standing up in purchasing,” says Stallkamp. Another key collaborative element is cross-functional activity, particularly between

the manufacturing and engineering departments that have traditionally been far apart. At the very least, they must be in a position to share demand-side data and to make high-level product development decisions together.

But inclusivity extends in many other directions too. It can involve bringing academics into the mix, as Cliff Lynch did when he headed logistics at Quaker Oats. For a while, Michigan State University (MSU) professor Don Bowersox would come every Friday to teach logistics to Lynch’s staff members at Quaker Oats. After



**“I try to explain the supply chain to sales. I’m a broker and liaison between the demand side and supply side.”**

**—Mary Long, Campbell Soup Co.**

that, groups of 20 to 30—ranging from clerical staff to transportation managers—would go by rented bus to Bowersox sessions at the MSU campus. “That was quite an ambitious program,” Lynch recalls. “It took a bit of selling to my management.”

Importantly, inclusivity also reaches out to employees. When Ron Casbon, then heading up purchasing at Bethlehem Steel, needed to review new personal protective equipment for employees, he surprised the equipment sourcing team by seeking the input of the workers who would have to wear the gear. The insights proved invaluable to the overall sourcing process.

True leaders also empathize with those who report to them. They strive to understand their motivations and concerns, empowering them to continually push for higher performance. Recalls Francis Farris, a strategic sourcing manager who worked for Ron Casbon for five years: “Ron constantly showed a genuine interest in his buyers and encouraged us to express our ideas. He respected differences of opinion.”

**7. They continually “pay it forward.”** The best supply chain leaders are phenomenal teachers in the broadest sense of the word. They see their work in very dynamic terms—always in flux, with constant need for knowledge transfer and knowledge upgrades as business circumstances change and as the workforce mix changes. That is especially important today, when there can be four generations at work in the same office or factory, and when markets are as volatile as they are.

At least two of those we interviewed cited Woody Hayes, the legendary Ohio State football coach. Says

warehousing expert Ken Ackerman: “Hayes was extremely vocal in saying that the most important work he ever did was not on the sidelines of the football field but at kitchen tables all over America, trying to recruit the next generation of players.”



**“The kinds of disciplines you develop when you’re in sourcing and supply chain are the kinds of disciplines that work in operations. The real connection point is that all of these things are about improving the business.”**

— Shelley Stewart, Tyco

At IBM, Tim Carroll is constantly on the lookout for up-and-coming leaders. He has been instrumental in driving several programs to identify and foster IBM’s next generation of supply chain executives. Mentoring is very important at IBM, and Carroll personally mentors about two dozen individuals, meeting with each of them for at least half an hour a month and putting himself only a phone call or e-mail away if they want advice.

Carroll also is committed to a new “shadowing” program in which junior managers follow an executive through every meeting and conference call over several days. “I really challenge them after the meeting,” he says. “I get them to tell me why I reacted in a particular way to something that was said. I ask them to say what really happened, and to give me a sense of the environment of the meeting—whether people there were just paying lip service to the decisions, for example.”

The IBM supply chain leader also highlights a fairly recent “next generation” program geared solely to the promising managers who’ve been with the company for less than 10 years. Carroll explains: “Our supply chain leadership program puts them into a very regimented program. We move them around on complex high-visibility assignments that last six to nine months. Then we’ll move them into something completely different. The intention is to get them to take a holistic approach to the business.”

Jake Barr at P&G also exemplifies the leaders who invest in coaching younger managers—an essential element in the company’s approach to leadership development. He urges the up-and-comers to really get to know the company inside and out beyond their own areas of responsibility. He also encourages a constant search for new processes and practices. “If you don’t really understand what’s

going on outside your manufacturing or distribution area, it’s very difficult to become much more than an administrative manager of a process. You’re not leading change,” he says.

Many of the leaders we have interviewed see themselves very much as enablers—there to create opportunities for their reports to contribute. An important component of contribution: having the latitude to experiment, and the freedom to make mistakes provided that the lessons from those mistakes are taken to heart.

One last point about the leaders’ outreach to younger professionals: While most of those efforts will clearly benefit their organizations over the long term, the leaders manifest a genuine spirit of giving back. That spirit is evident in the community activities of people like Norbert Ore; he and his wife worked to found and build a new YMCA facility. And Ken Ackerman, who founded an independent charter school in his hometown of Columbus, Ohio, as part of a deep commitment to shoring up the skills base in the U.S.

### **Preparing for Tomorrow’s Challenges**

The supply chain leaders we have interviewed over the years are anything but complacent. Indeed, they worry about many aspects of the profession and about national competitiveness in general. Some express concerns about the erosion of basic skills in the U.S. Others are anxious about what they see as a weakening of commitment to professional development and attrition of core communications skills. And many fret about a return to short-termism—a tendency to be driven by quarterly earnings pressures as globalization pressures increase and costs of commodities climb. Says consultant and educator Kate Vitasek: “A good leader will have the courage to manage for the long term despite the constant pressure to focus on short-term priorities.”

The good news is this: True to their bias for action, the supply chain leaders are rolling up their sleeves to do something about the problems they see. They are working within their organizations, through their trade and professional and industry associations, and through their communities to meet the challenges. At least as important: They are passing on their traits to the next generation of flag-carriers—timeless characteristics that will enable tomorrow’s supply chain leaders to anticipate and cope with challenges as yet unimagined.

That alone is a reason to feel bullish about the future of the supply chain profession. ☺☺

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## A Real-World Take on Transformation

By Ram Narasimhan, Joe Sandor, and Tobias Schoenherr

**Companies recognize that they need to continuously transform themselves to survive and prosper. But they're finding that traditional, largely internally focused, approaches fall short. Increasingly, the leaders recognize that the real breakthroughs come only with the engagement of the supply network. Summit meetings of leading supply chain practitioners convened by Michigan State University underscore this new reality—and point to a winning technique called supply-leveraged organizational transformation.**

*Change is the law of life. And those who look only to the past or present are certain to miss the future.*

—John F. Kennedy

*It is not the strongest of the species that survives, not the most intelligent, but the one most responsive to change.*

—Charles Darwin

**T**he only constant in today's world is change. Leading companies recognize this and understand that they must continually transform themselves to remain competitive. Over the past several decades, significant organizational transformations have been taking place, pushing firms to higher levels of performance



and competitiveness. In many cases, these have been enabled by such proven techniques as total quality management and business process reengineering. But merely repeating these traditional, largely internally focused, improvement initiatives is no longer enough. The kind of transformation needed today cannot be accomplished within the four walls of the firm. Real transformation—with the growth and business success associated with that—will come only with the engagement of the supply network.

With this foundational understanding of the transformation process, we have been convening a group of thought leaders—supply chain practitioners—at the Michigan State University Executive Summit, first held in 2007. The mission of this annual summit is to examine how supply management can be leveraged to drive organizational transformation and strategic change that leads to competitive advantage. We have called this supply-leveraged organizational transformation, or SLOT. (Later in the article, we will give more detail on the firms at the Executive Summit and their specific areas of presentation.)

Certainly, this is a timely issue: The amount spent on purchasing goods and services as a percentage of total revenue is increasing across virtually all companies, attesting to the growing importance of supply management. As the spending increases, so do the challenges: tougher competition globally, rising customer expectations, and shorter product lifecycles.

This article explores the keys to supply management success in this environment. In particular, we look at how strategic imperatives affect supply management strategy, which in turn influences the strategic choices made by the firm. We examine supply management's role in affecting successful supply chain transformation and strategic change. In addition, we discuss how supply management culture and orientation within an organization can

facilitate (or hinder) this transformation. Finally, we conceptually contrast supply-leveraged organizational transformation to traditional transformation approaches, highlighting the true potential of the former.

The following six propositions guided our research:

1. In supply-leveraged organizational transformation, strategic imperatives—that is, the strategic actions that the firm must pursue to achieve competitive success—drive supply management strategy.

2. In supply-leveraged organizational transformation, supply management strategy influences strategic choices made by the firm.

3. Strategic sourcing is a key enabler of successful organizational transformation and strategic change.

4. Supply management competence is a key enabler of successful organizational transformation and strategic change.

5. Strategic integration across the supply network is a key enabler of successful organizational transformation and strategic change.

6. Supply management culture and orientation are key enablers of successful organizational transformation and strategic change.

We differentiate between traditional transformation initiatives and *supply-leveraged organizational transformation*. We believe that SLOT is likely to be more successful in today's dynamic and fast-changing environment because it leverages the unique capabilities and expertise of the supply network. Each partner in this network contributes unique and complementary capabilities; integrating these capabilities enhances overall supply management performance. A supply-leveraged strategy also tends to be more flexible and better able to adjust to a dynamic environment than traditional approaches. Each supplier in the supply network can independently adapt to the strategic needs of the focal firm, thereby enabling the entire supply network to reorganize as the need arises. Therefore, changes in the network can be made proactively to accommodate business conditions, rather than reactively to market dictates.

With a supply-leveraged transformation, supply management becomes a strategic element, not merely a means to manage the flow of products from raw materials stage to end consumer. And as a strategic element, this function can actively benefit and promote organizational transformation. This buttresses our argument that

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supply network partners need to be incorporated into the process. In contrast, the *traditional organizational transformation*, or TOT, tends to be much more reactive, internally focused, and slower to respond. Traditional approaches do not leverage the capabilities and uniqueness of the supply network, but focus on internal changes that the firm can directly control.

Strategic change in organizations is a highly complex and elusive process, and can lead to a restructuring of the supply network. However, opportunities for restructuring the supply network can be the catalyst for successful strategic change. Our focus is on ways in which the supply network can be leveraged to bring about transformative changes in organizations.

Traditional approaches tend to be slow and cumbersome, and are more reactive than the supply-leveraged technique. They typically address the transformation task by reconfiguring internal process flows and changing the supply chain “footprint” through significant investments in the company’s own resources. With conventional approaches, the company is essentially relying on its own internal capabilities, knowledge, and expertise.

By contrast, a supply-leveraged approach utilizes the capabilities, skills, and expertise of the entire supply network, making it much more flexible and quick to adapt to changing environments. Because of its flexibility, SLOT enables a more proactive approach to establishing the right global footprint to accommodate anticipated changes. This means the right level of capital investments, capacity, and capabilities—avoiding overinvestment in some areas or underinvestment in others.

Companies attempting a traditional supply management transformation will find it more risky and

cumbersome to adopt any arbitrage-type initiatives. So with TOT, for example, a company would establish its own manufacturing facilities in China or its own call center in India. While the company retains principal control over these operations, the investment required can be significant, thereby increasing the risk and potential loss in case of failure. With supply-leveraged transformation, on the other hand, a company can hedge against potential vulnerabilities by strategically partnering with key entities in the supply network in the desired locations. While the firm does give up some control and increases its reliance on third parties, the flow of products from raw materials to end consumer remains flexible and agile thanks to the supply network partnering. And importantly, the investment and risk potential is significantly less than with TOT.

The following illustrates the point. For too many companies, offshoring has become an end in itself; that is, products and services are acquired offshore just because of the apparent lower prices. But consider that salaries for engineers in China and India are rising. So it may no longer be as advantageous to offshore these services over the longer term. Similarly, higher transportation costs, longer lead times, and increasing supply chain risk may render the offshoring strategy less and less attractive. When all the relevant factors are considered, we maintain that companies can achieve global competitiveness through a supply-leveraged rather than a traditional approach (SLOT vs. TOT).

Exhibit 1 compares and contrasts the salient aspects of the two approaches to organizational transformation against the key capabilities of adaptation, aggregation, and arbitrage. Adaptation is associated with boosting the

EXHIBIT 1

**Supply-Leveraged vs. Traditional Approach**

Issue	SLOT (Supply-Leveraged Organizational Transformation)	TOT (Traditional Organizational Transformation)
<b>Adaptation</b>	Proactive, quick and flexible reconfiguration of the supply network. Effective and efficient establishment of the right global footprint with flexible supply network partners. Leverage of unique capabilities and competencies of supply network partners.	Reactive and slow adjustment to changing market needs by internally reconfiguring process flows. Reliance on own capabilities and expertise. Heavy internal investment to change global footprint. Increased risk and decreased flexibility.
<b>Aggregation</b>	Cross-company or even cross-industry efforts to standardize products, services and processes across markets to achieve economies of scale and scope. Leveraging expertise, knowledge and capabilities of other supply network members to find the best form of aggregation. Increased volume leverage.	Company-internal efforts to standardize products, services and processes across markets to achieve economies of scale and scope. Volume leveraging constrained by internal capacity. Reliance on own expertise, knowledge and capabilities. Increased risk.
<b>Arbitrage</b>	Strategic integration with supply network partners located in regions with cost differentials. Leveraging expertise, regional knowledge and capabilities of supply network partners. Increased flexibility.	Exploitation of cost differentials in other regions by establishing company-owned subsidiaries in these locales. Reliance on own assets, leadership and capabilities. High risk (and losses) in case of failure.

market share by customizing a firm's processes and products/services to meet the unique needs of local markets, resulting in greater local responsiveness. Aggregation refers to cross-company or cross-industry efforts to standardize products, services, and processes across markets to achieve economies of scale and scope. Arbitrage stands for the exploitation of differences in regional or national markets, such as cost or product standards, as a source of value creation.<sup>1</sup>

## A Summit of Leaders

Over the past few decades, companies have adopted several different approaches to organizational transformations, including total quality management, Lean, just-in-time, and business process reengineering, to name a few. However, while valuable and beneficial in many instances, these largely internally focused programs are not up to the challenge of realigning and repositioning organizations for today's global operations. Compelled by

EXHIBIT 2

### Common Themes Across Companies

Company	Strategic Interdependence & Collaboration	Scope, Integration & Leadership	Knowledge Creation, Exploitation & Innovation	Strategic Change Management
<b>Boeing</b>	Brings together multiple sub-systems into a whole, serving as a systems integrator for its customers. Example: ratio of inside development and manufacturing to outside sourcing had been 90%/10%. Now it's 10%/90%.	In its role as systems integrator, Boeing has far greater reliance on suppliers, and has spread its lean processes throughout the supply network.	Boeing accelerates activities to encourage early supplier involvement in new product development.	Its role as a systems integrator requires Boeing to seek ever greater market knowledge—for example, to conduct robust buy vs. make analysis.
<b>Cisco Systems</b>	Cisco Systems is able to virtually control the supply network without owning assets.	Since nearly all manufacturing is outsourced, Cisco developed superior supply management skills and risk-management acumen.	Cisco Systems captures supplier know-how to create profound knowledge that delivers a superior customer experience.	Supports customer-focused high-margin activities, while attracting best-in-class manufacturing capabilities at the lowest possible costs.
<b>Merck &amp; Company</b>	Merck aims to become the customer of choice for suppliers through its ability to support R&D productivity.	Merck deliberately pursues the link between manufacturing strategy and business outcomes.	Places greater reliance on suppliers, and puts an emphasis on supplier relationship management.	By linking its manufacturing strategy to business outcomes, Merck wants to become the supplier of choice.
<b>Volvo</b>	Volvo intelligently reduces the number of suppliers to optimize best fit and innovation.	Volvo's aim is to accelerate its movement up the supply management maturity curve via integration.	Emphasizes joint new product development with suppliers, including involvement in launch processes.	Volvo emphasizes enhanced supply management visibility and skills.
<b>Delphi Corporation</b>	Delphi increasingly pushes early supplier involvement.	Alignment of metrics is a key initiative in Delphi's integration efforts.	Progressing toward knowledge creation and innovation, Delphi strives to overcome its GM legacy.	Key for Delphi in its strategic change management was its deliberate restructuring during bankruptcy
<b>Lincoln Industries</b>	All stakeholders, both within and outside the company, are actively involved in serving the end customer.	Lincoln "walks the talk" on foundational beliefs around respect for employees, showing exceptional leadership.	Lincoln's culture enables an atmosphere conducive to continuous improvement and innovation.	Strategic supply base management is considered a key to success.
<b>Ingersoll Rand</b>	At Ingersoll Rand, a common supply vision requires key supplier participation.	Goal is to accelerate progress on the supply management maturity curve via integration.	Ingersoll Rand promotes centers of excellence between divisions and suppliers.	Leverages volume and expertise throughout the extended enterprise.
<b>Sara Lee</b>	Pursues a dedicated supply base reduction and an intensive involvement with their critical few suppliers.	Internal integration efforts led to a consolidation of spend and the implementation of best practices.	A significant portion of Sara Lee's new products originates from supplier ideas; measures are in place to reward this activity.	Has elevated the organizational status of supply management so that it now links directly to overall corporate objectives.
<b>Lear Corporation</b>	An overriding aim at Lear is to find and develop the right suppliers for optimal supply network agility and sustainability.	Scope was adjusted by right-sizing Lear's global footprint via a focused geographic representation and organization.	Strives to exploit global supply management synergies to drive innovation and lower costs.	Lear's supply organization and supply network was restructured to enhance competitiveness and lower costs.

increasing scale and scope considerations—due in large part to the globalization of operations, increasing clock-speed, and rising customer demands—firms are increasingly exploiting the resources of external partners. Such strategic partnering with suppliers has become a key element in corporate strategy, enabling strategic agility, flexibility, growth, and competitive success.

Recognizing these realities, we set out to investigate how opportunities in the supply network can provide the impetus and enable the kind of transformation needed. We chose the term “transformation” rather than “change”

## With supply-leveraged transformation a company can hedge against potential vulnerabilities by strategically partnering with key entities in the desired locations.

because transformation better reflects the fundamental rethinking that needs to take place in how business is conducted. Real transformation is much more than merely implementing good supply management processes and practices; it also requires a shift in mindset on how business is conducted. Transformation involves the utilization of suppliers as enablers of new business opportunities, as sources of valuable knowledge, and as active supporters of the firm’s competitiveness.

We have been convening the Executive Summit at Michigan State University to learn first-hand from successful practitioners how supply management can facilitate organizational transformation. This event brings together supply management educators and thought-leading executives from major multinational firms that have mastered supply-leveraged organizational transformation. Our insights are derived from presentations by the executives in attendance as well as follow-on panel discussions, breakout sessions, and structured dialogues.

In our Executive Summit II, for example, we identified four common characteristics of the participating companies that enabled them to achieve a supply-leveraged organizational transformation (see Exhibit 2, on the previous page). These key enabling characteristics are:

**1. Strategic interdependence and collaboration.** This refers to optimizing the supply base and developing close long-term relationships with the selected suppliers. The focus here is on retaining suppliers that provide not only products or services, but also offer

capabilities for advanced levels of collaboration.

**2. Scope, integration, and leadership.** This refers to the alignment of metrics supporting overall performance of the firm, the management of capabilities and risk, and integration both within the enterprise and with external supply partners.

**3. Knowledge creation, exploitation, and innovation.** This characteristic is the ability to utilize unique supplier knowledge and expertise. This may involve the transfer of crucial customer value-creation activities, such as research and development, to outside partners.

**4. Strategic change management.** For strategic change to happen, supply management must be regarded as an equal player in the boardroom, possessing the power to influence decisions and institute change.


These four themes were relatively easy to identify as they were articulated often throughout the Executive Summit, which included

representatives from the following companies: Boeing, Cisco Systems, Merck & Company, Volvo, Delphi, Ingersoll-Rand, Lincoln Industries, Sara Lee, and Lear Corporation. Harder to identify was the glue that held all these themes together. Upon reflection and discussion, though, it became evident that the unifying element was attitude—the right attitude needed to win in today’s competitive marketplace.

Attitude is manifested in various ways, for instance, a willingness to collaborate with key stakeholders, openness and trusting communications, mutual dependence, working together on new product launches, and so forth. Put another way, attitude is a way of thinking that goes beyond the traditional supply management strategy that simply looks to enhance the firm’s bargaining position. We identified two primary insights in this regard, as described below.

### Insight: Supply Management Outcomes

The first insight relates to supply management outcomes. Historically, companies have tended to follow the logic of Michael Porter’s five forces of market competition (see *Competitive Strategy: Techniques for Analyzing Industries and Competitors* by Michael E. Porter). In Porter’s view, a buying firm’s “success” depends on the relative balance of power in negotiations with sellers. Power is a function of market barriers, substitute potential, seller/buyer hegemony, and relative scale. The intuitive result of an analysis, according to Porter, is that a



firm's performance is equated to the relative amount of value it can extract from a given supply network. In other words, how much of the pie you get.

Insight from our Executive Summit, however, suggests that this take-the-most-you-can strategy falls short in two important ways. First, it fails to understand how big the pie could be if supply network members worked together (as opposed to fighting over the size of the slice). Second, it misses the point that before you can capture value, you must first create value. In varying ways and through different examples, each summit participant concluded that greater value comes from mutual dependence, rather than from superior positioning, as implied by the Porter framework. Thus, dependence should be embraced, not avoided. In fact, the thought leaders at the Executive Summit concluded that benefits from mutual dependence exceed those from having a position of greater power over suppliers.

Another important part of this first insight regarding outcomes relates to the role of supply management in the business. Basically, our summit executives advocated movement from “staying in the game” to “winning the game.” In thinking about this desired progression, let us consider the following four principles that ultimately drive effective supply management: efficient (lean/low total cost of ownership), reliable, flexible, and innovative.

The summit participants noted that staying in the game requires excellence across the first three elements—efficient, reliable, and flexible. Competitive realities today demand that firms be cost effective; responsive to both environmental changes as well as changes in demand; efficient in asset and resource allocation; and able to provide timely customer delivery with a minimum of logistics cost and inventory investment. Outstanding performance along these three dimensions of performance is hard work. It calls for the adoption of best practices, development and retention of superior talent, creation of motivating metrics, and a host of other management and process skills and disciplines. The overarching message, which is well understood by veteran practitioners, is this: We must supply goods and services to our customers at acceptable price and quality thresholds, exactly when and where our customers want.

This is all well and good. But increasingly, the ability to satisfy customer demand for cost, quality, and delivery (the first three elements on our list) is becoming mainly

an “order qualifier.” Quality is expected to be perfect, cost is expected to be low, and goods and services are expected to be available where and when the customer demands them. Of course, no firm is perfect; quality, cost, and delivery performance can always be improved. Further, to the extent that a given firm outperforms its peers on these dimensions, it will enjoy a competitive advantage. However, the length of time such advantage endures is getting shorter. Similarly, the potential for significant differentiation based on cost, quality, and delivery is diminishing.

What enables companies to break through to the next level and “win” the competitive game is the fourth element: innovation. And this is where supply management can—and should—play a lead role. As a game changer, innovation goes beyond the “when” to the “what” in our product and service offerings, thus providing lasting and significant advantage. Supply management can play a pivotal role in increasing the rate and quality of innovation by marshalling network resources for the firm's benefit. This

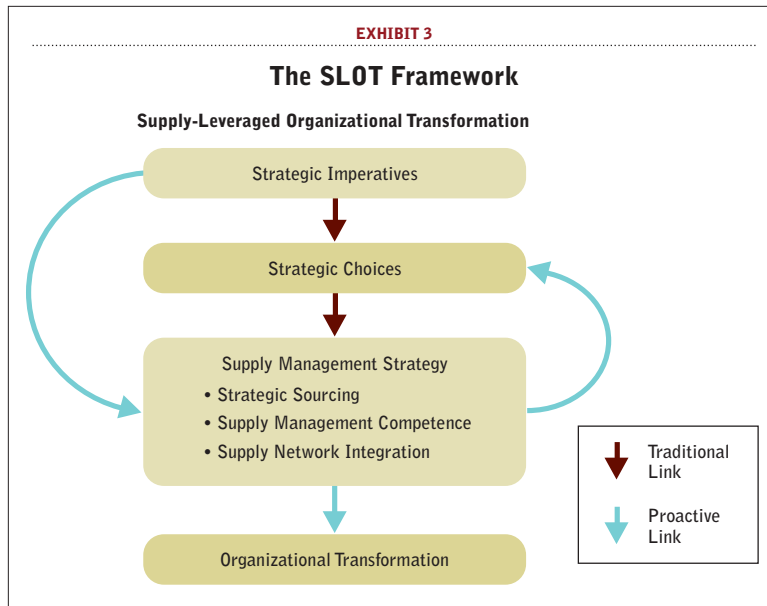
**A supply-leveraged transformation utilizes the capabilities, skills, and expertise** of the entire supply network, making it much more flexible and quick to adapt to changing environments.

is the essence and lies at the core of a supply-leveraged organizational transformation.

Increasingly, external entities are fueling the engine of innovation. Staying in the game requires talent, resources, and organization—all internal capabilities. Winning the game adds the innovative element of relational excellence. In particular, the best and most creative suppliers must prefer to do business with your firm over their other potential customers and especially your competitors. It is relatively easy to measure returns on personnel and physical assets within an organization. It is much more difficult to manage and measure returns on assets that a firm does not own. Yet winning companies will be those that most effectively utilize the full capabilities of their supply networks, especially in driving profitable revenue through innovation.

### **Insight: Role in Corporate Strategy**

The second insight involves supply management's role in overall corporate strategy and the related organizational



transformation. Essentially, we believe that winning firms will move beyond merely aligning supply chain with corporate strategy to actually engaging in the development of the corporate strategy. A firm's strategic imperatives are both directly affected by and informed from supply management strategy. Historically, supply management strategy was being mediated by strategic choices made by the firm.

From our Executive Summit, however, emerged a framework that shows the proactive relationship between strategic imperatives, supply management strategy, and strategic choices. (This framework is depicted in Exhibit 3). Specifically, discussions with thought leaders at the gathering pointed to a direct impact of strategic imperatives on supply management strategy, which in turn influences the strategic choices made by the firm. These best-practice firms base their supply strategy on the dimensions of strategic sourcing, supply management competence, supply network integration, and supply management culture—all key facilitators for organizational transformation. Our framework demonstrates how supply-leveraged organizational transformation can lead to the repositioning of a firm's competitive posture.

Opportunities in the supply network can provide the impetus and serve as facilitators for organizational transformation that utilizes suppliers as enablers of new business opportunities, as sources of valuable knowledge, and as agents supporting the firm's competitiveness. Such a transformation further positions the supply network as a vital part of the firm. In a SLOT scenario, the firm utilizes external resources of the supply network to

efficiently and effectively adapt to changes in the business environment. The combination of unique and complementary capabilities of network partners, coupled with their knowledge assets and expertise, can lead to a dynamic and flexible realignment of organizational resources, business processes, and organizational interfaces. By leveraging the supply network, organizational transformation can occur proactively—that is, before market conditions impose an unavoidable adjustment.

SLOT reverses the traditional relationship between strategic imperatives, strategic choices of the firm, and supply management strategy. We define strategic imperatives as the long-term objectives and aspirations that a company wants to pursue. Strategic choices refer to the firm's translation of these imperatives into corporate

infrastructure, actionable programs, and initiatives. The traditional view of the relationship between these three dimensions is that strategic imperatives determine the strategic choices a firm makes for itself, which in turn dictate the subordinate functional supply management strategy. (Depicted graphically, strategic imperatives → strategic choices of the firm → functional supply management strategy.)

The findings from our summit, however, suggest two different notions: (1) strategic imperatives are able to influence supply management strategy directly in a proactive fashion and (2) supply management strategy itself can inform the strategic direction. This point of view emphasizes first the proactive and leading role that supply management can play in responding to a firm's strategic imperatives, and second, the impetus that supply management strategy can have on a firm's strategic choices (instead of being treated as a subordinate functional entity receiving directives emanating from the firm's strategic choices).

This enlightened way of thinking about supply management, which was heartily endorsed by our summit participants, has significant benefits for firms in their quest to transform themselves in response to today's competitive marketplace. The supply management function is thus not seen as a silo among many disciplines within the organization, but rather as a potential unifying driver of competitive advantage. The shift from the traditional model, wherein supply management is reactive and not an integral part of the debate and discussion in strategy formulation, to a model in which it



is proactive and an integral part of strategy formulation, is a new strategic perspective. It's a perspective that recognizes the vital role that supply management can play in organizational transformation. As such, SLOT is not merely a means of managing product flows with increased agility, but also a strategic approach to business growth and profitability.

### Formula for Success

We have spent some time describing the key insights from MSU's Executive Summit. Implementing these insights follows the supply management formula E<sup>2</sup>C<sup>2</sup>, or Elevate, Enhance, Collaborate, and Centralize knowledge. Here are some brief suggestions on how practitioners can implement E<sup>2</sup>C<sup>2</sup>:

- **Elevate:** Although others might view this as self-serving, it is essential that supply executives get into the board room. Begin by finding ways to routinely get on the CEO's agenda. Link your initiatives to overall corporate goals and report results in a way the CFO appreciates and understands. Show how supply management performance affects EPS, ROIC, cash flow, new product development, customer service, and so forth.

- **Enhance:** The team with the best players wins most often. Become the employer of choice for the top supply management talent. Continuously improve the acquisition, development, and retention of supply management personnel. Expand rotational assignments for high potential individuals. Look for people with superb interpersonal and analytical skills along with general business acumen.

- **Collaborate:** Become the customer of choice for your suppliers. Use outside experts to regu-

larly measure supplier perception of your firm. Do you mostly help or hinder your suppliers? Make supplier perception a key metric in your organization, not just your purchasing department. Track continuous improvement suggestions from suppliers and new product development support. (Have they helped you with a flawless new product launch, for example?) Reward strong performers and share benefits. Co-locate key personnel.

- **Centralize:** The best supply management organizations tend to be centralized. At a minimum, centralize the creation and dissemination of knowledge. Establish common global processes and metrics. Leverage best practices and knowledge across not only your organization but also your extended supply network.

For many years now, business writers and industry observers have linked success to customer focus and employee satisfaction. Pleasing customers and attracting and retaining the best employees have long been recognized as critical components of success. Arguably, in today's globally competitive markets, loyal customers and employees are even more important.

Yet there are three legs to the business success stool—customers, employees, and suppliers. And while the supplier leg is often neglected, it may be the strongest of the three. In any case, it offers the best opportunity for overall business improvement. We believe that the supply-leveraged organizational transformation (SLOT) approach outlined here can take your supply management activities to a new level of excellence. ∞

1 Ghemawat, P., 2007. Managing differences: the central challenge of global strategy. *Harvard Business Review* 85 (3), 58-69.



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# How Inventory Optimization Opens Pathways to

By Sean P. Willems

**O**ver the past decade, inventory optimization has moved from a theoretical construct relegated to classroom instruction to a practical tool that improves corporate profitability. The underlying drivers of inventory, in the form of demand and supply variability, are common to all supply chains, making inventory optimization (IO) applicable to every industry.

Underscoring the broad applicability of IO, many diverse businesses have realized dramatic improvements in supply chain performance including:

- Case New Holland executed a postponement strategy that reduced total inventory by 20 percent for its line of compact tractors.<sup>1</sup>
- Hewlett Packard achieved more than \$130 million in total inventory savings.<sup>2</sup>
- Microsoft increased inventory turns 18-20 percent while simultaneously increasing fill rates by 6-7 percent.<sup>3</sup>
- Procter & Gamble reduced inventory levels by \$100 million for its beauty division.<sup>4</sup>

These results are not isolated incidents. For companies that implement IO, a 10 to 30 percent reduction in total inventory is common. This article documents the transition to IO, what companies have gained from implementing inventory optimization, and how these tools can be integrated into any company. I will also review real world examples of IO in action, keys to success, and

questions you need to ask yourself before moving ahead with an IO initiative.

## How Did We Get Here?

Four factors have contributed to the growth of inventory optimization in the past decade: the success of operations-focused improvement initiatives; the brute-force reconciliation of supply and demand; the focus on metrics for supply chain performance; and the existence of commercial IO software.

First, IO is built on the foundation established by successful business process reengineering, lean manufacturing, and six sigma projects. While these initiatives are different, and each worthy of their own article, they are relevant to IO because they establish a rigorous relationship between supply chain inputs and outputs. Further, they provide an excellent foundation that can accelerate the realized benefits from inventory optimization.

Second, companies have worked hard to remove gross imbalances between supply and demand. By making capacity levels and material purchase plans more tightly match projected demand, there is greater emphasis on properly setting inventory targets. Following the global financial crisis and the subsequent slashing of inventory across the board, there is no longer an excess of production capacity or stockpile of leftover inventory builds to satisfy fluctuations in demand. Now, one has to meet these fluctuations with scientifically derived inventory targets, which requires proven IO software to optimize the end-to-end supply chain.

Third, there has been significant adoption of metrics, like service level and cash-to-cash cycle time, that require a supply chain orientation and can only be

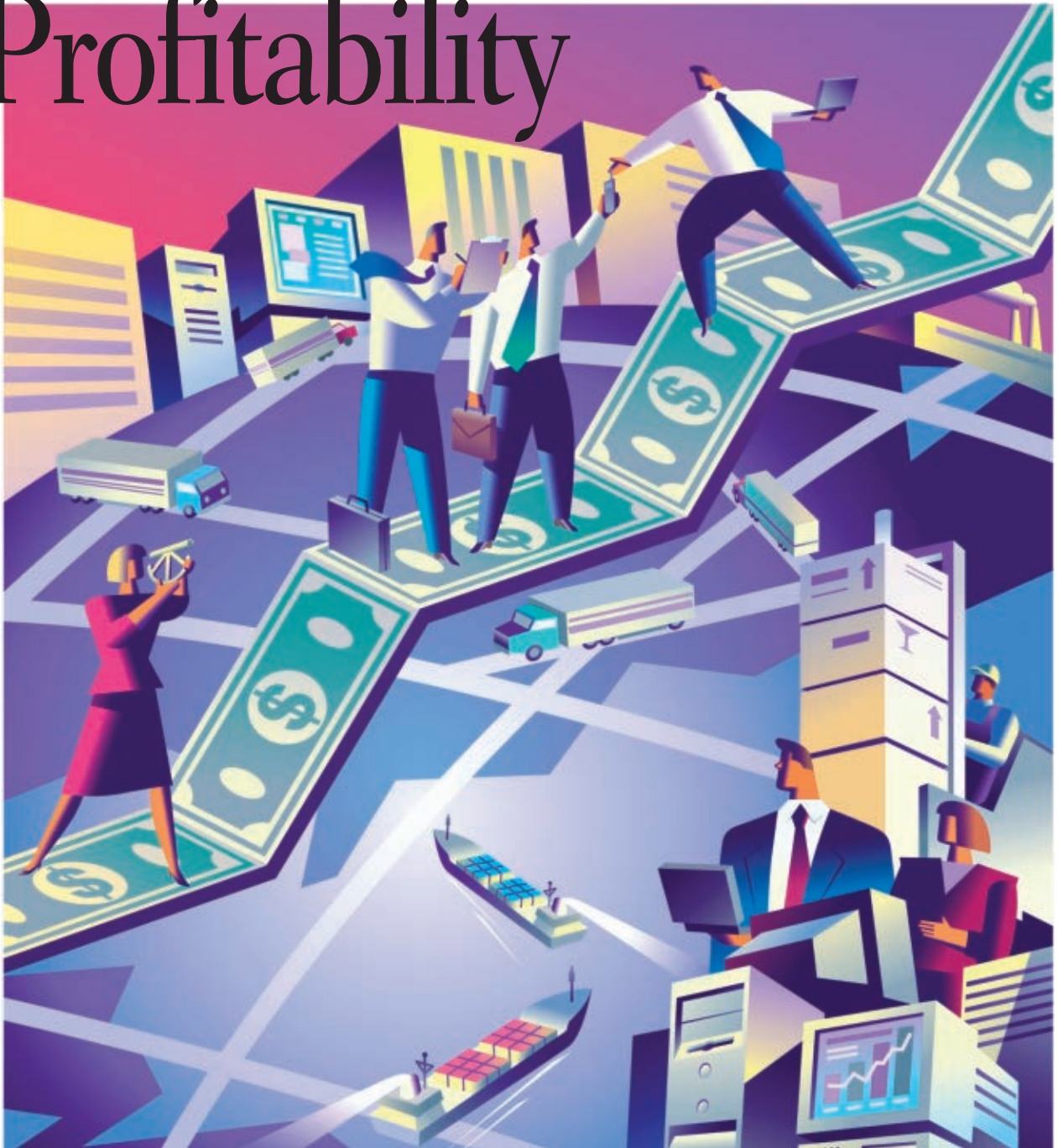
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Inventory optimization—the process of scientifically determining the right inventory levels across the supply chain—has never been easy. But advanced tools now available are enabling companies to do the job faster, more accurately, and with greater business impact. In fact, industry leaders are finding that IO can drive greater profitability through lower inventories, better fill rates, and ultimately a more satisfied customer.

# Profitability



improved with tools like IO.

Fourth, proven software capable of solving complex IO problems across global supply chain networks is now commercially available. As opposed to deterministic optimization methods that underlie advanced planning and scheduling (APS) systems, the underlying mathematics for inventory problems required the development of stochastic nonlinear integer solution methods. While this IO math is different than APS math, it is not industry specific; thus, the same software can be deployed across different industries to optimally set and manage inventory positions.

### What is Inventory Optimization?

Inventory optimization was born as an advanced algorithmic approach to understanding and quantifying the propagation of demand and supply uncertainties across a multi-level supply chain. Today it is considered a core competency at both mid-size and Fortune 500 companies in a wide range of industries. IO has proven to be a sustainable process to free up millions of dollars in working capital by reducing inventory without damaging service levels. Unlike traditional “binge-and-purge” cycles of over-production followed by brute-force reductions, IO enables companies to achieve savings and increase inventory turns while driving more profit to the bottom line.

In short, inventory optimization scientifically determines the minimum inventory targets across the entire supply chain network subject to constraints established by the planner.

### Different Ways Companies Set Inventory Targets Today

Companies today set inventory targets in various ways. The methods used can be viewed along the following continuum from completely ad hoc and heuristic to globally optimal: (1) no formal targets; (2) employ rules of thumb; (3) use single-stage calculations; and (4) use multi-echelon software tools.

At the simplest level, some companies still do not set formal inventory targets. Instead, they manage inventory by padding the schedule and making items earlier than required. For all but the simplest of products, this safety-time approach is woefully inadequate. A more prevalent approach is to employ a rule-of-thumb target. This involves setting a days of supply (DOS) coverage target for every item. While DOS rules of thumb are easy to understand, they have two serious limitations. First, DOS is based on average demand and not variability. Second, DOS approaches are forward looking whereas inventory targets are actually backward looking because they are an outcome of production decisions made in earlier periods.

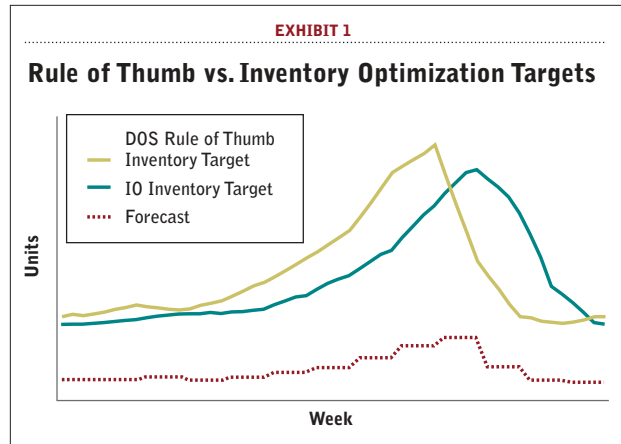


Exhibit 1 presents a real-world illustration of the problem of forward-looking targets at Microsoft. In this case, a forward DOS target reduces inventory too soon because in the peak period of demand the DOS target is already looking forward to the off-peak period. As such, the DOS target lowers inventory levels before the peak sales period, which results in lost sales. The DOS target also builds inventory up while demand is still in the low period. So not only do service levels suffer but overall inventory levels for the year are higher than they should be when compared to the results from IO. (More details on this particular issue and the associated Microsoft example can be found in Neale and Willems, 2008.)

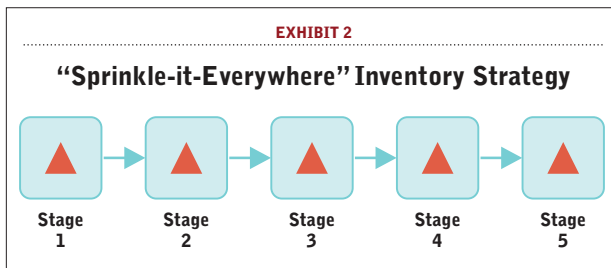
Single stage calculations are an improvement over rules of thumb—but they still have significant limitations. First, it is more appropriate to think of these models as calculating vs. optimizing. By only looking at a single item at a single location, the resulting inventory problem often reduces to a straightforward calculation. Because the single item is being looked at in isolation, it does not consider its effect on the rest of the network. If you open an inventory textbook, you are looking at the single stage calculation that may be supported in a typical APS system. So while the mistake is understandable, it is in fact a mistake to think of these single stage solutions as performing a true optimization. In reality, these solutions simplify the problem to the extent that a single calculation can be performed. This is an improvement over DOS rules of thumb to be sure, but falls significantly short of optimally solving the inventory problem.

Multi-echelon inventory optimization software represents the state of the art approach to optimize inventory levels across the end to end supply chain. These models have significantly more degrees of freedom because they do not assume, like single stage models do, that a specific location must hold inventory. Modeling multiple stages allows other types of inventory, including cycle stock and prebuild along with safety stock due to time phased

demands, to now be properly modeled across the supply chain. This seemingly small change opens up tremendous opportunity to improve supply chain performance and lower total inventory.

### How does Multi-Echelon Inventory Optimization Work?

When modeling a multi-echelon inventory problem, the objective is to determine the right inventory targets across the entire supply chain. Even if we restrict our attention to a simplistic five-stage supply chain where all the stages form a serial line with Stage 1 as the raw material and Stage 5 as fulfilling customer demand, there are many possible ways to deploy inventory across the supply chain.



For example, Exhibit 2 depicts a common inventory strategy encountered in practice. In this picture, triangles denote safety stock held at a stage. In Exhibit 2, every stage holds a decoupling safety stock. This allows the actions of a stage to be isolated from other stages. This might be called a "sprinkle-it-everywhere" inventory strategy. However, experience shows that each stage tends to grow its inventories over time, which results in a suboptimal overall inventory strategy from a cost perspective because it does not pool across locations. Instead, each location covers its own lead time.

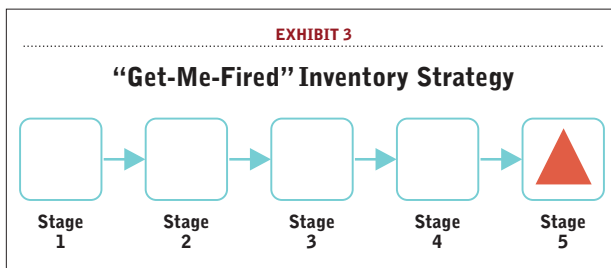
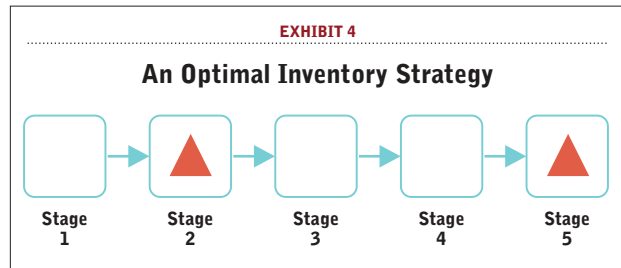


Exhibit 3 represents another extreme. It is pooling in its most extreme form for this simple supply chain. Here, only Stage 5 holds safety stock. This forces the inventory at Stage 5 to increase, versus the situation in Exhibit 2, because Stage 5 must now cover the lead times for all five stages. This removes the safety stock from the other stages because Stage 5 is covering all the

lead time in the supply chain. In most real-world cases, this is too much pooling and is problematic because we are now holding safety stock at its most expensive and most differentiated point. So while Exhibit 3 is an interesting thought exercise, it is very unlikely to be the optimal safety stock policy in reality. In fact, it could end up being a "get-me-fired" strategy.



In Exhibit 4 we will assume Stage 3 is the big value add step in the supply chain. In this scenario, a decoupling safety stock at Stage 2 covers the lead times of Stages 1 and 2 while Stage 5 covers Stages 3, 4 and 5. This is an example of what could be the optimal safety stock policy where, through IO, we have placed the right amount of inventory at separate locations to reduce working capital and ensure service levels.

Inventory optimization models at the SKU location level to identify where it is best to hold inventory. This representation is often more granular than how non-supply-chain-people think of the problem. For example, the lay person might think of inventory held at the distribution center as one pile of inventory. Yet the supply chain team has to think of inventory in all its possible states in the DC, because inventory can be held in all three states—for example, raw inventory that has not been processed, packed inventory that has been kitted with other items, and packed inventory that is dedicated to a major channel customer. To produce a feasible inventory plan, all three locations need to be modeled for the purpose of setting tactical inventory targets that can be uploaded into the planning system on a weekly or monthly basis.

It is important to recognize that the inputs to an IO tool can be very modest. The IO data requirements for an inventory optimization tools can focus mainly on the limited list below:

- Characterization of demand and its volatility.
- Service level target.
- Stage inventory holding cost.
- Stage lead time.

Examples of additional data that can help improve the quality of the result from the IO model are estimates of lead time variability, constraints on delivery performance for stages, and the underlying review periods for different portions of the supply chain.

With the data in the areas listed above, an IO tool evaluates all the inventory stocking levels across the supply chain that satisfy the desired service level requirements. The stocking levels that produce the minimum inventory cost are the optimal inventory policy and the result from the IO tool.

### What Do the Results of Inventory Optimization Look Like?

Farasyn et. al (2011) document the application of IO tools at Procter & Gamble.<sup>5</sup> Exhibit 5 is a simplified IO model for one product family (liquid makeup) within the total North America Cosmetics supply chain. The chain consists of 8 unique raw materials, 10 blank uncolored work-in-process materials (WIPs), 24 colored WIP materials, 150 packaging materials, 18 intermediate subassemblies (partially assembled finished goods), and 75 finished goods that move from finished packaging on to U.S. and Canadian distribution centers and ultimately to retail customers. Intermediate subassemblies also must satisfy demand for promotional items. In total, the model contains 500 stages (a SKU at a location) and over 700 arcs (bill of materials between SKU locations).

The model incorporated existing service policies (for example, service level target of 99.5 percent case fill rate), material lead times (generally ranging from 7 days to 8 weeks), production times (1-2 days), review periods (7-28

days), transportation and movement times (1-7 days), quality assurance durations (1-5 days), and costs added at each location. Demand characterization (mean and standard deviation) for each finished good SKU was based on the past 13 weeks of actual shipments and forecast, and the future 13 weeks of forecast.

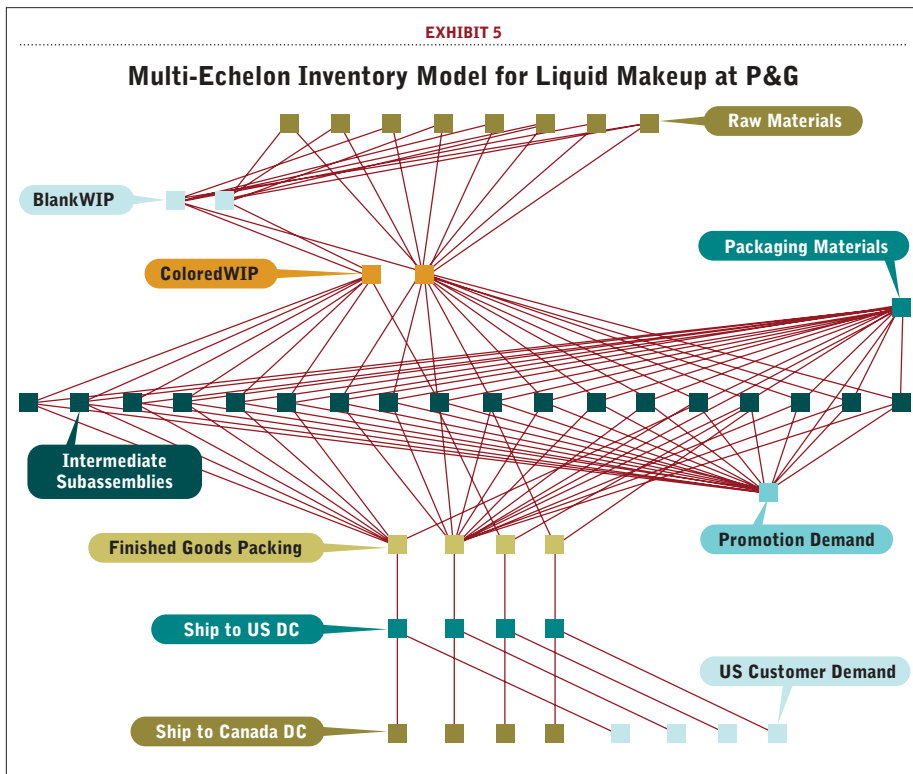
The application of multi-echelon inventory optimization to the Cosmetics liquid makeup portion of its supply chain yielded a change in level and placement of inventory safety stocks while ensuring the target 99.5 percent service level was protected. Exhibit 6 provides an overview of the change in safety stock days on hand across the four major safety stock inventory echelons—materials, work-in-process, finished goods in the U.S. distribution center, and finished goods in the Canadian distribution center. Safety stock days decreased in materials and finished goods, and increased in work-in-process.

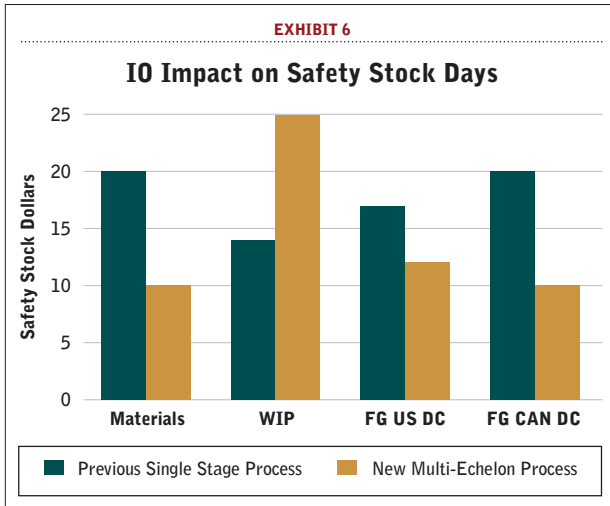
Most importantly, the total investment in safety stock for this supply chain was reduced by 17 percent, as the dollar drop in finished goods and materials far outweighed the dollar increase in work-in-process. This 17 percent reduction in safety stock equates to a 5 percent total inventory reduction for this product family's supply chain.

Similar multi-echelon results were achieved by a mid-sized (less than \$250 million volume) manufacturer. The manufacturer operates two distinct businesses. One is an import business where the firm operates as a traditional distributor; in the other business,

product is manufactured in a two-echelon supply chain consisting of raw materials and finished goods in North America. After IO was applied, at an aggregate level raw material inventory was increased allowing finished goods to decrease. In fact, the total inventory reduction exceeded 19 percent.

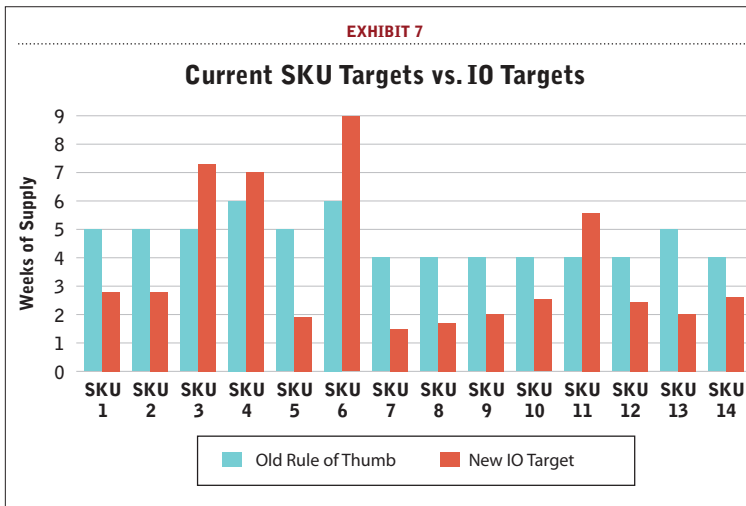
Exhibit 7 breaks down the results by SKU. The SKUs are rank ordered by volume, with SKU 1 representing the highest volume product. The inventory results have all been converted into periods of supply. The existing DOS rule of thumb employed either four, five, or six weeks of supply for every SKU. The results from IO are completely indicative of a typical





implementation. Namely, a few SKUs actually increase their inventory levels. This is true for SKUs 3, 4, 6, and 11. In fact, when this result was first shared with the planning team, IO was made to look psychic because these were the SKUs that were on the planner's hot list. But IO is not psychic. IO just sets inventory level based on demand and supply variability, and we all know that some products are more variable than others.

For all the other SKUs, IO recommends lower inventory levels. Again, this should make intuitive sense. Planners manage a hot list on a daily basis. That hot list cannot be infinitely long. If it was, then they would have too little of everything and that can only happen if there is grossly insufficient capacity. So the fact that planners can manage the hot list means, by definition, there must be too much inventory for the other SKUs (because they are not on the hot list that week). Exactly how much excess inventory for the other SKUs depends on its parameters. So while the SKUs differ from company to company, the overall result in Exhibit 7 is common to all companies that implement IO.



## Inventory Optimization Best Practices

Setting aside more generic best practices associated with any improvement initiative, there are two specific practices that are critical to successful inventory optimization.

### Break Inventory Into its Components

In order to optimize inventory levels, it is necessary to recognize that inventory is not one monolithic quantity. It can be broken into components that exist for assignable reasons. Some of the most important categories of inventory include anticipatory stock, cycle stock, early arrival stock, marketing stock, obsolete stock, pipeline stock, prebuilt stock, and safety stock.

Cycle stock is the inventory due to production frequencies. Early arrival stock is due to uncertainties in coordinated delivery times. Marketing stock is additional inventory placed at customer locations to stimulate demand or satisfy retailer shelf-space requirements. Obsolete stock is inventory of unsalable product that is often left on the books for accounting and finance purposes. Pipeline stock is based on the lead times in the supply chain. Prebuild stock is inventory built ahead of demand due to capacity limitations. There are several classes of safety stock each specific to a type of variability; be it forecast variability, supply variability, or manufacturing variability.

Our list does not fully enumerate all types of inventory. For example, consignment inventories may warrant a separate designation (although they can be considered marketing stock) while some manufacturing processes require curing or another delay step (although they can be considered pipeline stock). Also, promotion stock (in the form of PDQs) have characteristics that make them similar yet different from marketing stock.

It is worth noting that, particularly when it comes to reporting inventory metrics to senior management, it is not necessary to track all of these categories. However, it is necessary to define categories that "move the needle" in terms of supply chain performance. A good rule of thumb is to measure any category that comprises more than 20 percent of total inventory.

Breaking inventory into categories is important for three reasons.

1. *Not all inventory is of equal importance to the business.* If inventory is not broken into its components, it cannot be tracked or improved. It would not be uncommon for a mid-sized company to have more than 100 million dollars in inventory. If it is just all reported as one giant bucket of costs, then it cannot be improved.

2. *The business drivers of the different cat-*

egories of inventory differ so they cannot all be improved the same way or with the same speed. Different math is required for each category. In particular, the safety stock component, because it is driven by variability in both demand and supply, is the hardest component to solve without a proven multi-echelon inventory optimization model.

3. *If a management edict comes down on the first day of the quarter to cut inventory by 10 percent within a month, only safety stock (and possibly cycle stock) can be reduced quickly.* All of the other categories (such as prebuild, marketing or obsolete stock) are driven by other factors that cannot be easily or quickly changed—if they can be changed at all. So a 10 percent inventory reduction initiative could translate into a 30 percent safety stock reduction requirement. (These last two points emphasize why IO has grown in importance over the past decade as companies responded to increased volatility in the global marketplace.)

### **Create a Virtuous Cycle of Inventory Optimization**

Inventory optimization operates at both tactical and strategic planning levels, and a virtuous cycle of inventory optimization is created when they operate in concert. At the tactical level, inventory targets are set weekly or monthly based on demand and supply variability. Each time the system is run, it updates its inventory targets based on the updated demand and supply information. So unlike a DOS rule of thumb or a single stage calculation that is run in an off-line mode, the IO system automates the creation of inventory targets on a weekly or monthly cycle. These updated targets free the planning team to focus on only the truly problematic SKUs, because the vast majority of the SKUs will be handled as part of the normal planning process.

At the strategic level, the current instance of the tactical solution is immediately available to answer any questions that arise. In effect, strategic questions that could not be addressed in the past can now be answered “for free” because the data is readily available and the outcome can be implemented in the next run of the tactical solution. In my experience, people vastly underestimate the frequency with which these strategic inventory-related supply chain decisions are made. They are not just made at new product introduction, for example, but every time the product is introduced in every channel in every market in every geography.

### **Is Inventory Optimization Right for Me?**

The simple truth is that inventory optimization is applicable to all but the simplest supply chains. But whether IO is an initiative worth pursuing depends on the relative importance of inventory and service levels versus the other initiatives the company can pursue. To help answer whether inventory optimization is worth pursu-

ing, it is helpful to consider the following questions.

Have you been tasked to:

- Reduce total inventory by 10 percent or more?
- Implement a postponement strategy?
- Increase service levels without increasing inventory?
- Adjust inventory levels to reflect product-family profitability?

• Launch new products more frequently or cost effectively?

- Source raw materials or finished goods abroad?
- Consolidate manufacturing or distribution operations?
- Update inventory targets more frequently than once a year?

Does your supply chain:

- Experience significant bullwhip effects?
- Experience seasonality or end of quarter push?
- Consist of more than one location or channel?

Answering yes to any of these questions is a good indication that IO could improve the performance of your supply chain.

In less than a decade, inventory optimization has emerged as a proven technology to drastically reduce total inventory levels while maintaining or improving customer service levels. These competing objectives are satisfied by scientifically accounting for the variability inherent across the entire supply chain and establishing a virtuous cycle of inventory optimization that operates at both the near-term tactical and strategic levels. Born as an advanced algorithmic approach to understanding and quantifying the propagation of demand and supply uncertainties across a multi-level supply chain, inventory optimization is now recognized by leading companies as a core competency critical to their success. ☞☞

1 Neale and Willems (2009)

2 Billington et al (2003)

3 Neale and Willems (2009)

4 Farasynm et al. (2011)

5 This section is taken in its entirety from the section labeled “Leveraging North America Cosmetics’ Success Across the Beauty & Grooming GBU” in Farasynm et al. (2011)

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# A Practical Framework for STRATEGIC PLANNING

By Tan Miller and Matthew J. Liberatore

To develop a successful supply chain strategy, a firm must have an effective framework and methodology for strategy development. Further, this framework and methodology must ensure that the firm can select those projects that will best support its supply chain strategy.

This article sets forth such a framework that incorporates both strategy setting and project selection. It's important to emphasize up front that this framework was developed in a real-world setting. Specifically, it is based on the supply chain planning frameworks and project selection processes developed by the authors while one (Miller) worked at Warner-Lambert and Pfizer, and the second author (Liberatore) consulted on these initiatives.<sup>1</sup> We implemented and employed the frameworks presented here at Warner-Lambert and Pfizer, and recommend these approaches to other practitioners seeking methodologies to organize and enhance their supply chain strategic planning and project selection processes.

To illustrate our approach, we draw on the experiences of a fictitious company called ABC Manufacturing and Distribution Inc. The ABC story is patterned after actual corporate implementations of the framework in which we were involved.

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## The Challenge of Strategy Development

Formulating, implementing, and maintaining a well-positioned, comprehensive supply chain strategy is a significant challenge for firms competing in today's global economy. Moreover, that process of planning, prioritizing, and executing strategies and projects to ensure that the supply chain remains competitive never ends. Firms must continually evaluate the efficiency and effectiveness of their current supply chain, identify the next steps necessary to meet future requirements, and implement specific projects that will best achieve their objectives. In short, the process of strategizing and planning is ongoing and must have a goal of continuous improvement.

To facilitate a cogent process for developing and implementing supply chain plans, a firm must have an effective framework to organize its planning and resource allocation processes. We present a framework here that can help companies guide this effort and, importantly, to select those projects that will best support their supply chain objectives and strategies within the available resources allocated. As we describe and illustrate through our fictitious company, this framework offers a well-defined process by which firms can identify those projects that will contribute most significantly towards achieving their objectives and executing their strategies.

## MOS: Mission, Objective, Strategy

ABC Manufacturing and Distribution successfully employed the framework to integrate its supply chain objectives, strategies, and project selection process into one aligned, comprehensive approach. In particular, the company used the framework to determine which projects it should pursue to improve the delivery of finished goods





Most everyone acknowledges the importance of strategic supply chain planning. But many companies struggle with translating their plans into action. In many cases, what's missing is a framework that can guide the strategic planning process. The real-world framework offered here not only facilitates this process, but also helps companies select those projects that will help make the strategy a reality.

across its supply chain. (Again, ABC’s illustrative experience with the framework and methodology are based on our actual experiences working for several diversified consumer products and pharmaceutical companies.)

ABC produces a wide variety of consumer goods and distributes its products to a broad array of retailers, who then sell these goods to consumers. Recently, the company has also implemented its own direct-to-consumer channel of distribution, an effort still in initial stages of development. ABC’s supply chain organization is just now entering its annual strategic planning process.

To develop and organize the planning process, the company employs the mission, objective, and strategy (MOS) approach, which is a three-stage strategic planning process.<sup>2</sup> In the first stage of this process, ABC’s supply chain management defines its overall mission. Then in stage two, the company evaluates its supply chain from both internal and external perspectives. Based on this evaluation, it defines a set of objectives designed to achieve its stated supply chain mission. In developing the objectives, ABC’s supply chain organization focused on the set of functional capabilities that its supply chain must have in order to facilitate carrying out its mission.

In the third stage of the planning process, ABC develops strategies designed to meet those objectives defined in the previous stage. In developing these strategies, ABC’s managers consider and address the needs of all of the major stakeholders and constituents of the firm and its supply chain. (We discuss these stakeholders and constituencies in more detail below.) The planning process culminates in the selection of those supply chain projects that best support the strategies developed. Exhibit 1 presents the framework as applied to ABC.

Note that the first three levels of Exhibit 1 correspond to the three stages of the strategic planning process (mission, objectives, strategies) for ABC’s supply chain organization. Level 4 of the framework represents the potential projects (displayed as P1 to P12) that ABC will employ to achieve its MOS. We now review, step by step, ABC’s implementation of the framework depicted in the exhibit.

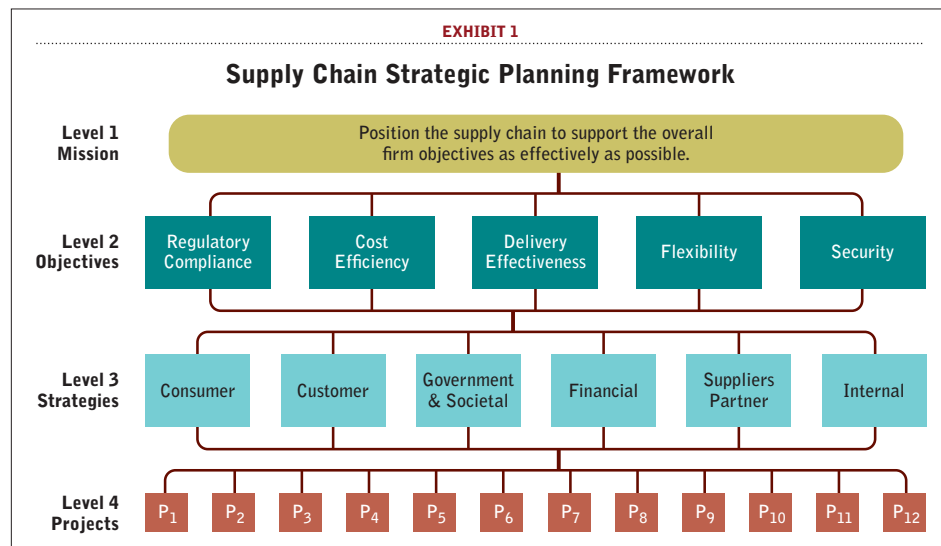
First, following the MOS approach, the supply chain organization defined its mission as follows: “Position ABC’s supply chain to support the

overall firm objectives as efficiently and effectively as possible.” As the mission statement underscores, ABC’s supply chain management views its role as one of facilitating and enhancing the firm’s ability to compete successfully in its industry. To carry out this mission, the supply chain planning team, consisting of a mix of senior and mid-level supply chain managers, next established their performance objectives. The team also reviewed a wide range of supply chain functional capabilities. Then based upon this review, it defined explicit performance objectives in the following areas:

- regulatory compliance
- cost efficiency
- delivery effectiveness
- flexibility
- security

We note that ABC (and any company utilizing this approach) should formulate precise objectives against which it can accurately evaluate itself in the defined areas. For each objective, then, the company needs to set metrics that gauge progress against those objectives. For example, a cost efficiency objective might be to reduce logistics costs to either a targeted percentage of sales or cost per case; so these would be the performance metrics. (In our illustrative review of ABC’s objectives, we have not included specific metrics because of space limitations in the article.)

One more observation about supply chain objectives before we close the discussion: In setting these goals, companies often need to consider the related tradeoffs. In the case of ABC, tradeoffs certainly need to be discussed with regard to the objectives of cost efficiency, delivery effectiveness, and flexibility (responsiveness) to customer needs. The remaining two objectives—regulatory compliance and security—relate more to the exter-



nal environment in which the supply chain operates. With these two objectives, as with the others, ABC must weigh all appropriate actions and tradeoffs.

After developing its five major objectives, ABC then turned to the specific strategies needed to achieve the objectives in a way that met the needs of its major stakeholders and supply chain constituents. Specifically, supply chain management leadership determined that supply chain strategies needed to be developed that focused on six key areas:

- The Consumer (CONS)
- The Customers (CUST)
- Governmental and Societal Responsibilities (G&S)
- Financial Wellbeing (FIN)
- Suppliers and Partners (S&P)
- Internal Operations and Employees (OPS&E)

Note that these focus areas incorporate all of ABC's stakeholders and constituents, both internal and external to the firm. (We'll come back to this later in our discussion of potential supply chain projects, depicted in Exhibit 2.)

For the purposes of this article, we will not delve into the details of all the explicit strategies that ABC would have developed. Instead, we offer this brief illustration. A typical customer strategy might be to enhance the customers' perception of ABC. This could be a key component of the company's overall customer strategy. ABC would develop specific projects and actions to support this strategy, and then measure over time the results of the ongoing effort. Explicit strategy statements and supporting projects would be developed for all the remaining strategies to complete the framework.

The mission, objectives, and strategies defined by ABC's supply chain management provide a framework for the organization to move forward. With its strategies defined, ABC now must select and initiate individual projects that will facilitate successful implementation of the strategies. This effort consists of first identifying a set of potential supply chain strategic projects, and then from that broader set, selecting the actual projects to be pursued.

## Identifying and Selecting Projects

As part of the supply chain planning process, companies first need to perform an "environmental scan" to obtain relevant information on the business environment in which their supply chain operates. This process helps identify issues that need to be addressed during the planning process, along with potential projects that would facilitate implementation of the organization's supply chain strategy. The range of trends, factors, and initiatives that a firm must consider in crafting its supply chain strategy increases every year at an accelerat-

ing pace. The rapid advance of supply chain technologies, globalization of supply chains and competition, environmental and sustainability initiatives, supply chain security and regulatory issues, global IT systems, and product nomenclature represent just a sampling of the many considerations that render supply chain planning an extremely complex undertaking.

We have put together a comprehensive set of potential "project areas" and initiatives that a firm may consider in its process of establishing (or updating) its supply chain strategic plan. Appendix A presents a representative sample of the topic areas identified. (To obtain the complete list, please contact the authors.) We constructed this list by first reviewing all articles in a recent 12-month period appearing in nine representative supply chain trade magazines and journals.<sup>3</sup> All major topics identified in this review were placed on the list in the appendix. Additionally, we supplemented those topics through a series of informal discussions with supply chain practitioners. Finally, a recent article by Autry et al. in the *Journal of Business Logistics* (Vol. 29, No. 2, 2008) offers a broad list of logistics tactics and strategies—based on interviews with industry practitioners. We reviewed the Autry list and added a few topics from their article that had not surfaced in our interviews and reviews of the publications.

In some cases, the set of topic areas considered may simply emanate from senior supply chain management's assessment of the firm's supply chain needs. Or the topics could result from a more formalized review process that includes input from other parts of the organization. But regardless of the approach taken, the firm must either explicitly or implicitly establish a topic list before deciding which projects to undertake to support its supply chain strategy. This helps ensure that the firm's strategic planning process is comprehensive, and does not become too narrow or inwardly focused. During the planning process the number of potential projects will be reduced to a manageable subset that can be evaluated more closely. Further, because funds are limited, the firm must prioritize the remaining projects based on benefit-cost considerations.

Going back to our hypothetical case example, Exhibit 2 displays the list of potential supply chain strategic projects that ABC's managers have proposed to support their strategies, objectives, and ultimately their mission.

For ease of illustration in Exhibit 2, we have indicated that each potential project supports just one strategy—for example, CONS (Consumer), CUST (Customer), and so on. In practice, however, one project often supports multiple strategies—which our framework can easily accommodate. In this case, ABC's managers developed the potential project list after evaluating: (1)

EXHIBIT 2

ABC's Potential Supply Chain List

	Project Description	Strategy Project Supports
1	Streamline existing direct-to-consumer delivery and Internet ordering services.	CONS
2	Integrate POS data as input to current forecasting and production scheduling processes.	CUST
3	Establish and enhance customer relationship management (CRM) services.	CUST
4	Implement customer segmentation program based on customer profitability and activity based costing (ABC) analyses.	CUST
5	Expand supplier relationship management (SRM) programs.	S&P
6	Evaluate and benchmark supply chain security processes and procedures and recommend enhancements.	G&S
7	Integrate individual country sales and operations planning processes into one Global S&OP process.	OPS&E
8	Develop and implement plan to optimize use of RFID in the supply chain.	OPS&E
9	Evaluate current use of 3PLs and recommend if usage should be increased.	FIN
10	Develop and implement labor productivity measurement systems for plant and warehouse operations.	OPS&E
11	Expand import/export compliance IT capabilities.	G&S
12	Benchmark current carbon footprint and develop long-term green manufacturing operations plan.	G&S

The strategic planning process generates significant additional value when plans lead to specific actions. Thus, a candidate set of projects is evaluated next (see Exhibit 2). ABC understands the importance of allocating their limited resources to those projects that best support the most important strategies. The projects are ranked accordingly, so that the highest ranked projects can be funded in order until the budget is exhausted. At the conclusion of this phase of the planning process, the team communicates these results to everyone in the supply chain function as well as to relevant personnel in other parts of the organization. The objective here is to let everyone know where the emphasis needs to be placed in running the business. The strategic discussion should, in fact, lead to the develop-

general trends and initiatives in supply chain management as represented in the appendix listings and (2) the firm's specific supply chain priorities. Additionally, in constructing its initial list, ABC's managers made certain that they identified at least one potential project to address each major strategy. Note that these 12 projects are the fourth, or lowest level, of the supply chain strategic planning framework introduced earlier.

**Applying the Framework**

Using Exhibit 1 as a guide, ABC's supply chain strategic planning team engages in discussion and debate to determine the importance of the stated objectives in achieving the supply chain mission. They prioritize the objectives, applying a simple weighting technique of distributing 100 points across the five objectives. Next, the team considers the extent to which the defined strategies meet each of the objectives, and eventually determine their overall importance through the weighting process. At this point, following the framework, the planning team now has linked its objectives to its mission, its strategies to its objectives, and its strategies to its mission (via the strategies link to the objectives).

ment of tactical policies that best achieve the mission.

In conducting planning meetings, it's useful to have members of the supply chain planning team prioritize or weigh the various items individually without first discussing them among the group. This approach ensures that all individuals actively participate in the process and increases the probability that all participants will "buy-into" the planning framework. It also encourages individual creativity and initiative while ensuring that the views of all team members are considered. In short, this approach enhances the prospects for success. The ultimate goal is to achieve agreement and alignment at the various steps of the planning process so that the team concludes the process united in their support of the prioritized strategies and projects.

Note that in some instances, a company may wish to use a more formal process to prioritize the strategies, objectives, and projects. The Analytic Hierarchy Process (AHP), developed by Thomas Saaty and described in his book, *The Analytic Hierarchy Process*, is an easy-to-use decision making method for prioritizing alternatives when multiple items must be considered.<sup>4</sup> The accompanying sidebar above gives more information on this approach.

## The Analytic Hierarchy Process

The Analytic Hierarchy Process (AHP) requires a planning team to make a set of relative comparisons at each level in the framework (Exhibit 1) that will eventually lead to a set of weights. For example, one question might be: With respect to achieving the mission, which objective, regulatory compliance, or cost efficiency is more important—and how much more important is it? Each member of the team would then answer this question using the AHP's 1-9 numerical scale. Briefly, in this scale, a value of 1 would mean that the two objectives are equally important with respect to achieving the supply chain mission. A value of 3 for cost efficiency relative to regulatory compliance (i.e., 3:1) would indicate that cost efficiency is a moderately more important objective than regulatory compliance with respect to achieving the mission, while a value of 9 (the highest possible value) would indicate that cost efficiency is extremely important relative to regulatory compliance. Thus, in the AHP scale, the higher the value assigned to any relative comparison of two items (or two objectives, as in this example), the more important is the first item relative to the second item.

Using a series of such questions, a planner makes relative comparisons for each potential tradeoff at each level

of the framework. A mathematical formula is applied that assigns relative scores for each of the items on a given level. The combined scores on each level equal 1.0, allowing for easy comparison. For example, regulatory compliance might have a score of 0.20; cost efficiency, a score of 0.24; and so on for the remaining objectives. The AHP methodology then combines the scores across the levels in the framework using a weighted averaging technique to determine scores for each objective, strategy and then for each project in achieving the mission. The project scores determined for each project at level 4 can be used to allocate funds.

The AHP also allows the use of non-numerical ratings (such as Excellent, Very Good, Good, Fair, Poor) in evaluating the projects. AHP software packages such as Decision Lens Suite offered by Decision Lens Corporation can simplify the elicitation of the comparisons and automatically perform such calculations. However, regardless of whether or not a formal prioritization process such as the AHP is used, the essential goal of the supply chain planning team and management is to rank and prioritize its supply chain strategies and action plans.

### Making Better Decisions

The framework we have presented here is designed to support a firm's supply chain strategic planning activities and its project selection process. Our framework utilizes the mission, objectives, and strategies (MOS) approach for strategic supply chain planning and links the results to the project selection and resource allocation process. In the corporate supply chain planning process, where managers are required to make difficult and often budget-constrained decisions on which projects to implement, our framework offers the guidance necessary to ensure aligned decision-making. Specifically, the explicit links in the framework between projects and strategies, strategies and objectives, and objectives and the supply chain mission facilitate clear and consistent decision-making.

Finally, as we illustrated in Exhibit 1, the framework promotes a comprehensive and structured approach to the supply chain strategic planning process.

### Footnotes

1 The framework and processes presented in this paper were developed and utilized by the authors while Tan Miller worked at Pfizer and Warner-Lambert as head of Consumer Healthcare Logistics (Pfizer) and Director of Logistics Planning (Warner-Lambert). Matt Liberatore consulted on these frameworks while working as a chaired professor at Villanova University.

2 For more on the MOS approach, see Liberatore et al., *The Engineering Economist*, Vol.38, No. 1, 1992.

3 The journals reviewed included *Supply Chain Management Review*, *Logistics Management*, *Modern Materials Handling*, *American Shipper*, *DC Velocity*, *Global Logistics & Supply Chain Strategies*, *Interfaces*, *Outsourced Logistics*, and *Journal of Business Logistics*.


4 The authors have successfully utilized this method in practice several times (see e.g., "A Framework for Integrating Activity-Based Costing and the Balanced Scorecard into the Logistics Strategy Development and Monitoring Process", Liberatore and Miller, *Journal of Business Logistics*, Vol. 2, No. 2, 1998)

### Appendix A

#### Supply Chain/Logistics Topics and Trends Identified

1. Business intelligence and analytics—level of emphasis, future directions.
2. Cold chain—trends and requirements (particularly for pharmaceutical and biologic product distribution).
3. Collaborative Planning, Forecasting and Replenishment (CPFR) and Customer Relationship Mgmt (CRM).
4. Cross-docking and minimizing logistics "touch" points.
5. Demand visibility, including use of POS (point of sale) data.
6. Direct-to-consumer delivery and Internet order management.
7. Forecast accuracy and demand management initiatives.
8. Fuel price volatility—impact on supply chain design and strategy.
9. Global DC and facilities design strategies.
10. Global standards strategies—e.g., support for EDI, UPC, GTIN and other standards and data sets.


11. Green and sustainability initiatives—next steps? Carbon footprint strategy.
12. Globalization impact on supply chain risk and vulnerability.
13. Import/Export compliance requirements and organizational capabilities; Global Trade Management.
14. Inventory investment, deployment and postponement strategies.
15. IT investment in supply chain/logistics operations; overall supply chain IT strategy.
16. Labor productivity strategies (for plant and warehouse operations).
17. Lean logistics, Six Sigma, and other improvement programs.
18. Outsourcing strategies, including offshoring vs. near shoring.
19. Performance measurement and dashboard strategies.
20. Impact of port issues (e.g., congestion on West Coast, expansion of Panama Canal) on supply chain.
21. Procurement/sourcing—how many supplier tiers should be reviewed? SRM strategies.
22. Product packaging strategies including re-usable packaging approaches.
23. Reverse logistics/product returns—current and future strategies.
24. RFID strategies, including use of RFID vs. multi-dimension bar codes.
25. Risk management and supply chain security—becoming more and more critical?
26. S&OP (Sales and Operations Planning) —trends and directions.
27. Skill set requirements to manage global supply chains—training/education, retaining talent.
28. Design approach—revisiting links and relationships in supply chain network.
29. Innovation strategies—how to promote innovation within the supply chain organization.
30. Strategic planning initiatives, including methodologies such as scenario planning.
31. Tax strategies—impact of taxes and transfer pricing on supply chain network design.
32. Total delivered (landed) costs—are they being considered in global supply chain decisions?
33. Investment in warehouse and plant automation. What level is right?




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# VALUE FOCUSED SUPPLY: Linking Supply to Business Strategies

By Robert Monczka, John Blascovich, Leslie Parker, and Tom Slaight

Over the past two decades, companies worldwide have saved hundreds of billions of dollars by aggressively applying competitive sourcing techniques to their spend base. Companies gained control over 50, 60, or even 70 percent of their revenue that flowed to suppliers. Information technology enabled companies to gain visibility into what they were spending, where, and with which suppliers.

By spend aggregation across business units and geographies and concentrating spend with fewer suppliers, companies established leverage they never realized they had. Standardized approaches to sourcing brought rigor and discipline to both fact-finding and analysis. E-tools enhanced competition, improved decision-making, and sped up sourcing processes.

Looking back over the past 20 years, it is clear that competitive sourcing created significant value for companies by driving major cost savings directly to the bottom line. However, A.T. Kearney's 2008 *Assessment of Excellence in Procurement (AEP)* global research

found that the savings gap between "leader" and "follower" companies had shrunk by half just since 2004. Continued attention to competitive sourcing will remain necessary just to keep up.

Value derived from sourcing cost savings will not be enough in the coming years. Even before the economic crisis of 2007-2009, CEO expectations for supply had expanded well beyond cost reduction to include innovation and growth, risk management, value chain optimization, and even sustainability.


Since the crisis, macroeconomic forces and competitive conditions have created an even more turbulent and uncertain business environment. Competition has intensified because of slower overall growth and restrained, less trusting customers are redefining what they value. Increased government power is placing new regulations on how businesses will operate. Greater government borrowing may portend higher taxes, greater currency fluctuations, higher interest rates in the commercial sector, and uncertainty regarding deflation/inflation direction. Growing demographic pressures are affecting consumer buying patterns. Workforce size is changing in developed and developing countries. In combination, these forces will have a direct impact on how tomorrow's value chains are structured and how they operate.

In this environment, just saving money on external expenditures will not be enough to survive, let alone thrive, in the years to come. Companies must find and obtain additional value from their supply relationships. The supply network needs to contribute holistically to the company via innovation and growth, asset utilization, sustainability, risk management, and overall competitiveness

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The ongoing pressure to cut sourcing and procurement costs is certainly understandable. But simply saving money on external spend will no longer be enough to survive, let alone prosper, in the years ahead. What's needed instead is a new, longer-term approach that closely links supply management with business strategies. We call this breakthrough technique

**Value Focused Supply.**

as well as cost.

These new, more advanced Value Focused Supply (VFS) strategies are the target of this article, which is based on the research project conducted by CAPS Research and A.T. Kearney described in the accompanying sidebar. The aim is to understand how a holistic value approach differs from traditional competitive sourcing approaches, examining the changes required to areas such as company and supply philosophy, value goals and metrics, sourcing and supplier management approaches, and internal and external teaming for the company's strategic purchases. It also examines the type and degree of C-level executive involvement, understanding, and support needed to ensure tighter linkage between business strategy and supply and deeper cross-functional collaboration.

### Defining Value Focused Supply

At its core, Value Focused Supply is an approach for creating and implementing longer term strategies for key categories and their suppliers that go far beyond competitive sourcing. By linking supply to competitive business strategies, the goal is to increase the attractiveness and competitiveness of the company's end products and services, thereby increasing value for both customers and the company. Ideally, VFS starts with a deep understanding of what customers (both consumers and end users) value, then maps that understanding backwards through the company's part of the value chain and outward to the supply base, through multiple tiers. This helps to isolate those categories that are critical to driving value in the end markets and allows the company to focus on shaping and using the capabilities of the supply base to complement and supplement its own—and in turn create more value for the customer and the company.

### Value Focused Supply Strategies

The best way to illustrate the breadth, depth, and impact of VFS strategies is to examine the wide variety of examples

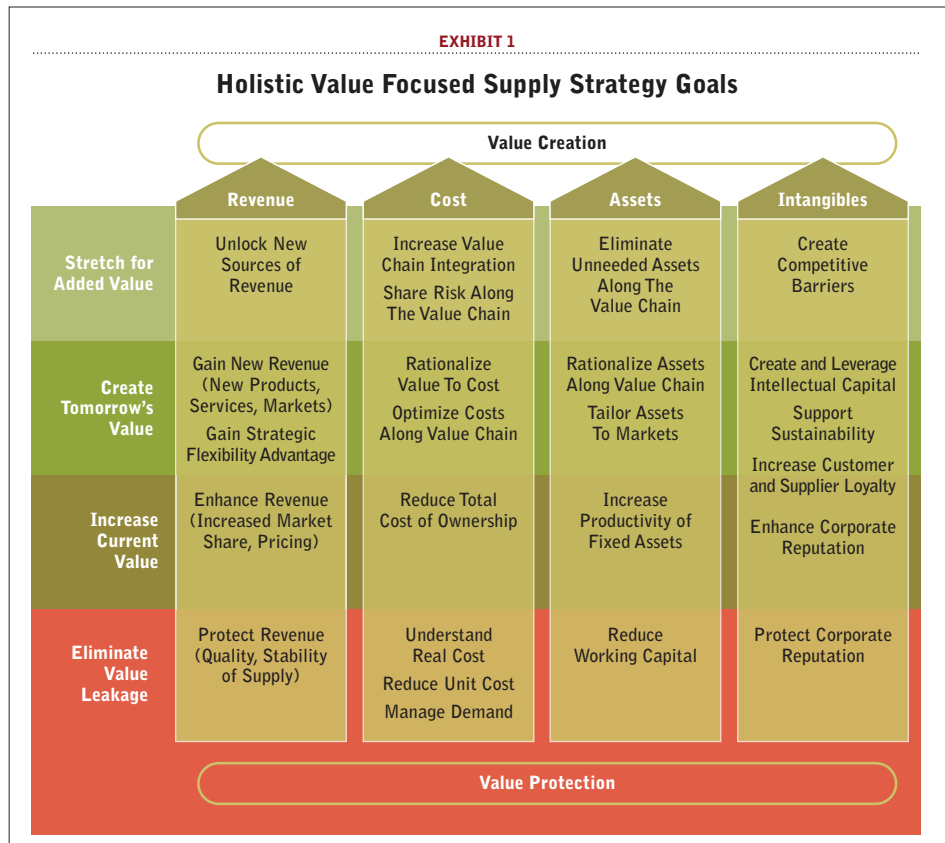
found in this research. We found that value was created in four increasingly sophisticated ways—eliminate value leakage, increase current value, create tomorrow's value, stretch for added value—as illustrated Exhibit 1.

#### Eliminate Value Leakage

The first level of value that VFS can provide is to ensure that value is not being lost from a key category. On the revenue side, revenue must be protected by providing quality, cost availability, lead-time stability, and predictability for goods and services purchased.

To illustrate, Powercon (one of the participating companies in our research—all names disguised) found that it had to eliminate value leakage from a key electronics category. Specifically, poor delivery performance by a sole supplier for a segment of the category caused the company to delay shipments, which in turn affected customer service levels and made for unsatisfied customers. The company undertook a formal effort to explore improvement options by assembling a cross-functional team that included an expert in lean, Six Sigma, and quality and manufacturing functions.

As part of this initiative, Powercon dispatched a lean, Six Sigma expert to spend three weeks at the supplier's plant in Asia to identify potential improvements. The



expert examined setup, changeover, equipment, planning parameters, minimum order quantities, inventory, and transit. Among the key findings, the expert discovered that the supplier had reduced its on-hand inventories and was only shipping once per week. To help set the course for improvement, the expert suggested some operational changes intended to increase on-time delivery performance to 98 percent. The recommendations included new safety stock rules, increased levels of on-hand inventory, twice-weekly shipments, adjusted minimum order quantity rules, and increased supplier-managed inventory levels at the supplier's own component suppliers.

Powercon found that poor delivery performance not only affected the revenue side but also caused spill-over problems: production inefficiencies due to rescheduling around the shortages; increased inventory levels to buffer against shortages; and increased costs to track and expedite shipments from the supplier. By fixing the delivery problem, the company also found that it needed less inventory throughout its operations. Reducing inventory investments and costs allowed for better pricing to customers. Learnings were also transferred to other suppliers, leading to improvements in their performance. Customer loyalty improved due to improved order reliability. In addition, the company gained increased flexibility in manufacturing, allowing it to respond more quickly to customer order changes.

Value leakage from cost often results from non-competitive unit costs or ineffective demand and consumption management. Traditional actions associated with competitive sourcing, such as reducing the number of suppliers, leveraging company-wide volumes and soliciting new bids, help to ensure that the company receives pricing (unit cost) that is competitive in the market. Rationalizing specifications and controlling consumption also helps to eliminate unnecessary expenditures.

Another source of value leakage is working capital. Negotiating appropriate payment terms with suppliers—and then taking advantage of these payment terms—helps keep cash on the books. Working with suppliers that provide quality parts and assemblies with reliable delivery helps to minimize rework, inventories of rejected items, safety stock inventories of usable items, and work-in-progress inventories of products that use the items.

### ***Increase Current Value***

From a Value Focused Supply perspective, actions to prevent value leakage are largely defensive. While this type of defensive stance is important, it does not actually create new value. Instead, as the companies participating in our research have demonstrated, value creation

begins by adding to revenue, attacking costs broadly rather than on a unit-price basis, making better use of fixed assets as well as working capital, and improving the company's image in the eyes of customers. There's an important difference between preventing value leakage and creating value. Actions to prevent value leakage are more prescriptive and generally applicable across the entire spend base. Actions to create value, on the other hand, are more dependent on the specific category situation and often require specialized knowledge and skills as well as a higher degree of insight and creativity.

Increasing market share or improving pricing on existing products and services can increase revenue and current value. By creating an alternative source of supply for a severely constrained component, Bentham captured the lion's share of the market from its competitors, while also commanding premium pricing. Healthifoods, another of our research participants, was able to enhance market share in emerging markets by using supplier market intelligence to develop products that fit local customer tastes.

### ***Create Tomorrow's Value***

In addition to creating value based on today's set of products and services, VFS can be used to recast how both the company and its suppliers create value in the future. This includes actions like leveraging supplier knowledge and insights to identify consumer and end user marketplace needs to help create unique value for these markets. Another would be to take advantage of the supply base's technology capabilities to gain competitive advantage in new product and service design and lead time.

Several participating companies found ways to gain new revenues by working with suppliers of key categories to develop and introduce new products and services and enter new markets. By developing a new alloy with its supplier, Bigtru was able to introduce a new form of engine part that provided comparable performance at a far lower cost for today's autos. Not only did this increase market share, the new alloy positioned the part for significant future growth as the auto industry's engine technology evolved. Additionally, the company gained a strategic lead-time advantage of as much as three years over its competitors.

There are several ways to create value for tomorrow in terms of cost. Improving the value-to-cost ratio by techniques such as value engineering (for new designs) and value analysis (for existing ones) helps companies strip out unnecessary cost and get more "bang for the buck" from purchased goods and services. Optimizing value chain cost includes rooting out waste at any stage of value add, as well as reassigning work along the chain

to improve overall efficiency.

F&B combined several approaches to create a value-focused strategy for a key commodity. It simplified product specifications and found ways to reduce usage of a key ingredient. It also assigned volumes to suppliers based on the fit with each supplier's "sweet spot" of capabilities. In some cases, this allowed suppliers to exit businesses that did not fit well, helping them become more efficient. F&B also developed in-house capabilities to process/manufacture certain ingredients to increase its knowledge of the processes in use by suppliers. Overall savings from the effort totaled 12 percent.

Companies can create value for the future by working with suppliers to rationalize/optimize the asset structure across the value chain. Steps that can be taken in this regard include eliminating duplicate assets, outsourcing or in-sourcing assets to achieve scale or cost advantages, and repositioning assets geographically to match market needs or to mitigate risk.

Healthfoods was projecting rapid growth in emerging geographic markets. It needed a supply strategy for its capital equipment that would support both a dramatic rate of growth and the unique requirements of its developing markets, which were trending toward increased product diversity, coupled with lower volumes of sales on individual products. Healthfoods was already expanding its use of developing-country supply markets for capital equipment as a way to reduce costs in mature markets. So it piggybacked on this effort and worked with those same suppliers to design and make equipment suited for the local market. The company was able to cut the time needed to introduce a new product in a new location by almost 25 percent. Further, it found that the local suppliers provided knowledge of local consumer preferences that helped to improve product formulations and guide sourcing for raw materials best suited for those formulations.

**Stretch for Additional Value**

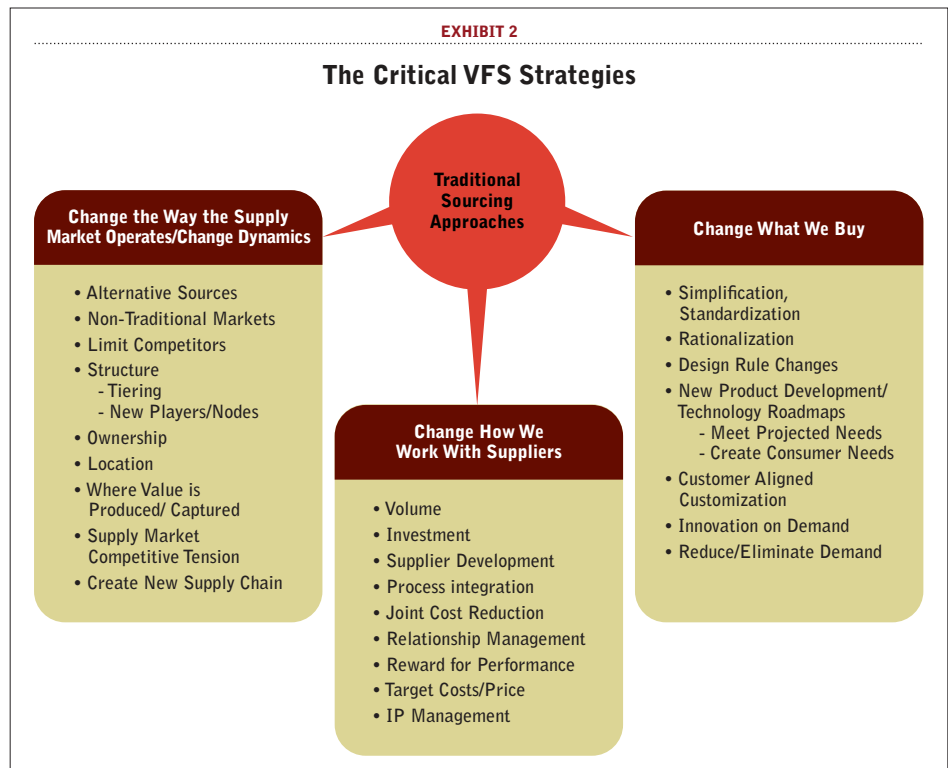
As the previous examples illustrate, our research surfaced several instances of companies using both traditional and innovative approaches to increase value from key categories. We also found that a few study participants stretched the bounds of conventional category management and found

entirely new ways to create, shape, and use supply markets to generate value and competitive advantage.

Stretching for revenue sometimes means completely reshaping the supply market to unlock barriers to revenue. It can also include finding creative ways to leverage the company's value to the supplier—and to turn that into a source of revenue.

Bentham, for example, was missing out on a boom time in a major customer market. Growing demand for its customers' end products plus rising prices for raw materials left customers clamoring for new plants and equipment that could process a cheaper but less pure grade of raw material. A bottleneck for a key component used in raw materials processing created by a near-monopolistic supplier and three-year backlogs was making it difficult to compete for future business.

Unprecedented market demand had created a window of opportunity for Bentham to make a bold move. The company decided that its best chance was to bypass the traditional supply market for the component and to develop a new captive source that it would be able to strongly influence. Bentham found alternative sources for steel and fabrication and built a supply chain that delivered the components in half the time. The company used the availability of the component from this new source of supply as a point of differentiation in its sales efforts. Faster construction of facilities with this component meant that customers could generate revenue sooner and free funds that would



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The screenshot displays the SCMR Critical Topics website. The main header features the SCMR logo and navigation links for News, Critical Topics, Blogs, White Papers, Webcasts, and Subscribe. A prominent blue banner reads "CRITICAL TOPICS". Below this, the page is organized into several sections:

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- Software & Technology:** Features a highlighted article titled "SOFTWARE and Technology" with the sub-headline "Labor management: Investing in human capital". The article text discusses the importance of labor and workforce management systems in modern supply chains.
- Other Topics:** Includes "New Reefer Service has enhanced tracking system", "Boardwalktech releases new ERP solution", "The mobile supply chain", "4PLs emerge", and "Mallory Alexander sets up shop in New York".

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otherwise be tied up in construction. As a result, the company successfully won a series of contracts and generated substantial incremental revenues and profits.

Lastly, a company can obtain additional intangible value by including approaches that are difficult to copy by competitors in its supply strategy for critical categories. Bentham did more than just set up a successful alternative supply chain for the key component. It also negotiated capacity arrangements with the only practical alternatives for steel supply, which effectively made it more difficult for competitors to set up competing supply chains.

### Some Observations on Value

As the examples above indicate, value can take on different forms according to the company situation, the category involved, and the supply market opportunities or limitations. For some, value comes from a broad supply market value strategy aimed at influencing or even reshaping whole supply markets. In other cases, it involves value-focused sourcing strategies aimed at extracting available value from the market, ranging from better pricing to gaining equity stakes in suppliers in exchange for the value the company generates for the supplier. In other cases still, it involves strategies centered on collaborating with specific suppliers of key categories to unlock even more value.

It's important to note, too, that individual value-focused category strategies are often multidimensional in terms of the value that they generate. Several examples drive the top line and the bottom line simultaneously, and some even have spinoff benefits related to assets or intangibles.

Finally, a clear pattern emerged from our research. The more sophisticated a VFS approach, the stronger the linkage required between the company, business unit and product line strategies, and the underlying category strategies. In turn, this means that the category strategies are more directly linked with what the consumer or end user values as well. See Exhibit 2 for an overview of critical VFS strategies.

### Where to Start with Value Focused Supply?

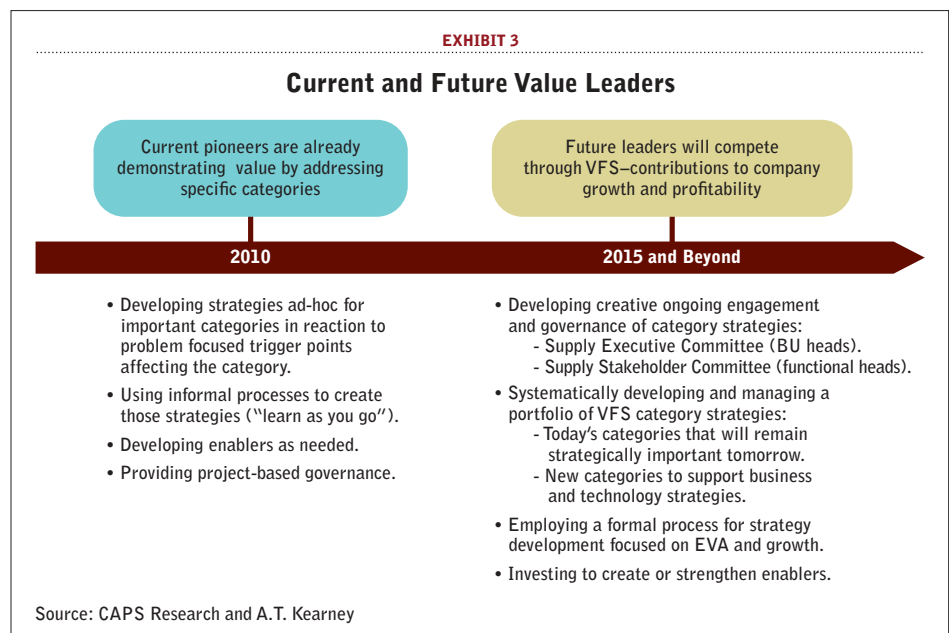
In this research, many of our examples show VFS

applied as a result of “trigger points”—that is, specific category issues or even crises—that required attention to protect or create value. Enablers were developed on an “as needed” basis to overcome the crisis or respond to the trigger. VFS strategies were not regularly applied on an ongoing basis, as illustrated on the left side (2010) of Exhibit 3.

For the future, leading companies will need to systematically develop supply strategies and their enablers highlighted above to meet both current and future strategic needs. In order to identify, predict, and respond to those needs, an ongoing organization should be developed to guide the company to compete through VFS, as depicted on the right side of the exhibit (2015 and beyond). As an initial step, a supply stakeholder committee that is influenced but not led by supply management may be formed. This stakeholder group will provide insight and resources to support individual VFS initiatives.

Longer term, the company might form a supply executive committee (comparable to a marketing or finance executive committee) to orchestrate the development and implementation of the company's portfolio of VFS strategies. This committee would be led by a senior executive and supported by other functional executives, including supply management.

Applying VFS systematically requires a fundamental shift in the way that many stakeholders approach supplier relationships. Rather than viewing individual suppliers as their own responsibility with supply management tasked with identifying qualified alternatives and competitive pricing, stakeholders need to view the supply base as a corporate resource that can help meet the company's



strategic needs much in the same way that marketing, financial, or technology resources are identified and deployed.

Two natural questions given this ambitious objective would be: “Where should I start?” and “Is this a push or a pull effort?” Undertaking this type of mission requires a sensitive balance between supply demonstrating that

it has the capability to provide unqualified leadership in managing the supply base as a critical corporate resource, on par with finance and marketing, and promoting the request to create the role by a trusting senior management. Making senior management aware of the value of such a mission without seeming self-serving becomes the challenge.

## Details on the Research

This major research initiative of CAPS Research and A.T. Kearney identified four objectives:

- Establish how value is being created for strategic purchases through Value Focused Supply strategies.
- Define, establish, and communicate overall approaches and capabilities that enable development of VFS.
- Demonstrate application of VFS through practical company case examples.
- Enhance the understanding of C-level executives about how VFS strategies contributes to sustainable business and product/service competitive advantage.

Fifteen companies with VFS experience agreed to participate in the case-based research (see accompanying exhibit—company names disguised). These companies represented a wide variety of industries including aerospace and defense, automotive (OEM and supplier), consumer durables, consumer packaged goods, engineering, procurement and construction (EPC), health care delivery, high tech, industrial control systems, media and entertainment, pharmaceuticals, and raw materials processing. Individual company revenues ranged from \$4.5 billion to more than \$100 billion, with combined revenues for the 15 companies exceeding \$500 billion. Typically, these companies were among the top three within their industries in terms of reputation.

Our approach involved looking at VFS from both a bottom-up and top-down perspective within a company.

Specifically, we sought to:

- Gain an in-depth understanding of how a company approached VFS for one of its strategic categories (a “case study example”).
- Profile how the company had extended VFS across its portfolio of key categories (the “company narrative”) and the degree to which the approach was formalized.
- Gain additional insights from review and discussion of the preliminary findings in a full-day conference with the study participants.

### Participating Companies

Company (disguised)	Industry Group	Value “headline”
Apollo	Media and entertainment	New packaging sets industry standard—boosts sales.
Bentham	Engineering, procurement, and construction	Creates new supply chain—bypasses chokepoint, boosts sales.
Bigtru Co.	Automotive supplier	With supplier co-develops new alloy, gets head start for future products.
Carco, Inc.	Automotive OEM	Novel approach to tooling cuts costs throughout the value chain.
ComCo, Inc.	Power systems	Embraces cross-functional supply approach for next-generation products.
Duraman, Co.	Consumer durables	Engineering-procurement collaboration chops product complexity and cost.
F&B, Inc.	Consumer packaged goods	Company and suppliers align resources with what consumers value.
Globalgoods	Consumer packaged goods	Finds novel ways to share in increased supplier value.
Healthfoods, Inc.	Consumer packaged goods	Supply strategies help drive developing market growth.
HiTech, Inc.	High tech	Collaboration on component design yields one-year lead over competition.
Meditrend	Health care delivery	Cross-functional cooperation maps the way to improved patient outcomes.
Metropolitan, Inc.	Raw materials processing	Spec changes, market intelligence, analytical tools create supply flexibility.
Pharmacare	Pharmaceuticals	Supply management unlocks value in “sacred cow” category.
Powercon Co.	Industrial control systems	Corrective measures stop value leakage at supplier.
Techco, Inc.	High tech	Supplier collaboration boosts quality, cuts cycle times and costs.

Source: CAPS Research and A.T. Kearney

## Senior Management's Role in VFS

What do the companies in our research tell us about the involvement of senior management and of senior executives in other functional departments? In some instances senior management sponsored the VFS projects and program, and organized the multidisciplinary group in which supply management played a key role. In other cases, related functional departments—be they finance, engineering, legal, manufacturing, or product development—played a partner role with supply management to promote VFS. In only a few of the research cases did the supply management function drive the VFS idea by itself.

At four of the companies, top management sponsored broad-ranging initiatives focused on capturing value that included supply management as a key contributor to the process. Multifunctional, multiunit teams were established to spearhead the approaches. In addition, these teams addressed specific supply categories to protect or create value.

For three other companies—Bentham, Bigtru, and Carco—top management recognized the threat or opportunity posed by a specific supply category and then sponsored and resourced multi-disciplinary teams to seek VFS opportunities. At Bentham, systemic barriers were overcome to open up a promising revenue-producing opportunity. At other companies, supply management obtained support from other functional areas to protect or create Value Focused Supply. At Apollo, for example, collaboration between packaging design, marketing, and suppliers enabled the establishment of an industry standard for a new product package.

In all of these instances, trigger points drove the development of either a broad-based program driven by threats and opportunities outside of supply management or an opportunity for a few functions to collaborate with supply management to address Value Focused Supply. We did not see a well-established, systematic approach to VFS of the sort portrayed on the right side of Exhibit 3. What would be required to set up such a program?

## A Supply Management Mission Statement

Let's say that a company has been able to establish a supply executive committee as a systematic organization to address Value Focused Supply. The committee seeks to develop a supply management mission statement that incorporates the principles of VFS. What would that mission statement look like? We believe that it would include the breadth of vision, understanding of the main value components and capabilities needed to be a key

player in VFS endeavors.

We will suppose that the following mission statement is adopted:

*"Our mission is to create or enable the supply needed to meet our company's strategic goals. This includes, but is not limited to, the following objectives:*

- *Mission—Lead a powerful global force, **mobilizing scale and innovation** to support our company's strategic objectives, instead of just relying on individual efforts to meet cost reduction targets.*

- *Mission—Be the **go-to people** for knowledge of the source and use of strategic value for each existing or future spend category at our company.*

- *Mission—Be the **leader, influencer, or participant** in the creation of leading-edge, innovative value-focused strategies for strategic purchases.*

- *Mission—Be the **trusted provider** of knowledge as well as of the implications of strategic risk for each existing or future spend category at our company.*

- *Mission—Be the **accomplished team** recognized as playing a key role in our company's success, and as a great place to build a career, instead of a set of disparate units with pockets of strength.*

- *Mission—Be the **collaborative and information connection** between our customers, other company functions and our suppliers to map value creation and implementation, instead of just a contributor to the efforts of others.*

*By fulfilling this mission, supply will become a key resource to meet our company's strategic objectives, along with other elements such as financial resources, human talent, technological assets, and market strength."*

Can your company become a leader in Value Focused Supply? As a supply management executive, can your supply management organization become known for VFS within your company and its supplier community? As a supply management professional, can you lead the development of your own skills and capabilities for that kind of a reputation?

Overall, leading companies will increasingly view strategic suppliers as extensions of their organizations and tap into supplier resources and capabilities to jointly protect and create value. Companies that lead in the implementation of Value Focused Supply have the opportunity to achieve breakthroughs in value creation—leveraging the functional expertise across the organization—that informs and supports the company's strategic goals. ☺☺





# Supply Chain World North America 2011

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### Keynote Speakers



**Thomas H. Davenport**  
Babson College | Business-Strategy Analyst, President's Distinguished Professor of Information Technology and Mgmt.

*Competing on Supply Chain Analytics: How Fact-Based Decisions and Business Intelligence Drive Performance*



**Alan D. Wilson**  
McCormick & Co., Inc. | Chief Executive Officer and President

### Speaker Companies



# Driving Top-Down Change from the Bottom Up

By Kristen Etheredge and Damon Beyer



Kristen Etheredge and Damon Beyer are Vice Presidents with A.T. Kearney based in Dallas. They can be reached at [kristen.etheredge@atkearney.com](mailto:kristen.etheredge@atkearney.com) and [damon.beyer@atkearney.com](mailto:damon.beyer@atkearney.com).

Most center-led procurement organizations we encounter have a “to do” list of planned improvement opportunities that are expected to be significant sources of benefit.

These opportunities typically require coordination across the organization and standardization of processes to leverage global purchasing spend and eliminate low-value variations in the supply chain.

No matter how significant the savings are, most organizations encounter problems when they try to drive standard procurement and supply chain processes from the top down. Well-defined, well-aligned centralized initiatives often fall short of full implementation and fail to deliver targeted savings. Why? Corporate leaders see the enormous potential upside of standardization, and they anticipate rational compliance from all parts of the organization. But rational compliance alone rarely produces results.

One of the most important realities of organizational life is that top-down dictates don’t greatly energize people on the “front lines”—those who work directly with suppliers and end-users. These individuals are rational and they know how to comply. Yet the key motivator for their performance is their day-to-day emotional commitment to the work that they do.

A subtle but sometimes insurmountable barrier goes up when worker motivations conflict with the centralized direction. For example, even though the new “standard” supplier promises lower cost and reliable performance, local procurement personnel find it hard to displace local suppliers with a proven, long-term track record of “whatever it takes” service.

Even more pernicious to central program suc-

cess is its implication that the personnel being asked to change have historically done a bad job. We have seen long-tenured employees with a solid history of delivering cost savings consistently fight a standardized supply chain program even though the program had its roots in the cost and service improvements those employees had innovated over several years. The central group had so thoroughly repackaged the improvement program that the local employees no longer recognized it as their ideas.

The reality is that even well-designed standard processes based in a thorough understanding of local relationships, service levels, and differences in practices often miss the mark. They fail because they don’t count the emotional cost of reductions in local decision-making, responsibility, and flexibility that necessarily come with standardized contracts, streamlined processes, and fewer global suppliers. Successful standard processes, therefore, require implementation strategies that build emotional commitment as well as rational compliance.

How do you build emotional commitment? The answer is to combine bottom-up change management with the top-down rollout of well-designed standard processes. This is accomplished by selecting the best front-line change agents and creating an informal advisory group.

## Find the Change Agents

Identifying front-line change agents is a complex task. Change agents must be able to influence others and get the job done under difficult circumstances. However, the best change agents may not fit the typical profile of a “high performer.” In fact, the stubborn respect and loyalty they typically command among their co-workers may even be irritating to management in the hierarchy.

We once encountered a front-line leader with a “trouble-maker” reputation. We were told not to include him in our discussions because he would simply not back down when he knew his team was right. It was clear, however, that engaging him and his potent network of relationships was the most effective way to achieve rapid, meaningful change deep within the organization.

More often than not, a handful of high energy, local motivators like this leader will drive change better and faster than any perfectly constructed representational task force. Look for these qualities in a change agent:

- **A “never empty/never full” attitude.** Effective motivators expect high performance, but they experiment and innovate to find things that work. Win or lose, they don’t overreact. Nothing is ever perfect—there’s always room for improvement. But nothing is so bad they haven’t seen worse.

- **A demanding, but engaged style.** These leaders know their teammates personally and professionally and understand how far to stretch each aspect. They set achievable goals, but raise the bar every time a goal is met. They promote independent action in co-workers and subordinates, but always step in and help when asked.

- **“Gut-based,” emotionally committed behavior.** These pride-builders constantly, but informally, celebrate success. They may comment on good things going on in the central group, but they rely on local language and connections to motivate employees. They develop emotional commitment in others, encouraging them to anticipate how good they’ll feel when they accomplish a difficult challenge. Importantly, they can celebrate a job well done.

### Form an Advisory Council

Once the core group of champion leaders is identified, invite them into an informal advisory council tasked with steering the change program. They will be skeptical when asked to help drive a top-down change; overcome their skepticism with a combination of incentives.

First, offer these change-agent motivators a venue to identify what’s wrong with existing designs. And listen attentively and respond appropriately to the real barriers and objections they voice. Second, point out that the informal council is a rare opportunity for them to work closely with their peers (typically an unnatural organizational act) and learn how to improve their own results.

Third, provide exposure to and interaction with senior leaders of the organization. This benefits both sides. At one large North American telecom company, the CEO became so engaged with the unfiltered perspective of real front-line supervisors that he rearranged his calendar and tripled

the time he could spend with them.

Finally, it’s important to keep this advisory group informal. Distance from the natural organizational immune system—the middle managers—promotes real information exchange and reduces unnecessary spin.

### Reap the Rewards

Combining top-notch motivators and informal structure taps into enormous reserves of insight and energy. As front-line managers transfer their emotional commitment to desired changes, the organization engages a get-it-done mentality that will stop at nothing to solve problems.

## Combining top-notch motivators and informal structure taps into enormous reserves of insight and energy.

Following their respected leaders, workers invest their own emotional commitment into the change program and three things happen:

1. A weak, “let’s just go along with the standard process” mentality morphs into a strong source of local pride and motivation: “We’ll be one of the first groups to demonstrate that we can make it work for our business.”

2. The desired changes come across in language that local business units can appreciate: “Even though the process will change, we’ll take care of our employees and have access to prices we couldn’t negotiate on our own.”

3. The new process unleashes potential sources of personal motivation and pride for those who are most affected: “I know that you view customer service as a top priority. That’s why I want you to work with the team to make sure the new supplier understands exactly what we need and when we need it.”

Selecting the right front-line champions puts a personal face on the global change program, giving local credibility to the central group’s promises, proactively identifying previously unforeseen issues with compliance, and systematically solving top-down translation problems.

Driving new standard procurement and supply chain processes through this approach creates advantages and accelerates benefits. We typically see top-down efforts take up to three years to roll out, with an average success rate under 50 percent. And large bottom-up efforts very often die of their own weight. But when the best front-line advisors engage bottom-up with a well defined top-down initiative, 80 percent of organizations see real results in as few as 12 to 16 months.

Today, fuel and capacity issues continue to loom large for air cargo carriers, while shippers are being told that tactical adjustments, especially in the growing Intra-Asia trade, will need to be made at a moment's notice as carriers re-adjust their networks.

# *Will fuel determine*

**By Patrick Burnson, Executive Editor**

**T**here's a very good reason that the theme for the upcoming Air Forwarders Association (AFF) annual conference in San Diego will be "A World of Opportunities: Asia 2011," says Brandon Fried, the association's executive director.

"Simply stated, Pacific Rim growth has been driving the global economic recovery," adds Fried. "Granted, the transpacific lanes were the first to feel the negative impact of the recession, but our constituents are very bullish on the strengthening prospects in this region."

Indeed, an entire general session at the AFF event will be devoted to examining this dynamic market. Meanwhile, other major air cargo associations are banging the same gong, heralding the Lunar New Year as an auspicious one to begin investing in new routes and distribution strategies in the Asian market.

The International Air Transport Association (IATA) notes in its most recent report that the economies of China and India continue to lead the region's recovery. Asia Pacific airlines—with a 45 percent market share of

the entire market—grew by 24 percent year-to-date in December 2010, and that trend is predicted to persist. One needs only to examine the upcoming calendar of global industry events to see that shippers are seeking new intelligence for market penetration.

The International Air Cargo Association's (TIACA) Executive Summit and Annual General Meeting 2011 is taking place in Bangkok, Thailand, this April, with organizers telling constituents that the time is right to begin regional investment again.

"Intra-Asia traffic had grown as big as the Europe-Asia trade lane did by 2008," says TIACA's Secretary General Daniel Fernandez. "So, airfreight flows change. Today, Thailand, Cambodia, and Vietnam are all major links in this supply chain."

Fernandez notes that products earlier in their life cycle—new evolutions of technology such as tablet computers and e-books—could expect to have a positive impact on airfreight for many years. "Still," he says, "carriers face major decisions about their future fleet needs."



PETER HORSUS

# the course?

With shippers so keyed up on finding new business in Asia, it comes as scant surprise that the airlines are bringing on new capacity. And according to the airline executives we interviewed, there will not only be more lift, but better efficiencies coming on line over the next few years.

## Airlines bring it on

While Asia remains the focus, demand for global air cargo transport in general rebounded sharply in 2010 after a calamitous 18-month decline that began in May 2008. Boeing executives insist that in spite of this downturn, world air cargo traffic will triple over the next 20 years, compared to 2009 levels, averaging 5.9 percent annual growth.

“The number of airplanes in the freighter fleet will increase by more than two-thirds over the same period,” says Thomas Hoang, Boeing’s regional director of cargo marketing in Seattle. “China is the main engine for this growth, but nearly every developed country in Asia will be a factor.”

Boeing analysts note that in 2009, world air cargo traffic declined 11.3 percent after declining 1.8 percent in 2008 and growing 3.3 percent in 2007. The 2008-2009 period marked the first time that air cargo traffic has contracted in two consecutive years. The decline affected nearly every geographic market; however, regions connected to industrial freight flows generally fared worse than regions that are less dependent on these flows. Remember, it was the rising price of fuel that diverted air cargo to less expensive road transport and maritime modes beginning in 2005.

Although the tepid rate of world air cargo traffic growth between 2005 and 2008 can be attributed in part to rising fuel prices, the nearly 13 percent drop in cargo traffic during the two years ending in 2009 reflects the steep plunge in industrial activity connected to the global economic downturn.

According to Hoang, new orders for larger, newer, and more fuel-efficient aircraft are in the offing to help offset some of those fuel-related concerns.

“We began our drive for more fuel-efficient models as we discovered that industrial activity started to recover, particularly in Asia,” says Hoang. “The pace of air cargo traffic contraction, which had approached 30 percent in the first half of 2009, began to ease. Monthly air cargo traffic statistics turned positive in November 2009, and the first eight months of 2010 saw an estimated 24 percent growth in traffic, compared to the same period in 2009.”

Hoang says that the strong rebound is expected to propel world air cargo traffic to regain the peak it attained in 2007 by the end of 2010. Indeed, anecdotal evidence suggests that many industrial shippers have turned to air cargo in response to the overcorrection that constrained capacity in the other modes of transport—particularly in containerships.

“But this does not mean we’ll see a reduction of sea-air distribution strategies,” says Hoang. “On the contrary. Some shippers will opt for a dual-mode solution for commodities like consumer electronics and appliances that are not as time-sensitive or in such great demand.”

Should the air cargo industry feel threatened by such a plan? An emphatic “no” comes from Huang. “We regard sea-air as a compliment to any supply chain—not as a competitive element at all,” he says. “Our commodity study indicates that a systemic change in the way cargo is moved is not underway. Some goods must always move by air.”

Asia’s air cargo markets will continue to lead the industry in average annual growth, according to Boeing research. Their findings also reveal that the Intra-Asia market alone is expanding 7.9 percent per year, and markets connecting developing economies to established economies will equal or exceed the average world growth rate.

Furthermore, Boeing says that over the next 20 years, the



**Boeing says that over the next 20 years, the number of airplanes in the freighter fleet is forecast to expand by more than two-thirds.**

**“Consider that each run up of one dollar in the price of crude carries a \$100 million incremental cost to United, that’s pretty startling.”**

*—Robbie Anderson, president, United Cargo*

number of airplanes in the freighter fleet is forecast to expand by more than two-thirds, from 1,755 airplanes in 2009 to 2,967 airplanes in 2029. Large freighter aircraft will lead fleet additions, growing from an overall share of 27 percent to 33 percent as traffic continues to build on long-haul, international trade lanes.

### Fuel costs loom

Robbie Anderson, president of United Cargo, notes that China leads all current and future cargo growth forecasts.

“Our strategic direction is determined by our shippers—we follow their lead,” says Anderson. “They are making the business decisions to invest and conduct business in Asia’s burgeoning economies, and we provide the bridge for their logistics.” United Cargo operates more than 159 wide body aircraft to 378 worldwide destinations.

Anderson says that during 2010, Asia was a key driver of United’s cargo growth, spurring combined revenue up 28.6 percent, to more than \$1.1 billion. But energy costs are still a major concern, says Anderson, who adds that fuel is United’s largest expense at 26.6 percent of operating costs; and, as a consequence, is a constant focus for efficiency. The rising drumbeat of fuel prices created an increase of \$517 million in United’s fuel costs in the fourth quarter alone.

“Consider that each run up of one dollar in the price of crude carries a \$100 million incremental cost to United,” he says. “That’s pretty startling.”

Matt Buckley, Southwest Airlines’ senior director of cargo and charters, concurs that rising fuel costs will make a significant impact on the bottom line, thereby ultimately increasing shipping costs. Fuel is Southwest’s second largest expense behind salaries, wages, and benefits.

“But considering the tremendous amount of manufacturing being done throughout parts of Asia, and the volume of

those goods being imported to the U.S., Asia will continue to be a strategic focus for many of our shippers for years to come,” adds Buckley. At the same time, he says that “near-shoring” is becoming a practical alternative to doing business overseas.

“We are seeing many forwarders working with manufacturers that are near-shoring in places like Mexico,” says Buckley. “As the costs of doing business in places like China continue to rise, I would expect near-shoring to increasingly become a more viable choice.”

### Cautionary perspective

The escalating fuel picture has industry analysts concerned, too, and not everyone in the air cargo arena is completely sold on Asia being the engine for economic growth. Given a longer time frame—say 20 years—one prominent expert feels that there will be a profound shift in shipping and sourcing.

Brian Clancy, managing director of Logistics Capital & Strategy, LLC, insists that Boeing and Airbus may be overbuilding in anticipation of demand that will begin to diminish by 2021.

“Airline manufacturers would have shippers believe that because of slow steaming, ocean freight providers can’t deliver time-definite service. But that’s not the case,” he says.

Clancy says that ocean carriers have been “bifurcating” their strings into slow steaming mega-vessels, with faster, more nimble ships providing point-to-point service in the major trade lanes. “APL’s Ocean Guaranteed model is a perfect example, as are the transpacific shuttles introduced by Horizon Lines and Matson,” he says. “Take the cargo off the ship, put it on a fast train or truck, and your supply chain has all the velocity it needs.”

The real issue, says Clancy, is not speed, but reliability. Ocean carriers have demonstrated that they can adhere to

schedule integrity while operating at a lower cost. Air cargo has not grown as fast as the ocean container industry, and that trend will continue, he adds.

“Airline manufacturers, who like to provide analytics in their forecasts to sell planes, will take issue with this, but they can’t argue with the facts,” Clancy says. “Does this mean a reduction in air cargo services? The short answer is no.”

According to Clancy, it means we’ll see a shift in weighted line haul segments and a redistribution of aircraft. Manufacturing origin points will change, and the flow patterns will follow.

Which brings him to address the real object of his passion these days: the so-called “BRICs.”

“First, let’s take China and India out of the long-term equation,” he says. “China’s manufacturing springs are winding way down, and we see a marked decline in their goods being consumed locally. Remember, only a relatively small percentage of its population is sharing any of the perceived prosperity of this huge economic upheaval.”

According to Clancy, U.S. demand for cheap goods is not going to be enough to sustain China’s growth, and he sees it as a “conveyor belt” that will be feeding fewer boxes to the West beyond the next decade.

Meanwhile, says Clancy, India will never have the transportation infrastructure to become a manufacturing powerhouse.

“So far, that country has done a good job of elevating its profile as a service industry provider,” he says. “They have the Internet super-highway, and this is a great advantage for outsourcing knowledge-based services. But when it comes to moving goods overseas or even domestically, they don’t have the real physical highways to achieve that.”

So that leaves Russia and Brazil, notes Clancy, and both have enough natural resources to remain viable GDP leaders.

“But the same can be said for the NAFTA (North American Free Trade Agreement) countries,” he says. “Mexico and Canada have tremendous stores of minerals, fuels, and other raw materials that can make this a dominant trading block again. And with more near-sourcing, you’ll see a new direction in airline scheduling.”

And while the aviation industry continues to be a leader in innovation, and has been a major driver of economic growth worldwide, its resiliency will be sorely tested in the coming years. The consensus seems to be that a unique set of challenges is most surely shaping the future of the air cargo industry. □

*Patrick Burnson is Executive Editor of Supply Chain Management Review*

**“Airline manufacturers would have shippers believe that because of slow steaming, ocean freight providers can’t deliver time-definite service. But that’s not the case.”**

*—Brian Clancy, managing director of Logistics Capital & Strategy*

## The Payback in Automated Procurement

**Survey data and qualitative research point to the powerful advantages of investing in procurement automation. Automation boosts the accuracy and speed of purchase order processing while enabling employees to be far more productive.**



By Rob Spiegel,  
APQC

Automated purchase order (PO) processing offers a number of productivity benefits, from reduced cycle time to an increase in the number of purchase orders processed per employee. Automation also enables improved integration and collaboration with vendors and is linked to higher transaction accuracy and lower transaction processing costs. These are among the key findings from surveys conducted and analyzed by APQC's Open Standards Benchmarking in Procurement ([www.apqc.org/pro](http://www.apqc.org/pro)).

### Advantages of Automation

According to data from APQC's benchmarking research and related studies, the tide may be turning so that organizations can no longer afford not to automate their transactional processes. Those that fail to automate simply cannot match the speed, efficiency, and effectiveness of competitors that do commit to automation. Regardless of how strong and efficient an organization's procurement staff may be, it cannot reach optimized productivity without automating purchase order processing. Automation improves productivity while driving down costs. It also frees up employees so that their time can be spent on more value-added activities.

Organizations that have automated see the

following benefits:

- reduced PO cycle time,
- greater number of POs processed per employee,
- reduced lead time on procured materials,
- lower operating costs,
- efficient management of supplier population,
- reduced maverick spending, and
- higher percentage of damage-free orders.

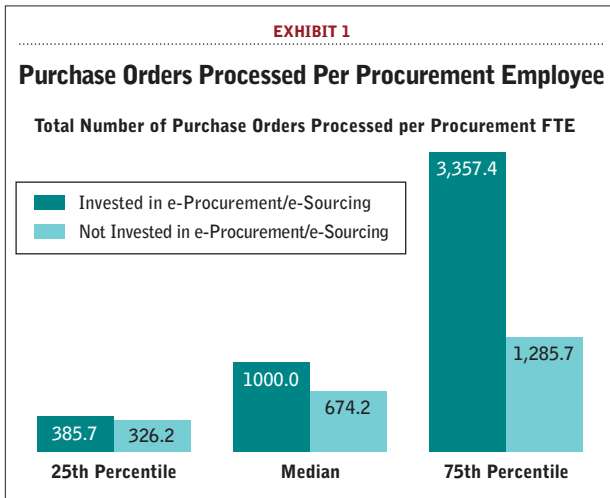
Overall, companies with automated procurement processes have shorter cycle times to place purchase orders, shorter supplier lead times on purchased materials, and more purchase orders per full-time employee. The message: investments in automation can make procurement more efficient, more effective, and less expensive.

Exhibit 1, which is based on data from APQC's Open Standards Benchmarking in Procurement, shows the total number of purchase orders processed per procurement employee. The higher performing organizations that invested in e-procurement/e-sourcing reaped the greatest benefits. As the graphic shows, they more than doubled the number of purchase orders per employee over companies that had not made the investment.

APQC also found that top performers that had invested in e-procurement generated purchase orders three times faster than those without e-procurement—two hours versus six hours. The main reason for this speed advantage is that an automated system can route information to the right people and ensure nothing gets lost.

Electronic data exchange (EDI) is another





practice that positively affects the number of purchase orders processed per employee. Once an organization produces a short statement of work, all transactions are automated, including receiving an approval note, opening a purchase order, and submitting payment. Top performers that employ EDI to transmit messages (instead of manually processing bills and checks) in at least 15 percent of their procure-to-pay transactions report a higher number of purchase orders processed per employee.

Organizations with higher percentages of purchase orders approved electronically are able to free up employees from transactional activities to focus more on strategic sourcing and supplier collaboration, which adds greater value. They also report a lower percentage of maverick buying. (Maverick buying is procurement that falls outside the preferred procurement process, outside the specific supplier contracts, or outside the preferred supply list.)

EDI is also associated with lower costs per purchase-order line item when ordering materials or services. Furthermore, organizations with a higher percentage of EDI purchases report higher percentages of purchase orders received damage-free and a higher number of purchase orders and line items processed per employee.

With regard to lead times, the research shows that organizations with automated procurement have significantly better average supplier lead time on purchased materials. (See Exhibit 2.) The improvements are apparent for businesses at all levels of performance.

### Real-World Benefits of Automation

Our benchmark data clearly make the case for procurement automation. Now, let's take a look at a real-world example. An APQC case study of Cessna Aircraft Company documented how procurement automation improved the tactical buying process for indirect purchasing. In fact, automation allowed the company to almost eliminate any manual

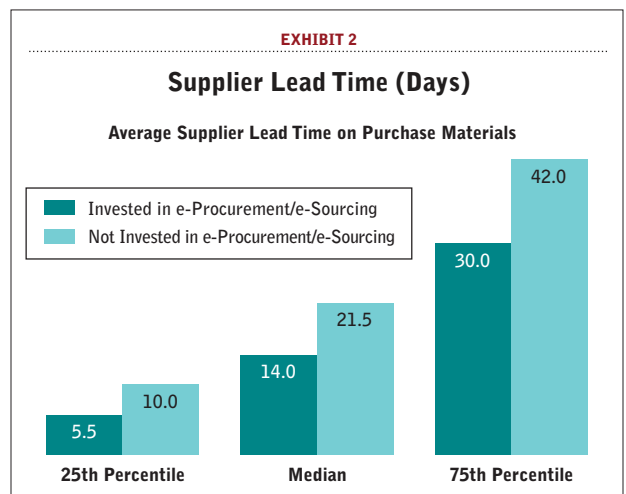
intervention by accounts payable personnel. The majority of Cessna's indirect purchasing is fully automated. All orders now come through its commercial system, which has more than a half-million part numbers already negotiated on contract.

A requester can use the system to procure items without the involvement of any supply chain personnel. With built-in approval chains of command based on established parameters, an order goes straight to the supplier for fulfillment. After the requester receives the order and confirms that it matches the purchase order, accounts payable can automatically pay out. Automation helped Cessna shift to a more strategic approach to procurement, letting buyers focus on high-dollar, unique items and strategic activities instead of tactical transactions.

### Process and Technology for Automation

McGladrey, a professional services firm, has identified several steps to effectively guide the transition to automated procurement. These include:

- Develop an overall strategy for managing procurement and accounts payable within the organization.
- Assess what technology is currently available in-house. Many companies already have procurement automation modules available as part of their ERP systems. Using a module from an already deployed system will come with the added benefit of integration.
- Look outside the organization to leverage specialized procure-to-pay solutions that take advantage of lessons that others have already learned. Many of the existing best-of-breed solutions for procurement come with effective best practices programmed into the package. Solutions to consider include document management tools, e-invoicing and automated requisition systems with tracking for workflow, and approvals tied back to internal controls.



## PURCHASING AND ACQUISITIONS MANAGER

Accountable for the Company's power cable, communications cable, data cable, photovoltaic cable, industrial electrical devices, custom cable assemblies, HED lighting systems, purchases. In conjunction and cooperation with other functional areas (manufacturing, QC, regulatory compliance, engineering, sales, etc.) leads the development and implementation of the Company's global procurement, sourcing, supplier management, logistics, and procurement information system strategies and systems, which create and sustain the Company's competitive advantage. Develop and implement global product sourcing, procurement and logistics strategies and programs. Conduct vendor selection and site visitation to determine supplier suitability. Stay abreast of worldwide economic conditions and market forces impacting major commodities PVC, Copper, Resins, Brass. Stay current, and in compliance, with business law as it pertains to global procurement. Stay current with all North American product law and certification standards. (UL, ETL, CSA, ISO, OSHA, MESA, SAE, ASTM ... etc.) Actively manage the key manufacturers and develop and maintain positive relationships with suppliers including frequent site inspections and daily communications. Negotiate multi-million dollar, multi year, multi dimensional contracts for the benefit of the Company. Drive significant cost reductions through quarterly review of material and finished good cost and annual or bi annual contract negotiations, outsourcing and materials management strategies. Lead the inventory /forecast review team. Develop and implement e-commerce, channels, and capabilities. Align procurement strategies with Sales and Operations in order to ensure that the necessary resources are in place to meet production and delivery schedules at various factory locations. Participate in the new product selection and development process by providing leadership for all procurement-related plans, sourcing, factory evaluation, first article approval, processes, and metrics. . Manage logistics, including ocean carriers, drayage companies, IFL carriers, customs clearance. Coordinate delivery schedules and error correction in documentary and scheduling projections. Chinese (Mandarin) spoken language in daily telecommunications with overseas factory personnel (60%), Chinese written (traditional and simplified) language document translation (40%). Incumbent is required to travel extensively throughout Asia to suppliers and customers' locations, including frequent (once every 4-6 weeks) travel to China to visit suppliers.

**Job Site:** Gehr Industries  
7400 E. Slauson Avenue,  
City of Commerce, CA 90040

**Contact Person:** Submit resume by mail with a copy of this ad to – Carl Tom

**Requirements:** College degree in Business administration or related discipline and five years work experience in purchasing specific to wire and cable industries.

In terms of technology, software-as-a-service, also known as cloud computing, may be the technology answer for companies seeking automated solutions. This option, which is growing in popularity, differs from the traditional approach to software acquisition in an important way. Typically, organizations have purchased software and installed it across their user base. Access is granted through a proprietary network, and the organization maintains it until the next version is released.

With software-as-a service, on the other hand, the relevant data and processing tools are kept on the vendor's servers. Thus, users do not have to bear the burden of internal servers and the cost of regular upgrades.

Cloud vendors effectively have shifted the paradigm from a buy to rent model for many advanced software tools, including procurement solutions. These systems hold great appeal as an alternative for organizations of all sizes. Cloud service providers make their software programs available via the Internet, and users can log-in from anywhere to use the programs. Vendors enable their customers to license their programs through a subscription fee or cost per transaction.

It's important to note that software-as-a-service is no longer the sole domain of the specialized cloud computing companies as it was just a few years ago. Now, major enterprise software companies have developed the model, recognizing that it is a particularly attractive cost-saving solution for small- to mid-size organizations. Both SAP and Oracle, for example, have recently created software-as-a-service options for their ERP functions as well as their procurement modules.

The upside of software-as-a-service is the savings on operating and up-front costs. This includes the often positive balance sheet shift from capital expenditure to operating expense. Also, maintenance and upgrades become the responsibility of the vendor. Many upgrades and patches actually occur without the awareness of procurement managers.

Security is often a concern when companies adopt software-as-a-service. Yet cloud vendors make a convincing case that data is more secure on their servers, pointing to the significant investments they make in security tools. Vendors often turn to prospective customers and say, "Here's our long list of security measures. How does that compare to your security policies and tools?" Few organizations, of course, put the same emphasis on security as do the cloud computing vendors.

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### Change Management Challenge

Organizations frequently report a strong return on investment (ROI) when they deploy automated procurement. With a software-as-a-service approach it may come faster than with a traditional solution. But in any case, the list of efficiencies and cost savings associated with automation is so extensive that the ROI from any procurement automation initiative is sure to come.

The real challenge of adopting automated procurement is change management. Organizations may encounter some resistance at both the managerial and employee levels. People tend to get comfortable with "the way things have always been done" and sometimes resist any change to that. The difficulty of change management, however, can be eased by employing implementation plans that clearly explain the benefits of automation and win buy-in from all involved.

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