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Mastering the FLOW

FEATURES

10 Connecting the Consumer to the Factory
By Larry Smith

18 The *New* Basics of Supply Chain Management
By Art van Bodegraven and Kenneth B. Ackerman

26 How to Find, Maintain, and Motivate Top Talent
By Mark Trowbridge

32 A More Mission-Critical Role for Procurement
By Herb Schul

40 Reverse Logistics: A New Core Competency
By Dale S. Rogers, Ron Lembke, and John Benardino

COMMENTARY

Insights 4

Global Links 6

Talent Strategies 8

THE OPERATIONS ADVANTAGE 48

BENCHMARKS 70

SPECIAL REPORT
Top 50 Motor Carriers: Tough at the Top
Page S50

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SupplyChain Management Review

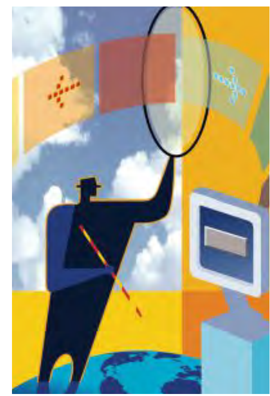

Illustration by Spark Studio

FEATURES

10 Connecting the Consumer to the Factory

Closely matching supply with end-user demand, a long-time ideal in retail channels, is only now becoming practical. The enabler is a set of tools and techniques called distribution resource planning (DRP). Supply chain executive Larry Smith of West Marine explains how DRP can be used today to effectively connect the consumer to the manufacturer..

18 The *New* Basics of Supply Chain Management

The skills needed to do the supply chain job keep evolving. That's not to say that the fundamentals learned in the classroom are no longer relevant. Rather, they need to be revisited and reinvigorated. Veteran supply chain observers Art van Bodegraven and Ken Ackerman relate the "new basics" that supply chain managers must master.

26 How to Find, Maintain, and Motivate Top Talent

New technology and advanced business processes are a big part of business success—no question. But the real leaders are discovering the value of something more elemental: the ability to attract, develop, and retain top-performing talent. Mark Trowbridge tells why people are the real horsepower that drives results.

32 A More Mission-Critical Role for Procurement

The procurement function is playing an increasingly important role in the success of the business. That's a key conclusion from a new report from Ernst & Young and Ardent Partners. This article tells what the study findings mean for supply management professionals and lays out strategic steps they can take to make their operation truly mission critical.

40 Reverse Logistics: A New Core Competency

Most companies historically have focused on the outbound portion of the supply chain. Today, the same level of attention must be paid to the reverse flow, argues Dale Rogers of Rutgers University and his co-authors. The reason: There's just too much at stake in terms of brand protection, sustainability requirements, and ultimately profitability.

S50 SPECIAL SUPPLEMENT
Top 50 Motor Carriers: Tough at the Top

COMMENTARY

4 Insights
Do Your Warehouse Goals Support Business Strategy?
By Larry Lapide

6 Global Links
Supply Chain Cybersecurity: A Team Effort
By Patrick Burnson

8 Talent Strategies
To Succeed at Sustainability, First Learn to Communicate
By Jason Mathers and Edgar Blanco

48 The Operations Advantage
The Transformative Power of Advanced Analytics
By Khalid Kahn

70 Benchmarks
Should You Manage Customer Inventory?
By Becky Partida

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Masters of the Flow

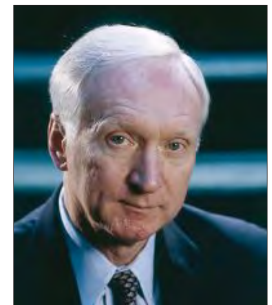
Supply chain management at its essence is about managing the flow—of goods, information, and money.

Traditionally, the outbound movement of finished goods has attracted the lion's share of attention both in the classroom and in on-the-job assignments. Less attention has been paid to the other flows such as reverse logistics, financial activity, and (until the last decade or so, anyway) the information flow. This issue of *SCMR* attempts to address some of these "attention gaps".

Let's start at the end with reverse logistics, defined as the movement and distribution of product that has reached the end of its lifecycle or that did not sell in its primary distribution channels.

Why is it important to recognize and aggressively manage this particular flow? According to Dale Rogers of Rutgers University and his co-authors Ron Lembke and John Benardino, reverse logistics costs can represent a full 7-10 percent of the cost of goods. In their article, these experts offer practical advice on the metrics and processes needed to effectively manage what has become a substantial supply chain cost element.

The information aspect of supply chain management is clearly articulated in Larry Smith's piece on "Connecting the Consumer to the Factory". Smith, an executive at West Marine and long-time advocate for collaborative SCM, describes a promising technique for capturing buying information at the retail store or the Web portal and then communicating that information directly to the factory floor. It's called DRP (distribution resource planning), and it has the potential to balance demand and supply in a way that benefits all of the supply chain partners.



Frank Quinn, Editor
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While techniques such as DRP can bring major advantage in terms of lowering inventory costs while keeping consumers happy, they do entail change—which can be difficult for many to accept. For an initiative like this to take hold, Smith says, retailers and manufacturers need to abandon the conventional "win/lose" approach in favor a collaborative mindset that ultimately focuses on the customer.

The financial flow is another sometimes-overlooked part of the supply chain process. In relating the "new" basics of SCM, Art van Bodegraven and Ken Ackerman underscore the need for supply chain professionals to speak the language of the CEO and CFO. That means not only developing a solid understanding of terms like ROI, ROA, and EBITD but also (and perhaps even more importantly) understanding how supply chain performance contributes to overall business performance. And that, in turn, demands a deep understanding of the supply chain's financial flows.

Becoming "masters of the flow"—physical, information, and financial—can enhance your career potential, to say nothing of the enormous benefit it can deliver to your organization.

Francis J. Quinn

SupplyChain Management Review

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BY LARRY LAPIDE

Do Your Warehouse Goals Support Business Strategy?

In most cases, the answer is no. Warehousing goals need to closely align with corporate objectives if the business is to succeed on revenues, margins, and profit performance.

Dr. Lapide is a lecturer at the University of Massachusetts' Boston Campus and is an MIT Research Affiliate. He received the inaugural *Lifetime Achievement in Business Forecasting & Planning Award* from the Institute of Business Forecasting & Planning. He welcomes comments on his columns at llapide@mit.edu.

My last column, "A Tribute to the Ever-Evolving Warehouse" (*SCMR*, March/April 2013), chronicled the evolution of warehouses as they moved from traditional stocking warehouses, to distribution centers (DCs), and then to full-service fulfillments centers. The growth in outsourcing and off-shoring of the Source and Make functions have rendered warehouses the last (and often the only) corporate facilities to handle customer shipments.

Throughout history, warehouse workers have been manual laborers that did a lot of lifting, moving, and loading. The goal of warehouse operations was to be cheap, mechanistically productive, fast, and accurate in order fulfillment. Automation has largely been deployed to achieve these types of operational objectives. Now that warehouses have become one of supply chain's most important functions, however, managers should revisit how warehouse performance is gauged. Are the operational objectives strategically aligned with the company's competitive strategy? My experience tells me it's unlikely.

Warehouse Goals Are Misaligned

I've encountered situations in which warehouse operations were wildly successfully in meeting their performance objectives. The problem was that these objectives conflicted with corporate strategic goals. Three anecdotal examples are discussed below.

First, during a conference I attended, I sat in on a presentation given by two warehouse managers from a pet foods company. The speakers boasted that throughout their company's long history, 100 percent of orders were shipped on-time. Amazingly, this was their operational performance goal.

They told a story about an instance where an order could not be shipped on time because an item on the order was out of stock. Rather than ship the order late, one of them went into a local pet store and bought the product there. They then repackaged and shipped it to the customer, meeting their 100 percent on-time goal. Yet this solution surely ran counter to the corporate profitability goals as the company obviously lost money on the product that they purchased at retail and then re-sold at wholesale prices. Another concern was that the stock-out was not documented. I'm sure the company's inventory managers would have liked to have been informed in order to prevent future stock-outs.

In this example, the sole objective was on-time shipments, with no regard to profitability. This is typical of "Perfect-Order" goals that view performance in the eyes of the customer, absent any company-view perspective. What was needed instead here was an "Efficient Perfect Order" goal. This more comprehensive objective supplements the Perfect Order goal with criteria on how an order was filled in comparison to how it was planned to be filled. Implementing an Efficient Perfect Order goal would have accomplished two important things: (1) the incident would have been documented and (2) no credit would have been given to filling the order because it was not filled properly (and thus cost the company money).

A second situation involved a grocery store

chain that did business in Puerto Rico. Each week, the stores ordered goods from a warehouse in Florida, which loaded the goods in a container for shipment. Often, after the goods were loaded, there would be a lot of extra space left in the container. So to save transportation costs, workers filled in the extra space with paper products. When a store manager got the extra paper products and realized that there was a surplus, he would conduct a sale to get rid of them. Over time, managers were running weekly sales—that is, until it was discovered what the warehouse workers were doing.

In effect, to meet transportation cost objectives the warehouse workers were invariably forcing store managers to heavily discount paper products. This, of course, had significant impact on the grocery store's profitability, to say nothing of the disruption it caused to the merchandise managers' promotional plans. The root of the problem: warehouse goals conflicted with corporate objectives.

A third and last anecdote involved a supply chain colleague who worked at a manufacturer of medical supplies and devices. The company had consolidated logistical operations so that all inventories were held within the same warehouse. Warehouse performance was evaluated largely on productivity metrics, irrespective of the products handled. Because the supplies products were high-volume (yet low-margin), the warehouse director focused the lion's share of employee efforts on them. Consequently, he had less time to spend on the smaller-volume, faster-growing, and highest-margin medical devices.

Because my colleague worked in the medical devices division and his goals were revenue and margin-focused, he constantly bickered with the warehouse manager to get medical-device orders shipped on-time and shipped before the supplies orders. The finance organization agreed with him because from a corporate cash-flow perspective it had similar goals. By aligning goals, this ongoing bickering between managers could have been avoided. Specifically, goals around revenue, cash-flow, and profit-oriented performance should have been incorporated into the warehouse director's objectives.

Aligning with Strategic Objectives

These anecdotal examples underscore that the warehouses of today need to have some performance objectives that align to corporate-wide objectives. In an earlier Insights column, "The Operational Performance Triangles" (*SCMR* November 2008), I discussed an approach for establishing a set of balanced supply chain performance objectives that align to corporate go-to-market strategies. (I consider this alignment to be the mark of an excellent supply chain). The approach uses a triangle as depicted in Exhibit 1. The location of the "dot" within the triangle represents the balanced focus among three types of operational performance objectives: efficiency, asset utilization, and customer response.

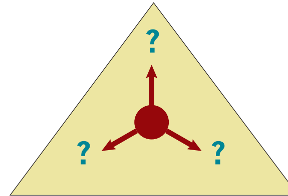
At each point in the triangle are examples of operational performance objectives that might be relevant to warehousing operations. However, note that a few of these are not typical. For example, warehouse operations are usually goaled by metrics based on unit volumes, such as number of picks, shipments, and receipts—without regard to the value of goods handled. Adding in metrics based on values such as the revenue, margin, and profitability derived from goods will incent a warehouse to be more revenue and profitability oriented. Supplementing the typical goals that are focused only on being cheap, productive, fast, and accurate, with the values-oriented objectives would better align warehouse goals with other corporate objectives.

In summary, now that the warehouse is becoming more important to competing in the marketplace, it may be time for managers to reset warehouse goals so that the whole supply chain team works in unison to achieve corporate-wide objectives.

EXHIBIT 1

Aligning Warehouse Operational Performance to Business Goals

Customer Response (Customer-Facing)
- On-time Shipments
- Perfect Order Fulfillment
- Cycle Times
(Do not relate to financial statements)



Efficiency (Internal)
- Labor Productivity (e.g., Unit-Based Picks/Hour)
- Warehousing Costs
- Efficient Perfect Order*
(Relate to income statement)

Asset Utilization (Internal)
- Warehouse Throughput (Units and Value)
- Overflow Storage
- Product Spoilage and Expirations
- Cash-Flow
(Relate to balance sheet)

*L. Lapide, "Not-So-Perfect Order", Supply Chain Management Review

GLOBAL LiNKS

BY PATRICK BURNSON

Supply Chain Cybersecurity: A Team Effort

By working closely with their suppliers and network partners, companies can minimize the emerging cyber threats that can disrupt global supply chains.

Patrick Burnson is the executive editor at *Supply Chain Management Review.* He welcomes comments on his columns at pburnson@peerlessmedia.com

While digital progress has enriched the lives of many supply chain managers and the companies they serve, industry analysts warn that there's a dark side to our reliance on complex computer systems. Indeed some experts contend that our information-intensive product pipelines have never been more vulnerable to disruption. Stealth and malicious code deeply embedded in our networks can shut down a global network in an instant. Chillingly, the IT reaction will probably be too late to repair the damage, much less restore the service.

Even the current quality of information on cyber security threats is suspect, says a recent KPMG survey of 1,800 members of corporate audit committees across 21 countries.

It's clear from the findings that audit committee members, which are comprised of senior executives who are not employed by the corporation, do not think that they are receiving enough information about online and social media threats and the risk mitigation programs designed to stop them. In fact, only 26 percent of the 1,800 respondents surveyed by KPMG said they were "satisfied" with the information received around these threats. This compares to satisfaction levels of over 70 percent on legal and regulatory compliance issues.

Nearly half of the survey respondents globally (45 percent) said that their company's overall risk management program—including cyber security—required "substantial work."

Meanwhile, anti-bribery laws have become a significant area of attention with over three quarters of the audit committee members reporting that they have increased their focus on the issue. Recent high profile cases involving defense contractors and banks no doubt have something to do with this change in outlook, says KPMG.

A desire for a broader range of skills on audit committees including IT, treasury, and risk expertise, is also evident from the report, says KPMG. Analysts maintain that those professionals currently charged with these functions are poorly prepared for the dynamic change now underway in their domains.

The report's conclusion should come as no surprise. Defending supply chains against the threat needs leadership from the top, with audit committees playing a key role in all of this. The results of the survey show that company leaders clearly have an appetite to get more actively involved.

Management Attention Critical

The findings of the KPMG survey ring true across a range of sectors, as evidenced by the agenda of a recent industry event we attended. At the RSA Conference in San Francisco, we sat in on a chief information security officer (CISO) "Viewpoint" track. During this track, attendees participated in a variety of sessions on how business and security are

intersecting. CISOs are senior-level executives within an organization responsible for establishing and maintaining the enterprise vision. These executives from such leading companies as eBay, Google, Bank of America, Visa, Zappos, and Johnson & Johnson spoke on a variety of issues including big data, risk management, and the "psychographics" they rely on. Psychographics, by the way, is the study of personality, values, attitudes, interests, and lifestyles.

After digging deeper into the issue we discovered a sobering bit of analysis by Patricia J. Richards, a senior consultant with Daniel Penn Associates in Hartford, CT. Her paper, *Building a Cyber Supply Chain Assurance Reference Model*, argues that greater attention must be paid to the role that cybersecurity plays in contracts between corporations and their suppliers.

It may seem counterintuitive, but there's safety in numbers, says Richards—especially if everyone is on the same page. As with any systemwide infrastructure adoption, the corporation must take certain steps to ensure that their cyber strategies are shared with current and potential diverse suppliers to ensure each link in the supply chain is secure as well.

According to Richards, one of the most compelling reasons that corporations implement supplier diversity and inclusive sourcing strategies is to help mitigate business risks by creating a more flexible and robust supply chain. At the same time, this increases competitiveness by attracting and developing smaller suppliers who have the ability to think innovatively and to move quickly. So while addressing risk, supply chain managers can also drive costs out of the system.

Maintaining a strong supply network and channel operators takes an investment on the part of corporate decision-makers and the supply base. For example, by maintaining regular communication with suppliers and sharing cybersecurity strategies as they evolve, corporations can reinforce the reliability of their supply chain and provide another layer of sustainability for supply chain partners.

Just as truly committed corporations have taken the lead in counseling diverse, small businesses on other key aspects of business management, financial viability and business structure, cybersecurity knowledge transfer and practices are "essential spokes in the wheel" of growth for these diverse businesses, Richards says.

A Cybersecurity Checklist

Richards has developed a checklist to help corporations enhance cybersecurity within their industries and organizations. It includes four key components:

- **Discuss**—The private sector should raise the urgency of dialog on cybersecurity at the national business level, highlighting dangers, proposing strategies, and offering solutions.
- **Educate**—Regional and national business organizations can alert and prepare diverse businesses (minority, women, disability and service-disabled veterans) to address cybersecurity issues in their businesses and with their customers.
- **Assess**—Corporations should assess suppliers' cybersecurity capabilities as part of the normal RFX process and have in place a protocol to educate and assist diverse businesses.
- **Adopt**—Large corporations and diverse suppliers should review the safety of their systems, reallocate resources to improve those systems, and adopt a plan to minimize the impact of cyber threats.

Defending supply chains against the threat needs leadership from the top, with audit committees playing a key role in all of this.

Strength Through Collaboration

Against a backdrop of rising cyber espionage, a U.S. Congressional report warned late last year of the threat to national security posed by potential vulnerabilities in the telecommunications supply chain, which includes manufacturers in China. Given how much U.S. companies rely on those products that provide infrastructure to Internet operations around the globe, they need to become more knowledgeable about where these products come from and how they are manufactured, the experts say.

"As cyber attacks continue to grow in strength and numbers, information security has continued to rise to the top of IT agendas around the world," said Sandra Toms LaPedis, Area Vice President and General Manager of the RSA Conference. "It's now crucial for businesses, vendors, and government agencies to band together and confront today's vulnerabilities."

The takeaway, says LaPedis, is that cybersecurity really has become a team effort: "We must collaborate and drive innovation within information security. Together, we can arm ourselves with the best resources and strategies to combat threats."

TALeNT STRATeGIES

To Succeed at Sustainability, First Learn to Communicate

By Jason Mathers and Edgar Blanco

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As a supply chain professional, there is a good chance that at some stage in your career you will be involved in an environmental sustainability project. What skills do you need to be successful in this increasingly important aspect of supply chain management?

In our experience, communications should be top of your list.

Being an effective communicator is a core capability for any practitioner in today's globalized business environment. But it is critical in the area of sustainability because delivering on these goals rests, to a large degree, on your ability to engage various internal and external stakeholders who can be disinterested or downright skeptical.

There are also non-traditional stakeholders that are critical to the success of sustainability initiatives such as competitors, government agencies, and NGOs. This complexity makes it more difficult to tell a simple success story to your customers and employees and to activists. You also need to have a sense of how these initiatives fit within the bigger picture of the organization's strategic objectives. In short, sustainability projects are a lot more challenging than switching out light bulbs.

Here are a few key lessons that might be helpful as you pursue supply chain sustainability projects within your own company. The projects highlighted were all subjects of Environmental Defense Fund (EDF)-sponsored case studies conducted by MIT's Center for Transportation and Logistics. The companies profiled were Ocean Spray Cranberries, Caterpillar, and Boise Paper. While each one is unique, they all demonstrate very clearly the role of communications in arriving at improved sustainability.

Formulate the Message

A clear, persuasive message is central to effective communications. When planning initiatives that involve greening the supply chain, it's important to know what a successful outcome will look like, and that involves being able to measure the changes. That, in turn, means it is crucial to establish effective performance metrics. Sustainability projects are no different.

In each of the cases, we defined project success around reductions in greenhouse gas emissions, also known as carbon emissions. Carbon is an example of a good metric because it is a direct measurement of one of the greatest sustainability challenges facing logistics and freight transportation. In the U.S., freight movement accounts for 15 percent of all corporate carbon emissions and lags only manufacturing as an end-use cause of these emissions. Additionally, many companies have overall carbon reduction targets. So, project-specific carbon metrics can be rolled up into these corporate-wide targets. Other environmental metrics such as water, waste, or energy use are also good examples but need to be clearly defined by the organization and tied to corporate goals to be effective.

Also critical to creating a compelling message is identifying a project that fits the specific needs of your company; these include "traditional" initiatives that are not always logistics "rocket science."

For Boise Paper, the solution was focusing on maximizing rail over truck transport, so figuring out how to stuff a third layer of pallets into the railcar made sense. For Caterpillar, which makes giant industrial vehicles, it was finding a way to change the heavy, specialized containers they use to move their uniquely cumbersome parts, to ones made of lighter weight plastic. For fruit juice giant Ocean Spray, it included collaborating with a competitor with an almost exactly opposite flow of product, to take advantage of a stream of rail boxcars going south that would otherwise have been empty.

Communicate the Project

Having established the message now comes an even tougher challenge: communicating it to an audience with wide-ranging interests and motivations. Succeeding in this regard is at the heart of a successful change-management process.

It's vitally important to coordinate efforts across multiple departments internally. You need to make sure that everyone has bought into the same vision and methods, and agrees on how to measure the results using the same criteria. This may sound simplistic, but many companies' internal divisions operate as completely separate parishes. The purchasing department is focused purely on the price of product or raw materials and has little interest in where these items came from or how they got there. The product design team may have no clue that a minor change to an end-product's design may have a significant impact on the packaging required, or materials source locations.

One of the first sets of questions you need to ask yourself is: Which departments are key to your objectives; how do you persuade them to support the effort and provide the data you need; and how do you structure working teams across different departments?

For example, in our Caterpillar case study, we observed that the team within the company that was tasked with adopting the new, lighter weight parts containers (thereby reducing the amount of fuel expended in moving them around), needed to work with the team that designed the assembly process to standardize parts in ways that would reduce the number of different size and shapes of parts containers. This work was crucial to deriving maximum benefit from the initiative.

Often, a sustainability project will involve communicating and collaborating with customers. In the case of Boise Paper, the company worked closely with OfficeMax, one of its largest customers, to accept different sizes and frequency of shipments so that it could make the most of the railcars that will reduce its freight carbon footprint. The effectiveness of presenting the project to customers and working with them to elicit their support and establish an effective exchange of information is a reliable indicator of eventual success. In that case, it's essential to determine who should be involved, the level they occupy in the customer corporate structure, and be able to set goals that are mutually beneficial. The same kind of approach also makes sense when collaborating with suppliers.

More intriguingly, sometimes sustainability projects achieve their vision by communicating with arch-competitors, and turning them into sustainability partners. Ocean Spray discovered that its competitor was transporting juice from Florida to New Jersey in an almost exact mirror image of one of its own major distribution routes. By communicating around a shared vision (reducing freight costs and emissions), the two were able to collaborate to fill empty railcars returning from New Jersey to Florida. In this case, of course, it was very important to delineate the scope of the interaction and be sure there was no danger of commercially sensitive information being accidentally exchanged. Keeping good, well-maintained channels of communication, where it was clear to all involved exactly what was going on, allowed this unusual project to produce a very good outcome for all involved.

Having established the message now comes an even tougher challenge: communicating it to an audience with wide-ranging interests and motivations.

Lastly, and perhaps most importantly, good metrics are invaluable when trying to communicate with your executive team. As you already know, there are a couple of metrics that really matter to them: cost and performance. A well-designed supply chain sustainability project will enhance both of these aspects while also delivering clear, objective sustainability benefits.

For example, Ocean Spray was able to cut carbon emissions from its distribution operations in the U.S. southeast by 20 percent while driving down the transport costs of supplying that market by 40 percent. As many companies now have corporate-wide carbon reduction targets, executives increasingly have a framework for appreciating the importance of projects that—like the ones highlighted here—improve the bottom line and environmental performance.

Stay On Message

When deploying communications skills to meet sustainability goals, it is important that you demonstrate how the effort will produce measurable improvements. Conveying this message and delivering on it will increase your "green" credibility, enhance boardroom visibility for these projects, and deliver cost savings.

Connecting the the Factory

By Larry Smith

Larry Smith is the Senior Vice President of Planning and Replenishment at West Marine, Inc. He can be reached at LarrySm@westmarine.com

While supply chain planning based on end-user demand has been applied in the B2B arena for decades, it is only now becoming practical in retail channels. But as distribution resource planning tools and techniques emerge, trading partners can now coordinate their supply chain as if only one company were managing it—effectively connecting the consumer to the factory.

What's so hard about connecting consumer demand to factory production? How is it that after decades of successful cases demonstrating the value of demand-driven supply chains in business-to-business (B2B) settings, most retailers still lack technologies that can maximize sales at the shelf or Web portal?

There is no single answer to these basic questions. Collaborative planning, forecasting and replenishment (CPFR) techniques have provided clear process roadmaps. Until recently, however, enterprise systems that could support large-scale alignment on a consumer sales-driven demand plan fell far short of the vision. Manufacturers have understood it for decades, but bricks-and-clicks retailers are only now beginning to realize that demand-driven systems and processes are key to defending and growing their share of market—not just against other bricks-and-clicks competitors, but against an explosion of Internet retailers and business-to-customer (B2C) dealers using exchanges such as Ebay and Amazon.

Two factors are galvanizing change. To begin with, customers are raising the bar. Demand-driven systems and processes will help retailers to offer the "omni-channel" service experience that customers are learning to expect from their online and mobile shopping activities. Secondly, recent technical breakthroughs have made possible the deployment of reliable and economically scalable store-level distribution resource planning (DRP) capabilities for retailers. The newest retail DRP systems support detail planning over an extended horizon—a big leap forward in capability over earlier systems, which were purely executional.

With these systems, retailers can calculate demand three

Consumer to

levels into the supply chain, driving factory output from what consumers are actually buying at the shelf or Web portal. The benefits flow outward: retailers' trading partners can synchronize supply and demand and incorporate all of the logistics constraints or product flow from the factory floor to the store shelf with unparalleled accuracy.

In effect, retailers and their trading partners can now coordinate their supply chain as if only one company were managing it, enabling them to jointly reduce inventories and cut the costs of manufacturing, transportation, distribution centers, procurement, and selling. The gains can be substantial: for instance, Sony (Canada) reduced its supply chain inventory by 20 percent and saw its in-stock levels improve from 87 percent to at least 95 percent. Lowe's reported a significant reduction in excess inventory, and its in-stock stepped up from 92 percent to 98 percent.

Manufacturers have understood it for decades, but bricks-and-clicks retailers are only now beginning to realize that demand-driven systems and processes are key to defending and growing their market share.

My company, West Marine, Inc., was the first retailer to use an enterprise solution for driving supply chain demand from consumer sales. In 2001, we set up a store-level DRP system supporting a 52-week forward planning horizon. More recently, IKEA, Meijer, OfficeMax, Lowe's, Mark's (Canada) and Sony (Canada) have implemented store-level DRP solutions and reported improvements in service levels, cuts in supply chain inventory, and better coordination with suppliers on new products and marketing.

For instance, Mark's reported an 8 percent reduction in inventory and record sales growth. IKEA said it achieved cost savings from its longer-term commitments with suppliers. And in 2009, Walmart told its suppliers that it would implement a store-level DRP system with the intention of modeling the supply chain with its trading partners and providing manufacturers with schedules of its planned orders. For their part, suppliers including Scotts, Vtech, Kraft, Sony (US), and LR Services (Europe) have also implemented store-level DRP capabilities to improve their planning and execution with key retail partners by building out demand and supply plans based upon sales by location.

Store-Level DRP Still Not Widespread

Even though store-level DRP implementations continue to spread, the fact remains that store-level DRP today still accounts for only a small part of the total volume of retail supply chains. Furthermore, there is still a significant gap between the demand planning and execution of B2C compared to B2B supply chains. B2B supply chains have been forecasting sales and orders starting at the end customer for many years. Computerized materials requirements planning (MRP) systems started in manufacturing organizations in the 1960s and led to the development of DRP systems. Over the past 40 years, countless manufacturers have deployed DRP solutions to drive the flow of products across their distribution networks and to align their supply chains around a single forecast. DRP systems allowed manufacturing supply chains to maintain an accurate and forward-looking bottoms-up computerized model of their extended business that accurately predicted sales, purchases, receipts, manufacturing, and distribution from source to customer.

Also, manufacturing supply chain participants found that they could rigorously compare all of their bottom-up predictions to their aggregate targets; they could manage exceptions and make adjustments to deliver planned results with the least disruption and at the lowest cost. These DRP capabilities enabled the development of the extended forward planning process that we know today as sales and operations planning (S&OP). Without similar bottoms-up forward planning capabilities, retailers have been unable to plan their business in detail over an extended horizon and to assess and optimize these plans in advance. Store-level DRP solutions will close this gap and provide the basis for a similar leap forward in planning and execution capabilities for retail supply chains.

So why has store-level DRP worked for B2B but not for B2C until recently? My vantage point as a retailer and leader of both the former Voluntary Interindustry Commerce Solutions (VICS) CPFR Committee and now the GS1 US CPFR Workgroup gives me some perspective on what has held back most retail supply chains thus far. There are four key hurdles:

- The computational challenges of a large-scale store-level DRP system were difficult for solutions providers to overcome.

• Retailers had complex legacy replenishment systems that were difficult to abandon.

• Retailers lacked the practical experience and know-how required for developing organizational routines for coordination and forward planning such as CPFR and S&OP.

• Functional and organizational boundaries inhibited the development of robust relationships and trust among supply chain partners.

Benefits of Store-Level DRP Systems

As a retail practitioner, I can appreciate the process improvements that retailers and their manufacturing partners realize by implementing store-level DRP systems. Retailers benefit because they have to create only one robust forecast: the forecast for consumer sales. They are relieved of the task of creating robust distribution center (DC) shipment forecasts, because the DRP system automatically calculates the DC shipments through its time-phasing calculations. Automation of the DC shipment forecast essentially eliminates the function of DC forecaster. This saving either reduces operating costs, or is invested in hiring merchandise planners who are accountable for assortment planning and inventory optimization. The most important outputs of a DRP system are the forecasts of orders to suppliers. Retailers commonly refer to these as order forecasts; manufacturers call these time-phased forecasts "supplier schedules"—and manufacturers have been providing them to their upstream trading partners for decades.

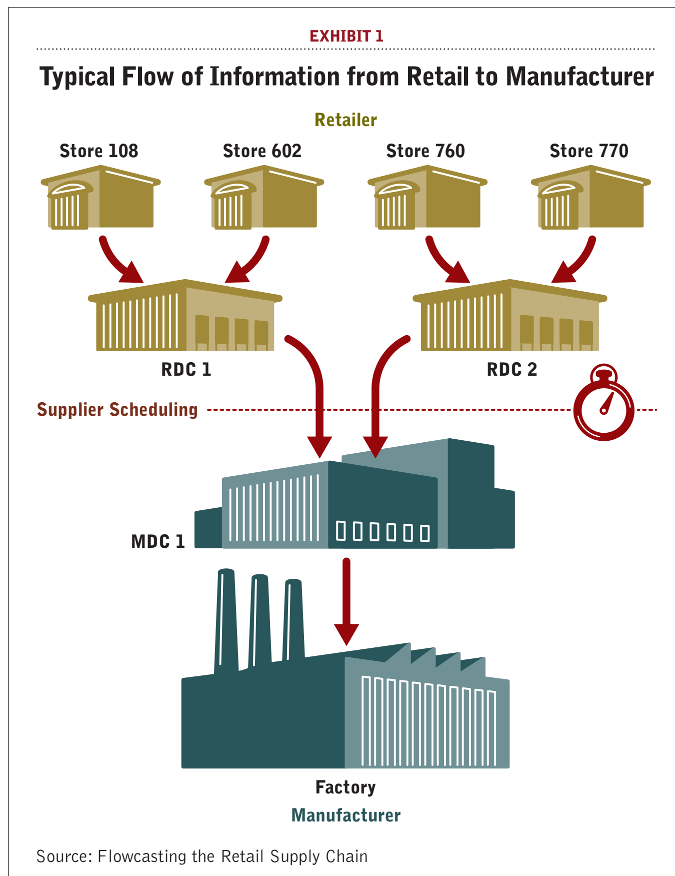
In providing a long-term order forecast to manufacturers, a retailer communicates all the details of its demand plan. Usually this communication is weekly, but it can be daily or even real time. When retailers are as transparent as this with their supply chain partners, things happen very quickly, and with immediate consequences. (My analogy is that when we hiccup, it's on Facebook.) The information provided in a retailer's order forecast or supplier schedule makes everything about the retailer's demand strategies completely apparent.

For retailers, this level of transparency is challenging, but it facilitates commitment to reliable planning. That is good; DRP processes extend the trading partners' commitment horizons. However, it will not automatically increase trust in the relationships. As a senior planning associate at a large retailer once said, "Why would I provide an order forecast to suppliers? That would just give them a stick to beat me with." For West Marine, it's clear that having a store-level DRP system has enabled and encouraged us to plan ahead and explore sales and marketing potential beyond anything we could have imagined without a bottoms-up planning engine. Using our forecasts, our suppliers improved on-time shipments from a dismal 30 percent to over 90 percent, and we maintained peak season in-stock at 96 percent overall and 98 percent for key items. More importantly, our suppliers came to recognize the value of coordinating their efforts with ours to drive consumer sales, customer satisfaction, and market share.

That said, the task of creating reliable sales forecasts is far from easy. The ideal situation for a manufacturer is that all of its retail customers provide order forecasts or supplier schedules. Today, manufacturers may be receiving store-level DRP supplier schedules from some retailers, which should be the most reliable projections they have. If these retailers are large customers, the forecasts are immediately beneficial for production planning and they provide the basis for additional CPFR activities between the partners. Other retailers may provide automatically calculated order forecasts based upon DC activities, but these forecasts rely upon historical DC shipments to stores rather than a multi-echelon store-level forecast methodology. A third group of retailers may not provide any insight to manufacturers on future orders. For this group, the manufacturer has no information, except its historical shipment data, on which to base a demand forecast. In this case, the manufacturer must independently forecast the demand plan for these retailers.

By implementing store-level DRP systems, retailers have to create only one robust forecast: the forecast for consumer sales.

Until recently, the planning capabilities of retail supply chains were very different from those of most of their manufacturing counterparts. Most retailers' store-level replenishment systems can robustly plan consumer sales, but these systems generally calculate only today's orders. They have no capability to generate store ordering needs beyond the current order, much less orders next week, next month or next season. Retailers generally employ DCs to optimize freight handling and allocation of products to stores. Most retail DC replenishment systems forecast shipments to stores based upon



Source: Flowcasting the Retail Supply Chain

DC historical shipments, without reference to a store-level order forecast and without accounting for current store selling or current store overstocks or understocks.

Without systems that support a collaborative demand plan established through a bottoms-up store-level DRP process, business execution visibility is short-term and orders are often a surprise (as if they were tossed over a wall). Each trading partner forecasts its demand independently, limiting category or market insights that could be shared between key suppliers and retailers. A history of past supply chain outages may drive each trading partner to build buffer stocks to avoid the risk of out-of-stocks. The inevitable supply chain overages and outages regularly result in adversarial buyer-seller relationships.

A store-level DRP forecast immediately accounts for any changes in end customer sales, with the result that increases in sales automatically cause calculated purchases to move closer to today, and decreases in sales automatically cause calculated purchases to move further out into the future. Updates to the network forecast are rapid, with weekly, daily or real-time updates as achievable norms. Such forecasts virtually eliminate bull-whip effects, enable participants to optimize capacity and throughput planning, eliminate waste, and improve value-added processes.

Store-level DRP systems are available to support forecasts for an extended horizon—over a 12-month or longer rolling horizon—which gives trading partners the data they need to coordinate more strategic and longer lead time tasks. Linking all activities to a DRP forecast creates a complete and dynamic calculated model of the extended enterprise. Since all future supply chain activities can be captured in this computerized model of the business, trading partners can share a single plan and work together to analyze and optimize their linked business activities.

Retailers that implement store-level DRP will find that their new demand coordination capabilities help each trading partner to work as part of a coordinated value chain. This will help trading partners to develop relationships of trust. Retailers and manufacturers build trust when retailers honor the forecasts that drove production. Manufacturers will build trust when they use available-to-promise (ATP) methodologies to protect product supply for retailers as if DRP forecasts were actual orders.

One leading SCM thinker put it this way: "Knowledge-sharing activities result in a production network that learns faster than other production networks about the best practices in production, quality, and management. High trust within the extended enterprise results in a production network with the lowest transaction costs. Less time is spent bargaining and haggling over the pie and more time and resources are spent increasing the size of the pie." [1]

Two factors are galvanizing change: customers are raising the bar, and recent technical breakthroughs have made possible the deployment of reliable and economically scalable store-level DRP capabilities for retailers.

How Does Store-level DRP Work?

Supplier schedules created by store-level DRP systems are the connecting bridge for the flow of information from buyers to sellers.[2] Supplier schedules are the information

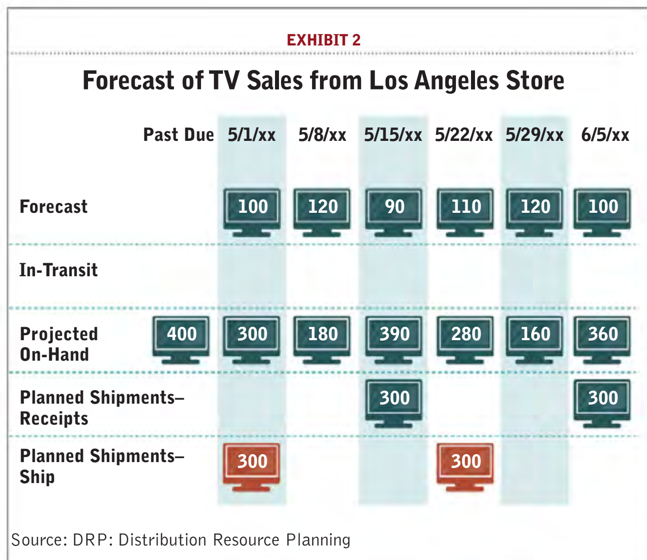


EXHIBIT 2

Forecast of TV Sales from Los Angeles Store

	Past Due	5/1/xx	5/8/xx	5/15/xx	5/22/xx	5/29/xx	6/5/xx
Forecast		100	120	90	110	120	100
In-Transit							
Projected On-Hand	400	300	180	390	280	160	360
Planned Shipments–Receipts				300			300
Planned Shipments–Ship		300			300		

Source: DRP: Distribution Resource Planning

flow about future ordering from stores to retail DCs, from retail DCs to manufacturer DCs, and from manufacturer DCs to the factory. (See Exhibit 1.)

The form of the schedule is item numbers, dates, and quantities representing the expected orders from each node in the supply chain to the next, including from the retailer firm to its manufacturer. Building the supplier schedule begins with only one forecast: the independent forecast for sales to consumers at each selling location. All demands for nodes further up the supply chain are calculated and thus are dependent demands, based upon the consumer sales forecast.

Let's take the example of the retail chain for sales of 40-inch HDTV sets. The building blocks for the supplier schedule are the demand plan (sales forecast) and the dependent replenishment forecast (planned shipments) for the 40-inch TV unit in the Los Angeles store. (See Exhibit 2.) The planned shipments are calculated accounting for the planned safety stock, the presentation minimums, delivery schedules, and order minimums and multiples. The store-level DRP system calculates similar planned shipments for all stores serviced by the DC. The timing and quantities of the sum of the planned shipments to all stores becomes the dependent demand forecast for this DC for the HDTV.

The next step in the DRP process is to calculate the DC's total purchase needs in a time-phased manner that discriminates quantities and both shipment and receipts timing. An important data point is the calculated total receipts schedule for all four sizes of HDTVs carried in stores. (See Exhibit 3.) This data set also shows how the visibility of store-level DRP supports a comparison of the calculated receipt plan for all HDTVs with the approved receipt from the monthly sales and operations plan.

The ability to compare the S&OP plan approved by the executive team with the sum of the supplier schedules coming from the day-to-day operating system (store-level DRP) provides an extremely powerful capability for the retail management team to improve control. Let's say the management team sets a tolerance for purchase variance for the HDTVs of plus or minus 2 percent. The variance between the automated order forecast for the current month is 30 TVs or 1.6 percent, which is within the tolerance. But the variance projected for next month is 450 TVs or 21.4 percent, a difference that requires resolution. In this instance, the buyer must change his planned purchases for the second month or seek approval for the additional purchase before releasing orders.

By starting at the lowest level (item store) and leveraging the continuous calculations in the DRP solution, retailers can drive the supply chain from the consumer

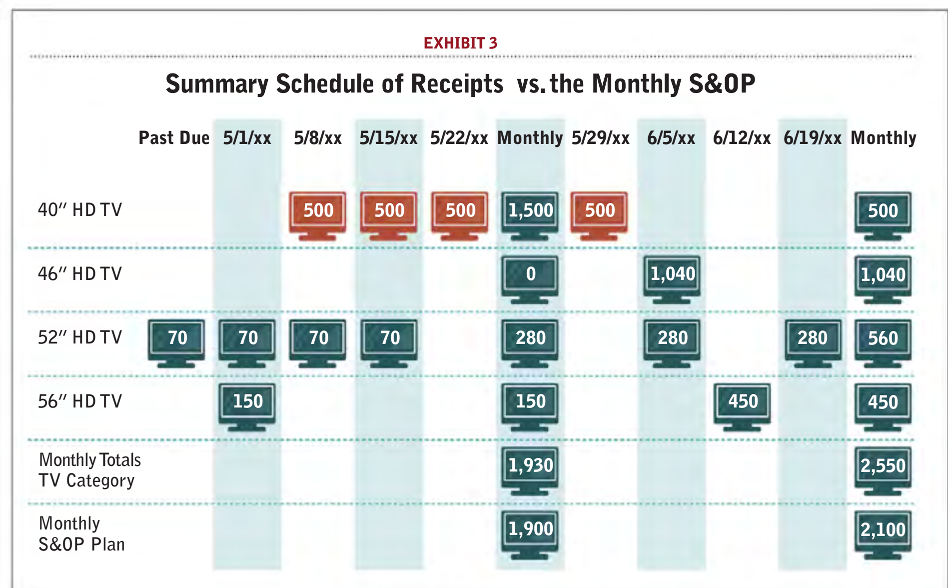


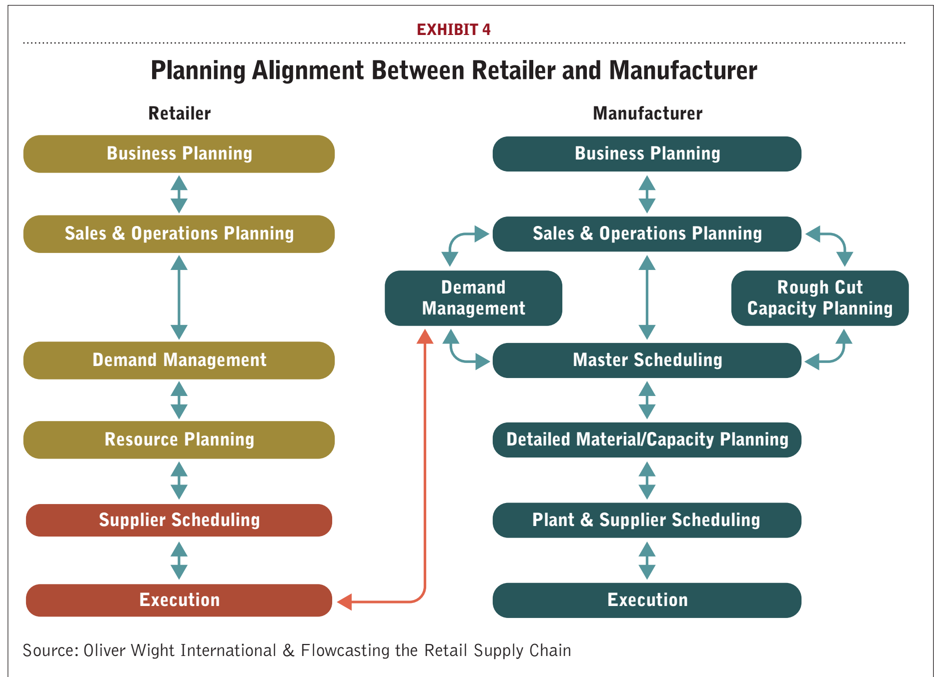
EXHIBIT 3

Summary Schedule of Receipts vs. the Monthly S&OP

	Past Due	5/1/xx	5/8/xx	5/15/xx	5/22/xx	Monthly	5/29/xx	6/5/xx	6/12/xx	6/19/xx	Monthly
40″ HD TV			500	500	500	1,500	500				500
46″ HD TV						0		1,040			1,040
52″ HD TV	70	70	70	70		280		280		280	560
56″ HD TV		150				150			450		450
Monthly Totals TV Category						1,930					2,550
Monthly S&OP Plan						1,900					2,100

demand forecast. Tolerances can also be set and efficiently managed to close the loop between S&OP and the day-to-day operating plans generated by the DRP system.

Another key data set shows how a retailer's DRP-generated supplier schedule links the retailer and manufacturer and also aligns the two partners' S&OP processes. (See Exhibit 4.) Remember that without the retailer's supplier schedule, the manufacturer's demand plans and S&OP are based upon historical shipments. Using the retailer's supplier schedule, the manufacturer replaces its own shipment-based demand plan for this retailer with the retailer's demand plan calculated from consumer sales.



Notice that the two-way red arrow in Exhibit 4 represents the flow of actionable information between the retailer's supplier schedules and the manufacturer's demand management. Demand information goes in both directions because it flows from the retailer to the manufacturer, while information about the manufacturer's supply issues flows back to the retailer and is reflected in its plans.

Without systems that support a collaborative demand plan established through a bottoms-up store-level DRP process, business execution visibility is short-term and orders are often a surprise.

This quick tour of DRP functionality makes the process seem very simple. In reality, the challenge of accomplishing calculations for millions of store-item combinations across distribution networks and extended time horizons has, until recently, prevented the development of effective enterprise store-level DRP solutions.

A Roadmap for Getting Started—Quickly

The advent of effective store-level DRP systems creates a competitive advantage. Companies in retail supply chains that embrace disciplined internal organizational routines (S&OP) and external routines with their trading partners (CPFR) will multiply the benefits of robust and dynamic automatic demand planning. The GS1 US CPFR Work Group recommended in its most recent guideline that retailers undertake a streamlined investigation to assess the benefits of these new solutions for their businesses.[3]

Retailers can launch a well-organized assessment project in approximately one to two months. We suggest the following six-step launch program:

1. Audit and Assessment *(one week)*. An executive team with appropriate operating managers and outside experts is formed to analyze the systems and processes used in current demand planning and replenishment in retail stores and DCs and in coordinating with manufacturers. The assessment will cover what's not working

well and what needs to change to make the organization more competitive. Current process design, technology, and planning competency will be addressed in this step.

2. *Establish the Vision* (*a half-day workshop with the same leadership team*). The objectives of this session are to achieve clarity about what will be accomplished in the store-level DRP project, particularly to instill forward planning practices throughout the organization and with the supply chain partners. The vision will be documented by the leadership team and communicated to the organization.

3. *Establish Performance Goals* (*a one-day workshop with the same leadership team*). This session will establish the performance categories that need to improve, how they will be measured, and to what levels performance will be expected to rise. The plan will set goals and measures for continuous performance improvements.

4. *Building the Plan for Costs and Benefits* (*a one-day workshop with the same leadership team*). This session will review all the anticipated costs and benefits related to adopting new processes and the store-level DRP solution.

5.*Project Authorization* (*a half-day executive meeting*). The authorizing decision should be taken at the conclusion of this meeting or as soon thereafter as possible.

6. *Project Organization* (*one week*). This step involves forming the project organization, allocating appropriate resources, and delegating required decision-making authority. It effectively launches the project and outlines the project's organization.

This succinct roadmap will launch the project and provide the structure for project design and governance. The executive or the team in charge of the project will establish appropriate timelines and milestones to implement and roll out the new technical solution. The implementation will include a rollout of new processes, roles, and responsibilities appropriate for the organization and for coordinating with its manufacturers.

Embrace the Change

Retail supply chains will become more competitive if retailers and manufacturers work together to reduce supply chain costs over time and share gains from eliminating waste or from using more effective value-added processes. In particular, they need to abandon win-lose approaches, which imply that a slight cost advantage by another supplier will cause an order to be lost or a contract not to be renewed.

So is your organization ready to adopt store-level DRP systems? Some companies resist the idea of forecasting, let alone planning. They believe it is impossible to predict the future accurately, so why bother? This attitude not only risks making a mockery of planning but it ignores the current realities of customers' expectations and technology's advances. Management guru Peter Drucker gave a crisp view about predicting the future: "To try to make the future happen is risky; but it is a rational activity. And it is less risky than coasting along on the comfortable assumption that nothing is going to change."

Companies need to abandon win-lose approaches, which imply that a slight cost advantage by another supplier will cause an order to be lost or a contract not to be renewed.

Customers are *forcing* things to change. New tools are enabling things to change. If your company doesn't acknowledge those truths soon, there's a very good chance that your competitors will.

Endnotes

1 Jeffrey H. Dyer, *Collaborative Advantage: Winning Through Extended Supplier Networks*, Oxford University Press, 2000.

2 Adapted from the GS1 US CPFR guideline "The Ultimate Retail Supply Chain Machine: Connecting the Consumer to the Factory."

3 Adapted from the GS1 US CPFR guideline "The Ultimate Retail Supply Chain Machine: Connecting the Consumer to the Factory."

The NEW BASICS of Supply Chain Management

By Art van Bodegraven and Kenneth B. Ackerman

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The skills needed to do the supply chain job keep evolving. That's not to say that the fundamentals learned in the classroom or in early job assignments are no longer relevant. Rather, they need to be revisited and reinvigorated within the context of today's challenges. These are the "new basics" that supply chain managers must master.

We talk glibly about change in supply chain management—continuous change, managing change, coping with change, even leading change. For all too many of us, those are only words. Truth is, though, that change in our universe is real, fundamental, and visceral.

As definitions of supply chains change, always extending and expanding, far behind are the days when our world was all about quoting rates, tendering loads, and pick/pack/on-time-shipment performance. As we have been required to get proficient in customer service, sourcing and procurement, supplier relationships, Sales & Operations Planning processes, and even occasionally integrating manufacturing to round out our planning and execution responsibilities, some of us have staggered a bit under the load.

We have bad news. Staggering under the load of these new supply chain requirements is no longer an option; we must *master* all of these elements as well as new ones that are certain to emerge.

Some may see these new opportunities for sleepless nights as "soft" skills—not quite as important as the "hard" quantifiable execution tasks we traditionally have focused on. We have more news. The soft stuff is surprisingly hard to execute, and it just may be the key to consistent and sustainable performance on the hard stuff.

So, what are the most important of the new basics? We discuss a number of them in this article; but be assured that the

list will continue to grow. The scope and scale of supply chain management may not be infinite, but like galaxies in our celestial universe, they will continue to expand.

The Role of Leadership

Perhaps the one basic that is fundamental to all others is leadership—which is different from the traditional focus in supply chain on "management." Nothing happens without leadership, whether it is in SCM or in any other aspect of organizational life. Leadership is the continuous process of enabling your people to achieve more of their true potential in a positive, sustainable way.

Leadership differs from management in several important respects:

- Leaders do the right thing; managers do things right.
- Leaders innovate; managers execute.
- Leaders develop; managers maintain.
- Leaders ask "why not?"; managers question "why?"
- Leaders focus on people; managers concentrate on systems and structures.
- Leaders exhibit trust; managers exercise control.
- Leaders look toward the horizon, a long-term vision; managers point to deadlines, a short-term focus.
- Leaders set objectives; managers organize the path to their accomplishment.

The reality is that both leaders and managers are necessary for business success. Having the right mix of individuals in the organization is the key. It's important to note, too, that there is some overlap in the skills required of each group. Both leaders and managers should be teachers; both should be clear and unambiguous communicators. Both can be genuine "people persons." And both can be masters of conflict management.

This last point about conflict management merits further comment. Doris Kearns Goodwin's best-selling book *Team of Rivals* tells how and why Abraham Lincoln recruited his political enemies to serve in his cabinet.

Lincoln's leadership genius was his ability to convert fighting into "constructive conflict." Debate and disagreement can be part of the leadership process, as long as the leader is able to skillfully convert conflict into compromise. Managers today should welcome constructive conflict as part of the process of finding creative solutions to complex supply chain challenges.

Finally, today's supply chain professionals can learn from the concept of servant leadership, which was first described by R.K. Greenleaf four decades ago. One of its most famous champions was Sam Walton, founder of Walmart. Sam drove an old pickup truck, flew his own small airplane, and inspired hundreds of workers when he asked: "Who is number one? The customer!"

Perhaps the one basic that is fundamental to all others is leadership—which is different from the traditional focus in supply chain on "management."

Both Greenleaf and Walton recognized that the best way to ensure that customers are treated well is to also treat your workers very well. Herb Kelleher, founder of Southwest Airlines, described it this way: "Management has its customers, the employees. If the employees are not satisfied, they will not deliver the required performance. If the customers are not satisfied, they will not fly again with Southwest."

The servant leader submerges his or her ego to facilitate the success of followers.

There are differences between leading and driving. You drive a car, but there is a limit to how far you can drive people. Leaders focus on their people, and drivers focus on themselves. Drivers emphasize compliance, while leaders encourage autonomy. Drivers seek to control, while leaders encourage engagement and empowerment.

The New Diversity

Just as the nature of leadership is changing, so is the nature of the workforce to be led. Time was (and not that long ago) that diversity meant having women and people of color in roles historically reserved for Caucasian males. Today, and certainly going forward, workforce diversity has become much more expansive. In addition to the traditional male-female breakdown, gay, lesbian, and transgender persons are now part of the diversity mix. Racial diversity has expanded beyond a single ethnic group or groups to include a rich tapestry of ethnicity, national origin, and religious practice and preference. We now have in our cities and even smaller towns, significant populations of Latinos, Central/Eastern Europeans, Somalis, Vietnamese, Haitians, Indians and Pakistanis, and many more—a significant number of whom are working in supply chain-related jobs.

Today's diverse workforce presents special challenges in management, communications, assimilation and accommodation of cultural and religious practices. Managers need to step up to this challenge because these individuals bring much-needed labor and brain power to our workplaces. We can no longer hang out a 21st century equivalent of "Irish Need Not Apply" signs to discourage or exclude recent immigrants.

One of our greatest diversity management challenges, though, may lie in the several generations that are present in the modern workplace. The media talks as if the Baby Boomers are all retiring at once; yet the realty is that many will stay in the workforce for a number of years. (Some of their predecessors, your co-authors included among, will still be working, too.) The Gen Xers are not that new any longer; in fact, some of them are contemplating retirement. And the Gen Y Millennials have been coming into the workforce for a few years. The message: We as supply chain managers must find ways to get these disparate groups to work and play well together.

There is another component to the multi-generational, multi-ethnic supply chain workforce that is likely to grow—and appropriately so. Walgreens, beginning with their Anderson, S.C. distribution center, has provided us with the template for building a unified workforce that includes people with handicaps—physical, mental, emotional, or some combination. The company has made an enormous effort to design their facilities and processes so that these individuals can work effectively with no compromise in business performance.

Bottom line: managing, leveraging, and integrating these disparate workforce components is vital to our future success in getting enough resources to get the job done, and using those resources with optimal effectiveness.

Green as a Way of Life

Going forward, people in our profession will have to think of themselves as sustainability managers as much as they are supply chain managers. It's inevitable, and

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sooner than we may think, that green principles will be embedded in supply chain education and in day-to-day practice. A few short decades ago, green was perceived to be the province of tree-hugging idealists—not practical, not economic, not feasible. Today, it is mainstream, and has become a critical focal point in the boardroom.

Some green initiatives like recycling and have been pursued for decades. Other no-brainers such as motion-activated lighting systems took a little longer to catch on. In the past few years, though, the momentum toward greener, more sustainable supply chains has accelerated.

Happily, there are scores, maybe hundreds, of companies experimenting with all kinds of technologies and practices to reduce emissions, shrink the carbon footprint, and manage consumption in a more sustainable manner. The high-profile initiatives may or may not be right for a specific company, or a specific geography, but they do capture public and political attention. Prime examples are the alternative and/or auxiliary power sources of wind and solar. The solar option can range from small arrays on the roof of a distribution center to vast farms of panels. Wind can vary from a simple roof-edge application, to a single standalone tower, to farms of towers. As the research and engineering into these energy sources proceeds, you get a sense that what's old is new again. Think about the days when every farm had a windmill.

Managers need to step up to the challenge of today's more diversified workforce because these individuals bring much-needed labor and brain power to our workplaces.

We will all be green sooner rather than later—whether we get there on our own accord or be led kicking and screaming by Federal and state governments. From our perspective, the former path is far preferable. It makes eminent sense to start off with the green projects that have a bottom line payback *now*, rather than wait for governments to dictate that we do things that may or may not pay off in a reasonable period.

We mentioned earlier that many companies are working on various sustainability initiatives. Two that have had considerable success in a supply chain context are Murphy Warehouse Co. and GENCO.

Murphy Warehouse, a Twin Cities-based multi-facility service provider, has successfully implemented many sustainability initiatives that make business sense, including:

- LEED (Leadership in Energy and Environmental Design) design and conversion at their facilities, at a near-trivial increase in cost per square foot.
- Auxiliary solar power supplying 18 percent of power with a four year to five year payback.
- Storm water runoff elimination, with a projected payback of eight years.
- Prairie grass landscaping, with an 85 percent cost/acre reduction and minimal investment.
- Brownfield redevelopment of an EPA Superfund site, providing habitat for eagles and native fish.
- Forklift tune-ups and quick-charge batteries to reduce gas emissions and increase in-use productive time.
- Green roofs with vegetation cover; dock blankets for a 10 percent heating expense reduction.
- T-8 lamp installation, reducing energy cost by 4 percent.

GENCO, the well-known product life cycle solutions provider, has made a deep and wide green commitment throughout its operations. The range of their initiatives is expansive. GENCO has been working hard on energy reduction, lighting control and upgrades, alternative fuels, process design/re-design, overall supply chain design, and reverse logistics applications

Sadly, not all that shimmers is green. The term "greenwashing" was coined back in 1986 to describe deceptive practices designed to enhance the eco-friendly image of organizations and products. The so-called seven deadly sins of this practice are:

1. *Hidden tradeoffs*—branding something as "energy efficient" but failing to mention a hazardous content.

2. *Absence of proof*—making a green claim either with no certification or with a certification from some bogus authority.

3. *Vagueness*—claiming something is "100% natural" though it actually contains naturally occurring toxins.

4. *Irrelevance*—for instance, proclaiming a product to be "CFC-free" when CFCs have been banned for decades.

5. *Lying*—making a flat-out false claim.

6. *Masking a fatal flaw*—touting "environmentally friendly" pesticides that actually kill birds would be an example.

7. *False labeling*—such as subliminally suggested purity or implied endorsements. Think about a sparkling

waterfall on the label of a bottle of purified municipal water.

We need to understand that cradle-to-grave—even cradle-to-to-cradle—logistics is fast becoming a way of life. Tomorrow's winners will develop a strategic commitment to sustainability, which will require excellence in all elements of supply chain planning and execution.

We Are All Numbers People

One of our greatest shortfalls as a profession has been the failure to learn and operate within the CEO's frame of reference. In thinking about the "new basics" of our work, we must address this gap immediately.

We like to talk about things like perfect orders, on time shipments, unit supply chain cost, inventory levels, and stock-outs. Guess what? The CEO doesn't really care about these. Oh, he or she might be swayed by the CFO to think about inventory is a quick source of ready cash. But top management's real hot buttons are Return on Assets (ROA), Return on Investment (ROI), Return on Equity (ROE), Gross Margin on Earnings Before Taxes and Depreciation (EBITD). If those terms are *not* part of your vernacular, you need to learn them fast if you want to be taken seriously within the business.

Frankly, too many supply chain practitioners make the situation worse by undervaluing how and where we contribute to the company's top-line financial performance. We become over-focused on inventories—in particular, the need to cut them. We concentrate on trimming costs in small increments by demanding more out of the workforce or by squeezing suppliers.

The fact is that we affect most, nearly all, of the components of enterprise performance. These are probably best illustrated in the well-known DuPont Model analysis, shown in Exhibit 1. The model's interactions are summarized in the exhibit. Its power lies in highlighting the many areas in which supply chain management materially contributes to an enterprise's financial performance.

As the model shows, supply chain planning and execution—and decisions—have profound effects on sales, cost of goods sold (COGS), fixed expenses, variable expenses, accounts receivable, and, hugely, fixed assets. And, yes on inventory…but not necessarily to cut, but to make sure that inventory is at the right level for a balance of investment and service. All of these pieces together are used to calculate gross margin, total assets, net profit, asset turnover, and return on assets (and return on equity), and so forth—in other words, the things that keep the CEO up at night.

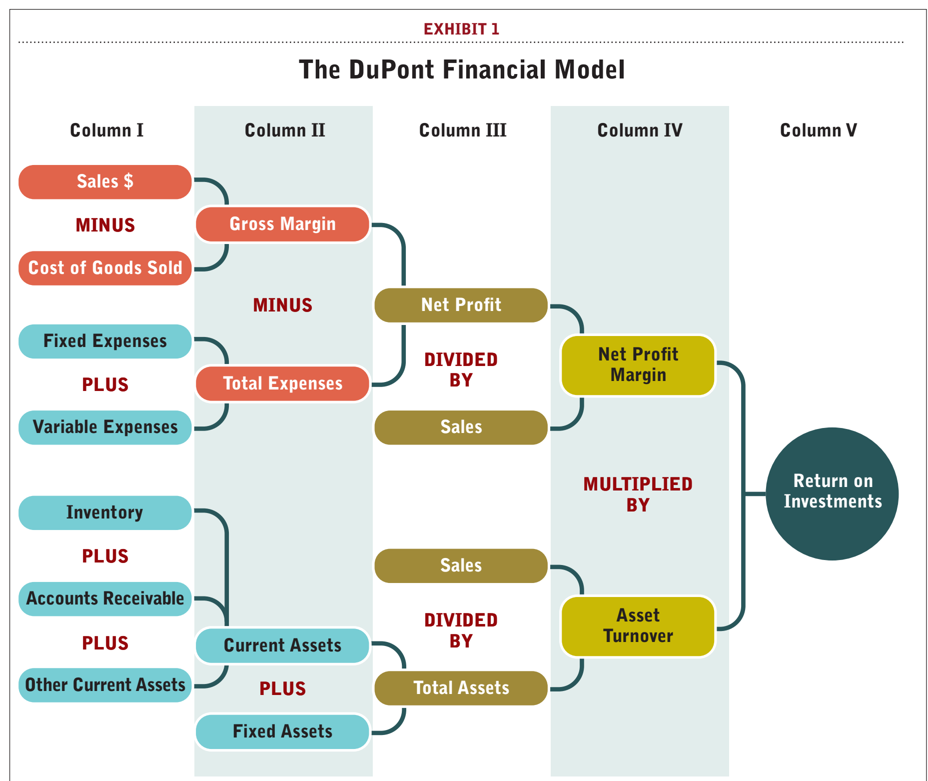
When we run supply chains in the context of the enterprise's performance, we are invited to a seat at the grown-up's table. This represents the coming of age in the corporate structure.

Mastering Relationships

Supply chain professionals must become masters of something they probably never studied in school: relationship management. We have so many interactions to manage today: suppliers, customers, service providers, consultants. And those are just on the outside. We also have deep and wide relationships *within* our organizations—internal customers, sales and marketing, legal, real estate, IT, finance and accounting, C-Level officers, and sometimes even board members. And, let's not for-

EXHIBIT 1

The DuPont Financial Model



get governmental relationships at federal, state, and local levels.

Are business relationships in general and supply chain relationships in particular, different from just plain "relationships?" How do we initiate them? What keeps them going after the first blush of infatuation? Are they all that important?

In the last century, one could have made the argument that relationships didn't matter all that much. We operated in siloes within the organization. Outside, we had transactional, often adversarial, dealings. But today, we have entered the Era of Collaboration in supply chain management, or at least that's what the experts tell us. But we submit that collaboration without the foundation of a sound business relationship is extremely difficult. Sustainable collaboration is not simply about "making nice" with customers and suppliers. Rather, it's built on a foundation of disciplined and rigorous practices and processes designed to foster win-win behavior over long periods of time.

The mantra that supply chains compete against other supply chains can be turned from slogan to reality through thoughtful relationship management. However, this is not about traditional sales/purchasing feel-good adventures with golf and drinks, dinner and drinks, or drinks and drinks. Such "relationships" are superficial, transient, and fragile.

Neither is it necessarily about "partnerships." A true partnership has attributes of high trust, close communications, shared values, open books, common objectives, and mutual benefit. So while honesty, courtesy, and clear communications should be part of any business relationship, these qualities do not necessarily add up to a partnership.

This holds true for both suppliers and customers. The secret to figuring out where to invest in deeper relationships lies in hard work, constant maintenance, and frequent re-evaluation. Both customers (key accounts) and suppliers (partners) must be selected on the basis of a structured analysis of mission-criticality, future prospects, alternative suppliers or customers, and overall business value.

This entire process of relationship building is arduous, but vital. We've observed seven building blocks that lead to a successful outcome:

1. A chemistry of shared values and compatibility.
2. Close attention and frequent feedback.
3. Belief in and commitment to the process and concept of the relationship.
4. Continuous improvement—*kaizen*—in all aspects.
5. No assumptions; nothing taken for granted.
6. Recognition of the other party's vulnerabilities.
7. An investment perspective vs. a cost mentality.

Strategy and Planning

The last two "new" fundamentals are the closely related activities of strategy and planning. Supply chain professionals today need to be proficient in both.

Strategy provides the "why" behind the "what" of supply chain operations. Many managers fall into the activity trap. They get so involved in *doing* that they overlook the strategic issues that should be the drivers of their actions. Supply chain professionals need to understand that difference between tactics and strategy. Tactical decisions are the process of doing things right; strategic decisions are doing the right things. In football, blocking and tackling are the tactics, and the game plan is the strategy. In military life, the battle plan determines the tactics while the war plan lays out the overarching strategy. As C.L. Dodgson (aka Lewis Carroll) observed in *Alice in Wonderland*: "If you don't know where you're going, then any road will take you there."

One of our greatest shortfalls as a profession has been the failure to learn and operate within the CEO's frame of reference. In thinking about the "new basics" of our work, we must address this gap immediately.

There are six questions that should be asked in defining your organization's strategy:

1. What business are we *really* in?
2. Who are our preferred customers?
3. What is our "special magic?"
4. What do our customers think of us?
5. How will we survive?
6. What is our culture?

In addressing the first question, consider that the answer may not be as obvious as it may seem. Southwest Airlines, for example, believes that its real business is not air travel but rather customer service. So if our real business is customer service, we must have exceptional customer-centric processes that distinguish among customer classes and types and reflect an investment (long term) perspective rather than a transient cost viewpoint. For supply chain executives, the main point is to support

the business objective—whatever it is—in all activities and programs.

Preferred customers are those that offer the best business relationship over the long term. For these customers, we must have tailored products, service levels, and processes that encourage them to do business with us. (For the less-desirable customers on the other hand, we should not offer anywhere near that same level of encouragement.)

The "special magic" might be service levels, innovative design, flexibility, customer friendly processes—any number of differentiators. In SCM, we need processes, technology, and attitude that supports these differentiators. Companies that believe they have a special magic will decline to engage in commodity marketing. The customer who asks about price before learning about your services more likely than not is a commodity buyer.

No matter how well we are doing in our own minds, it is vital to test whether customers see us the same way. An important part of this involves assessing whether our SCM planning and execution processes are delivering successfully against our corporate strategies. We can do a certain amount of this internally, but the acid test is to have an independent outside organization conduct studies and assessments. The next step is to do whatever redesign and technology reinvestments are needed to have customer assessments reflect our intentions.

Survival is pure and simple the end objective of risk mitigation and management. In the supply chain context, we must have capacity, technology, processes, production facilities, and supplier arrangements that promote business continuity. Even momentary failures can undermine the foundation of a business, and the supply chain's ability to continue to execute against corporate objectives.

Culture is a matter of making sure that the values of the enterprise are preserved and strengthened within the supply chain organization. Gaps and mismatches can easily weaken the strength of customer and supplier relationships that have been built on a strong foundation. If SCM is not walking the corporate walk, key supply chain partners may begin to question in what other respects the enterprise might not be what it seems—or pretends—to be. The best writing we have seen on this topic is Harvard Business School Professor Jim Heskett's 2012 book, *The Culture Cycle*.

In addition to working on his or her strategy skills, the supply chain executive needs to be a skillful planner—another new basic skill to be developed. Unfortunately, we have historically been perceived as problem solvers, fixers, and "deliverers." Your boss may not associate your job with strategy and planning; your challenge is to change that perception. You should be concerned about finding enough competent labor to handle projected volumes—not just next month but in 2016. You should be thinking about how much warehouse space and transportation capacity your company needs over the long term. Think carefully about the technology resources needed to keep your supply chain competitive for the next five years. Computer software is always on the list, but also consider storage and handling equipment as well as order selection technology.

In honing your planning competency, consider the strategic questions that are likely keeping your boss awake at night:

- What are the megatrends in our industry?
- What changes are contemplated by our largest customers?
- How, where, and when will our company develop new markets?
- What are our competitors doing?
- Where are we vulnerable?
- What is our most critical issue?

Finally, you need to clearly understand the main business goal of your company. Is it earnings, volume, or market share?

Answering these many questions is the best way we know of to demonstrate that strategy and planning are critical parts of your work life. And be proactive—don't simply react to mandates from above.

An Exciting Space

As always, there is more.

But the objective of this article is to illustrate the scope and range of today's enablers of success that go far beyond what we would have imagined a few short years ago as part of the supply chain manager's mandate. Developing competency in the new fundamentals of supply chain management is a daunting task, we know. But it's also a major part of what makes our profession the most exciting place to be now—and into the future. Good luck!

How to Find, Maintain, and Motivate Top Talent

By Mark Trowbridge

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For many supply chain executives, the temptation is to reach for new tools and technology to deliver the solutions they need. But the real leaders are rediscovering the value of something more elemental: the ability to attract, develop, and retain top-performing professionals is the real horsepower that drives results. Here are some core talent management techniques that set the winners apart.

Business leaders have long recognized that talented staff members are the true horsepower propelling their operations. Industrialist Andrew Carnegie once observed, "Take away my people, but leave my factories, and soon grass will grow on the factory floors. Take away my factories, but leave my people, and soon we will have a new and better factory."

One of the greatest challenges for chief procurement officers, directors, and managers continues to be how to attract, develop, and retain top-performing supply chain talent. This challenge has long been recognized, of course, but it has attracted renewed attention in recent years in several studies and surveys performed by supply management research groups, trade associations, and consulting firms.[1]

To meet this challenge, many of the supply chain executives with whom my colleagues and I consult are re-orienting their business priorities to focus greater attention upon the human resources they manage. In this article, we'll explore some of the techniques that innovative SCM leaders are using to recruit, motivate, and retain top performers.

A "Perfect Storm" for Talent

Several factors have converged to create a "perfect storm," which is reducing the availability of the best supply chain performers—materials management and logistics personnel, for sure, and procurement professionals in particular. These performance-limiting factors include the following:

1. Skilled Contributors Are Leaving the Workforce. The "Baby Boomers," born in the decade after World War II, are now aging into retirement. In the United States alone, it's estimated that each day, 10,000 more people are retiring from the corporate workforce than are joining it. In supply chain environments, this means that many of the most-experienced CPOs,

on supplier-provided production inputs, capital investments, and discretionary GAO procurements. *A Key Issues Study* by the Hackett Group and Ariba (sponsored by the Institute for Supply Management) called this trend "the jobless recovery" and predicted that supply management groups would need to adjust to "the new normal."

3. Reluctant Mobility by Top Performers. The truth is, many in the corporate workforce are waiting for the global economy's other shoe to drop. Japan and much of Europe[3] have re-entered recessionary waters, and the United States experienced negative GDP growth in the last quarter of 2012. Other areas of the world are watching. With such continuing uncertainty about the future of the economy, many of those in secure SCM positions with stable companies are unwilling to take the chance of entertaining offers from other companies. Candidate timidity is a challenge that my colleagues and I have had to increasingly work around as we help companies recruit new supply chain talent.

4. Fewer SCM Professionals Are Being Asked to Do Significantly More. Many of the readers of this article can personally attest to the fact that they are being asked to do significantly more, as the responsibilities of multiple positions have been condensed and loaded onto fewer shoulders. Many companies are also flattening management layers by eliminating supervisory positions that used to separate senior managers from sole contributors. Some of this increased productivity has been made possible through the better use of advanced SCM technology tools. But the increased responsibilities and pressures now being imposed upon the "best" professionals in the workforce have (1) decreased their capacity to be agile and nimble, (2) forced greater attention onto tactical rather than strategic matters; and (3)

directors, managers, sourcing leaders, and logistics specialists are quickly disappearing from the workplace. Studies indicate that, typically, their replacements lack the depth of expertise and experience of their departing predecessors.[2]

The severity of this factor has been partially mitigated by high unemployment levels in the 30 most industrialized countries; today, that figure stands at around 7.9 percent in the U.S. and 11.9 percent in the Eurozone. But the overall unemployment levels in most domestic economies include "non-professional" levels of personnel. In most economies, *management* staffing levels, like those typical of today's supply chain leaders, show unemployment rates of less than 3 percent.

2. Fewer SCM Staff Positions Are Available Post-Recession. When the global recession began in 2008, companies began to reduce their staff levels as revenues declined. This affected procurement and supply chain operations even more deeply because their staff reductions were also tied to reduced expenditures

increased the pressure on top performers to bear greater responsibilities. These pressures are pushing many senior procurement and supply chain professionals out of the workplace earlier than was typical in past decades.

So, with the talent storm swirling around them, what are some methods that can help supply chain leaders navigate through and around the challenges? The remainder of this article will discuss some "out of the box" techniques that companies are using to find, retain, and motivate superior supply chain talent.

Techniques to Find Top Talent

Even in normal staffing conditions, finding talented supply management professionals is more difficult than recruiting many other types of corporate personnel. Education, work experience, personality, and core job skills are basic qualifiers, of course. But supply management professionals often need unique experience to fit the requirements of the typical positions opening in today's environment.

Several factors have converged to create a "perfect storm," which is reducing the availability of the best supply chain performers.

For example, strategic sourcing personnel not only need a certain number of years of progressive experience, they also need proven expertise in sourcing the unique spend categories required by the prospective employer. A person who has procured domestic packaging materials for the last 10 years is unlikely to be the candidate you'd choose to lead an outsourcing initiative to move call center services to a supplier in a low cost country. Here are four proven techniques that deserve more attention:

Lateral Transfer of a Subject Matter Expert

Sometimes we can laterally transfer a subject matter expert into a supply management role and teach them the SCM skills they need to succeed. Years ago, I directed key sourcing operations for one of the world's largest financial services enterprises. The executive team asked our group to expand our sourcing activities to include the challenging category of human resources benefits in support of a 200,000-person employee base. The first category manager I hired was someone quite skilled in contracting for benefits services—from the sales side. She had handled complex, high-value negotiations on behalf of several top health benefits providers. We surrounded this sales professional with our team of strategic sourcing experts, and coached her in procurement best practices. That hiring decision was one of the best I ever made, and secured access to some very complex expenditure categories where our team was able to capture significant savings.

Retention of Departing Employees

Subject to the local employment laws, some SCM groups are creatively lengthening the careers of retirement-age employees. This can be done by bringing those persons back for key project work, granting ongoing compensation for part-time support, or other creative means.

"It's Not Just What You Know, It's Who You Know"

These days, there are many tools that an employer can use to find qualified staff—from working through social media to advertising on key job search sites. But one of the top characteristics of successful job candidates is that they previously knew the hiring director or manager personally. New senior-level managers often reach out to past colleagues to build new teams because they know and trust top performers.

But they shouldn't stop there. Consider the concept set forth in Six Degrees of Separation, first espoused by Frigyes Karinthy, that everyone in the world is just six relationships away from every other person. Try asking your team of direct reports, "Do any of you know anyone with the skills we need for this senior buyer position?" You may be surprised that they know some top-quality candidates from past employment situations or current networking relationships.

One caveat, though: true networking is not running an advertisement on sites like LinkedIn or Monster, although those tools can often be helpful. More than half of all responses to job advertisements in today's digital arena are from respondents who do not meet the core requirements stated in the advertisement. And of those resumes that seem initially to meet core qualifications, 35 percent or more contain a factual discrepancy.[4]

True networking involves using strong business relationships to find qualified candidates. My colleagues and I are regularly asked to find skilled candidates through our network of more than 11,000 supply management practitioners. For example, one of the world's largest technology manufacturers successfully taps into our network of colleagues to find procurement construction contract managers to conduct activities related to their building of clean-room silicon chip manufacturing

plants—a highly specialized field if ever there was one.

Clear and Carefully Written Position Descriptions
Companies spend thousands of dollars running job advertisements. But if the position is not described clearly and in ways that attract potential candidates, much of that spending can be wasted. Last year, our firm was asked by a large energy conglomerate to recruit for them a senior capital resource leader. The firm's human resources (HR) group had run extensive advertisements for several months using this title, without identifying a single qualified candidate. After reading the energy company's diffuse five-page job description for the position, we streamlined it to a one-page write-up that used the more descriptive job title, "Senior Supplier Manager-Capital Construction Projects." We then reached out to our network with the new position description, and within several weeks found a well-qualified candidate who got the job.

Techniques to Develop Staff Members

Locating and hiring talented SCM professionals is just part of the talent equation. It is just as important to improve the capabilities of current staff. Here are some techniques that supply chain leaders are revisiting these days:

Raise the Bar for Staff Appraisals
The organizations that are the best at developing their most talented staff members are usually those which set challenging objectives for those personnel. But, just as high jumpers won't do better if they never increase the height of the bar, so employees won't grow in their capabilities if they aren't challenged to achieve more. Supply management leaders need to adjust their employees' goals and objectives upward each year that those employees are in a particular position. In HR circles, the expression "measure up or out" reflects the act of systematically enhancing organization-wide performance. Crucially, that expression also links to the need to be willing to remove non-performing employees from important positions—something that many managers are reluctant to do. Peter Drucker has summed it up well: "Executives owe it to the organization and to their fellow workers not to tolerate nonperforming individuals in important jobs."

Assess Staff Competency to Develop a Baseline for Improvement
It has long been a best practice for SCM groups to assess the competency of their personnel, in order to create a baseline for professional development. Studies performed by groups such as the Corporate Executive Board's Procurement Council[5] and the Center for Advanced Purchasing Studies (CAPS)[6] have established skills assessments as an important first step in improving competency.

But the methodology of skills assessment can vary based upon what needs to be measured.

True networking is not running an advertisement on sites like LinkedIn or Monster. It involves using strong business relationships to find qualified candidates.

Many companies have relied on traditional assessment tools such as skills self-assessment surveys, in which employees are asked to rate their capabilities against a variety of competencies that are applicable to their roles. For example, they might be asked, *"On a scale of 1 to 10, please assess your negotiation skills."* Obviously, this approach is quite subjective, and the companies that typically administer such surveys have attempted to incorporate additional data points by having each person's direct manager also complete the survey. But the scoring of such assessments is still time-intensive and costly. And the results are still primarily based on employees' subjective responses.

A second method of behavioral skills assessment asks employees what they actually do in their jobs. For example, one well-known behavioral assessment asks, *"How many times have you conducted a reverse auction in the last month?"* The obvious problem here, however, is that some employees don't conduct reverse auctions (our example) as part of their responsibilities. Moreover, it is quite costly to tailor a behavioral assessment for every SCM job description, and failure to do so will skew the results. Although this approach has been automated by some providers, it can still mislead a SCM group into making unnecessary training investments if it is not tailored for each person's unique role.

A third assessment method is becoming much more popular, not least because it is both measurable and cost-effective to administer. This method—knowledge-based supply management competency skills testing—is

EXHIBIT 1

Sample Report Card for Supply Management Skills Diagnostic

Competency Category	Percent Correct	Date Completed	Correct Answers	Total Questions	Participant Score
Demand Management	100%	1/27/2013	114	143	80%
Cost Modeling	100%				
Supplier Evaluation	100%				
Business Financial Knowledge	100%				
Group Problem Solving	100%				
Coaching and Feedback	100%				
Supply Chain Integration	89%				
Communications–Written	88%				
Specification Management	86%				
Sourcing Strategy Development	80%				
Supplier Relationship Management	80%				
Team Building	75%				
Customer Relationship Management	75%				
Managing Resistance to Change	75%				
Effective Meeting Management	75%				
Contract Management	73%				
Project Management	71%				
Negotiations	70%				
Spend Analysis	67%				
Market Analysis	67%				
Effective Use of Time	67%				
Customer Service	50%				
Inventory Management	40%				

Title: Category Manager

This employee shows strong to excellent knowledge base in many procurement competency areas, as well as general business knowledge.

For her current areas of responsibility, she has development opportunities in customer (internal) service, contract management, project management, negotiations, spend analysis, and market analysis. Time management is also a general business skill which may be enhanced.

Source: Strategic Procurement Solutions, LLC

very quantitative in its application. It comprises groups of fact-based assessment questions that test an employee's understanding of best practices related to a list of competencies applicable to their jobs. (See Exhibit 1)

We typically use more than 20 competency categories—demand management, negotiations, supplier relationship management, and so on—featuring six to eight questions per competency, ranging from basic complexity to expert. Participants answer each question in every category. The questions are modeled after those that a professional might face in a certification testing environment (multiple choice or true/false). For instance, in the supplier evaluation category, the question might ask which of several options presents a major obstacle when developing business relationships with foreign sources of supply, with the choices being: (a) communications; (b) exchange-rate fluctuations; (c) cultural differences; (d) long lead times; or (e) all of the above. Many leading SCM groups are now moving to this type of skills diagnostic because of its accuracy, cost, and applicability.

Train Staff Members in Core Competencies

In a benchmark study several years ago that identified the differentiating characteristics of world-class supply chain organizations, the CAPS Research organization said the following: "World-class organizations have formal programs in place that invest in the training and development of their supply professionals."[7] Professional development training can take several forms, which should be chosen for their applicability to the needs identified in the skills testing mentioned above:

- *Offsite training programs or conferences*—When fewer than 10 employees need training in a particular topic, offsite training can be valuable. But a downside of offsite "retail" training programs or conferences is that the content will not be tailored to your particular organization. Moreover, the cost of having employees travel to the training location quickly makes it more expensive than the alternatives.
- *Onsite training workshops*—It is surprisingly cost-effective to have a quality training program presented onsite at your locations. The cost breakeven point that our firm uses to help clients decide whether to have training performed onsite is just 10 employees. Onsite training is particularly effective for content that is delivered interactively, using team exercises and role-playing events, for instance. Such content is usually strategic in concept, leading to a shift of perspective from the participants. I have found onsite training to be the single best method of instruction utilized today by leading SCM organizations.
- *Web based training*—Webinars can deliver fact-based didactic training cost-effectively to geographically diverse employee groups. This mode of training is par-

ticularly beneficial where minimal teaming interaction is required. The audience primarily listens as the presenter shares fact-based content. However, studies show that participants' attention can wane quickly, rarely lasting longer than 60 minutes. We have found that this form of training is most effective when used in a "lunch and learn" format.

• *Job rotations*—Job rotations can be enormously beneficial. My first procurement job, right out of university, began with two weeks spent in a manufacturing company's shipping, receiving, and inventory operations. The knowledge I learned in those early areas made my later career as a buyer in procurement all the more effective.

• *Mentoring*—Mentoring by a company executive is a helpful training tool for top SCM talent. This is especially helpful today because of the growing need for SCM professionals to influence change across the organization. Bringing senior-level perspective into a SCM professional's instruction can have great benefit in demonstrating and proving the value of the "soft" skills of influence and persuasion.

• *Professional certifications*—Earning professional certifications can enhance employees' foundational skills. Certifications such as CPSM (from the Institute for Supply Management), CPIM (from APICS), or MCIPS (from the Chartered Institute of Purchasing & Supply) are all prominent certifications.

Techniques to Retain Key Staff Members

Training and development certainly play important roles in improving the effectiveness of SCM professionals. These activities can also help retain valued employees. But there is much more that can be done to keep the most talented contributors on board. Here are some of the retention practices to which SCM leaders are paying particular attention:

Give Everyone Something Meaningful to Do. Unfortunately, too many SCM employees go to work without feeling that they are making a difference. They are paid for their work, and many are regularly thanked by their leaders for making a contribution. But if they don't feel they are doing something that has meaning, even the most talented staff members eventually begin looking for other opportunities.

Recently, I interviewed a candidate for a client company's CPO position. We progressed through the standard interview questions, and I then asked why she would consider leaving her current employer. The candidate answered frankly that her existing compensation package was excellent (in fact, it was slightly above that available for the open position), but that due to a recent company sell-off, her scope of responsibility had declined and there wasn't much challenging to work on.

It's vital for supply chain managers to put themselves in each staff member's shoes, trying to see their job responsibilities from their perspectives. Managers need to ask themselves whether their employees' jobs are fundamentally interesting. Are their SCM professionals being entrusted to deliver results? Are they truly contributing value to the accomplishment of the vision? If the answer to such questions is "no," then managers need to spend some time with each person to enrich their roles.

Reward Extraordinary Performance. Top supply management groups are increasingly linking employee compensation to performance. For example, a bonus for top sourcing personnel that is tied to achieved cost savings can be a powerful motivator. Average employee performance should be compensated only with cost-of-living increases; otherwise, all employees are eventually discouraged from trying to achieve remarkable results.[8]

Failure to focus attention on talent management is a mistake that SCM leaders cannot afford to make. Most senior leaders have not neglected this area of their organizational performance, but rather have underestimated the benefits that additional attention will provide. Adding some of the techniques in this article will increase the horsepower behind a successful supply chain.

Endnotes

1 Key resources include: *Anatomy of a World Class Procurement Organization*, Corporate Executive Board Procurement Council, 2003; *2010 Key Issues Report by the Hackett Group and Ariba*, sponsored by the Institute for Supply Management (ISM); and *Critical Issues Report – Supply Organizational Performance,* CAPS Research, 2003.

2 *Supply Management Development & Retention Report*, CAPS Research, 2009

3 *Key Eurozone Metrics*, January 2013, by Eurostat (the statistical office of the European Union).

4 "Top 5 Lies," *Fortune Magazine*, 2013

5 *Structuring Effective Procurement Training Programs*, Corporate Executive Board Procurement Council, 2004.

6 *Crucial Issues Report-Supply Organization Performance*, CAPS Research, 2003.

7 Ibid.

8 "Building Superheroes," *Inside Supply Management*, Mark Trowbridge, 2011

A More Mission-Critical

By Herb Schul

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In just the past few years, the role of the chief procurement officer (CPO) has changed dramatically. Beginning with the financial crisis in 2008 and 2009, through to the inevitable but volatile recovery that began in 2010, CPOs who have successfully dealt with shifting markets, economic turmoil, and general uncertainty have given their companies a big edge.

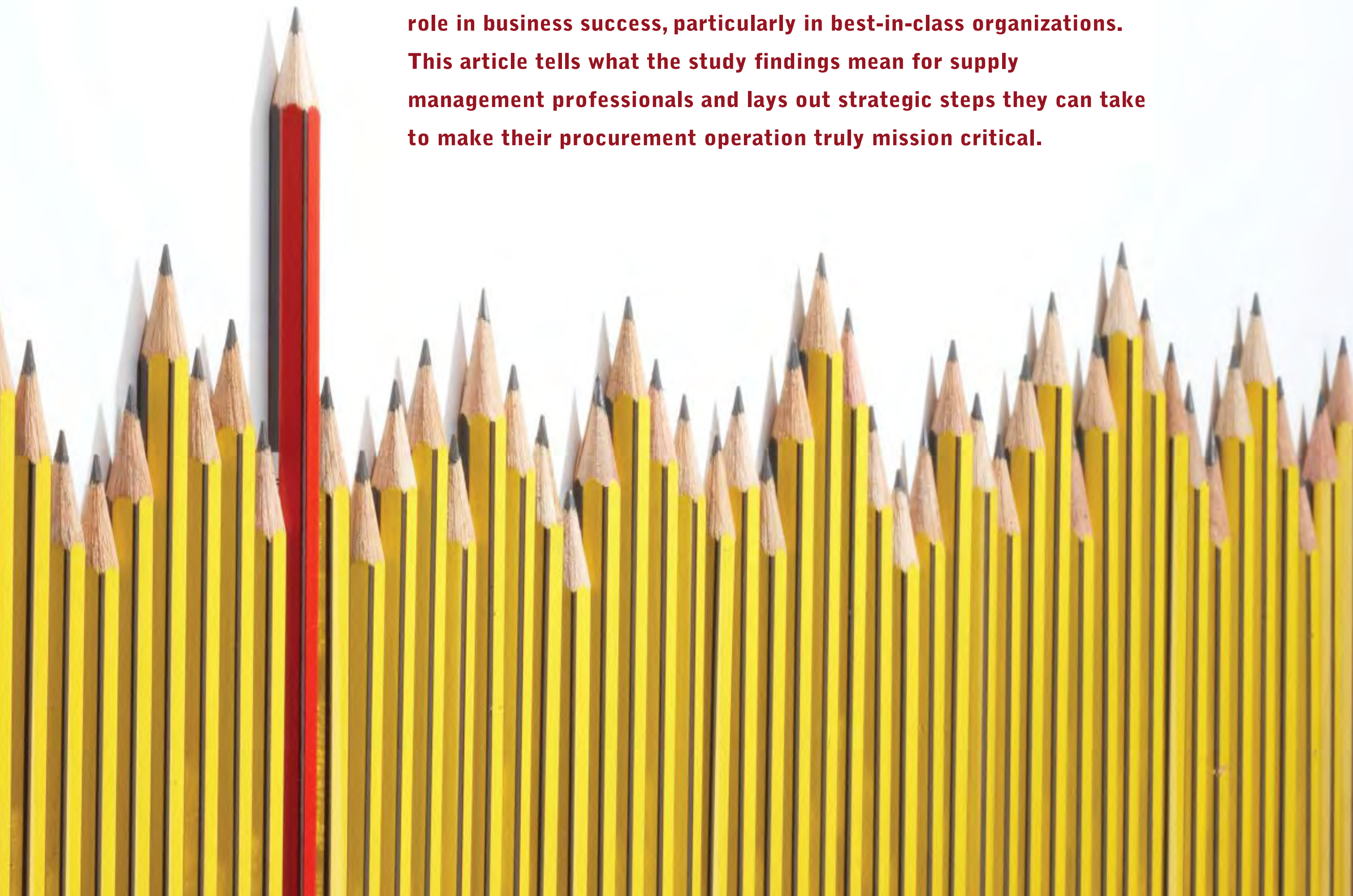
Under challenging economic conditions, sharp CPOs and procurement executives played a significant role in cutting costs. But equally important is the role they have played by responding to a rebounding economy. The best CPOs are helping to strategically guide growth in ways that are clearly contributing to the bottom line.

As a result, the CPO has been elevated to a role on equal footing to the rest of the C-suite, and their organizations are increasing their influence on business process owners and key stakeholders. Successful procurement strategies have focused C-suite attention on the overall importance of the function, and have led to more visibility—and influence—for the CPO. The best CPOs now have greater responsibility and control over business operations, including more active roles in crafting business strategy and initiatives.

Of course, not all CPOs are seen as rising stars in their enterprises; they are still viewed as foot soldiers in the battle against rising costs. But companies that still have this view are missing opportunities, and would do

Role for PROCUREMENT

A new CPO report from Ardent Partners and Ernst & Young confirms that the procurement function is playing an increasingly important role in business success, particularly in best-in-class organizations. This article tells what the study findings mean for supply management professionals and lays out strategic steps they can take to make their procurement operation truly mission critical.



well to study the best practices of leading procurement functions.

A new study from Ardent Partners, *CPO Rising 2012: Keeping Score*, examines the evolution of the CPO and the procurement function, and identifies strategies for success. Written by Andrew Bartolini, Ardent's chief research officer, and sponsored by Ernst & Young, the research is based on the experience, performance, and perspectives of more than 270 CPOs and other procurement executives. This article looks at some of the report's key findings.

The New CPO

The study focuses on the continuing evolution of the role of the CPO, and the level of engagement and alignment with a company's business objectives. It also examines the motivations and internal and external drivers that are shaping procurement leaders' priorities today and in the future.

The research revealed that there are essentially three levels of CPOs: a top collaborator (12 percent) or influencer (18 percent); a mid-level supporter (36 percent); and a reactive (30 percent) or siloed manager (4 percent). This is a promising development, but clearly there is room for improvement.

A senior director of supply management at a global pharmaceutical company explained why some companies still lag: "One of the challenges that the procurement function continues to face is that there is no unified definition of what procurement does. In many companies, procurement is simply a collection of processes that the group manages. It becomes difficult to explain or normalize the role to all stakeholders."

On the other hand, there are many CPOs who can describe the role in a single sentence. For example, a corporate director of global sourcing and supply in the sustainable energy industry says, "We are charged with risk rationalization while trying to drive cost out of the product and manage the challenges of local markets."

While the Ardent researchers describe the role of the CPO as a "work in progress," the pressure, priorities, and plans of many CPOs in 2012 were quite similar to those captured 18 months earlier in a 2011 report. "Finding more savings" remains the CPOs top business priority, according to 65 percent of those surveyed. "Improving collaboration," both internal (43 percent) and external (25 percent), and "sourcing more" (33 percent) also remain at the top of the list. Looking ahead, the study found that over the next three years, CPOs are focused on savings first, and then improving processes and managing people.

The report notes that one of the sharpest capabilities of procurement departments generally is strategic sourcing. Many strategic sourcing operations are highly sophisticated and extremely efficient in delivering value and cost savings to their organizations. The report quotes a sourcing leader in the energy industry: "We extensively work on what is known as 'demand aggregation' for our Tier 2 and Tier 3 suppliers. We try to see if there are opportunities to strategically position an aggregator of materials, components, tooling and the like. We will work with an aggregator, and review product drawings to define quantity and type of materials/components." So even where sourcing capabilities are strong, organizations must continue to improve their overall category management capabilities and maturity.

The good news is that top CPOs have earned a seat at the table in the C-suite and are viewed as critical to the enterprise. With nearly one in five CPOs reporting to either the CEO or president of their company, the objectives of procurement are increasingly linked to leadership's strategic plans. A CPO of a global pharmaceutical company based in India reinforced this point, saying, "Our new CEO is in the process of rolling out a new strategic plan, and procurement will be a big part of it." However, while many CPOs have made a great deal of progress compared to their role five or ten years ago, there is still work to be done.

Fortunately, there are a number of trends that will continue to bring the CPO and CEO closer together. One theme cited by Ardent is continued globalization, which has driven competition and spurred innovation, while also introducing greater complexity across the supply chain. Whether a company is sourcing product components from global suppliers, outsourcing a service that is based in a lower-cost country, or working to align demand and supply capabilities with key growth plans, the management team will increasingly rely on procurement to understand global market trends, category specific considerations, and risk mitigation strategies.

The State of Procurement Today

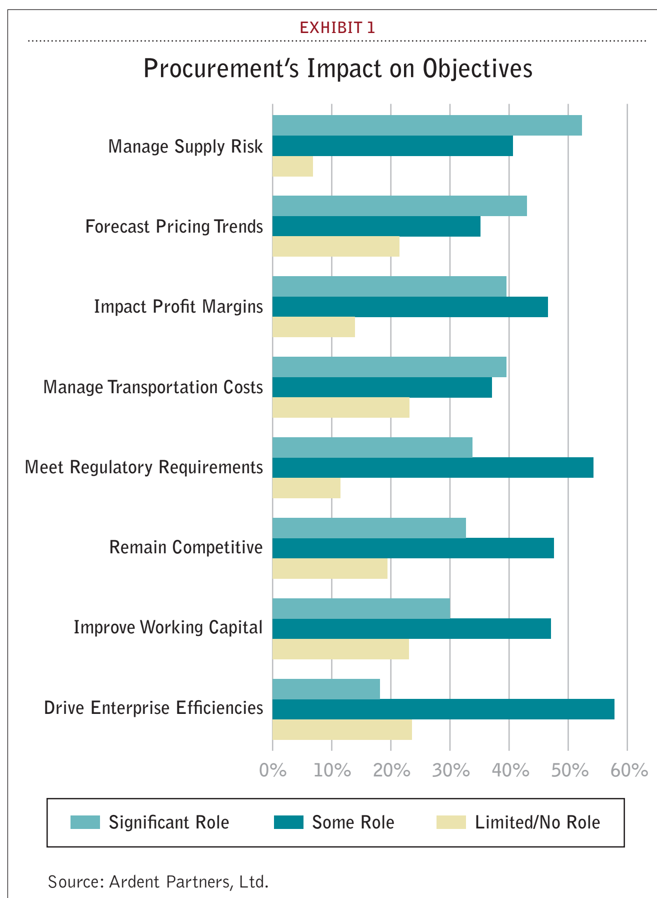
The role of the CPO and the procurement function, while still evolving, is stronger today than ever in many companies. This recognition is extending outside the organization. Wall Street securities analysts, for example, increasingly examine supply chains and supplier relationships when evaluating a company's business model, making buy and sell recommendations, and assessing corporate strategy.

When asked to recommend a desirable CEO profile for Lowe's, Inc., Laura Champine, an analyst for

Canaccord Financial Inc., said: "Either a merchant or a supply chain/operations-focused executive would be a good fit." Champine's view is not unique. More and more companies believe that supply chain management experience is a valuable asset for senior executives. On the entry-level side of the procurement profession, more undergraduates are receiving exposure to procurement and supply chain issues in the classroom, and in the business world, before graduation, allowing more strategic impact earlier in their career path.

Many CPOs acknowledge that it can be difficult to manage global supply chains and supply risk issues, and they are implementing a number of strategies to address these issues. According to Ardent, the leading strategies cited by CPOs include:

- Greater supplier collaboration to reduce risk (62 percent).
- Improving supplier communication (54 percent).
- Increasing supplier meetings (51 percent).
- Improving supplier planning and forecasting (46 percent).
- Improving supplier scorecarding and performance measurement capabilities (44 percent).



Source: Ardent Partners, Ltd.

The Impact of Procurement

C-level reporting relationships and higher levels of engagement and alignment by CPOs are certainly healthy indicators of the state of the profession today, but procurement's impact on the bottom line underscores the value of the discipline in many companies. Ardent examined a series of enterprise objectives where at least 75 percent of all procurement organizations are making a real impact, defined as areas where procurement either plays a "significant" or "some" role (see Exhibit 1).

Procurement's ability to improve areas such as supply risk (93 percent) and profit margins (86 percent are not surprising because they typically fall within procurement's sweet spot. However, maintaining regulatory compliance (89 percent) and improving working capital (77 percent) suggest that even greater value is being delivered or supported by the procurement team. Helping the enterprise stay competitive (81 percent) is another significant positive for procurement, and one that should be a primary objective of the CPO's strategic plan. While increasing revenues (58 percent) and entering new markets (42 percent) did not reach the top of the list, they are areas where procurement can and does play a valuable role.

Successful CPOs have also developed a set of metrics that help procurement prioritize and focus resources, track and improve performance, and communicate value to the business. "The onus is on the CPO to demonstrate clearly and unequivocally what procurement's value proposition is to finance (and the rest of the company)," John Peterson, CPO of IBM told Ardent. To earn—and/or keep—their seats at the table, CPOs must increasingly deliver and communicate value to the enterprise.

Today, the average procurement department manages just over 60 percent of the total enterprise spend. In most companies, it will take a few more years for the procurement team to gain a full understanding of the spend opportunity. But the trajectory is upward, with year-over-year savings increasing over the past several years. Moreover, Ardent's research shows that for every dollar placed under the management of the procurement function, the average business sees a savings benefit of between 6 percent and 12 percent during the first contract cycle.

Defining Best-in-Class Procurement

Generally, procurement teams that manage more spend report higher savings targets and totals—and that is what organizations should expect as the procurement team's

role grows. However, when looking at best-in-class procurement functions—the 20 percent of departments that manage 85 percent or more of their enterprise's total spend—Ardent found that current savings targets were actually lower than the previous year's savings. This can largely be attributed to market pricing bottoming out, the greatest near-term savings being realized, and inflationary pressures. Lower savings targets also are likely attributable to the relatively high levels of sourcing activity that the best in class have supported over the past three years.

In addition to having a large percentage of spend under management, the best in class deliver superior performance across a range of procurement performance metrics, including target and actual savings, addressable spend that is sourced, spend that is contract compliant, transactions that are contract compliant, contracts stored in a central, searchable repository, and enabled suppliers.

To achieve superior results, best-in-class performers have employed three key levers for success. According to Ardent, these include:

1. People and organizational levers. Best-in-class CPOs are 67 percent more focused on trying to increase the broader business skills of their staff, and are 57 percent more likely to initiate advanced training programs for skills development and technology use. In addition, they are 80 percent more likely to have formal mentoring programs. One of our key clients is focused on leveraging a hybrid approach to its procurement organization in order to meet varying needs to support the company's broader operations in both mature and emerging markets. Companies should consider a hybrid approach because what works in an emerging market doesn't necessarily work in a developed market, and vice versa. Also, by rotating staff through different roles and markets, organizations are able to develop more capable individuals, which help them in their career and positions them to drive more value in the future.

2. Process and control levers. Best-in-class leaders think more holistically about their operations and processes. They are 68 percent more likely to have revamped and improved processes through a formal initiative over the past two years. They also report higher levels of process standardization for strategic sourcing, and tighter linkage of price to price processes and systems. We see our more mature clients leveraging process improvement to drive end-to-end process integration compliance, and analytic capabilities, not just driving efficiency. In order to enable the people shifts, rotation methods, and operating models discussed above, companies need common procurement processes across all facets of the organization. Clients that don't have this in place could lose the chance to run their operations more efficiently and save money.

3. Technology and tools levers. The best-in-class edge begins with having a significantly higher level of visibility into spend. This is accomplished via automated spend analysis, and by leveraging e-procurement systems to a greater degree, capturing a significantly higher percentage of spend, and driving superior compliance. Best-in-class companies are 80 percent more likely to have full visibility into spend, while 90 percent of best-in-class groups have the ability to leverage spend data directly into their sourcing efforts (almost twice the rate of their competitors). Companies are continuing to evaluate and drive integration across their technology and tools portfolio. Among our clients, we have seen this kind of integration provide common information for decision making, as opposed to just a focus on siloed or pocketed excellence or end user satisfaction.

Strategies for Success

As just discussed, best-in-class procurement teams manage more spend to greater effect by standardizing methodologies, taking a holistic approach to their function, and making greater use of technology. Achieving that 85 percent level of spend management can take years, but Ardent identified a number of strategies for success to ensure continuous improvement in procurement programs, regardless of spend under management. They include:

- **Strengthen supplier relationship programs**—Opportunities to spur organizational growth and leverage more value are to be found in nearly all supply chains today. The best-in-class understand these prospects, and are 3.3 times more likely to have a supplier initiative that is focused on innovation and/or performance improvement. They are also twice as likely to have a standardized supplier management process, and three times as likely to have visibility into supplier performance and supply risk issues.

- **Embed staff within the business**—As CPOs

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Get There Faster

The management team will increasingly rely on procurement to understand global market trends, category specific considerations, and risk mitigation strategies.

attempt to win more budget holders and influence more spend, they should leverage their staffs and the relationships they develop by inserting them directly into business operations. It is key that they increase the frequency (and quality) of direct procurement staff interaction with stakeholders while continuing to drive the benefits of a more center-led hybrid operating model.

• **Enhance procurement performance management and spend visibility**— Operational excellence in procurement begins and ends with spend visibility. Only 42 percent of procurement departments truly have spend visibility today. Organizations should invest in automated spend analysis (the returns on these solutions can be quantified) and link the output directly to the sourcing process. If automation is not possible in the near term, companies can invest resources in developing information technology and analytical capabilities to produce spend reports on a regular basis for review and use.

• **Initiate a new compliance campaign**— Market-average compliance rates need to be improved. Ardent estimates that the hard cost of non-compliance ranges between 5 percent and 18 percent of every dollar of off-contract spend. Unless an enterprise is operating without serious controls, the percentage of its on-contract spend should be higher than the percentage of spend under management. Organizations should look to leverage e-procurement systems, begin tracking and reporting non-compliance on a monthly basis, and set goals to increase compliance every quarter.

The report also recommends that procurement and finance work together to develop and implement a CPO Scorecard™ to measure performance. Such a scorecard should include hard financial metrics (including savings and cash flow impact), stakeholder metrics (including internal customer feedback and supplier performance and risk), process and technology metrics (including procurement efficiency and activity metrics), and people and knowledge metrics (including staff competencies, training and retention). The CPO Scorecard should be used to evaluate the performance of the CPO, the procurement team as a whole, and individuals on the procurement staff.

Changing the way the procurement function is measured should change the way the department is managed. The CPO Scorecard can also provide a formal means to validate a department's strategic plan and evaluate its success in executing it. Additionally, the CPO Scorecard can help in communicating procurement's strategic value and vision to the rest of the organization.

Final Thoughts

Many CPOs and procurement and sourcing executives are being asked to take on additional activities while continuing to deliver a smooth running and efficient procurement operation. The pressure to generate savings, manage risk, and deal with increased globalization should be seen as an opportunity to elevate procurement's impact and value within the organization. The question is, how?

When it comes to your procurement operation, the objective should not necessarily be to become best in class across the board. Instead, ask what levers will deliver the most value for you and your organization. For some, focusing on category management may deliver the most value, for others it might be people management strategies that hold the most potential for improvement. The key is to have visibility into your entire operation, what resources you have available, and then decide what lever or levers to pull to deliver maximum value.

The procurement function has made great strides over the past decade, and will likely continue to grow in importance and influence. But there are no guarantees for individual success in a highly competitive global business environment. CPOs and their teams should continue to pursue progressive strategies within their organizations, seek ideas from multiple stakeholders and learn from best-in-class programs. Aligning with the overall goals of the organization, tracking the right metrics, and demonstrating value can and will give more CPOs a seat at the table—which will be to the entire enterprise's benefit.

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REVERSE LOGISTICS: A New Core Competency

By Dale S. Rogers, Ron Lembke, and John Benardino

Companies and their supply chain managers can no longer afford to treat reverse logistics as an afterthought. There is just too much at stake in terms of brand protection, sustainability requirements, and ultimately profitability. In short, reverse logistics needs to become a core competency. The practical insights offered here will help you develop that competency.

Managing product that does not sell, is entering the end of its life, or has been returned due to buyer's remorse is now generally understood to be a critical part of product life cycle management. Yet this has not always been the case. Historically, most of the attention paid to product management has focused on the introductory phase or on the volume-shipping portion of the product life cycle. The leaders have greatly broadened this perspective. They know that the difference between a product's success (and profitability) and failure often depends on how the end of life is managed.

The leaders understand, too, the business importance of taking good care of consumers. They know that customer satisfaction holds the key to long-term success and that enabling them to return products without penalty is a big part of the equation. The practice of customer returns isn't really new (see accompanying sidebar "Sears and JC Penney—Pioneers of Customer Returns,"on page 42), but it has become much more cost-efficient

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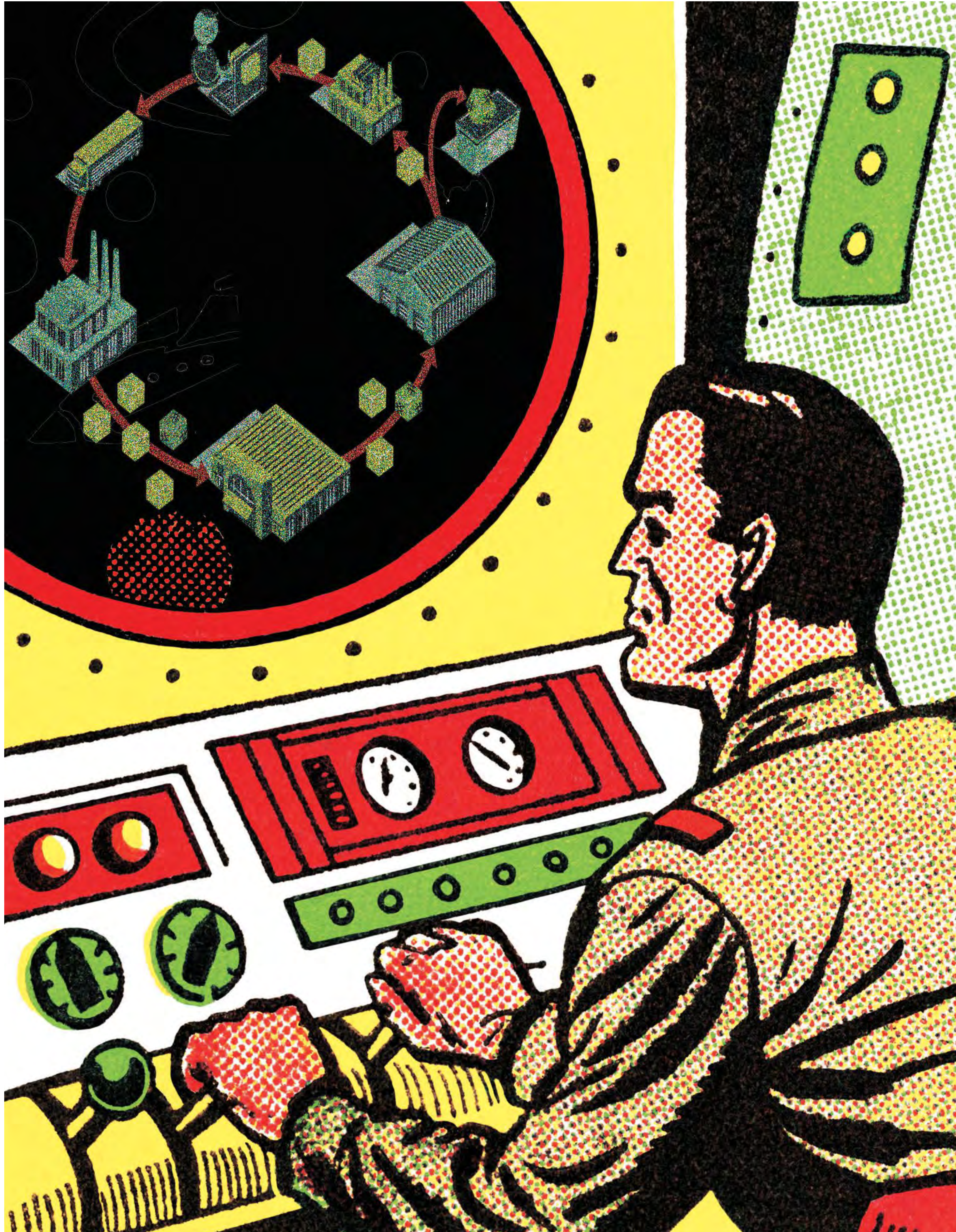


in the top-performing companies.

This article strives to make the case for building an effective reverse logistics program in your organization. It describes the importance of this key component of supply chain management and outlines how reverse logistics differs from forward logistics. We then describe some of the key considerations in building a reverse logistics competency and then list key metrics that need to be put in place. Finally, the article offers some practical steps that readers can take to build momentum for a successful reverse logistics program in their organization.

Reverse Logistics: Important and Different

Companies can no longer afford to treat reverse logistics as an afterthought. It needs to be a core capability within the supply chain organization. For years, most firms paid little attention to returns. That has changed as companies increasingly realize that understanding and properly managing their reverse logistics can not only reduce costs, but also increase revenues. It can also make a huge difference in retaining consumer loyalty and protecting the brand, as we explain more fully below.

Just how big is the opportunity? According to the Reverse Logistics Association, the volume of returns annually is estimated at between $150 and $200 billion at cost. This represents approximately 0.7 percent of GNP and 6 percent of the Census Bureau's figure of $3.5 trillion total U.S. annual retail sales. It has been estimated that supply chain costs associated with reverse logistics average between 7 percent to 10 percent of cost of goods.

Capturing the potential benefits begins by clearly understanding the nature of reverse logistics. First off, it is very different from forward logistics. Retailers and manufacturers design supply chains to quickly and efficiently send a continuous flow of product from production facilities to retailers' shelves. All of the boxes on a pallet are typically identical and stacked in neat rows. They arrive at the distribution center or retail outlet like clockwork.

The reverse flow is different in a number of ways. First, product arrives whenever customers decide to return an unwanted item, or a retailer decides to pull slow-moving product, or a manufacturer institutes a packaging change, or any number of other possible causes. Second, the product is not all in new condition. Third, much of the packaging is damaged or shelf-worn. The end result: the company must look at each individual item and make a decision as to its disposition. Exhibit 1 summarizes these and other differences between forward and reverse logistics.

Drivers of Reverse Logistics

The drivers of reverse logistics policies and practices will differ among organizations, in large part depending on the perceived importance of this activity to the business. In many companies, reverse logistics still is not considered very important—though as we said this is changing. In some organizations, in fact, it is actually viewed as an embarrassment. This could be the case, for example, where merchandisers responsible for buying product that did not sell well to the consumer are in charge of managing those returns. Often, they resist taking the hit of unsold and obsolete merchandise. Because writing down the book value of the slow-moving inventory and moving it to the secondary market is an admission that the purchase was unsuccessful, firms tend to postpone the decision. The products in question end up losing much more of their value than if the decision to liquidate the inventory was made more quickly.

In addition to corporate perceptions, product attributes are a major driver of reverse logistics. The first, and often most important attribute, is the quality of the product being returned. Items that appear to be first quality are more likely to be worth saving that those that

Sears and JCPenney—Pioneers of Customer Returns

The late 19th century saw two of the nation's most historic retailers emerge, Sears and JCPenney. Both evolved from very simple roots to become retail powerhouses. Sears started in a small train station in Minnesota, while JCPenney began as a tiny general store in Kemmerer, Wyoming. Both of these retailers operated on a then-innovative business philosophy: an open, liberal return policies where consumers could bring products back with no penalty.

This innovation, which was designed to increase customer satisfaction, did more than that. It actually reduced consumer risk of shopping at Sears or JCPenney. This meant that their stores were likely to attract a long-term consumer because the risk associated with shopping there was reduced. It was safe to buy something from Sears or JCPenney because the consumer knew that if it didn't function well, or it was the wrong size, or it just didn't work, they could return the product and get their money back.

For these two pioneering retailers, taking back product from consumers was a smart marketing move that over the years consistently translated to business success.

EXHIBIT 1

Differences Between Forward and Reverse Logistics

Forward	Reverse
• Product Quality Uniform	• Product Quality Not Uniform
• Disposition Options Clear	• Disposition Not Clear
• Routing of Product Unambiguous	• Routing of Product Ambiguous
• Forward Distribution Costs More Easily Understandable	• Reverse Costs Less Understandable
• Pricing of Product Uniform	• Pricing of Product Not Uniform
• Inventory Management Consistent	• Inventory Management Not Consistent
• Product Life Cycle Manageable	• Product Lifecycle Less Manageable
• Financial Management Issues Clearer	• Financial Management Issues Unclear
• Negotiation Between Parties More Straightforward	• Negotiation Less Straightforward
• Type of Customer Easy to Identify and Market to	• Type of Customer Difficult to Identify and Market to
• Visibility Of Process More Transparent	• Visibility of Process Less Transparent

Adapted from: Tibben-Lembke, R. S., & Rogers, D. S. (2002). "Differences between forward and reverse logistics in a retail environment," Supply Chain Management: An International Journal.

are not. Product size is another attribute that typically determines how return product is handled. It doesn't make sense to pay high-cost transportation to return a damaged item that is cumbersome to handle. It's not a good idea to transport a large item 1,000 miles and then throw it away—whatever the prevailing diesel costs may be.

The position in the product lifecycle is another attribute that drives returns management strategy and tactics. Disposition of a mature product that is nearing the end of its lifecycle will likely differ from that of successful new product introduction. Another important attribute is price point. If the product is low cost, then a lengthy decision process around its disposition is counterproductive.

A fifth driver of reverse logistics is the company's "go-to-market" strategy. This usually relates to the channels the company uses to connect with its customers. It also incorporates supply chain and marketing processes that guide how the company interacts with customers. Some go-to-market strategies will dictate how the firm should handle product returns. For example, it could be that market cannibalization is a major concern. In such cases, the final product disposition would have to be routed to a distant secondary market offshore, thereby alleviating that concern.

Finally, there are the financial drivers that come into play. A major one is inventory turns. Companies make an investment in inventory and once that inventory is sold, it moves into the cost of goods sold (COGS) category. When items are returned, they enter back into inventory—and the transaction is reversed. This reduces the value of the inventory turns metric, which is typically used by management as a measure of the health of inventory management within the firm.

The seller needs to find an appropriate secondary market that will speed up the time in which some value can be gained from the inventory they had hoped to sell. As is the case with forward logistics, financial flows typically determine the structure of the reverse logistics flow. One recurring problem is that managers are often measured on metrics that sub-optimize the structure of the reverse logistics flow.

The Management Mantra: Simplify

With an understanding of the nature and drivers of reverse logistics, you can begin to more effectively manage this activity. The guiding principle here is simplification. As every good supply chain manager knows, the fewer times you touch an item—and the shorter and cleaner the process—the better the result. This certainly holds true in reverse logistics. Because much of this product is low value, it's especially important to simplify the process, shorten the time and distance to ultimate disposition, and eliminate unnecessary touches.

Reverse logistics product has likely spent a great deal of time moving through the forward and reverse systems. The longer it continues to stay in the system, the more its value is likely to decline. (As one executive told us, "This is not like fine wine. It does not get better with age.") Already damaged products or packaging are likely to become further damaged the longer they are in the system. Products with any kind of technology component to them are losing market value with every passing month. As a result, companies must minimize the time product stays in the reverse logistics system. The more quickly an item gets dispositioned and moved through the system, the more value it is likely can be recaptured.

One of the biggest management challenges in this context centers on the issue of "one of many" vs. "many of one." In other words, the return flow often consists of low volumes of a multitude of items; by contrast, the

forward flow is typically comprised of one, or just a few, items moving in high-volume. Handling product on an individual basis, particularly product of varying quality, is much more difficult and costly than working with new, perfect-quality product that moves in high volumes. Because of the greater complexity and level of decision-making involved, reverse logistics requires closer attention at the senior management level than does forward operations.

As every good supply chain manager knows, the fewer times you touch an item—and the shorter and cleaner the process—the better the result. Reverse logistics is not an easy task, and many practitioners underestimate its difficulty.

Regardless of whether a product is intended to be sold and then recycled or disposed of in a landfill, systems must in place to ensure proper handling. Some companies may be willing to pay additional costs for proof of secure disposal. One popular approach to assure brand equity protection is for the company or its 3PL to video the actual product disposition, which often entails destruction of the product.

Managers need to be aware of the regulatory trend requiring firms to develop reverse logistics processes that ensure proper end-of-life management. Electronics waste, or e-waste, is a good example. Currently, 25 states have e-waste regulations. Twenty-four of those states have Extended Producer Responsibility regulations, and California has an Advanced Disposal Fee program. These regulations require that certified recycling partners confirm that electronics waste is disposed of properly. One reason for this is to guard against the products being exported to developing countries, which is against the law in most of those countries. In an October 2011 Dateline segment on Australian television, an investigative journalist in Ghana displayed a collection of computers and monitors that bore stickers from multinational corporations and U.S. state and federal agencies. No company wants that kind of publicity.

Managers also need to be cognizant of new regulations requiring that companies be able to offer proof that their products are what they claim to be. In the pharmaceutical industry, for example, the California Board of Pharmacy (CBoP) has set deadlines for all manufacturers to be able to show an electronic pedigree and a defined serial number down to the pill bottle level. Managing the authenticity of forward-moving product is costly. Managing authenticity backwards in the supply chain can be even more costly—and more difficult.

We mentioned earlier that time-to-cash is a key driver of reverse logistics. How effectively you minimize time-to-cash depends greatly on the processes developed around credit reconciliation. Because returns are not always a standard transaction, credit reconciliation processes that are routed through the CFOs office can be slow. These processes need to be established in advance so that credit reconciliation can happen quickly. Similarly, firms need to make disposition decisions fast. In fact, a sub-optimal disposition made quickly often results in a better cash position than a perfect decision made slowly. Returned items need to be managed for speed as well as for highest recovery values.

For firms forward in the channel such as retailers, wholesalers, or manufacturers receiving finished product, vendor agreements need to be strategically negotiated—not just accepted blindly. Supplier agreements must specifically address what should happen with returned products, who is going to pay for each element of the reverse logistics process, and how the credit reconciliation process will function. Large credit write-offs and aging receivables that should have been written down a long time ago can eventually get a company in deep trouble.

Another important issue in many industries is zero returns. This is called by a number of different names such as swell allowance or adjustable-rate policy. What all of these terms basically mean is that the customer does not physically return the item. Instead, it takes a credit allowance from its supplier.

This is common practice in the consumer packaged goods industry. Typically, manufacturers allow retailers a small percentage credit for items that are "unsaleable." These unsaleables will then be disposed of by the retailer and not shipped back to the manufacturer. Procter & Gamble pioneered adjustable-rate policies in the 1990s. In the food industry these are now the rule (often leading to some difficult feelings with the manufacturers who may not view such policies in the same light).

Finally, regardless of your particular industry segment, one of the core reverse logistics competencies is the ability to track the movement of products and components—both in the forward and reverse channels.

Product Recalls

Product recalls are part of the reverse logistics process that merit special attention. Recalls can be voluntary or mandatory. But in all cases, they need to be managed carefully in a way that first and foremost protects the brand and is efficiently executed.

Recalls in general are becoming more common. Consider that between Feb. 14 and March 11, 2013 (less than one month), the Food and Drug Administration (FDA) mandated more than 40 recalls. Recalls require more upfront planning than most other return types. For industries that are susceptible to recalls, like automotive or pharmaceutical, part of designing an effective returns management process is developing procedures for quickly informing customers transparently about a recall and then efficiently handling the return.

Even the best-run companies can run into difficulties with recalls, as evidenced by Johnson & Johnson's experience in 2009 with its Motrin product. J&J found contaminants in the product that reduced its potency. J&J asked its recalls management company, Inmar, to buy back the drug. Inmar sent contractors into stores to purchase Motrin without explaining the situation to the retailers. A memo signed by J&J's McNeil Consumer Healthcare unit told Inmar employees to "not communicate to store personnel any information about this product. Simply visit each store, locate the product and, if any is found, purchase all of the product."

Mishandling a recall can be extremely damaging to a manufacturer's reputation and a poor example of risk management. In the Johnson & Johnson case, congressional investigators became involved, forcing J&J to turn over more than 22,000 pages of documentation. It would have been much easier—and less costly—to have performed the recall differently. It was probably naïve to believe that the FDA and retailers would not notice that all units of a specific SKU were being purchased in every retail outlet carrying those items. What makes this case all the more surprising is that J&J was the architect of one of the most successful recalls campaign in history—the cyanide-tainted Tylenol incident in 1982, which the company handled transparently and skillfully in protecting the brand.

Secondary Markets as Drains

Developing a cost-effective reverse logistics program demands a solid understanding of secondary markets and the related concept of "drains." A consumer who purchases a refurbished laptop, or a college student who buys a used textbook are good examples of selling on the secondary market and getting additional value out of an asset.

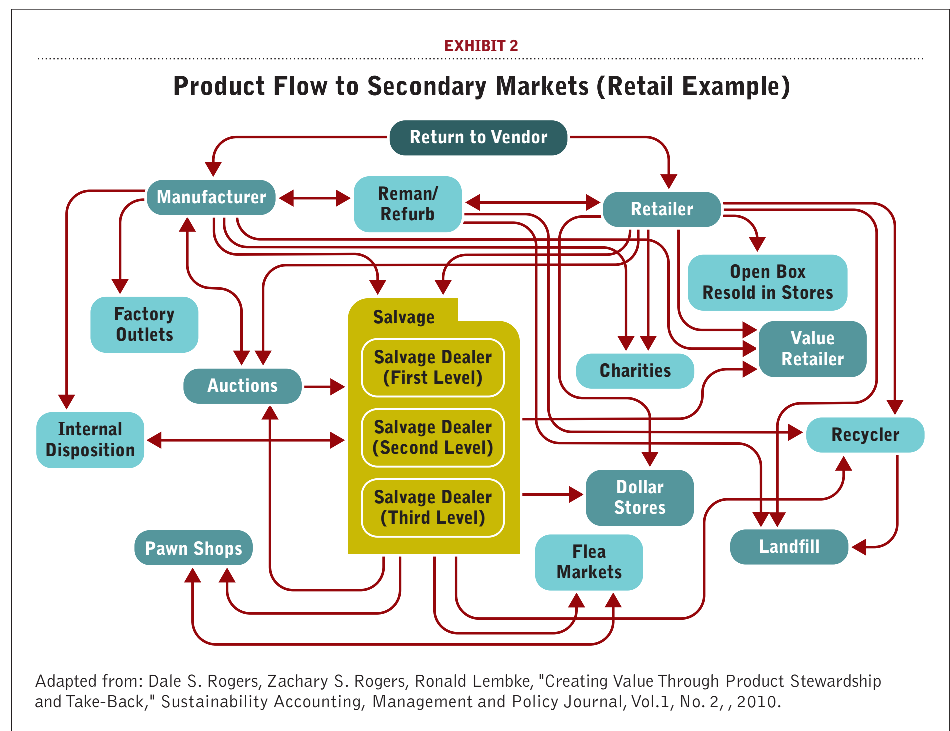
In addition to the revenue aspect, secondary markets provide other important benefits. Notably, they effectively divert a large number of products from landfills and create numerous jobs, thereby resulting in substantial environmental and economic benefit.

In short, secondary markets have become a significant portion of domestic economic activity in the United States. Although not reflected in current government metrics, a conservative estimate is that the secondary market represents 2.28 percent of the U.S. Gross Domestic Product. Several of the secondary markets consist of many small players, so there are no trade associations or other authorities to estimate their size.

To get a better sense of the secondary market dynamics, let's examine the retail sector. Exhibit 2

EXHIBIT 2

Product Flow to Secondary Markets (Retail Example)



Adapted from: Dale S. Rogers, Zachary S. Rogers, Ronald Lembke, "Creating Value Through Product Stewardship and Take-Back," Sustainability Accounting, Management and Policy Journal, Vol.1, No. 2, , 2010.

shows a realistic view all of the destinations that product may flow to from a retailer. When a company receives returned product, much of it will be sold off to companies in the secondary market. The secondary market is not a single marketplace, but the name for the network of companies that buy and sell product that cannot be sold as first quality in the primary channel.

Usually, a retailer's first choice of disposition is to return the items for full credit back to the supplier. Unfortunately, that option is often precluded by a supplier agreement or by a product customization such as a store-branded item.

The reverse logistics system is charged with cleaning the unwanted product out of the network while contributing as much as possible to profitability.

One of the most common approaches to product disposition is through salvage brokers. The first level of salvage broker will typically buy in bulk such as a trailer load, and offer a small fraction of the product's original cost. The offer might be as low as 10 percent of the wholesale price. When a company sells product to a salvage broker, that broker will turn around and sell that product to another broker or other secondary market, who then may sell it to the public. Or the product may be sold to a series of brokers before it ultimately gets sold to a consumer.

Some of the product may enter the secondary market through other paths. Auctions, international dispositions where the product is shipped offshore, factory outlets, value retailers such as firms like T.J. Maxx or Marshall's, or dollar stores are places to move product that is not selling well through the intended primary market.

These secondary markets effectively act like drains. Every system needs to have a means to rid itself of excess or unwanted materials. In the human body, for example, the circulatory system's arteries handle the forward logistics of bringing oxygen and nutrition to the cells while the veins carry the carbon dioxide and waste products to the lungs and kidneys for removal. Without the veins to carry away waste products, cells would cease to function, literally drowning in their own waste. And no one wants to think about a building that did not have both inbound and outbound plumbing. Having "drains" of one type or another is crucial to the operation of all systems.

Drains are similarly critical to a product supply chain. Items are taken to retail destinations for sale, but not all of it will be sold. Some will be returned, and the system has to have a way to deal with those products. If there were no drains built into the system, no way to deal with the items, the system would drown in this unwanted material. Imagine what a retail store would look like if all returned and unsold items had to stay at the shop until they were sold. The sleek and chic stores of an upscale mall would quickly look like thrift outlets.

No matter how well the system's unwanted materials disposal system is designed, there will likely be times when the drains cannot keep up with the load placed upon them. The reverse logistics system is charged with cleaning the unwanted product out of the network, and contributing as much as possible to profitability. The products sold to the secondary market are generally being sold for far below their original cost, so it might seem strange to speak about reverse logistics systems contributing to profits. However, every additional dollar recovered is one less dollar of loss. The higher the percentage of cost that can be recovered, the better.

A company needs to have a well thought-out plan, complete with a network of secondary market partners, that will accomplish all of the following: (1) dispose of product in a timely manner, (2) recover as much value as possible, and (3) protect brand equity.

Importance of Metrics

To monitor progress against its reverse logistics plan, a company needs metrics that measure the financial impact of returns on the firm and on other members of the supply chain. As part of this process, the company should develop procedures for analyzing return rates and tracing the returns back to the root causes. Measures such as amount of product to be reclaimed and resold as is, or percentage of material recycled, are examples of such metrics.

In analyzing your company's reverse logistics performance, consider tracking these metrics:

- *Disposition cycle time:* Cycle times can be an important measure of reverse logistics. The more standardized and streamlined the processes are, the shorter the cycle time should be.
- *Amount of product reclaimed and resold:* What

percentage of product that moves to the reverse logistics system is reclaimed and resold? How much value is recaptured?

• *Percentage of material recycled:* This metric tracks the percentage of product in the reverse logistics stream that is recycled in an appropriate manner.

• *Waste:* How much product and other materials are moved to landfills, incinerated, or disposed of as waste? The objective is to minimize product in the waste streams.

• *Percentage of cost recovered:* Is the firm maximizing the profitability of product that did not sell well or has been returned by consumers?

• *Per item handling cost:* A cost-per-touch type of metric can be readily computed by dividing total facility costs per month by the number of items processed. This is also a valuable way to compare the efficiencies of different facilities

• *Distance traveled:* Tracking average distance traveled per item is not nearly as simple as determining per-item handling cost. Generally speaking, the fewer miles that can be put on an item in the reverse logistics network, the better.

• *Energy used in handling returns:* This metric is used in sustainability programs. It measure how much energy (diesel fuel, electricity, etc.) is used in the reverse logistics process.

• *Total Cost of Ownership:* What is the total cost of ownership related to originally acquiring the product, reselling it, bringing it back as a return, and moving it through a secondary market or placing it in a landfill?

The Path Forward

Firms need to care deeply about how they manage product that did not sell in the primary channels. Reverse logistics is not an easy task, and many practitioners underestimate its difficulty. Good reverse logistics and returns management programs are unlikely to appear out of nowhere. Companies have to work closely with their suppliers and customers to make these processes work well.

At first glance, handling the reverse flow may seem roughly equivalent to managing the forward movement of new product moving through primary channels. However, the process is often much more difficult and the final objective is not as clear. It is obvious that the goal of manufacturing and shipping new product forward is to get it all the way to the retailer and ultimately the consumer. On the reverse side, quality, distance traveled and the other variables mentioned earlier can determine the path backward and ultimate disposition. The lack of uniformity in the products' physical condition makes reverse logistics all the more difficult. It entails the sorting and evaluation of product, which is typically not necessary for new product in the forward channel. Negotiations to sell the product further contribute to the complexity of reverse logistics.

The end result of all this: the reverse movement of products offers many challenges and opportunities not present with forward logistics. Companies need to spend quality management time carefully examining and constructing their reverse logistics processes. They need to work hard to manage these processes or they will experience a constant leak of profit.

A successful reverse logistics program begins with a clear objective: What do we want to accomplish through our reverse logistics efforts? Setting that objective will help the company better determine how to handle consumer returns and unsuccessful product. As part of this process, disposition options for returned product need to be identified and analyzed for cost minimization and profit maximization. Consideration also must be given to the impact of policies and procedures on the brand and potential cannibalization of sales in the primary market.

Going back to the Sears and JCPenney examples, a company can turn returns into a strength that improves its relationship with consumers. To manage the complexity that accompanies a good reverse logistics program, companies need to view it as a critical management activity. In particular, they need to apply management time and expertise required to turn a problem into a strength. Or put another way, to turn trash into cash.

The Transformative Power of Advanced Analytics

By cultivating advanced analytic competencies, procurement can transform itself into a strategic function that delivers real business value across the supply chain.

By Khalid Khan

Khalid Khan is a partner with A.T. Kearney Procurement & Analytic Solutions. He is based in Chicago and can be reached at khalid.khan@atkearney.com.

In the broadest terms, business analytics is a process through which mathematical techniques and functional knowledge are combined to yield actionable insights. While they have been employed for well over a decade, analytic techniques are being used increasingly today because of these key factors: the need for faster, actionable decisions; the sheer volume of data being collected by organizations across their extended enterprises; and the availability of low-cost data storage and computing power and tools.

The power of analytics cannot be harnessed until it is embedded with the appropriate functional knowledge. Sourcing professionals embed parametric bidding in their RFPs to build representative "should cost" models to drive better supplier negotiations. Combining commodity price index data and commodity market knowledge with predictive models and simulations enables better hedging strategies and more effective risk management. And advanced sourcing techniques such as Collaborative Optimization, maximize the total value between supply partners and procurement by finding the most efficient mathematical solution that balances supplier objectives (for example, capabilities, price, and asset-utilization) against purchasing constraints (such as service, cost, and quality). Time and time again we have seen procurement analytics yield better results and help identify larger savings opportunities even in the most constrained market conditions.

In general, analytical techniques fall into one of three categories based on their ability to help provide forward-looking insights. Basic analytics provide a historical perspective on business performance, placing it at the low end of analytical maturity. It is typically supported by basic scorecards and static reports. Anticipatory analytics provides a forward-looking view that creates transparency into past and potential future performance drivers. These techniques help organizations build an understanding of why things happened in the past in order to prepare for the future. Predictive analytics—such as optimization, simulation, and predictive modeling—combines historical data and external factors and constraints to mine insights into what will happen according to statistical probabilities. These techniques enable dynamic forward-looking insights with quantified trade-offs to allow organizations to make informed decisions.

By moving up the analytics maturity ladder procurement can become an active participant in shaping broader business strategy and drive cross-functional dialogue on product development, quality, and risk management. For example, procurement can develop predictive models using its knowledge of existing and emerging supplier capabilities to develop a set of strategic supply options to inform product development and manufacturing partners for new products.

More broadly, supply chains are becoming more and more complex with rapidly changing product configuration, unforeseen supply disruptions, and marketplace fluctuations. These complexities make it difficult for organizations to find the most efficient way to deploy their constrained resources across the supply chain. By cultivating advanced analytic

competencies procurement can transform itself into a strategic function that provides the necessary level of rigor for making strategic allocation and resource planning decisions across the supply chain.

Project Shows Analytics' Potential

In a recent project, A.T. Kearney used advanced analytics to help a consumer packaged goods company rationalize and cut costs for point-of-purchase displays, a critical promotional tool for CPG companies. The initiative resulted in a significant decrease in suppliers and display models, and ultimately led to significant cost savings and increased promotional sales.

For a consumer-focused company in a highly competitive business, point-of-purchase (POP) displays are crucial. It is estimated that shoppers take seconds to decide upon a given purchase, so anything that can entice them is critical to driving sales growth. A range of resources must be marshaled in order to design, manufacture, procure, deliver, and deploy POP items. Point-of purchase is a highly complex set of categories at most CPG companies, as thousands of unique SKUs potentially can build up over time.

Market supply dynamics, including raw material price fluctuations, new technologies and supplier operating models, made for inconsistent purchasing, complicated by an emphasis on promotions tailored to individual markets and customers. When the CFO of this company challenged the procurement group to achieve significant savings levels in the POP category, it quickly became clear that an analytics-focused effort should be undertaken. Doing so would require assembling the disparate data owned by the multiple units that made up the division.

Teams formed to address each of the key sources of value: POP SKU rationalization, specification redesign, strategic sourcing, and supply chain/execution excellence. While data collection took significant time, the data extracted ultimately proved to be a foundation for future improvement efforts. By developing detailed variance trees that showed every single POP SKU in a category in a structured manner, supplemented by annual order frequency and total purchase volume for each SKU, the case for change became clear—program initiators could no longer claim that every SKU was critical. In cross-functional stakeholder workshops, SKUs were evaluated against a simple two-by-two matrix based on volume and strategic value as measured by an analytics effort, leading to a significant data-driven reduction in SKUs.

Analytics was also put to use in a rigorous sourcing effort that encompassed multiple rounds of targeted pricing negotiations based on cost drivers. The process started with the unbundling of supplier proposals in order to get to volume breakdowns, component-level cost breakdowns for each of 120 SKUs, and a cost driver breakdown. Statistical analysis was then performed to determine the "should-cost" amount per SKU before price targets were set based on should-costs by SKU and supplier.

There is a need for a new breed of procurement professional with strong business acumen combined with analytical proficiency.

Suppliers then engaged in expressive bidding that allowed them to provide cost, efficiency improvement, and material and manufacturing change proposals. Bids were factored against business constraints, including those that were self-imposed, from customers, from government requirements, and from suppliers and local markets. The bids were then run through an optimization engine to determine potential solutions based on factors like savings, opportunity costs, implementation ease, and operational impact. Understanding business requirements and constraints is critical to this type of sourcing effort.

The sourcing effort winnowed the POP supply base down from more than 100 to fewer than 10 suppliers, which has led to increased discussions around strategic work and improved inventory management. The savings goal was met despite the need to make tradeoffs between cost and holistic supply chain improvement. Governance and compliance are being emphasized to maintain the SKU and supplier reductions.

A New Breed Needed

As the project we just cited suggests, there is a need for a new breed of procurement professional with strong business acumen combined with analytical proficiency. Procurement organizations will need to develop, recruit, or train these individuals through exposure to deep functional knowledge and practical, hands-on analytics experience. Finally, critical to building a sustainable, high-leverage team and world-class analytics capability procurement leaders will need to provide strong top-down support and challenge the organization's legacy culture and processes around decision making.

A SPECIAL SUPPLEMENT TO:

SUPPLYCHAIN MANAGEMENT REVIEW

TOP 50 TRUCKING COMPANIES

CONTENTS

Top 50: Tough at the top S52

Despite low revenue gains, FedEx Freight posts best fiscal third quarter results in five years S66

FTR's Shippers Condition Index continues to decrease S67

Con-way says LTL performance in Q1 may be a drag on earnings S68

ATA reports February volumes up for fourth straight month S68

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Top 50 Trucking: Tough at the top

Analysts and top trucking executives agree that a sharp focus on a durable business plan and dependable operations are vital to remaining profitable in one of the most challenging trucking environments in history.

By John D. Schulz, Contributing Editor

At its essence, trucking sounds so simple: Find a niche, create a business plan, execute it on a daily basis, eliminate exceptions, charge decent rates, and then get paid. However, those executives leading the biggest and most profitable trucking companies will tell you that executing this theoretically straightforward plan every day is anything but.

"For us, I think a lot of it goes back to the strategic planning we did 15 years ago," says David Congdon, president and CEO of Old Dominion Freight Line (ODFL), No. 5 on *Logistics Management*'s (*LM*) Top 25 LTL listing and one of the most profitable LTL carriers in the country. Congdon says that the path to ODFL's current perch was long and involved and could have only been achieved by staying focused on core business principles that are paying off now.

Analysts and top trucking executives agree that a sharp focus on executing a sound business plan is one of the keys to making the list of Top 50 trucking companies. The other elements, say our top sources, would be attention to detail, employee relations (both union and non-union), financial strength, information technology, and operational execution.

"Trucking is not a business where money just rolls through the door." says Donald Broughton, trucking analyst with Avondale Partners. "Everybody knows what they need to do: lower empty miles, minimize fuel, maximize revenue per truck. But execution is hard, and it's tough to establish the discipline every day

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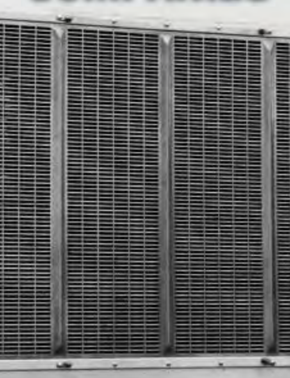

TOP 25 LESS-THAN-TRUCKLOAD CARRIERS—2012 REVENUES

(Includes fuel surcharges)

2012 RANK	CARRIER NAME	2012 REVENUE ($MILLION)	KEY COMMENTS FROM PAST YEAR
1	FedEx Freight*	$5,011	Largest operating margin growth of public LTL carriers in 2012
2	Con-way Freight	$3,340	
3	YRC Freight	$3,187	Includes YRC Reimer
4	UPS Freight	$2,378	Teamster employee contract expiring in July 2013
5	Old Dominion Freight Line	$1,942	Most profitable public LTL carrier
6	ABF Freight System	$1,669	Teamster employee contract expiring in March 2013
7	Estes Express Lines	$1,661	Largest private LTL carrier
8	YRC Regional	$1,641	Includes Holland, Reddaway, and New Penn
9	R+L Carriers**	$1,250	
10	Saia Motor Freight Line	$1,099	Largest yield increase for public LTL carriers in 2012
11	Southeastern Freight Lines**	$875	Opened three new terminals in 2012
12	Vitran Express	$703	Acquired Milan Express in Feb. 2011
13	Averitt Express	$579	Member of the Reliance Network for national coverage
15	Roadrunner Transportation	$511	Acquired Expedited Freight Systems in Aug. 2012
14	AAA Cooper	$465	
16	Central Transport Intl.	$380	Closed more than 40 terminals since 2011
17	Dayton Freight Lines**	$353	Fastest growing private LTL carrier in the top 25 for the 2nd straight year
18	New England Motor Freight	$351	Division of Shevell Group of Companies
19	Pitt-Ohio Express	$327	Member of the Reliance Network for national coverage
20	A. Duie Pyle**	$286	
21	Central Freight Lines**	$202	
22	Daylight Transport	$169	Light-asset with concentration on the West Coast
23	Oak Harbor Freight Lines	$156	
24	New Century Transportation	$151	Light-asset load to ride hybrid LTL operation
25	Wilson Trucking	$150	Only top 25 LTL carrier with larger revenue growth in 2012 vs. 2011
TOTAL TOP 25 LTL CARRIERS REVENUES		**$28,833**	

Note: Revenue for LTL operations only (including Canadian operations) unless otherwise indicated
*Revenues primarily LTL and include less than ten percent for truckload and other services
Source: Company reports and SJ Consulting Group estimates, Prepared by SJ Consulting Group, Inc.

to force your customers, suppliers, and employees to do that. It requires a lot of work and thousands and thousands of hours of planning."

Mike Shevell, chairman of the Shevell Group that includes New England Motor Freight (No. 18 on the *LM* LTL list), says that the key to success is getting proper rates to haul freight. "Without rates that can give us proper profit, there's going to be a very serious problem in future," he says. "Our cost of doing business is off the charts, and regulations are putting a noose around our neck. It's getting more difficult to operate."

Despite the most brutal operating environment in years, the top carriers on our lists are managing to stay focused on service. There's an old saying in trucking that "you get the business on price, but you keep it on service." Executives and analysts agree.

"You prove yourself to customers in a tight environment where there's very little capacity," says Saul Gonzalez, president of Con-way Truckload (No. 17 on the *LM* TL list). Gonzalez is quick to credit his employees as the key differentiators. "Our employees are what separate us. They strive to make us better."

During a recent conference call with analysts and investors after another solid financial quarter, ODFL's Congdon was asked how his trucking company was able to obtain such strong freight rates. Congdon's answer was nothing less than direct: "We've found that it's a lot easier to sell a service equation, if you have it. In order to get paid for good service, you have to offer good service."

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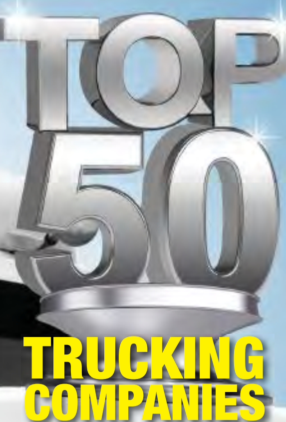

TOP 25 TRUCKLOAD CARRIERS—2012 REVENUES

(Including fuel surcharges)

2012 RANK	CARRIER NAME	2012 REVENUE ($MILLION)	KEY COMMENTS FROM PAST YEAR
1	Swift Transportation	$3,007	
2	Schneider National	$2,290	Includes Schneider National carriers and Schneider National Bulk carriers
3	Werner Enterprises	$1,686	
4	Landstar System*	$1,680	Business capacity owner revenue only. Largest Flatbed carrier
5	U.S. Xpress Enterprises	$1,630	Includes U.S. Xpress, Arnold Transportation, Xpress International, Total Transportation, Xpress Global Systems
6	J.B. Hunt Transport Services	$1,563	Largest Dedicated carrier
7	Prime**	$1,372	Largest temperature-controlled carrier
8	C.R. England	$1,071	
9	CRST International	$1,061	Acquired Specialized Transportation (STI) in July 2011
10	Crete Carrier Corp.**	$999	
11	Greatwide Logistics	$958	Merged with Cardinal Logistics in early 2013
12	Knight Transportation	$862	Includes Knight Transportation, Knight Refrigerated, Knight Port & Rail Services
13	"Ruan Transportation Management Services "	$708	Includes Ruan Dedicated Contract Carriage, Bulk Transportation
14	Anderson Trucking Service	$668	Acquired Energy Transport in June 2011 and Waylon Transport in Oct. 2012
15	Ryder Systems	$665	
16	Covenant Transport	$641	Includes Covenant Transport, Star Transportation, SRT
17	Celadon Group**	$612	Has made 8 acquisitions since 2011
18	Stevens Transport	$609	
19	Con-way Truckload	$559	Truckload division of Con-way, Inc.
20	Heartland Express	$546	Most profitable public truckload carrier
21	Mercer Transportation*	$492	
22	Marten Transport	$483	
24	Universal Truckload Services*	$465	Acquired Linc Logistics in Oct. 2012
23	NFI Industries	$460	NFI Dedicated
25	Central Refrigerated Service	$453	
TOTAL TOP 25 TRUCKLOAD CARRIERS		**$25,539**	

* Light-Asset Carrier
** Results adjusted to closer resemble calendar year
Revenues primarily for truckload operations and may include less than ten percent for non-truckload services
Source: Company Reports and SJ Consulting Group estimates, Prepared by SJ Consulting Group, Inc.

To ensure good service, Con-way's Gonzalez says that he makes sure to talk to every new driver. "It's my job to communicate how to represent Con-way as a professional. How they dress, how they pick up and deliver, how they interact with customers. It's important that they know that from the first day, and I do that personally."

That attention to detail may be one of the key common denominators among all members of the *LM* Top 50. Deregulation weeded out the poor operators in trucking, and those now at the top all execute terrific service. Here are a few of the back stories on how some of the Top 50 are able to maintain their position year after year.

Staying on top

About 20 years ago, Old Dominion Freight Line was nearly exclusively a Southeast regional carrier, competing with a host of other top-flight, mostly non-union carriers offering nearly identical next- and second-day LTL service. Congdon, who was then working under his father Earl the CEO, realized ODFL had to diversify.

"We spent lot of time building a portfolio of service that works together with our technology, and that touches everything we do," says David Congdon. "But we had to stay focused on the basics, and that's the key thing."

Today, ODFL offers regional, inter-regional,

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and intrastate domestic shipping, assembly and distribution, domestic drayage, direct service to Canada, and even full container load ocean carriage. Two-thirds of its trucking business is two-day or less with 86 percent third day or less.

"We have a very good blend of regional, interregional, and long-haul across our network," Condon explains.

ODFL earned $169 million net income on $2.1 billion revenue last year as the most profitable LTL carrier in the land. Its operating ratio (OR) was an eye-popping 86.5, and that came on top of an 87.6 OR in 2011 and 90.7 in 2010—by far the lowest three-year OR in the LTL sector. "We're not perfect by any stretch," adds Congdon. "But we've got it honed down pretty well so we can balance pricing and network growth and customers and so forth. We've got a good balance of proper things going on."

At the opposite end of the LTL profit spectrum is ABF Freight System, the nation's seventh largest LTL carrier. Hurricane Sandy and a continued weak freight environment were two conspirators that created a 2012 income loss of $7.7 million at parent Arkansas Best Corp.—a swing of almost $14 million when compared to the $6.159 million net income in 2011. Revenue remained steady at just over $2 billion annually.

ABF (No. 6 on the *LM* LTL list) is currently in crucial labor talks with the Teamsters union that will likely prove decisive in whether it will be profitable going forward. The company is now asking for concessions like those obtained by YRC Worldwide (No. 3 on the *LM* LTL list).

YRC may be the poster child for trucking turnarounds. After losing in excess of $2.6 billion from 2006 to 2011, YRC turned an operating profit last year. It changed its management team, installing former YRC executive James Welch to replace Bill Zollars as CEO—and the move has paid off.

In a recent conference call with investors, Welch resisted the urge to run YRC's operating profit up the flagpole. That was a small battle, he said. The war has yet to be won.

In one of his most important early moves, Welch installed Jeff Rogers as president of YRC Freight, its long-haul and largest subsidiary. Rogers is a "blocking-and-tackling" fanatic with a knack for employee relations. In a recent letter to YRC Freight employees, Rogers told his workers that they indeed accomplished a lot in turning around the company—but much more remains.

"There's no doubt about it, we're getting our swagger back," wrote Rogers in the letter. "Here comes the honest truth, though: All our recent successes won't mean a thing unless we deliver results in 2013. We simply must win in the marketplace, and I mean now. This is the year we go from survive to thrive."

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Managing the issues

The best trucking executives say that there are many paths to success, but they all stress that there can be no shortcuts in service.

John White, executive vice president of sales and marketing for U.S. Xpress, the nation's second largest privately held TL, says that the most important thing is to be relentless on deciding what's best for shippers. "If we focus on making our customers better, we're going to be successful," White says.

Yet, White adds that trucking is even more complicated than that. White refers to something he calls the "murky horizon," which includes an uncertain supply of drivers, rising equipment costs, and an unclear legislative landscape that might include reduced hours of service and other productivity cuts.

"It's hard to plan and work the plan for five years," says White. "The challenge moving forward is moving purely away from being an entrepreneurial spirit to being a little more disciplined. You have to be in front on some challenges."

The issue of onboard electronic recorders (EOBRs)—the so-called black boxes—is a good example. Washington recently mandated EOBRs for all new trucks, probably starting with the 2015 model year. Sensing this inevitable move, U.S. Xpress began installing the boxes several years ago and will soon have its entire fleet outfitted.

"We knew that was coming," says White. "EOBRs will help our drivers better understand time management, and it will help us manage our business better as the legislative landscape evolves."

If hours-of-service rules change, the data captured by those EOBRs will be invaluable in creating new lane and truck assignments, White adds. In short, a little advance preparation will help smooth what could be a rocky transition for others.

Offering new services is another way to stay on top. U.S. Xpress recently launched a new refrigerated service offering to its grocery customers that wanted to improve shelf life of some produce. "We're constantly being asked to bring innovation into the market place," says White, adding that the service now involves 150 trucks.

The Shevell Group's Eastern Freightways TL unit has grown its dedicated and flatbed business in recent years due to customer demand. "Our flatbed business has mushroomed," says Shevell. "It's been a huge success, and we feel it will be even better as construction rebounds through the economy. If the economy grows, that will grow."

Other carriers have started new services to attract shippers. As an example, Con-way Truckload recently began offering double-stack trailers that can adjust the interior height to increase available payload. Some pallets can't be stacked because of weight and configuration; however, these double-stack trailers can adjust the height of the floor so more freight can be hauled. "That's been really helpful to us," Gonzalez adds.

Costs skyrocketing

All trucking executives interviewed for this story say that the cost of doing business is rising at least 10 percent a year. Trucks that cost $80,000 five

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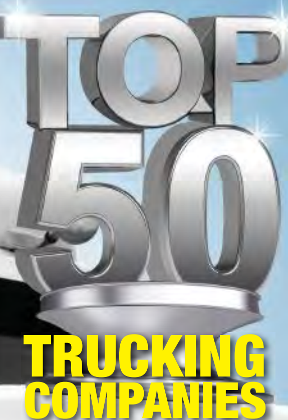

years ago are now $125,000. Fuel is staying stubbornly near $4 a gallon, while drivers remain scarce and are costing more than ever to train and retain.

"The cost of everything is going up—terminals, equipment, insurance, fuel, trucks, drivers," says Shevell. "And the driver shortage is only going to accelerate as the economy comes back." And after examining the new health care act, Shevell concludes that its costs will be "mind-boggling" to carriers. "It's going to hurt carriers' profitability," he says. "It's been bad enough the last five years, but with everything going up, there are not enough pennies around our neck to pay for it."

For shippers that will mean rate increases in the low- to mid-single digits, perhaps more on lanes where capacity is extra tight. "The industry is not earning enough to sustain itself in order to continue on a successful basis," says Shevell. "Notwithstanding the driver shortage, once the business demand exceeds capacity you're going to see a very serious problem, and when it comes is anybody's guess. But, it's going to happen."

That will mean that those carriers with sufficient financial stability will be able to obtain the credit necessary to purchase or lease new trucks. Those without…well, who knows.

"Some carriers' financial stability is wonderful, and some I wonder how they do the things they do," says Shevell. "We've just spent $25 million for new equipment this year and we'll spend another $10 million before the end of year. If carriers don't continue to re-power their fleets, I don't know how they're going to be able to survive."

"Notwithstanding the driver shortage, once the business demand exceeds capacity you're going to see a very serious problem, and when it comes is anybody's guess. But, it's going to happen."

—Mike Shevell, chairman of the Shevell Group that includes New England Motor Freight

The key to survival is deciding how to anticipate shipper needs. "We all have an obligation of creating value," says Dan Van Alstine, senior vice president and general manager of dedicated services at Schneider National (No. 2 on the *LM* TL list). "But the successful companies are creating value for customers, shareholders, driver associates, and for the communities in which we operate. It's a cliché, but it's true."

White of U.S. Xpress says that his customers are asking more than ever how they can differentiate themselves through supply chain excellence by driving excess inventory and eliminating costs from their systems. But this more strategic approach will cost shippers through rising rates, he says.

"We can strategically work with our customers to drive improvement and mitigate issues," adds White. "But invariably, we're going to see continued pressure on price in base truckload rates. Whether it's HOS, equipment, cost of drug

YRC Freight's winning game plan

YRC Worldwide's financial turnaround is nothing short of amazing and unprecedented in the U.S. trucking industry. After losing in excess of $2.6 billion from 2006 to 2011, it earned a small operating profit last year and company executives say they're bullish that the company is well positioned for solid profitability ahead.

How did YRC do it? In a January letter to all YRC Freight employees, company president Jeff Rogers gave some hints with his five operating principles. A condensed version follows:

• Be brave: "Think outside the box, tap your creative energy, and work as a team to solve problems and invent business solutions."

• Decide and do: "Stay focused, decide the right course of action (there's never a perfect answer) and then as the saying goes—just do it, safely and without delay."

• Hunt in a pack and work collaboratively: "In the grand scheme of things, the team is always more important than the individual, regardless of rank or title."

• Take it personally: "Do what it takes to win, but be responsible…safety is your top priority."

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"I'm asking you to put these principles in action," Rogers' letter concludes. "It doesn't matter if you're behind the desk, behind the wheel, or on the dock. The sooner we live by our principles, the sooner we'll all succeed."

—John D. Schulz, Contributing Editor

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testing, sleep apnea testing…those are all positive and important things and will continue to improve safety and environment. But all those things come with a cost. You will continue to see upward pressure on price."

Ideally, carriers hope to form long-term strategic relationships with customers instead of what White termed "tactical ones." However, White says he believes that at the end of the day prices will continue to escalate.

In the truckload sector, the largest TL carrier, Swift Transportation, has less than 2 percent market share. In such a fragmented market, gaining pricing power is difficult. But that doesn't mean TL carriers aren't getting more strategic with rates. "Capacity hasn't been expanding, so we've seen the industry gain some discipline," White adds. Going forward, some carriers may want to expand the asset-light side of their business through brokerage or 3PL services while eschewing large capital expenditures to buy assets outright.

J.B. Hunt (No. 5 on the *LM* TL list) is an excellent example of that. Its intermodal business grew 13 percent last year while its pure truck business continued to shrink, showing a 27 percent decline in operating income. Shippers can expect Hunt's Truck division to continue to shrink and receive little additional capital as Hunt continues to find greater return on investment in other units.

All that reduction in over-the-road capacity will do over time, analysts and executives say, is push up trucking rates for the rest of the industry.

—John D. Schulz is a Contributing Editor to Logistics Management

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Despite low revenue gains, FedEx Freight posts best fiscal third quarter results in five years

Fiscal third quarter earnings for transportation bellwether FedEx were down overall on an annual basis, with quarterly net income—at $361 million—down 31 percent. However, this decline cannot be attributed to the quarterly performance of FedEx Freight, the company's less-than-truckload (LTL) subsidiary.

Revenue at FedEx Freight, at $1.24 billion, was up 0.8 percent from $1.23 billion last year, with an operating margin of 0.3 percent compared to -0.1 percent a year ago. FedEx Freight reported an operating income of $4 million, ahead of last year's operating loss of $1 million.

FedEx Freight yield was up 2 percent due to improvements in its FedEx Freight Economy yields, while average daily shipments rose 1 percent due to higher customer demand for Economy service offering for all lengths of haul. Weight per LTL shipment was flat at 1,154 pounds, and composite LTL yield—at $20.03—was up 2.3 percent. The company pointed out that the quarter had two fewer operating days, but Freight was still able to realize higher operating income and margins due to gains in yield and volume along with operational efficiencies.

The FedEx Freight Economy service is part of FedEx Freight's 2011 network re-launch that focused on offering shippers the choice of two levels of service: Priority and Economy. Prior to the launch of the revamped LTL network, FedEx Freight President and CEO Bill Logue described it as a strategy to grow its business profitably for the long-term and a "game changer" designed to simplify what FedEx determined was a "too complicated LTL shipping process."

The idea, said Logue, was to give LTL shippers two options based on speed of delivery and price. The new FedEx Freight network is comprised of FedEx Freight Priority, a fast-transit choice for time-sensitive LTL freight delivery, and FedEx Freight Economy, a less costly choice for LTL freight delivery.

While revenue at FedEx Freight in the fiscal third quarter was up less than 1 percent, Logue said on the March earnings call that it still represented the unit's strongest fiscal third quarter in the last five years, even with two less operating days.

"That had a big impact on our numbers," said Logue. "From our perspective, we saw volume up, we saw yield up and we saw weight up. And so from that perspective it was a good quarter. Our business had a healthy third quarter, and if you look forward, we saw productivity in the quarter being very strong as well."

—Jeff Berman, Group News Editor

FTR's Shippers Condition Index continues to decrease

Typically, when things are going well for truck carriers, it often means that they're not going as well for shippers. Based on the most recent edition of the Shipper Conditions Index (SCI) from freight transportation consultancy FTR Associates, that appears to be the current trend.

January's SCI, that represents data for the most recent month available, was -7.1, down 2 percentage points from December. A reading above 0 suggests a favorable shipping environment, according to FTR, which describes the SCI as an indicator that sums up all market influences that affect shippers, with a reading above zero being favorable and a reading below zero being unfavorable. May 2011's -11.4 was the worst SCI reading of this current economic cycle.

FTR said that the SCI represents "deteriorating conditions" for shippers early in 2013, with the SCI forecast expected to continue moving down as the year moves on, approaching negative double-digits by the end of 2013.

This, according to FTR analysts, will result in increased freight rates as volumes continue their slow crawl, with capacity expected to be hindered by regulations—including the new motor carriers hours-of-service (HOS) rule that's expected to kick off in July—along with subsequent increases in rates and decreases in available capacity.

FTR Senior Consultant Larry Gross told *Logistics Management* that back in 2004 there was a combination of a change in HOS and a growing economy, and that resulted in about two years of freight increases.

"Now, this year, we have a raft of regulatory changes, plus a growing economy along with the new HOS rules as currently constructed likely to stand," said Gross. "We're setting ourselves up for a 2004 replay, but the pressure on the driver supply and capacity is going to be considerably longer than the one-shot event that occurred in 2004. So we see the prospect for a negative rate environment extending much further."

—Jeff Berman, Group News Editor

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Con-way says LTL performance in Q1 may be a drag on earnings

Transportation and logistics services provider Con-way Inc. released an update on first quarter trends at Con-way Freight, its less-than-truckload (LTL) unit, that it said could collectively reduce Freight's quarterly operating income by roughly $14 million.

Chief among the factors for the potential loss in income cited by Con-way were that daily weight is expected to be down about 1.5 percent compared to the first quarter of 2012, coupled with other items expects to negatively impact near-term profitability, including a reserve for a large vehicular claim; a charge related to a transition to new technology; costs associated with adverse weather; and field training expenses pertaining to line-haul optimization.

Con-way added that first quarter 2013 revenue per hundredweight, excluding the impact of fuel surcharges, is expected to increase approximately 3.5 percent annually.

"Tonnage trends, while below last year, have been relatively stable throughout the first quarter, and our core operational performance is trending in the right direction," said Douglas Stotlar, Con-way Inc.'s president and CEO, in a statement. "Despite the near-term cost headwinds at Con-way Freight, confidence in our key initiatives and the ability to expand margins—particularly in the second half of 2013—is being reinforced each day."

The key initiatives cited by Stotlar include lane-based pricing and line-haul optimization, factors that Con-way said are expected to provide increasingly improved results in the coming months.

Quarterly revenue at Con-way Freight, at $824.7 million, was up 3.6 percent, with yield, or revenue per hundredweight, up 5.1 percent year-over-year and 4.2 percent excluding fuel surcharge. Tonnage per day decreased 3.5 percent, while operating income of $21.5 million was up 9.9 percent compared to $19.6 million last year.

Con-way said that the revenue growth was primarily attributable to improved yield and higher fuel surcharge revenue—and partially offset by lower tonnage levels. The carrier added that the operating income improvement was impacted by an accelerated decline in daily tonnage at the end of the fourth quarter that it said exceeded normal seasonality.

"LTL freight is just OK, not great, and Con-way Freight is not expected to see benefits from its improvement initiatives until the second half of 2013," wrote David Ross, analyst with Stifel Nicolaus, in a research note.

As *Logistics Management* has reported, the LTL sector has made up significant ground from the depths of the Great Recession. This is due, in part, to tighter capacity and steady rate gains since 2010.

—Jeff Berman, Group News Editor

ATA reports February volumes up for fourth straight month

The American Trucking Associations (ATA) reported that trucking volumes showed modest gains in February.

The ATA said that seasonally-adjusted (SA) truck tonnage in February increased 0.6 percent to 123.6 (2000=100) following a 1 percent gain in January. This represents the fourth straight month the SA has grown, a trend that has not occurred since late 2011, according to the ATA. The ATA added that over the last four months SA tonnage has increased a cumulative 7.7 percent.

On an annual basis, the February SA is up 4.2 percent, which is in line with January's 4.6 annual bump. Year-to-date, the SA is up 4.4 percent, compared to a 2.3 percent annual gain for the same period in 2012 over 2011 data.

The ATA's not seasonally-adjusted (NSA) index, which represents the change in tonnage actually hauled by fleets before any seasonal adjustment, was 113.5 in February, which was 5.5 percent below January.

As *Logistics Management* has reported, some industry analysts maintain that the NSA index is more useful since it's comprised of what truck-

ers haul. As defined by the ATA, the NSA index is assembled by adding all the monthly tonnage data reported by the survey respondents—ATA member carriers—for the latest two months. Then a monthly percent change is calculated and then applied to the index number for the first month.

"Fitting with several other key economic indicators, truck tonnage is up earlier than we anticipated this year," said ATA Chief Economist Bob Costello in a statement. "While I think this is a good sign for the industry and the economy, I'm still concerned that freight tonnage will slow in the months ahead as the federal government sequester continues and households finish spending their tax returns. A little longer term, I think the economy and the industry are poised for a more robust recovery."

Other drivers for relatively decent tonnage data include an improving housing market, slight gains in retail sales, and steady manufacturing output.

However Charles Clowdis, managing director of transportation advisory services at IHS Global Insight, explained that these increases are small, adding that the sequester situation and the general malaise about Washington is taking its toll on most working Americans.

"Many do not understand it," said Clowdis. "Instead, they look at it as 'OK, so the Stock Market is booming, but I'm working 2 or 3 jobs and my standard of living is way down." He added that people are tired of not having new things, and some spending is reactionary—and hopefully not from credit or cashed-in 401Ks or IRAs.

What's more, Crowdies added that motor carrier executives need to temper enthusiasm, especially when it comes to expanding and also buying new equipment, unless the old equipment clearly needs to be upgraded.

—Jeff Berman, Group News Editor

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Should You Manage Customer Inventory?

While managing inventory at customer sites can lead to fewer logistics employees, it can have a negative effect on order cycle time. The right answer requires careful analysis.

By **Becky Partida,** Research Specialist-Supply Chain Management, APQC

IN THE PURSUIT of more efficient ways to deliver products to customers, some organizations are managing inventory at their customer sites. Vendor managed inventory (VMI) programs do have advantages for customers; vendors often have the experience and expertise needed to better anticipate demand or inventory needs. The companies managing the inventory benefit as well. In particular, their ability to better anticipate customer needs can lead to higher customer satisfaction. In addition, if access to customers' inventory data is made available, a VMI-type of program can more effectively automate what are often labor-intensive manual processes—thereby benefitting both parties.

Data from APQC's Open Standards Benchmarking in logistics indicates that only slightly more than half of participating organizations have implemented VMI programs at customer sites (see Exhibit 1). Of those that have implemented this practice, 21 percent have done so extensively and 31 percent only to some degree.

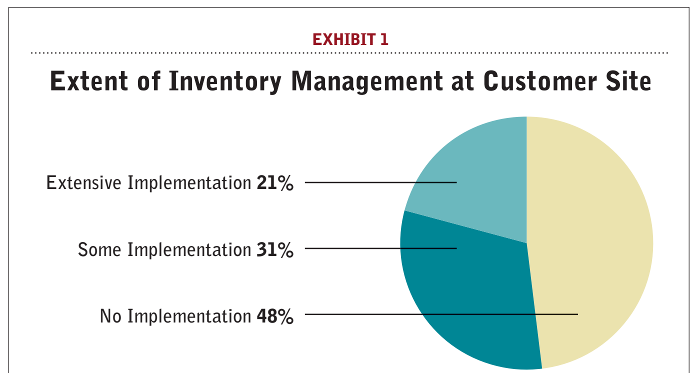
Although managing inventory at customer sites has the potential to improve customer satisfaction and perhaps increase business, organizations should consider how it could affect logistics performance and costs. In an effort to address these concerns, APQC compared the customer order cycle time, total cost to manage logistics and warehousing, and number of logistics employees needed for those organizations that have adopted VMI and those that have not. Our data reveals some surprising results: although organizations that manage inventory at customer sites need fewer logistics employees, they have longer customer order cycle times and higher costs for managing logistics and warehousing.

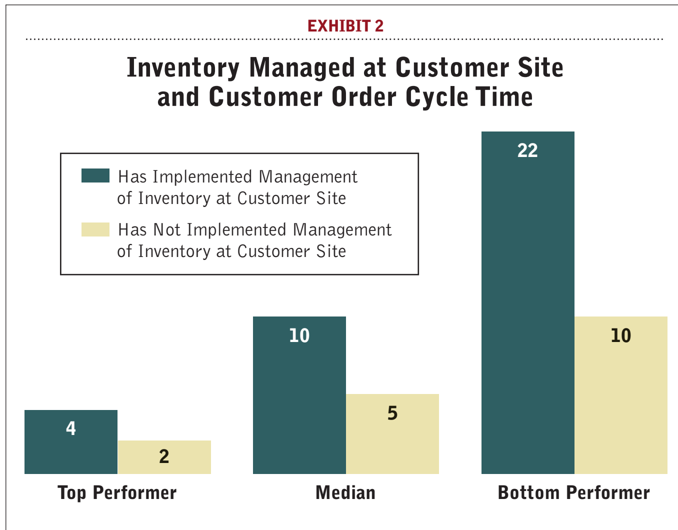
Customer Order Cycle Time

Despite the potential for better anticipating demand changes and thus having better lead times for customer orders, organizations that are managing inventory at customer sites have longer customer order cycle times than non-

EXHIBIT 1

Extent of Inventory Management at Customer Site





adopters of this practice (see Exhibit 2). At the median, this group takes five days longer to process and deliver customer orders than the non-VMI companies. Among bottom performers, this difference is even larger—organizations that manage inventory at customer sites take 12 days longer to process and deliver customer orders.

These results are surprising given that potential visibility into customer stock levels should enable organizations that manage inventory at customer sites to process and deliver customer orders faster. Knowing a customer's current inventory as well as its inventory history would enable a VMI organization to better forecast the needs of its customers. It may be that the survey respondents who do not manage inventory at customer sites have streamlined their order processing and fulfillment practices more than those that have adopted this practice. It is also possible that the VMI adopters have encountered systems issues that have led to incomplete information on customer inventory and demand, which has had a detrimental effect on customer order processing and shipping.

Logistics Cost and Employees

APQC also evaluated the performance of the two groups with regard to (1) the total cost to manage logistics and warehousing per $1,000 in revenue and (2) the number of full-time equivalent employees (FTEs) needed to manage logistics and warehousing per $1 billion in revenue. Exhibit 3 presents the median performance for each group with regard to the total cost to manage logistics and warehousing.

Organizations that manage inventory at customer sites spend $5.12 more per $1,000 in revenue to manage logistics and warehousing than the non-VMI respondents. Although the cost difference may not seem significant, for a company with $5 billion in revenue annually, this would amount to an additional $25.6 million associated with managing logistics and warehousing.

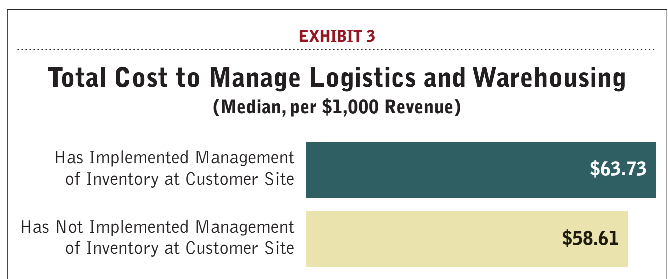
We can gain additional insight on this issue by comparing organizations that have adopted the strategy to only some degree with those that have adopted it extensively. According to APQC's data, those that have adopted this practice to only some degree spend a median of $52.59 per $1,000 in revenue on managing logistics and warehousing. By comparison, survey respondents that have extensively implemented VMI spend a median of $88.16 per $1,000 in revenue for managing logistics and warehousing. At the median, the difference in costs between the two groups is $29.55 per $1,000 in revenue. For a company with $5 billion in revenue, this would translate to $147.75 million in additional logistics and warehousing costs associated with extensive implementation.

Several factors could contribute to the significantly higher logistics and warehousing costs associated with extensive implementation of inventory management at customer sites. For example, it could be that extensive implementation requires companies to spend more on systems and technology needed to track customer inventory information for multiple sites. The VMI organizations also may lease space at customer warehouses as part of their inventory management practices. This would add to costs through the lease as well as through the operating costs associated with having offices at customer sites.

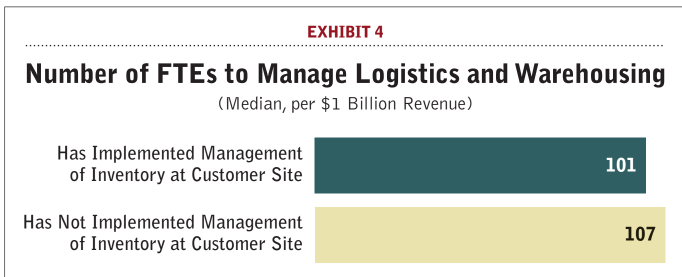
Despite the higher logistics costs accrued by organizations that manage inventory at customer sites, this group requires fewer FTEs to manage their logistics and warehousing. At the median, they require 101 FTEs per $1 billion in revenue, whereas organizations that have not implemented VMI need 107 FTEs per $1 billion in revenue (see Exhibit 4 on page 72). Fewer FTEs means lower personnel costs associated with logistics and warehousing for these organizations. This finding further points to the higher logistics costs for VMI organizations that originate from other sources such as higher systems or overhead costs.

Focus on the Customer

APQC's data indicates that the management of inventory at customer sites does not automatically result in superior



performance across logistics metrics. Although companies that have adopted this practice need fewer FTEs to manage logistics and warehousing, they spend more on this process than the non-VMI respondents. This difference is even more apparent when looking at logistics costs for organizations that have extensively adopted VMI. Perhaps even more surprising are the longer customer order cycle times for those that manage inventory at customer sites.



These results paint a complex picture of the potential effects of managing inventory at customer sites on logistics performance. Extensive adopters of this practice may invest more in technology for tracking customer inventory and demand information. Yet the longer customer order cycle times indicate that the VMI programs in place are not meeting the expectation of improved inventory management and order delivery.

Organizations looking to manage inventory at customer sites should carefully consider where breakdowns could occur within the order fulfillment process and take additional measures to ensure that performance does not falter. Maintaining a focus on customer satisfaction can give organizations a competitive advantage, especially if they are one of the few vendors in their industry to offer this kind of service to customers. At the same time, some companies may have a customer base that expects vendors to provide this kind of service.

For organizations adopting this inventory management practice, the key to success is providing the best service possible. This requires a careful analysis of potential weaknesses in their performance and then establishing a close and continuous relationship with their customers.

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