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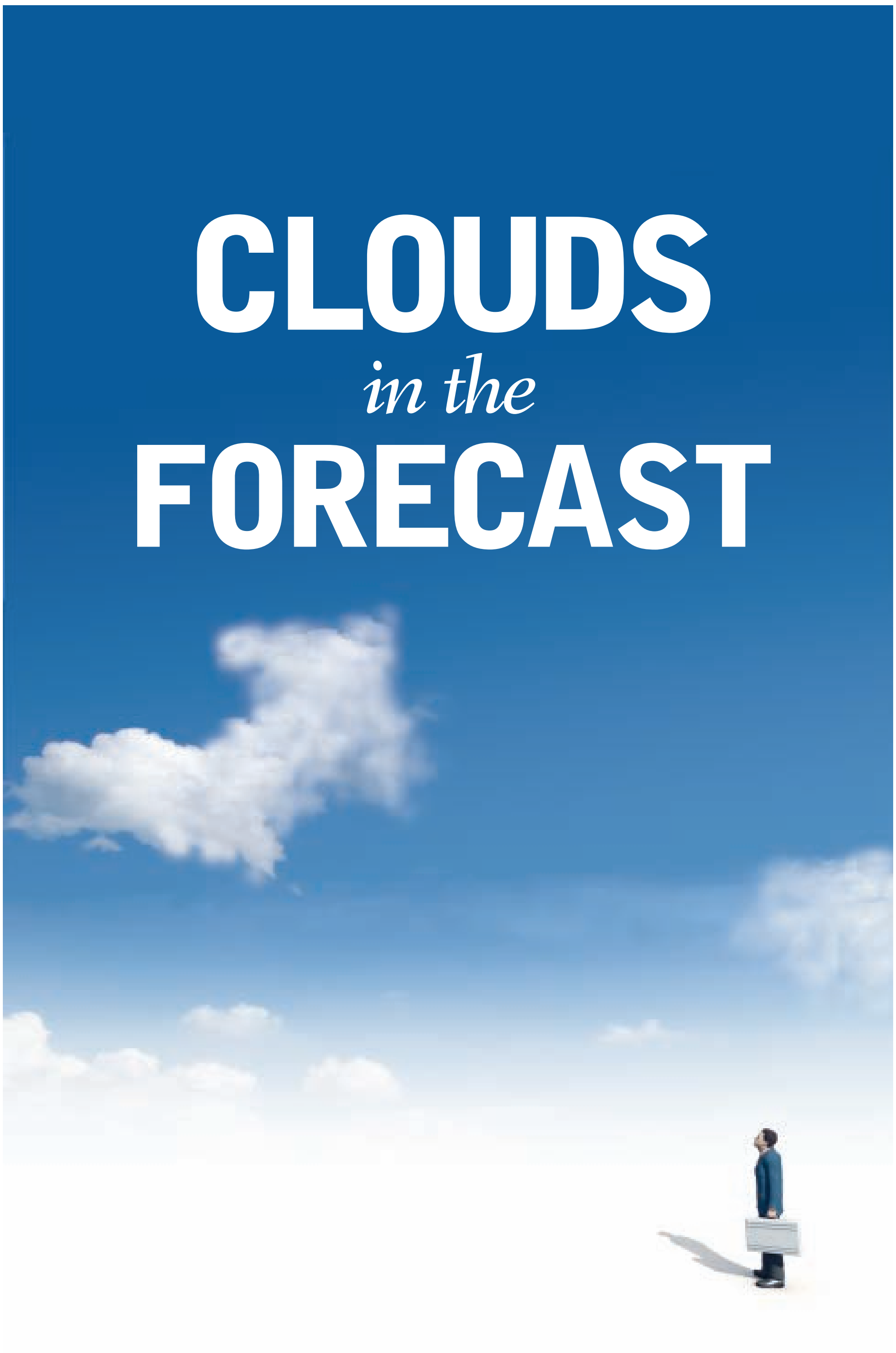

FEATURES

COMMENTARY

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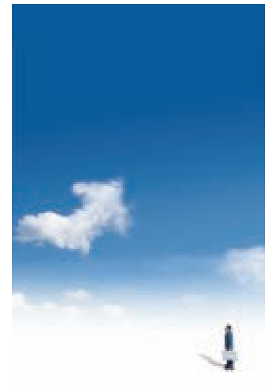

FEATURES

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One More Time: People, Process, Technology

Frank Quinn, Editor
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People, process, technology. These are the three core elements that determine the relative success (or failure) of any organization. We've heard this in countless management books and keynotes speeches. And it's hammered home in business school curricula across the country.

Now it's our turn. This issue of *Supply Chain Management Review* is devoted in roughly equal measures to the three core elements. Our rational: Their importance can never be stated enough.

Let's take technology first. Our opening feature article from Derek Jones and Thomas Schramm of Accenture paint a comprehensive picture of one of the most promising technologies to come along in recent years—cloud computing. Thanks to the ads that have been popping up on national TV lately, everyone is probably familiar with the cloud concept by now. What may not be so evident, say the Accenture consultants, is the real potential that cloud computing holds for the supply chain. In their article, the authors describe those financial and operational benefits in some detail—while offering this sage counsel: In order to achieve the benefits, you first need to address six critical questions.

On the process side of SCM, this issue focuses on the way in which capital expenditure projects are designed and executed. Traditionally, the procurement and supply management folks have been called into these projects after the key design and supply decisions had been made. Thus, purchasing's role became largely transactional, simply buying the materials and services that effectively have been "baked into" the project.

But according to supply management experts Robert Rudzki and Robert Trent, this conventional approach forecloses on some important opportunities. They argue convincingly that companies need to put in place a process whereby purchasing is involved *early* in any capital expenditure project. The perspective and expertise purchasing pros can bring to this effort, the authors say, will pay big dividends—not just in the initial buying activities but throughout the life of the CapEx project.

The people part really flows through most of our stories most of the time. It's especially evident this issue in the piece about Biogen Idec's shake-up of its supply chain to cope with an expanded and more complex operating environment. The team-based approach this biotech company took to accomplish the transformation speaks to the criticality of having the right people in place. After all, it's the people who use the technology and execute against the processes.

Though the primacy of people may be self evident, we introduced the Talent Strategies column in our March/April 2011 issue just to make sure. Written by the experts at MIT, the column this month addresses an especially timely question: What are the critical skills needed to manage in a supply chain crisis?

So at the end of the day, I guess we can't say it enough… People, Process, Technology.

Francis J. Quinn

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InSIGHTS

BY LARRY LAPIDE

Integrated Demand Signals at the Crossroads

Integrated Demand Signals, or IDS, allow you to leverage "daily data, daily." But how close are we really to realizing that ambitious goal?

Dr. Lapide is a lecturer at the University of Massachusetts' Boston Campus and is an MIT Research Affiliate. He welcomes comments on his columns at llapide@mit.edu.

In 1992, Wal-Mart deployed Retail Link® to provide its vendors with information on the sales trends and inventory levels of their products sold at the retailer's stores. In 1996, Retail Link became available via the Internet and made the Web its application platform.

The deployment of Retail Link marked another watershed event in the Efficient Consumer Response (ECR) movement that was beginning around that time. At the 1994 conference of the Council of Logistics Management (now the Council of Supply Chain Management Professionals) I spoke about forecasting in the consumer products industry and showed an early version of the demand signals graphic shown in Exhibit 1. I said that companies were contemplating relationships with downstream partners to get demand signals to better understand supply chain dynamics, to do multi-tier forecasting for improved forecast accuracy, and to improve planning to better integrate supply chains. I had just completed a consulting engagement in which we had installed a forecasting system for a consumer-products manufacturer that used the knowledge of a distributor's inventory to better forecast product sales to that manufacturer.

Since that time, I've been enthusiastic about demand signals. I've researched, written, and spoken about opportunities that exist to leverage POS (point-of-sale) data and other downstream signals to improve forecasting and integrate supply chains. While industry has generally been receptive to this concept, companies have actually done little with POS data to integrate upstream supply chains. Instead, POS data has mostly been used by customer-facing service and account teams to work with retailers on replenishing inventories, especially to support promotions and new product launches. As I observed what has been happening, I concluded that supply chain managers felt that POS data was too inconsistent, cumbersome, and hard to use. Had I been "beating a dead horse" for over 15 years?

Finally, Some Momentum for IDS

What I and others had been advocating all along has come to be known as the Integrated Demand Signals (IDS) concept. And in the consumer products industry anyway, the concept is finally heating up. Responding to a request from General Mills, Penn State and the MIT Center for Transportation & Logistics (MIT-CTL) last fall jointly ran an IDS Symposium. Participants were drawn from consumer product manufacturers, suppliers, third-party logistics providers, and technology analyst firms. The symposium was written about in the Winter 2010 edition (Issue No. 39) of *MIT-CTL's Supply Chain Frontiers* (http://ctl.mit.edu/about us). The article was titled "Demand Sensing at a Crossroads."

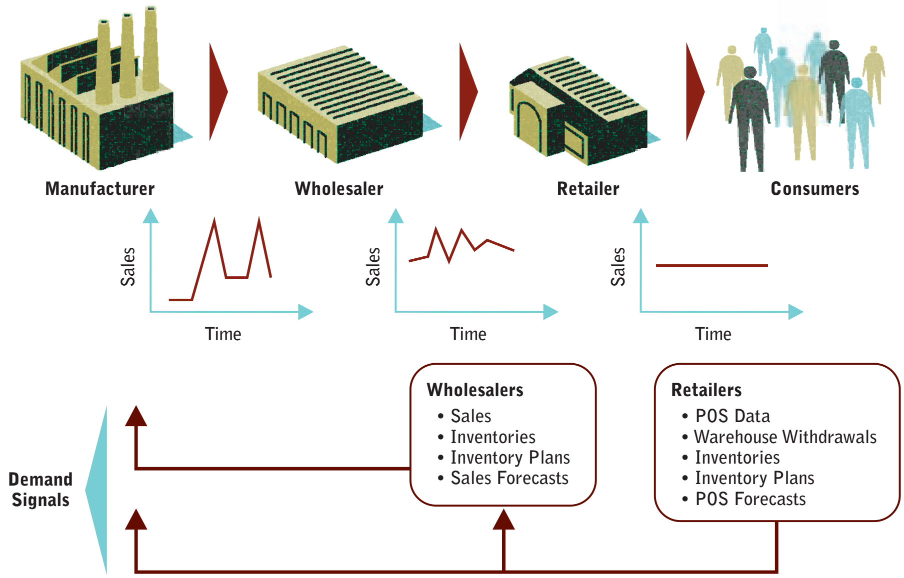
What follows is my summary of the current state of IDS, based on the symposium and on my research and observations:

• IDS remains in piloting mode. However, as the article in *Supply Chain Frontiers* indicated, the concept is at a "crossroads." While supply chain managers are finally convinced there is substantial value to IDS, they believe that it will take significantly more time and resources to implement than originally thought.

• Symposium participants cited a host of hard

EXHIBIT 1

How Downstream Demand Signals Can Help Mitigate the 'Bullwhip Effect'



benefits as demonstrated by pilots. These included cost and inventory reductions, revenue growth, improvements in new product launches, and better fill rates and retail-shelf availability. With regard to top-line growth, the participants said that IDS yields more timely information than today's syndicated data that is up to six weeks old. It also provides earlier feedback on the consumer preferences needed to better manage upstream operations.

• Companies need to implement Demand Signal Repository (DSR) databases to store massive quantities of downstream data for easy access and rapid analysis. Moore's Law (of exponentially increasingly computing capabilities) has made such databases more feasible, yet the industry may need to wait a little longer to reach the levels of computing required. The goal for IDS is to leverage "daily data, daily." That is, data needs to be consistently collected everyday and processed overnight for managers to act on it the next morning.

• As one participant in the symposium aptly put it, the "drumbeat" of decision-making and planning at a company will have to change to daily from what is now monthly or weekly. Getting to this stage requires the creation and implementation of enterprise-wide business processes that can leverage daily demand signals. Today's demand-supply chain activities are typically driven by customer orders and not by what is going on downstream, such as on retailers' shelves. The enterprise-wide processes needed to get the needed data—upstream and downstream—requires the input of marketing, sales, and finance as well as the supply chain.

• Suppliers will face a significant challenge in coping with the inconsistent policies and data formats that retailers have been using in providing POS data. Some retailers "don't get it" and others "don't have it." Some give it for free, while others charge. Most significantly, some companies—Wal-Mart being the primary example—will not allow a third-party to access and host data on behalf of suppliers. This restriction is hampering syndicated data innovation. Suppliers are finding that having to develop DSRs on their own to accommodate the policies and data formats of multiple retailers is proving cost-prohibitive.

Where Do We Go from Here?

The IDS concept, which is very much at a crossroads, is leaving managers in a quandary. They believe it will ultimately yield big benefits; however, they struggle with coming up with effective means to achieve those benefits. Supply chain managers realize that they need to jointly implement enterprise-wide business processes with counterparts from marketing, sales, and finance. In and of themselves, these implementations are huge efforts. Over and above this, they recognize the necessary (and costly) effort required to build DSRs that will allow them to leverage "daily data, daily" from the lion's share of retailers. Data from just a few simply will not achieve the critical mass needed.

As technology analysts at the symposium noted, the industry is experiencing "perpetual pilot syndrome" and "no one has cracked the code on demand sensing." I believe retailers will have to play a larger role in establishing what is needed. Suppliers have their hands full implementing cross-functional business processes. So it's up to the retailers to establish industry-wide data standards. At the same time, they need to work with technology providers to offer hosted DSRs so that suppliers can inexpensively purchase syndicated data, rather than having to develop DSRs themselves.

Barring this support from retailers, some day some supplier might "crack the code" and get substantial competitive advantage from IDS. However, implementing IDS today represents a big gamble for a single supplier to take on itself, especially in an uncertain economy.

PROFILES in LEADERSHIP

Pragmatic Strategist: Ronald D. Schnur

By John Kerr

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

Ron Schnur spent much more than he had to when he was a sourcing chief at beer maker Coors. Instead of trying to procure bottle labels for as little as possible, Schnur and his team chose more expensive labels that change color when the bottle is cold.

The additional spend was entirely justified. Consumers love the idea of knowing their beer is "ice cold" when the mountains pictured on the label turn blue. The labels' special temperature-sensitive ink, also sourced by Schnur, significantly boosted Coors brand qualities—and sent sales and market share soaring.

Schnur cites this example to expose the central flaw in conventional cost-centric supply chain approaches. "Supply chain people should have metrics that are tied as much to revenue and growth as to cost saving," he says. "We really have to do a better job of getting people prepared to operate in a world like that."

As the vice president of dairy supply & operations at WhiteWave Foods Company, Schnur practices what he preaches. "You have to learn to understand and appreciate the sales and marketing world and speak their language—and engage with them," he says. He describes how he adapts his presentations to ensure that they translate for his colleagues from other functions: for instance, how a dollar not spent is the equivalent of so many cartons of milk sold to supermarkets. When he speaks with finance staff, he talks in cost per container and about shareholder value—not about the supply chain's specific metrics. And he makes it his business to get out into WhiteWave's markets, joining sales and marketing teams on visits to customers to get an immediate sense of the scale and cadence of demand.

Ron Schnur defines leadership as the ability to engage and excite people around the achievement of a common goal.

In his current role—he has been in the job since mid-2009—Schnur is in charge of providing strategic, financial, and operational leadership for the company's dairy supply chain and operations team of 115. His group also provides direct support for WhiteWave's organic foods business unit, whose Horizon brand is a familiar sight on store dairy shelves nationwide. Previously, Schnur was vice president of procurement and supplier management for Sears Holdings Management Corp. There, he steered procurement and supplier management activities for $8 billion in non-merchandise spending and had responsibility for corporate aviation, e-sourcing and supplier diversity.

Prior to joining Sears Holdings, Schnur was vice president, strategic sourcing for Coors Brewing Company for nearly five years, leading procurement and supplier management activities encompassing raw materials, packaging, corporate services, and supplier diversity. He has also held procurement and supply leadership positions in several other organizations, including Eaton Corp. and Chrysler Corp.

Getting Results Through People

Schnur defines leadership primarily as the ability to engage and excite people around the achievement of a common goal or objective. "Great leaders get results through people—by building organizational capability," he says. "To put a bit more emotion into that assessment, people have some fundamental questions that determine your ability to lead them. Are you committed to the task? Are you engaged? Are you leading from the front? People gravitate to positive energy. Also, is there a sense that I can trust you? And do you have empathy—do you care about me? These are some of the things that employees will want to know about their leaders," says Schnur.

Asked about the development of his own leadership style, Schnur describes a trajectory that will be familiar to regular readers of this column. "You mature from a state of doing and of having people think you're the smartest person in the room to one of teaching—helping people grow so they can do it themselves. You're no longer telling them what to do," he says.

When he took over strategic sourcing and supply at Coors, Schnur had to keep those ideas very much in mind. With a mandate from senior management to have the supply chain group add more value to the whole organization—for instance, by partnering with sales and marketing to bring new products to market—Schnur concedes that he sometimes had to resist the urge to do things himself. The pressures to perform were significant.

Schnur knew it was necessary to build an organization that could expand and sustain strategic sourcing activities. "To transform a group of 100 supply professionals, you have to bring people along. People go at different paces; you have to recognize that," he says. Throughout the group's shift to a strategic sourcing stance, Schnur had the full support of Coors' supply chain officer and chief financial officer; they helped coach him to walk before running. "You've got to understand what your long-term vision is and articulate it," Schnur adds. "You have to make sure your change effort has a solid foundation, and then you pace your change."

During his career, Ron Schnur has arrived at five ideas that serve as leadership guidelines for him and the managers who report to him. The first is simple: Do good work. "If I had to turn it into a bumper sticker, it would read: 'Pursue excellence,'" he says. The second guideline is just as simple: Get results. The third is a reminder to do what is in the best interests of the enterprise in terms of total cost, rather than making decisions that cut purchasing costs in the short term. His fourth principle gets at the team-building concepts noted earlier—with a particular emphasis on finding ways to resolve conflicts. And the last idea: "Enjoy what you do." Says Schnur: "If you don't, then find something else to do. Life is too short."

Enjoy what you do. If you don't, then find something else to do. Life is too short.

Advocate for Supplier Diversity

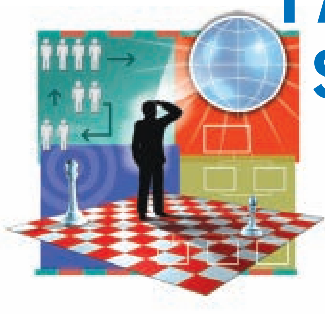
Schnur has no problem enjoying what he does. He is a board member at the Institute for Supply Management. An alumnus of Pennsylvania State University's MBA program, he's also on Penn State's MBA Advisory Board and has served as a curriculum adviser for the university's supply chain management program.

He is also well-known for his work in developing minority suppliers, and has been a board member of the National Minority Supplier Development Council as well as a member of its Corporate Plus Committee. He is adamant that supplier diversity initiatives must not—must never—be viewed as social responsibility programs. "It's not a quota system and it's not a 'nice-to-do' thing," he emphasizes. "We all have a responsibility to do business with suppliers that more and more reflect your consumers. It just has to be part of how you research your category, develop your category, and implement your category strategy."

Schnur has pushed for such pragmatic supplier development everywhere he has worked. At WhiteWave, for instance, his group works to encourage their Tier One suppliers to engage with minority suppliers. "We'll help them with programs and matchmaking. We'll lend our resources to help them find new sources," he says. But in no situation should there be different types of scorecards for minority suppliers, according to the WhiteWave supply chain chief. "I don't believe in free lunches and I don't believe in holding any group of suppliers to any different standards than any other suppliers," he maintains. At Coors, his target was to attain 10 percent of his group's spend with women and minority suppliers within five years, working with many of the company's Tier Ones. The target was easily surpassed.

Schnur contends that there are no great secrets to managing suppliers well. He points to five truths he considers universal. First, suppliers want to know what's expected of them, with all contract terms made very clear. They also want to know how they are performing against those expectations, using metrics that make sense to them and that are consistent. Suppliers also appreciate communication and information, says Schnur; they want to be engaged and want to know what's going on with your business. They always want to be (and deserve to be) treated with respect and integrity. And of course, they want to be paid a fair price.

Profound? Not especially. Practical? Very.



TALeNT STRATeGIES

Do You Have the Skills to Manage a Crisis?

By Dr. Bruce Arntzen and James B. Rice Jr.

Dr. Bruce Arntzen is Senior Research Director and James B. Rice Jr. is Deputy Director at the MIT Center for Transportation & Logistics. They can be reached at barntzen@mit.edu and jrice@mit.edu.

The tsunami that devastated northern Japan and wreaked havoc on the world's third-largest economy delivered a shocking reminder of the vulnerability of supply chains to catastrophic disruptions. Other recent examples of such calamities include the earthquake that struck Haiti in 2010 and Hurricanes Katrina and Rita in 2005.

While much of the physical destruction caused by disasters like these is unavoidable, it is possible to mitigate the business impacts. For example, Japanese car manufacturers suffered production stoppages and parts supply interruptions in the aftermath of the tsunami. But the manufacturers were proactive in keeping customers informed of developments and working with current and prospective suppliers to minimize the supply chain fallout.

In light of these experiences, what supply chain skills are needed to be prepared for large-scale disruptions and to recover quickly when disaster strikes? And who in the organization should take the lead in developing response strategies?

Risk Management Plus

All supply chain managers are risk managers in the sense that they regularly deal with risks across the supply chain. They hedge demand uncertainty with extra finished inventory or additional capacity, and guard against supply uncertainty with dual sourcing and raw material inventories. Supply chain managers buffer the organization against unreliable manufacturing operations with multiple production lines and plants.

While these areas of expertise are invaluable in crisis situations—and underline the supply chain's critical role during emergencies—companies with complex supply chains also need dedicated risk management resources. An individual or internal organization should take the lead in developing business continuity plans and assessing the risks throughout the supply chain.

The specifics of this role will vary from company to company. But often the lead person is called the supply chain risk manager (we shorten it as SCRM here) and has responsibility for managing risk for the entity, which could be a business unit, a product line, or a product category.

Skill Set Needed

The skills required to fulfill the SCRM role are reflected in the activities that need to take place both before and after a disruption hits the organization.

Before the Event Happens

The secret to successful response to disruptions is to prepare *before* the event occurs. To do this effectively, the SCRM needs to address some critical questions: What disruptions could happen? And how would these supply interruptions affect the business? Importantly, this individual also must consider both the possible sources of a disruption as well as the associated end states—and recognize that these scenarios represent different challenges. In considering the sources (for example, earthquake, tsunami, hurricane, labor action, fire, terrorist attack), the SCRM assesses the probability of potential events, and decides which require preparatory actions.

Humans are creatures of habit—a truism that is reflected in the amount of attention people pay to various types of risk. A recent survey by the MIT Center for Transportation & Logistics (MIT CTL) of 1,500 supply chain managers asked these individuals to rank a list of 25 risks from most to least frequently occurring. They judged supplier failure to be the most frequent risk event and earthquakes as the least frequent. The next question asked them to rank the importance of these same 25 risks to their supply chain. The rank ordering of importance was almost identical to that of frequency.

The survey results strongly suggest that the respondents were using one metric—frequency—to judge the importance of a disruption. But what about severity of the impact? Don't earthquakes do a lot more damage than a supplier failure? As creatures of habit, these managers focused their attention on the familiar risks that happen most often. A talented SCRM should avoid forming a "risk comfort zone" and put all forms of risk in proper perspective.

Having identified the types of disruptive events and potential impacts, the SCRM can then develop appropriate contingency plans. What actions can be taken to ensure that the business continues to operate even if it loses the ability to produce, ship, communicate, and secure supplies, for example? The level of planning required to formulate back-up plans requires creative thinking and a "preparation" mindset.

Still, back-up plans alone are not enough when responding to a severe disruption. The SCRM should also establish resources such as emergency response centers (ERCs), communications systems, chain-of-command structures, and business continuity plans that can be activated when the enterprise is thrown into a crisis.

Finally, the supply chain risk manager must help to educate employees and increase awareness of emergency response practices. This will encourage employees to consider potential crises, be aware of the consequences, and think about what measures can be taken to prevent or mitigate the impact of a business interruption.

After an Event Happens

After a disruption, the focus shifts to recovery and implementing the contingency actions that have been developed for such emergencies. The key is to react quickly: companies that delay not only risk a lengthier recovery, but have more difficulty securing scarce production capacity that has already been taken by nimbler players.

Typically, an organization will activate an ERC at the corporate level or in the region where the even occurred, or both. An ERC can even be "virtual." In the Japanese tsunami disaster, for example, Hewlett-Packard set up a virtual situation room where managers across the world could pool information.

The ERCs should be staffed by key functions that typically come under the supply chain umbrella such as procurement, operations, and distribution. The SCRM directs the overall effort, though he or she may or may not be a part of the team. These functional experts are the central coordinators for the supply chain response. They need knowledge and a skill set that may not normally be part of supply chain manager's make-up. For instance, they must be intimately familiar with the business continuity plans established by the planning group. And they should be able to interpret the plans quickly and adjust them as needed depending on how the situation is unfolding.

This type of decision making requires the ability to work under extreme pressure with limited data, and to coordinate across many parties in the supply chain. These emergency response specialists work effectively in an informal hierarchy and, where necessary, assume authority over more senior managers.

Managers with these "extreme" problem solving capabilities rapidly consider a situation and craft creative solutions to unanticipated problems. Similar to a broken field runner in football, they are able to handle surprises without being derailed and come up with innovative solutions. Such innovation was evident at one company that was faced with the loss of a critical petroleum-based packaging material in the aftermath of Hurricane Rita. It redesigned its packaging around non-petroleum-based materials as a near-term solution to circumvent the material shortage. This undoubtedly entailed a cost increase and numerous changes. But the problem solvers did not accept the base constraint and found a solution that kept their products on the shelves.

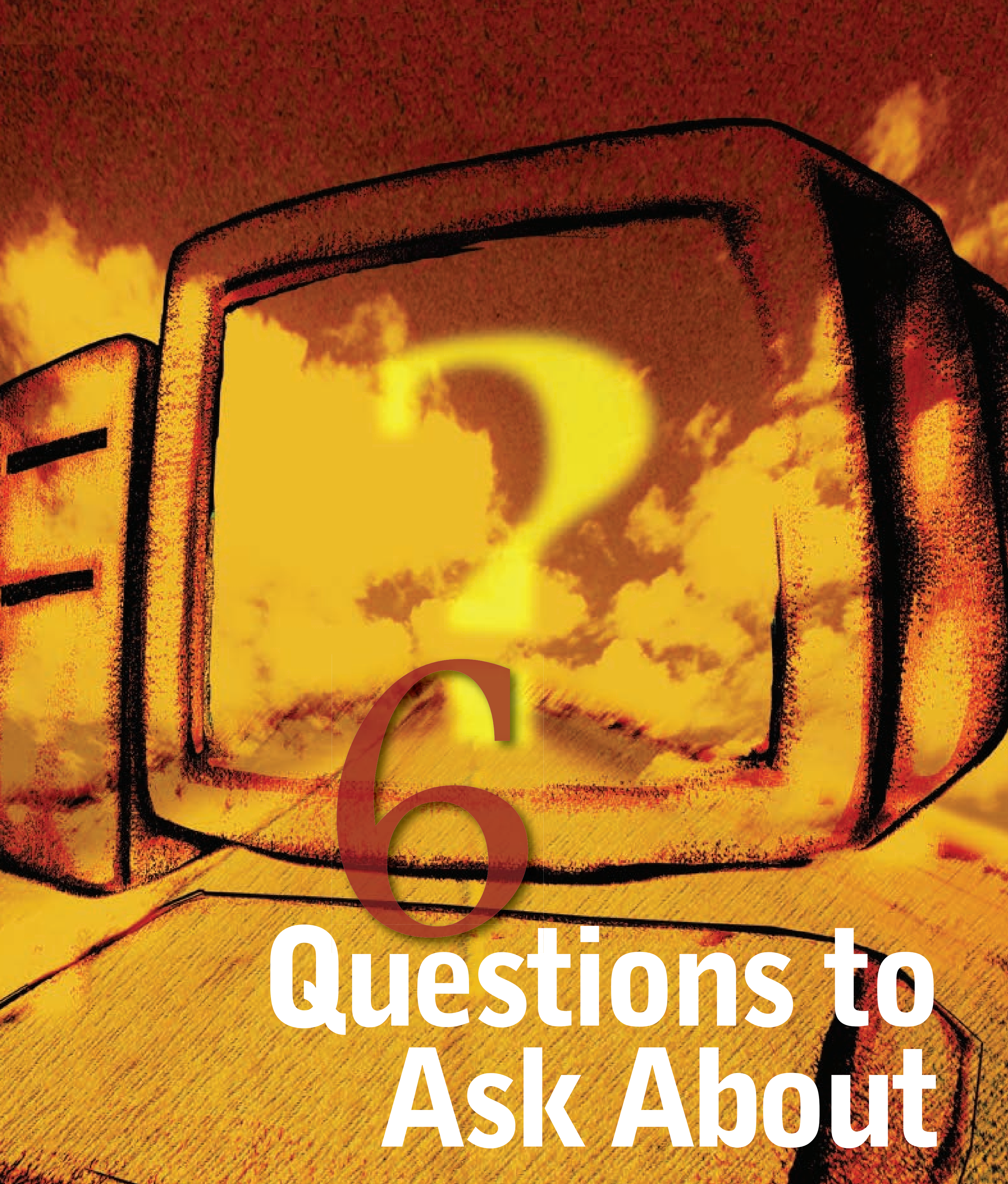
Steeling the supply chain against calamities is part of a culture of emergency response that any enterprise can benefit from.

Emergency responders also require a mix of diplomatic and listening skills—and a thick skin. They also must be exceptional communicators. These individuals are the company's main channel of communication both internally and externally in crisis situations. The external audience includes highly demanding media representatives.

Expect the Unexpected

Mercifully, disruptions on the scale of the tsunami that ravaged Japan are few and far between. But that does not mean that supply chain organizations should ignore the possibility of being affected by such disasters.

Steeling the supply chain against calamities is part of a culture of emergency response that any enterprise can benefit from. But that culture requires specific skills that are not part of regular supply chain operations. It is incumbent upon companies—particularly large organizations with complex supply chains—to nurture these skills and identify individuals who can take the lead in supply chain risk management.



6 Questions to Ask About

CLOUD COMPUTING

Cloud computing—an emerging technology that gives users wide access to computing capabilities without the costs of ownership—has huge potential for the supply chain. In fact, the cloud is poised to usher in a new era of high-performance SCM. But before making the transition to cloud computing, companies need to address six key questions to make sure that they capitalize on its full potential.

By Derek Jones and Thomas Schramm

Around the world, interest in cloud computing is growing rapidly, as executives in more and more industries identify ways to capitalize on the benefits it promises. Many organizations are now using cloud services and technology to develop innovative products, improve operations, share information with customers, partners and suppliers, and run important enterprise applications. Despite security concerns and other challenges, executives in virtually all sectors believe cloud computing can provide their companies with lasting competitive advantage.

Over time, the cloud revolution will reach every area of business activity, reflecting the benefits it offers in terms of costs, scalability, and flexibility. Not surprisingly, interest in cloud's potential in supply chain management is increasing apace, as companies worldwide strive to make their supply chains more flexible, dynamic, and efficient in response to ever-increasing volatility in customer demands and market conditions.

Benefits Beyond Costs and IT Capacity

Currently, most attention is focused on how cloud computing can reduce IT costs and help companies meet pressing—but often short-term—computing needs. However, some organizations are looking beyond these short-term opportunities to determine how clouds can help them achieve a permanent step-change in competitiveness. In the coming years, as operational excellence becomes ever more critical for success, executives in both the developed and emerging world will take advantage of cloud computing to run leaner, more agile operations at lower cost.

In fact, reducing capital expenditure and recurring IT costs are just two of the many reasons organizations decide to pursue cloud computing and services. The Accenture Institute for High Performance recently concluded an 18-month research study into cloud computing, involving interviews with some 669 senior executives worldwide. Exhibit 1, drawn from this study, illustrates the wide diversity of drivers behind enterprises' cloud computing activity. While cost benefits claim the top two places, other important benefits being targeted include enhanced communication and collaboration, more standardized and efficient processes, and provision of IT services in locations with limited IT infrastructure, resources, or skills.

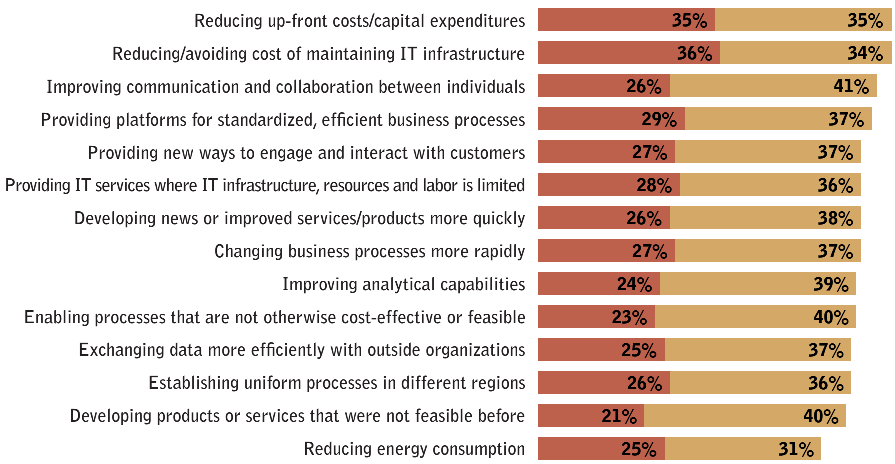
All of these potential benefits are highly relevant to supply chain management. In addition, the close alignment between the cloud's capabilities and the needs of high-performance supply chains is further underlined by the fact that supply chain is one of the leading areas where businesses expect to use cloud computing in the near future.

As Exhibit 2 illustrates, respondents to our High Performance Cloud Computing research believe that over the coming 18 months they will use cloud computing and services primarily to provide shared IT platforms, manage and store data, run enterprise applications, improve productivity and collaboration, and execute analytics. Within these general objectives, the third-highest priority is running CRM, ERP, or supply chain management applications in the cloud. This priority came behind only running multi-organization IT platforms, and data back-up.

Derek Jones (derek.m.jones@accenture.com) is the Research & Development lead in the Accenture Supply Chain Management practice and Thomas Schramm (thomas.a.schramm@accenture.com) is the Executive Director in that practice.

EXHIBIT 1

How Important Are These Benefits in Using/Exploring Cloud Computing?



Source: The Accenture Institute for High Performance's Global Cloud Computing Survey

Six Critical Questions

While cloud computing in the supply chain is attracting growing interest, it is also generating some difficult questions. We are still at the dawn of the cloud computing era—a stage at which companies are experimenting with cloud services, or are in the early stages of implementation. It will take years to see the exact ways in which cloud computing will change or transform how business is conducted and companies compete.

We believe that cloud computing will ultimately drive a revolution in the way supply chain services are provided; in particular, we envision a shift away from traditional, contracted outsourcing models to more flexible, transaction-based models. Some companies are already using cloud computing to do this, such as the U.K.-based confectionary company Cadbury (see accompanying sidebar). The good news for other businesses is that they have time to decide how to use the cloud and to learn how to manage its risks—thereby enabling them to save money, improve their operations and, most critically, transform themselves into a more formidable competitor.

Supply chain executives can get a head start by conducting a timely, focused, and productive evaluation of cloud's potential and pitfalls. To help them do this, Accenture has identified six key questions that decision makers should ask about this still-new phenomenon. By addressing these questions, supply chain executives can focus on the truly key issues, and start to identify the real opportunities and risks that cloud computing brings to their own organization.

1. What is cloud computing and how does it work?

As we noted earlier, cloud computing allows companies to access IT-based services via the Internet. These services include infrastructure, applications, platforms, and business processes. Across all these offerings, cloud services tend to share several characteristics:

- little or no requirement for capital investment to enable usage;
- variable pricing based on consumption—buyers pay per use;
- rapid acquisition and deployment;
- lower ongoing operating costs than IT owned and managed in-house; and
- programmable and adaptable in use.

Companies that have begun to map out and plan their cloud strategies have typically focused on IT infrastructure initially. The benefits targeted include financial flexibility, lower total cost of ownership (TCO), speed to market, and the availability of information

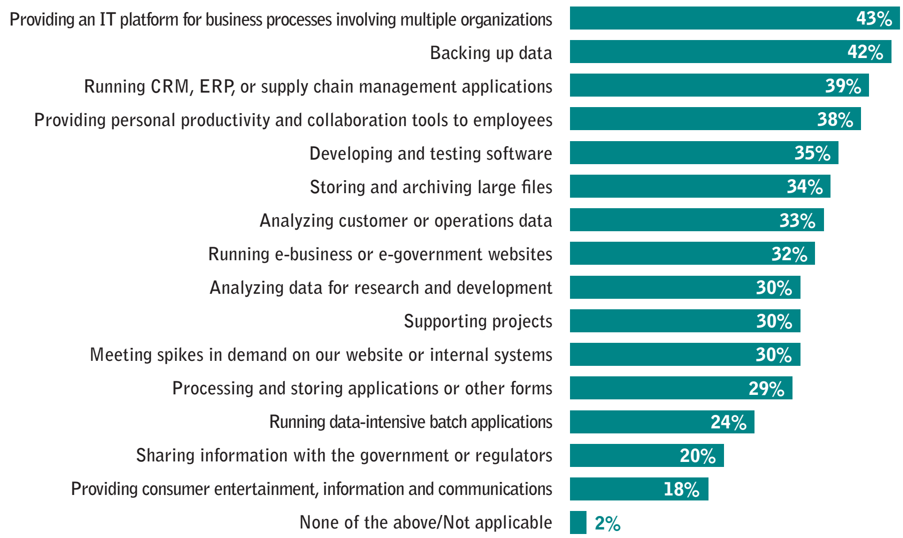
What Is Cloud Computing?

The term cloud computing originated as a twist on "computing cloud," an easy-to-visualize way to portray a group of computers or the Internet itself. Put simply, cloud computing allows users—wherever they are in the world—to obtain computing capabilities through the Internet from a remote network of servers.

When provided as a service from an external company, cloud computing lets organizations bypass the expense and overhead of buying, installing, operating, maintaining, and upgrading the networks and computers found in data centers. Instead, users tap into a service when it's needed for as long as it's needed. All that is required is a broadband Internet connection, at the other end of which are computing clouds—supersized data centers containing tens of thousands of servers hosting Web applications. Organizations usually pay for cloud services based on the kind and the amount of services used.

EXHIBIT 2

How Will You Use Cloud Computing in Next 18 Months



Source: The Accenture Institute for High Performance's Global Cloud Computing Survey

anywhere and anytime. However, cloud also brings opportunities to expand similar benefits up the value continuum to applications and processes, and into the design, development, and delivery of innovative product and service offerings for customers. The hierarchy of cloud opportunities that starts with infrastructure, and then moves up through platform, application, and business process clouds, is summarized in Exhibit 3.

Clouds at each level of the hierarchy can take two forms: private and public. Private clouds are built within a company's data center and are designed to provide and distribute virtual application, infrastructure, and communications services for internal business users. In contrast, public clouds extend the data center's capabilities by enabling the provision of third-party providers over a network.

The choice between private and public clouds represents a trade-off between security and flexibility. A company using a private cloud (an approach that is sometimes required by regulators) gains the perceived benefits of lower risk and higher data security because the company owns and holds the cloud data and services within its own infrastructure. With a public cloud, the user's data is held externally alongside that of other businesses. Yet a public cloud also tends to offer greater flexibility and scalability than a private cloud.

Different types of businesses may make different choices regarding public or private clouds for running their supply chains. Large multinational companies with multiple global supply chains may decide to use private clouds as a way to standardize their IT infrastructure, simplify their upgrade paths, and standardize their processes—while still retaining a high degree of customization at the enterprise level. Private clouds also can span multiple companies, effectively becoming private "trading exchanges" for partners in the extended supply chain.

In contrast, small and medium-sized enterprises may find a public cloud to be the most suitable solution. Though they may sacrifice a degree of customizability, these organizations gain such benefits as lower cost, simplification of IT support, scalability, and ongoing innovations and upgrades. Crucially, adopting this approach means they will not need to run complex implementation projects. Cloud computing allows them instead to focus on training and change management support for the affected users.

2. Is cloud more than just a technology or applications play?

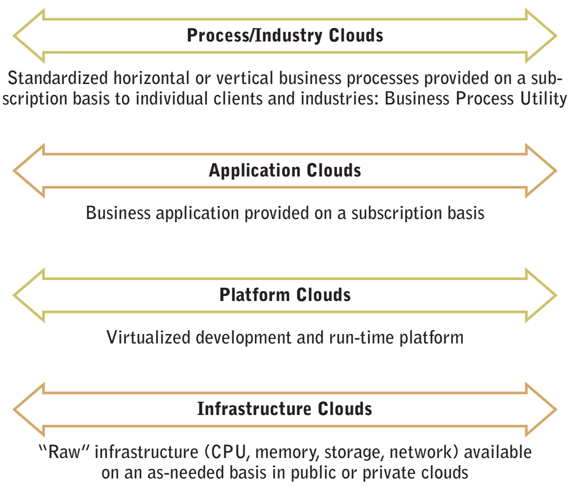
Certainly, technology is the bedrock of cloud computing. However, cloud represents much more than "just another" technology platform. In fact, it promises to transform how companies buy and use IT services, both within the supply chain arena and across the broader enterprise.

Moving further up the cloud computing continuum shown in Exhibit 3, we believe that cloud technology will also be the enabler for an entirely new paradigm: cloud-based supply chain processes, or "supply chain in the cloud." Put simply, in the not-too-distant future we expect to see providers of supply chain services leverage the cloud computing technology to provide services on a transactional pay-per-use basis to any customer, anywhere, anytime. The emergence of supply chains in the cloud will have a transformational impact on the way in which supply chains are created, managed, and optimized.

What is it about cloud technology that will enable it to transform supply chains operations in this way? The answer essentially comes down to two key attributes that cloud brings for users of cloud-based services. The first is that *little or no CapEx is required*. Cloud-based applications and services are generally provided almost entirely on a transactional basis. That means users require little or no capital expense outlay to get started in new business segments, markets, or geographies.

EXHIBIT 3

Continuum of Four Cloud Computing Opportunities



Source: Accenture Analysis

The second attribute is that *low barrier to entry will create new market entrants.* Because major capital investments and staff ramp-ups are not required, new companies will find it easier to establish themselves in the marketplace. These new competitors will combine innovative ideas with readily available, cloud-based services to challenge established market leaders—without the need to build up an entire supply chain infrastructure.

Supply chain in the cloud is a concept that is still in its early stages. It will develop at different paces in different process areas, industry sectors, and markets, as described below:

- **Process areas**—Supply chains in the cloud are likely to take hold initially in areas on the fringe of what companies consider core capabilities. Processes like global trade compliance, transportation route planning, freight bill audit and payment, and even basic product design engineering are all likely candidates.
- **Industry sectors**—The early adopters will probably be industries both with products that are less complex, and those with the greatest cost and margin pressure. This includes industries like mass-market consumer goods and parts and supplies in the automotive and industrial equipment sector. Sectors like pharmaceuticals and high-tech will likely adopt cloud solutions further down the road.
- **Market**—Supply chains in the cloud will be characterized by a more efficient way to use services because cloud enables companies to add and ramp up services more quickly with little or no capital investment. As a result, the most likely early adopters of cloud-based sup-

Cadbury's Cloud-based Success Story

In 2008, Cadbury decided to transform its physical supply chain by improving collaboration and visibility end-to-end. The U.K.-based confectionary company realized this would only be possible if all the relevant systems were integrated and if everyone involved—from company managers to key partners across the extended supply chain—were able to manage supply chain events in real-time.

Having evaluated the options to achieve this goal, Cadbury decided to implement a cloud-based Software-as-a-Service solution called CarrierNet, developed by Deltion in the U.K. The solution was implemented in January 2009 and went live at the start of the busy Easter selling period that year. (Cadbury is now part of Kraft Foods, which acquired the company in early 2010.)

By mid-2010, CarrierNet had saved Cadbury £145,000, while also helping it to drive customer service levels to an all time high—actually hitting 100 percent at times. Within the first year of implementation, Cadbury saw a £45,000 reduction in transport costs due to the elimination of incorrectly addressed loads. Furthermore, no loads were delivered to the wrong address. Additionally, because the cloud-based tool enables users to monitor and "talk-in" any potentially failed deliveries caused by customer challenges or vehicle hold-ups, the company reduced the number of "returned loads" —that is, loads sent back to Cadbury because the driver could not complete the delivery. This reduction resulted in a further savings of £50,000.

The first year of cloud computing also saw Cadbury take 40,000 truck miles off the roads, reducing annual carbon emissions by 650 tonnes and savings £50,000 in staff costs through better planning. Cadbury's supply chain partners, including co-packers, also have saved significant sums by reducing the resources required for planning.

Commenting on the results to date, Keith Newton, Customer Logistic Director for Cadbury Britain & Ireland, said: "The implementation of the CarrierNet solution has enabled us to move from a series of unlinked systems to an interfaced solution that has totally eliminated a number of areas of failure. It is no coincidence that since implementation we have recorded a number of 100 percent customer service days, which is a significant achievement for a large FMCG company such as Cadbury."

Sources: Adapted from publicly available materials on the Deltion website, www.deltion.com, and on the Logistics Manager website, www.logisticsmanager.com ply chain services may be organizations in countries that have less developed infrastructure, and where traditional approaches require higher up-front investment.

3. *Is cloud a reality for all supply chain processes?*

While cloud computing for supply chain processes will have a transformational impact, it is unlikely that every single process will ultimately be a candidate for cloud.

Two categories of processes, in particular, may prove not to be well-suited to cloud computing. First, complex and/or unique processes that require a heavy degree of customization are less likely to be delivered as cloud-based services, at least in the near future. Second, processes that require heavy integration with either a physical flow or with other information systems (particularly those requiring ultra-fast response times) are not well-suited to cloud. A good example of these might be optical character recognition used by postal services that process mail at speeds of 30,000 pieces per hour.

These exceptions aside, there are many supply chain processes that lend themselves readily to being cloud based. These include some that are already available, if not in a fully cloud-based model, then somewhere on the spectrum towards cloud-based processes. By this we mean services that can be ramped up relatively quickly, that have no long-term contracts, and are paid for on a per-transaction basis—even if the model is not completely Software as a Service, and the technology is not massively scalable. The areas where this kind of service is currently being used include freight bill audit and payment, spare parts locating, and transportation sourcing/bid management.

Going forward, those supply chain processes that lend themselves to cloud computing can generally be divided between (1) the "lower-hanging fruit" that is likely to move to cloud in the short-to-medium term and (2) the more challenging and complex processes that are longer-term candidates for cloud. At the same time, the market for cloud-based solutions will become more mature, standards will be defined, and leading players will be established. Taking all this into account, we expect cloud-based processes will be established in three major waves by 2015, as shown in Exhibit 4.

Of course, these are merely projections of what might evolve, based on development to date. Over time, innovative ideas from providers and demand for services from consumers will ultimately determine which processes move to the cloud. In all areas, the basis for successfully providing supply chain processes in a cloud is a strong combination of IT infrastructure and process excellence and expertise.

4. *What specific benefits can cloud bring to my supply chain?*

Supply chains in the cloud will bring an array of benefits for users. We can group these benefits broadly into two categories: financial and operational.

Financial benefits. For users of cloud-based services in the supply chain, one of the most powerful benefits will be the ability to *switch capital expenditure into operational expenditure*. This is especially attractive in the current environment in which companies are limited by the capital markets in terms of the amount of capital expenditure they can make. By utilizing cloud-based supply chain services, they can reduce the amount of capital investment required to operate and to grow.

EXHIBIT 4

Implementation Waves for SCM Processes on Cloud Platforms

Wave 1 2010-2011 Processes and providers characteristics and examples	Wave 2 2011-2013 Processes and providers characteristics and examples	Wave 3 2013-2015 Processes and providers characteristics and examples
Early pilots. Driven by innovation and continuous improvement needs, testing attitude. Support and administrative processes. These can easily be abstracted and isolated, and do not require complex integration. Examples: • Capability development/ training delivery • Simple analytics	Maturing phase, first providers disappear from the market, others invest to grow and improve service offering. Higher focus on core and rather complex processes. Examples: • Pricing optimization • Replenishment planning • Order processing • Transportation load building	Consolidation phase, major players in each category defined. Well established models for usage and payment of cloud based services. Also complex processes covered in cloud, e.g. requiring collaboration between many entities and tighter integration with other processes, and perhaps involving physical capacity constraints. Examples: • Collaborative engineering • Warehousing and distribution of physical product • Reverse logistics/returns processing • Fleet management

Source: Accenture

A related advantage is the opportunity to move to a *more variable cost structure.* By taking advantage of transactional commercial terms, companies will be able to "variablize" their cost structures so that costs move more in line with revenue. Compared to traditional outsourcing models—which typically have fixed prices and long-term contracts—cloud-based services will enable companies to ramp up easily in times of growth and ramp down in times of lower demand, without finding themselves stuck with excess capacity and cost.

Operational Benefits. Cloud's advantages in terms of variable costs also are reflected on the operational side. In particular, transaction-based services enable *quick ramp-up and ramp-down* of process volumes—and even of new processes and services. For example, assuming availability of viable cloud-based capabilities, companies may decide in times of unusually high demand to use a demand-and-supply planning solution for a limited period of time. This enhanced flexibility also allows faster entry into new markets and geographies.

Companies should also benefit from *improved uptime* in their supply chain applications because having fewer instances of software simplifies the support and maintenance.

A further operational benefit of cloud is *process excellence*, as users are enabled to take advantage of best-of-breed processes and services in a lower-cost and more flexible cloud environment. Cloud also will enable companies to focus more efficiently on running their most important and differentiated core processes.

5. How will cloud computing change business models in supply chain?

We anticipate that rising adoption of cloud computing will have a major impact on supply chain business models. This change will make itself felt in four main ways:

- *Better and broader decision-making.* The integration enabled by cloud-based applications and processes will enable faster and more effective cross-enterprise and extended supply chain analysis and reporting. This will result in more accurate, timely, and comprehensive management information, thereby supporting better decisions.
- *IT governance.* IT governance will undergo a significant change in that it will need to consider standards and expectations towards providers of cloud-based services, not just infrastructure and applications. Factors such as interaction models, service levels for availability, and potential downtimes will need to be defined. Perhaps the most significant change, though, will be the application integration with cloud-based services, which needs to be architected in a way that enables customers to change service providers quickly and flexibly.
- *Business process governance.* Companies will need to ensure that cloud-based processes are used across all regions and legal entities in order to standardize the global operations and take full advantage of the financial and operational benefits. This will require process governance that can plan and manage all continuous process improvements across the enterprise.
- *Financial governance.* Companies who opt for supply chains in the cloud will come to look at all the aspects of contracting for services differently from how they do so today. This will be reflected in the following:

Administration and budgeting: While cloud-based services will enable ultimate flexibility, their pay-per-use fee structure will require companies to apply rigorous governance over who is using the services, how often, and why. And they will need to account for the costs accordingly.

Measuring and monitoring: The transactional nature of cloud-based services will require new SLA models, possibly based on response time, accuracy, or other measures of effectiveness.

Billing and payment: The transactional nature of cloud-based services will increase the complexity of billing and payment compared to traditional approaches. Companies will need accounting systems and processes that allow them to accurately pay for services that were requested, provided, and met any contingent criteria.

6. What are the challenges—and how can they be managed?

The journey towards cloud-based supply chains will require companies to overcome a number of hurdles. The foremost of these may be concerns over *data security*, an issue that surveys consistently show is the number one concern about joining a cloud-based service environment. For the most part, however, the cloud providers have addressed the security issue. In any case, companies using cloud-based services should perform data security audits together with the cloud provider to ensure that their customer data is properly protected.

A further risk is a loss of skills and knowledge from the organization. Because cloud-based solutions will facilitate moving processes beyond the organization's borders, companies need to have a very clear and deliberate strategy as to which processes are to be owned and operated internally (mainly core processes) and which are less critical and strategic and, therefore, could be handled by a service provider. Once a company loses detailed knowledge of these non-core processes, it could be very difficult to re-establish them in-house.

Compounding this risk of losing valuable skills is the danger of a *service provider going out of business*, a scenario that would be especially detrimental during the relationship's early stages. As with any supply chain partnership, companies need to mitigate this risk by evaluating the strength of the overall market and the specific strength of their chosen provider. This involves using traditional risk-management and due diligence techniques to determine the risk of failure and to identify viable alternatives in case of a failure.

Given the one-to-many nature of many cloud services, companies also worry about a *loss of customization*, fearing they will have to use a standardized process that does not fit their specific business needs and operating model. This risk can be offset by advances in configurability. Software vendors and service providers are going to increasingly offer the ability to configure within a standard code base.

Similarly, because competitors may be using the same or similar service offering, some companies perceive a risk that using a public cloud may result in a *loss of competitive advantage* in their marketplace. However, if a process gives a company a significant competitive advantage, it most likely isn't a candidate for a public cloud process anyway. A private cloud still provides major benefits such as massive scalability, standardization, and a clear upgrade path—the key difference from a public cloud being that it does not deliver these in a multi-tenant environment. So companies can still take advantage of the technology benefits with internal/private clouds and create competitive edge through differentiated capabilities.

While these are all important challenges for companies considering a move to supply chains in the cloud, the most significant challenge may well be making the changes required to the overall business model, as we outlined above. Most companies today are not governed in a way that will allow them to take advantage of new cloud-based services—so to make the most of the capabilities, they will need to change the way they make decisions and govern their IT, business processes, and finances. Cloud will require these to be governed more from the top-down across the enterprise as opposed to autonomously in individual geographies and/or business units.

Migration Should Start Now!

While it will take some time for supply chains to transition to cloud computing, Accenture believes it is already clear that the capabilities and potential savings from clouds are too great to ignore. Executives are still grappling with the risks, possibilities, and the cost of writing off current investments in systems and processes. Yet beginning the journey sooner rather than later can deliver some substantial financial benefits. Some companies that have embarked on the transition to cloud computing are already starting to realize those benefits.

As the cloud is embraced, a widening array of software vendors and IT consultancies, service providers, and venture capitalists will be drawn to this new market. In fact, given the low development costs, short development cycle, and quick return on cloud services, future advances in supply chain IT and processes are much more likely to be based on clouds than on conventional computing.

So the critical question isn't *whether* cloud computing will become a fundamental technology in high-performance supply chains in the next decade. Rather, it is how successfully companies will profit from the capabilities that cloud computing offers. If your organization has not yet started the journey to the cloud, now is the time to start mapping out your trip.

THE POWERFUL POTENTIAL OF DEMAND MANAGEMENT

By Michael Shea and Berry Gilleon

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The ability to see customer demand and align it with your supply chain—what's called demand management—has become a truly crucial capability. But many supply chain managers still struggle with building this capability in their organizations. A new survey uncovers the challenges they typically face and points to opportunities for successfully overcoming them.

How well does your organization do at demand management, and in particular demand forecasting? The answer to this question is central to supply chain and business success. Proficiency in demand management is absolutely critical in developing the right relationships with suppliers, producing the right amount of product at the right time, and forging a mutually beneficial and profitable relationship with customers. For this article and related survey, we see demand management as the process of assessing customer demand and matching that demand with the supply chain capability to deliver against it in a cost effective manner. For the most part, we exclude demand management processes focused on influencing demand.

Griffin Strategic Advisors recently conducted a survey among supply chain professionals to determine the challenges and success they have experienced with demand management activities. (For more details on the survey, see accompanying sidebar on page 20.) Based on the respondents' collective experiences, we hoped to identify the state of demand management today, the recurring challenges that need to be overcome, and the best practices. From the findings, we also developed what we hope are useful insights for taking demand management activities to a higher level. Importantly, in developing the survey we sought the input of the supply chain professionals themselves. The idea was to ensure that we had a "real-world" orientation.

Our survey focused on these key areas of inquiry: (1) most important demand-management challenges facing companies; (2) demand management integration with other related business systems; (3) best practices in demand management; and (4) key issues around demand forecast accuracy. We discuss each in turn below.

1. The Key Challenges

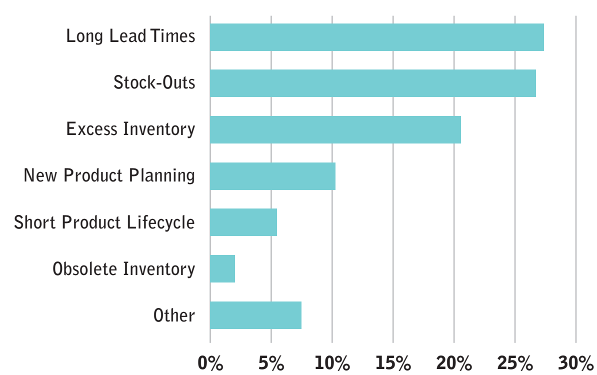
To put our discussion in a highly practical context, we wanted to learn the most important demand-related challenges supply chain professionals were experiencing today. Reflecting obvious concerns about the effectiveness of their forecasting capabilities, respondents put the challenges of long lead times, stock-outs, and excess inventory at the top

of the list (see Exhibit 1). Two of the these top three—stock-outs and excess inventory—have direct financial impact on organizations, either through the potential loss of business (stock-outs) or the inefficient use of capital (excess inventory). Long lead time, on the other hand, is more of a cause than an effect. Specifically, long lead time exacerbates the problems inherent in demand management such as variation in demand and supply and other external factors.

We probed further to determine the relative importance placed on addressing the key challenges identified. Stock-outs was considered to be the most pressing issue, rated as very or extremely important by 79 percent of respondents. Excess inventory and long lead times followed closely at 71 percent and 67 percent respectively. There is some irony that stock-outs and excess inventory lead the challenges, as they are diametrically opposed in some sense. Isn't excess inventory the cure for stock-outs? Such is the precarious balancing act we call demand management.

EXHIBIT 1

Single Most Important Demand Management Challenge



We further asked the respondents to assess their efforts at addressing the important challenges identified. The results show that they were doing the best job with regard to stock-outs and long lead times; 75 percent reported at least moderate success in tackling the stock-outs issue and 70 percent had a similar level of success with lead times. Excess inventories proved to be a slightly tougher challenge. Only 55 percent indicated that they were moderately or extremely successful in addressing that task.

2. Demand Management Integration

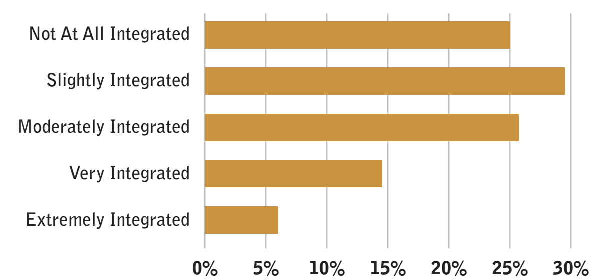
Systems integration is key to efficiently addressing the kinds of challenges identified by our survey respondents. Highly integrated systems allow companies to drive to a "one number" state in which decisions made in the functional areas are all driven off a common data set. Other benefits of integration include reduced manual transfer of information from system to system, which has a positive impact on speed and accuracy.

So we asked respondents how effectively their supply chain activities were integrated with the demand management software/systems. These software and systems are used to manage information and form the basis of planning, sourcing, producing, and delivering products. The principal ones include demand management solutions, S&OP (Sales and Operations Planning), and ERP (Enterprise Resource Planning). Survey participants were asked to respond to these questions on integration whether they were using an actual software package or were performing these functions via a "system" (for example, meetings or spreadsheets). Note that we were not concerned with the specific type of solution or system, but rather with their integration with the supply chain. In the vast majority of cases, though, respondents were using software packages.

Integration proved to be somewhat problematical across the different dimensions we measured. With respect to the integration of the supply chain and the demand management software/system, just under half of the survey respondents reported that they were at least moderately integrated. (See Exhibit 2.) Of that number, however, only 6 percent considered their companies to be "extremely integrated"—the highest possible level of integration. Most surprisingly, fully 25 percent said that they were not at all integrated. The findings indicate that companies overall still have a long way to go on this key integration activity. Effective supply chain management requires and depends upon the outputs from demand management.

EXHIBIT 2

Degree of Integration: Supply Chain and Demand Management System



Interestingly, the level of integration seemed to correlate positively with company size. For organizations with annual revenues of less than $100 million, the great majority (around 72 percent) put their level of supply chain-demand management integration as slight or nonexistent; only 28 percent were moderately integrated or better. For companies with annual revenues greater than $50 billion, on the other hand, about 85 percent rated themselves as moderately integrated or higher.

Integration of the demand management software and S&OP is of fundamental importance, as the S&OP process drives the execution of manufacturing and sales activity. The needed integration could involve different modules of the same software package or separate software solutions. Overall, the respondents reported that the integration between demand management and

Details of the Demand Management Survey

This survey was designed to gain an understanding of current practices in demand management across a broad spectrum of industries. The survey evaluated the use of systems and their effectiveness, specific challenges faced in demand management, and the degree of success in tackling these challenges. It also sought to determine the financial opportunity of improved demand management and to gauge the effect of the recent financial downturn on demand management capability.

The survey attracted 190 respondents representing companies in a wide variety of manufacturing and service industries. The respondents represented company sizes from less than $100 million (25 percent) to greater than $10 billion (13 percent). Every continent except Antarctica is represented in the survey, with the majority (70 percent) coming from the United States. The respondents represented all levels of the organization; 22 percent were at the vice president level or higher; 32 percent at the director level; and 50 percent at the manager or professional level. This diversity of roles and responsibilities among the participants enriched the follow-up discussions designed to elicit more specific understanding in key areas.

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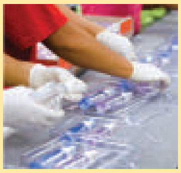


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S&OP was even less than that of the demand management software/systems and the supply chain. Only 15 percent said that the demand management-S&OP integration was very integrated or extremely integrated. (This compares to 20 percent for the supply chain-demand management integration reported at these high levels.) We consider this finding particularly telling because of the critical relationship that demand management has within the S&OP process.

The important message here is that everyone could benefit from striving to achieve best practices in demand management for greater profitability.

With regard to the necessary integration between demand management and the ERP system, which forms the overall architecture of the organization's core business functions, we again found only limited integration. In fact, four out of five respondents reported that integration between demand management and ERP was moderate at best (with 25 percent saying not at all). Only 15 percent characterized their situation as very integrated and a mere 5 percent as extremely integrated. Again, this clearly points to an area of significant potential improvement.

Discussions with respondents and software suppliers identified several factors that may help explain this relative lack of integration. First, many companies' ERP systems were installed with a strong focus on financial reporting and manufacturing, with demand management modules either not purchased or activated. Second, demand management software systems often have been developed with an eye toward specific industry needs, retail demand management being a good example. In general, getting multiple systems to play well together in a seamless fashion continues to challenge many companies.

3. Best Practices

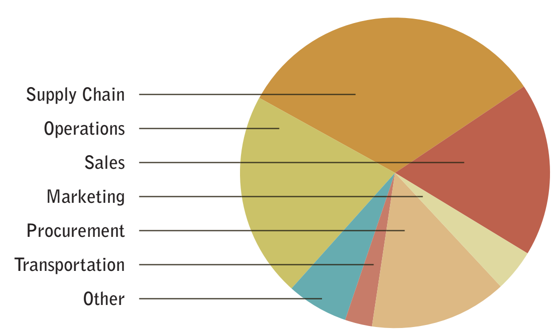
What currently constitutes best practices in demand management in a supply chain context? Almost by their very nature, best practices are relative rather than absolute. However, because they arise from the actual practitioners—and the related processes, systems, and tools that they use—the best practices are pragmatic and innately valuable. The trick is discerning common practice from "best practice." Our survey questions sought to bring greater clarity to that distinction. In particular, we looked for best practices in demand management in such areas as metrics and incentives, customer involvement, and profitability.

As a backdrop to examining the best practices, let's first look at some of the organizational issues surrounding this activity. Demand management touches and benefits other functions across the organization's entire value chain But where does the ultimately responsibility for demand management typically reside? Our survey questionnaire gave respondents the following possible choices: operations, supply chain, sales, marketing, procurement, and transportation/logistics. (See Exhibit 3.)

The survey results indicate that the responsibility for demand management most often resides in the supply chain function—as reported by one third of the respondents. The next most reported function was operations (21 percent), followed by sales (18 percent), and procurement (14 percent). While these results may not be surprising, it is clear that more companies view the activity of demand management as more of a supply chain or operations function than a pure sales function.

EXHIBIT 3

Responsibility for Demand Management Process



As part of the organizational inquiry, we were especially curious about the interaction between demand management and the procurement and the logistics/transportation functions. (In our pre-research, a number of supply chain executives asked about this as well.) Procurement and logistics play key roles in the successful execution of demand management strategy. We found that the interaction in both cases was relatively strong—but could be even stronger. Thirty percent of respondents reported that their purchasing function was "very involved" in demand management; for logistics/transportation the comparable number was 17 percent.

The majority of respondents characterized their involvement as "moderate" with regard to both functions.

Companies would certainly benefit from a closer integration between demand management and these two functions. Regular input around supplier issues, capacity and mix, transportation or warehousing constraints, for example, are invaluable for a solid demand plan. Similarly, logistics needs accurate and timely input to execute against the demand plan.

Best Practice: Performance Metrics and Scorecards

A recognized best practice of any supply chain improvement initiative are measures to gauge progress and to incentivize the desired behaviors. As the saying goes, "What gets measured gets rewarded, and what gets rewarded gets done." In that spirit, the survey asked if companies had measurements (for example, scorecards) and incentives around their demand management process, what were those metrics and incentives, and how effective were they.

Only about one fourth of the respondents surveyed indicated that their companies had metrics for demand management. The specific metrics mentioned most often by this group focused on forecast accuracy, on-time delivery, and fill rate. Even fewer respondents (22 percent) have actually incorporated incentives into their demand management process. The main incentive they used was bonuses, with awards and salary increases a distant second and third.

Among those respondents with demand management incentives in place, 42 percent rated them as very effective and another 46 percent called them moderately effective. These findings appear to make a strong argument for using incentives as a best practice around demand management. It's interesting that the great majority of companies (80 percent) who did not have demand management incentives felt that such incentives would not be effective. So the logical questions become: Have these companies tried incentives in the past but were unhappy with the results? If they have never tried incentives before, what's the reason for their pessimism? In either case, they need to seriously consider the positive response of those companies that have successfully implemented incentives.

Best Practice: Customer Involvement

Companies increasingly are adopting the practice of using customer-provided forecasts, often as part of a formal customer relationship management (CRM) program. We wanted to learn the extent to which this practice was being adopted, if the results were accurate, and whether the sales or demand management function was the main interface with the customer.

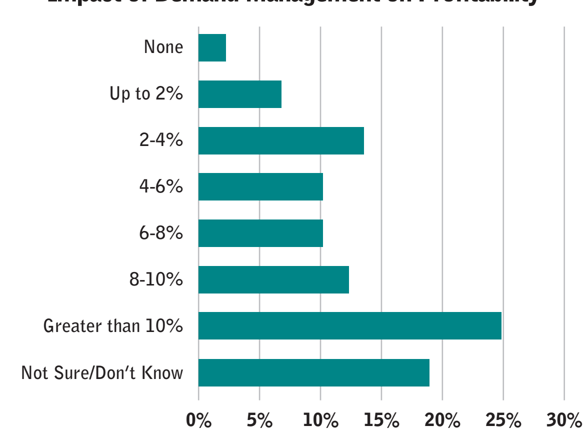
Half of the companies reporting said they did not use a CRM system, 37 percent said they did, and 13 percent were not sure/did not know. Notably, the responses showed a strong correlation between size of company and CRM usage. In particular, companies with revenues in excess of $2 billion are far more likely to have a CRM in place than companies under this revenue level.

Customer-provided forecasts on the whole were not considered to be particularly accurate. Only 4 percent of respondents said such forecasts were very accurate and another 37 percent put them as moderately accurate. (None said they were extremely accurate.) The remainder—close to six of 10 respondents—viewed customer-provided forecasts as only slightly or not at all accurate. This general characterization of customer-provided forecasts holds true for all company sizes. Obviously, there is significant room for improvement with regard to customer-provided forecasts. But based upon the survey results, it would appear that the use of such forecasts in and of themselves is not necessarily best practice.

Asked whether sales or demand management is the main functional interface with the customer, more respondents pointed to the former. Twenty-eight percent said that the customer interface was completely through sales, 27 percent said it was mostly through sales, and 28 percent said it was equally through sales and demand management. By contrast, only 14 percent said the key interface was mostly through demand management and only 4 percent said it was completely through demand management. This general pattern held true across all company sizes.

EXHIBIT 4

Impact of Demand Management on Profitability



Best Practice: Profitability

From a purely business standpoint, perhaps that most important question of our survey asked about the perceived bottom-line impact of using best practices in demand management. We were surprised at the potential upside in profit indicated by the respondents. Fully one fourth of them cited a profit potential of greater than 10 percent through better demand management. (See Exhibit 4.) Most respondents saw the profit potential in excess of 4 percent, while fewer than one in 10 put the potential margin improvement at 2 percent or less. Interestingly, respondents from smaller companies saw a relatively greater profit potential in demand management. The majority of respondents in the $2 billion and under category put the potential at 10 percent or more. (One executive we interviewed told us that a demand management improvement project currently under way at his company will absolutely and significantly improve profitability.)

The findings point to a significant potential upside that all companies should explore aggressively. The important message here is that everyone could benefit from striving to achieve best practices in demand management for greater profitability. This finding obviously merits further study to better understand in more detail what needs to be done to uncover this potential profit, the difficulty and cost associated with that effort, and how to sustain the results.

4. Demand Forecast Components

Beyond the integration and best practice issues, the survey sought to identify the key components associated with demand management forecast accuracy. Specifically, we looked at frequency of forecast updates, internal and external data sources used, forecast accuracy and related impacts, and responsiveness of demand management systems.

Frequency of Demand Forecast Updates

First, we wanted to determine how frequently the demand forecast data was updated. By far the most common forecast cycle was monthly (42 percent of respondents). Weekly was next, reported by 18 percent, followed by daily (13 percent), and quarterly (9 percent). One respondent told us that his company also updates their forecast "when there are serious management problems."

No clear correlation emerged between the forecast update cycle length and the specific industry of the participant. For example, retailers generally did not have more or less frequent forecast updates than, say, respondents in the manufacturing sectors. Similarly, we observed no correlation between frequency of update cycle and level of systems integration.

Internal and External Data Sources Used in Forecasts

Companies use a variety of internal data sources in developing their forecasts. The most common data source was customer orders—mentioned by close to three out of four respondents. Another common data source comes from customer shipments, reported by 42 percent. Point of sale (POS) data has become an increasingly important source of forecast data as well. Close to one third of respondents now say that these use POS data to help drive their demand forecasts.

The use of POS data was not concentrated in any particular business sector. However, we did see a correlation between the use of POS data and the level of demand management systems integration. Of the responding companies using POS data, 31 percent said that they were very or extremely integrated; this compares to only 12 percent at this integration level among companies not using POS data. Further, over 60 percent of companies using POS data for forecasting rated their demand systems integration to be moderately integrated or better, compared to only 31 percent for the non-users.

External sources of data are also extensively used in demand forecasting. Among the most commonly used general indicators were the Consumer Price Index, Gross National Product Growth, and the Consumer Confidence Index. About one quarter of the respondents use industry-specific indices or other information sources. As would be expected given the number of industries represented in the survey, these more specific indicators were far-ranging—everything from hotel occupancy rates and import data to intuition.

Forecast Accuracy Method Used

Understanding the accuracy of any given demand forecast is as important as conducting the demand forecast itself. Determining forecast accuracy is the first step in a continuous improvement cycle that drives higher forecast accuracy. The survey revealed that a high percentage of respondents do measure their forecast accuracy using recognized statistical measures. Mean Absolute Percent Error (MAPE) was the most popular measure (used by 47 percent of respondents), followed by Mean Absolute Deviation (MAD), which was used by 37 percent. Several respondents also used bias and Weighted Absolute Percent Error (WAPE). Approximately one of 10 respondents said that their company did not measure the accuracy of their forecasts.

Responsiveness and Sensitivity of Demand Management Software/System

The more sensitive and responsive a forecast is to trends, the more value it has to supply chain management. The ability to rapidly detect changes in demand gives companies greater flexibility to accommodate changes, or influence overall demand. Most respondents clearly are not satisfied with the ability of their demand management systems to forecast short-term trends. Well over half of those surveyed rated their demand management system as either not at all or only slightly responsive to short-term trends, while only 20 percent described their system to be very or extremely responsive.

Most companies attempt to influence demand through demand-shaping activities such as sales promotions or new product introductions. A key question here, however, is how accurately can the results of these demand shaping activities be measured and can their effects be separated from other sources of variation? Clearly, companies would benefit from understanding the results of these activities. For example, how much sales lift could come from a 15 percent discount? Does a 15 percent discount result in more operating profit than a 10 percent discount?

The survey results show that most respondents would have a difficult time answering these types of questions. Fully 37 percent rated their systems as not at all effective in measuring the impact of their demand-shaping activities. Another 2 percent rated their systems as only slightly effective. At the other end of the spectrum, 10 percent of respondents said their systems were very effective at measuring demand-shaping initiatives. (See Exhibit 5).

Impact of Forecast Accuracy

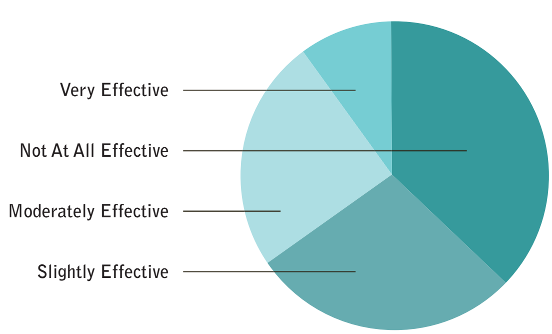
Lead-time variability is an often cited detriment to demand forecast accuracy. The negative impacts—which include supply chain risks and costs—extend across inventory management, logistics, engineering/design changes, and new product development. In our pre-survey research, the supply chain professionals expressed to us their concern about lead time variability and asked us to quantify the related impacts in the survey questionnaire.

Not surprisingly, we did find a strong statement of impact from our respondents. Almost half (49 percent) said that lead-time accuracy had a very important or extremely important impact on demand forecast accuracy. The remaining respondents were roughly equally divided between moderate impact and slight or no impact.

Bias—persistent under- or over-forecasting—is another common problem for demand managers. Many of the causes of bias are rooted in company culture and expectations (for example, unbridled optimism or persistent pessimism). For those responsible for managing supply chains, bias can be especially frustrating, resulting among other things in repetitive stock-outs or excessive inventory. Survey respondents considered bias to be a recurring problem that seriously impacted demand management performance. More than 45 percent found bias to be either very or extremely impactful on inventory levels or fill rates. Only 5 percent of respondents felt that bias was not a factor in inventory levels or fill rates.

EXHIBIT 5

Effectiveness of Demand Shaping



Impact of Economic Recession on Forecast Accuracy

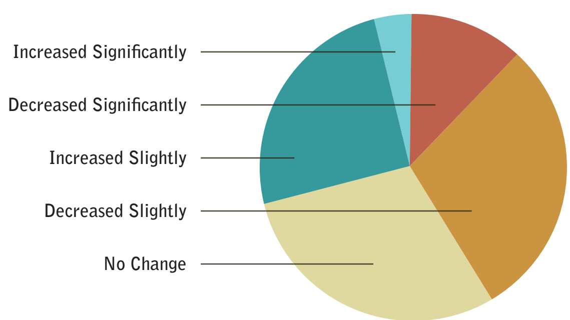
With the recent economic downturn and recovery in its early stages, many companies have experienced extreme shifts in demand. Often these shifts are overstated at any given point in the supply chain because of the effects of de-stocking/re-stocking, also known as the Bullwhip Effect. We wanted to learn just how well demand management systems performed in this unstable period.

The results were not particularly encouraging. A majority (61 percent) of the respondents described their systems as either not at all or only slightly responsive to the recent economic volatility. And while 26 percent of the respondents rated their systems as moderately responsive, only 12 percent considered them to be either very or extremely responsive. Not surprisingly, then, when asked how overall forecast accuracy has been affected by the current period of economic volatility, 41 percent of respondents felt that their forecast accuracy had decreased while only 29 percent said it had improved. (See breakdown in Exhibit 6.)

The responses to this question indicate that there is still room for improvement and lessons to learn in terms of minimizing the impact from future economic downturns. To be better prepared for future economic volatility, companies could consider a couple of actions to improve demand management processes. First, they could improve sensitivity to leading indicators of upcoming demand

EXHIBIT 6

Economic Impact on Forecast Accuracy



shifts in order to give themselves better visibility and time to adapt. Second, they could shorten their supply chain in order to lessen the time needed to adapt to demand changes. Moving from low cost country sourcing to "near-shoring" would be an example of this.

Finally, we looked at the types of demand management software/systems in place to help companies with their forecast accuracy. SAP was the provider mentioned by most respondents at 39 percent, followed by Oracle/People Soft/JD Edwards at 16 percent. Others solutions providers mentioned included i2 Technologies, Logility, JDA, and Infor. Variations of proprietary/in-house/custom software accounted for about 9 percent of the companies surveyed.

Asked about the effectiveness of these software packages in managing demand, 20 percent said they were extremely effective; 39 percent said moderately effective; and 41 percent slightly or not at all effective. (See Exhibit 7.) Larger companies in general tended to rate the effectiveness of the software/systems higher than the smaller companies.

Capturing the Opportunities

Our survey identified a host of potential benefits from the successful implementation and integration of demand management processes. Certainly, one of the most significant of those is the profit potential from demand management best practices identified by our respondents. As we noted earlier, over 25 percent said that better demand management could increase the overall profitability of their organization by more than 10 percent.

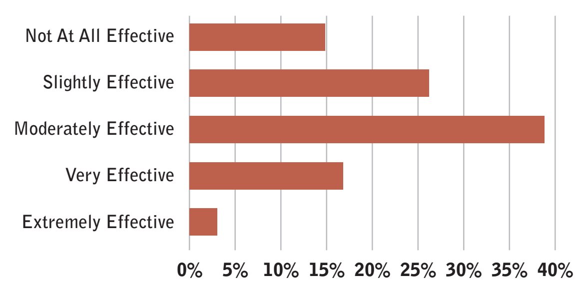
What steps can companies take to begin capturing the significant profit opportunities and other advantages that can flow from effective demand management? The survey results lead us to a few key recommendations.

1. *Get better organized.* Migrate to an organization with a comprehensive supply chain view as opposed to a functional view (of procurement, transportation, sales, and so forth). Our survey showed that many companies do not fully integrate or engage the various functional areas of the supply chain to effectively maximize the value that can be delivered through capabilities like demand management.

2. *Make your systems and processes work for you.* Improve system and process integration. The objective here is to use common information across the organization so that all team members are driving to the same outcome. Note that we have no preference toward particular software or systems. The key for improvement is ensuring the use of consistent information across the organization.

EXHIBIT 7

Rating Effectiveness of Software Packages



3. *Incorporate multiple inputs in managing demand.* Develop a robust forecasting and demand management process that uses multiple inputs including history, trends, external and internal data. (The survey made it pretty clear that customer-provided forecasts alone may not be the answer.) Incorporating multiple inputs will pay dividends by addressing the key demand management challenges identified in the survey: stock-outs and excess inventory

4. *Use metrics and incentives.* Create metrics in such areas as forecast accuracy, on-time delivery, and fill rate to gauge the effectiveness of your demand management activities. Then build incentives that encourage people to excel against those key metrics. The survey results strongly support that creation of metrics and incentives as a best practice in demand management.

A Textbook Transformation: How BIOGEN IDEC Overhauled its Supply Chain

By Joydeep Ganguly, Alasdair Shepherd, Esther Alegria, Rob Ciamarra, and Rob Handfield

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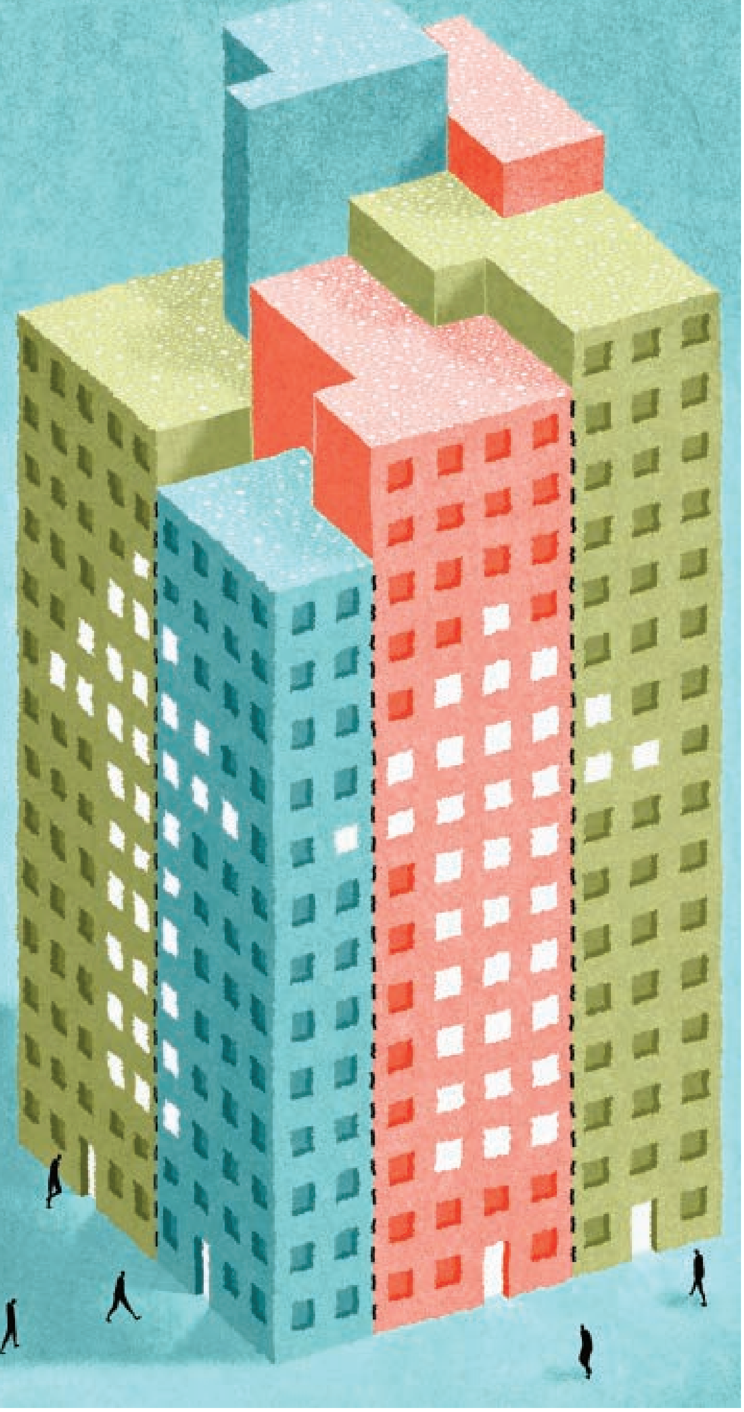
Although strategic sourcing capabilities are well established in industries ranging from automotive to pharmaceuticals, they are still in the formative stages in the biotechnology sector.

It isn't easy to drive the necessary changes. With their external spend increasing so fast, there is great pressure on biotech companies to rethink how their sourcing structures are set up to add most value. The first wave of strategic sourcing strategies is often targeted at cost-cutting through volume



The management team at Biogen Idec knew they had to transform the supply chain to cope with increasing volume and complexity at this biotech company. Beginning with a detailed gap analysis, they launched a comprehensive transformation program that addressed factors as varied as vendor continuity and purchase order processing times, drawing from sourcing best practices. The overhaul to date has proved to be a resounding success.

consolidation and leveraging of the organization's total spend, followed by supplier base reduction and longer-term contracting. But as organizations mature, executives require their sourcing groups to develop and deliver additional capabilities. In a growing number of companies today, supply management is being asked to demonstrate deep insights into customer requirements, and to quickly translate those insights into product offerings that often rely more on outsourced capabilities.

Biogen Idec Inc. is showing how this can happen in the biotech sector. In the last year, the company has undergone a huge shift in the way it operates its supply chain, particularly in the management of sourcing.

What began as a "grass-roots" transformation effort at Biogen Idec produced strong early results in the form of cost savings. The initiative was soon recognized by the executive team, but as the effort expanded, it produced results beyond cost savings, sustaining momentum and moving the organization to higher levels of process performance. This was achieved by focusing on stakeholder engagement and use of an analytical sourcing framework.

Because Biogen Idec is applying a multi-faceted approach to sourcing and procurement activities—in effect, following the best-practice textbook—its approach is noteworthy for any company that believes that additional value can be derived from sourcing and procurement operations. In this article, we present the elements that were assessed and processes that were enhanced to deliver the supply chain transformation.

Anticipating a More Complex Supply Chain

Headquartered in Weston, Mass. and with international headquarters in Zug, Switzerland, Biogen Idec is the world's oldest independent biotech and a Fortune 500 company with more than $4 billion in annual revenues. The company discovers, develops, manufactures, and markets biological products for treating conditions such as multiple sclerosis and non-Hodgkin's lymphoma. It was formed from the November 2003 merger of Biogen, Inc. and IDEC Pharmaceuticals Corp.

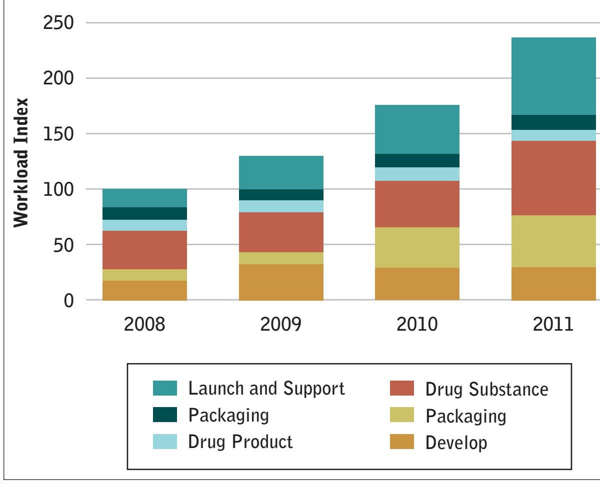
In addition to its portfolio of drug candidates, the company has capabilities, including capacity for protein manufacturing, that are world-class in quality and scale. Biogen Idec is one of a handful of biotechs that have licensed and dedicated biological bulk-manufacturing facilities. It has a large-scale manufacturing plant in Research Triangle Park, N.C.—one of the world's largest cell culture facilities—and a new 90,000-liter facility for producing biologics in Hillerod, Denmark.

The company's global operations (supply chain) unit reports into its Pharmaceutical Operations and Technology (PO&T) business area. The global operations mission is to ensure the uninterrupted supply of the highest-quality products to patient sites worldwide. To meet its goals, PO&T sources an array of products and services, including active pharmaceutical ingredients, outsourced contract services, professional services, manufacturing and facilities equipment, manufacturing contract services, and raw materials and lab consumables. Like many other companies in this sector, external spend is significant—several hundred million U.S. dollars annually.

Prior to 2009, support for PO&T sourcing and procurement was provided by a corporate sourcing group under a centralized business model. In September 2009, anticipating a sharp rise in the complexity of the company's supply chain, the management team launched an assessment of supply chain maturity across PO&T. Several factors had converged to spark the maturity assessment. To begin with, there were many more clinical trials in the pipeline, dealing with a range of new technologies that had not been sourced before. Concurrently, contract manufacturing spend was increasing; As a result, the executives anticipated that workload would increase in multiple PO&T areas, as seen in the workload index in the anticipated spend profiles in Exhibit 1.

EXHIBIT 1

Workload Index and Spend Trends



The step change expected in Biogen Idec's spending on contract manufacturing—and on distribution and logistics—was largely due to the company's assertive move into the "small molecule" space, the manufacturing of which was completely outsourced. ("Small molecule" describes traditional pills, tablets, etc., whereas "large molecule" refers to complex biologics.) In addition, the imminent commercialization of the next generation of large molecule products was going to drive activity and complexity in the contract manufacturing organizations. (drug product manufacturing at Biogen Idec is almost exclusively outsourced.)

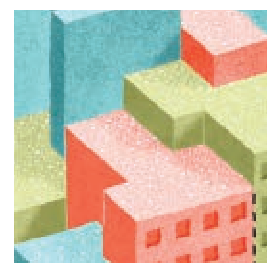
The assessment formally confirmed that there was tremendous opportunity within the supply chain to add value by instilling sourcing processes, personnel, and tools that would maximize Biogen Idec's return on external spend and allow for the expected increase in workload to be handled without a big jump in the need to hire new employees.

The central conclusion from the maturity assessment was that sourcing systems could benefit greatly from more analytical focus and organizational optimization in the way that supply chain systems (particularly in contract negotiations and supplier management) were being managed. Six process specifics were considered key to the transformation:

Oversight and Organization. At the time of the gap analysis, there were multiple forums that had oversight of the major sourcing and supply chain initiatives. Sourcing and procurement services within PO&T were provided via an alliance between the corporate sourcing and the line functions. Under this model, the line functions were responsible for forecasting spend and the priority was to achieve targeted spend rather than achieve targeted cost savings or avoidances. Suppliers typically worked closely with respective line functions (such as manufacturing or quality) to drive specifications and pricing, with minimal engagement of the sourcing teams in analyzing key markets or cost management. This often drove a proliferation of unique items and suppliers for common categories of purchases.

Procure to Pay (P2P). Although spend management processes existed, and with the external manufacturing workload increasing, it was clear that adequate criteria should be introduced to ensure that spend was being optimally bid across all categories. The metrics used to track spending or savings lacked consistency and comprehensiveness, which meant that the organization risked not having adequate oversight of the overall value of contracts with suppliers. Purchase order approvals typically took longer than desired because there were frequent questions about whether the appropriate diligence had been carried out or if the value of the PO could be reduced by bidding.

With new systems and processes in place, the confidence of line functions in the competence of the sourcing unit grew—to the point where they now actively seek out the group for all major initiatives.



Category Management. Under the existing model, some sourcing category strategies had been identified, but formal category management processes for PO&T had not been established. The sourcing and procurement activities were placed in the line functions across the PO&T organization, which also were involved in the day-to-day management of making the product and maintaining supplier relationships. Thus, while supply chain risk was recognized, contingency planning activities for risk management efforts were not yet formalized. Also, the staff who carried out sourcing activities was more focused on expediting or managing quality issues than on strategic sourcing.

Supplier Relationship Management. With multiple governance forums, it was difficult to ensure that supplier selection in areas such as selection criteria, standard market price benchmarking, and performance measures were consistent and fully in accordance with company manufacturing and risk strategies. In addition, PO&T's supplier base had quadrupled from 500 to 2,000 suppliers from 2007 to 2009, causing an explosion in the workload needed to manage them. Although supplier performance management (SPM) scorecards were in use, they were not standardized.

Performance Measurement. Biogen Idec did use key performance indicators (KPIs) for tracking supply chain performance around processes such as spend under management, supplier performance, contracting status, cost savings, visibility of service level metrics, or multiple sourcing agreements with suppliers across sites. However, the KPIs were neither standardized nor trended. In addition, certain KPIs, although monitored, were being tracked in separate databases and therefore not considered in aggregate. Thus, performance management systems existed, but were not set up to truly improve transparency and ease of access to contract pricing structures.

Talent Management. It became apparent that the capabilities of the sourcing groups could be greatly enhanced by inclusion of staff with experience relevant to the sourcing categories for which they were responsible. This would enable greater engagement in technical discussions and a more data-driven approach to sourcing.

Recognizing this, Esther Alegria, Vice President of Manufacturing in N.C., and Alasdair Shepherd, the company's Vice President of Global Operations, quickly decided to sponsor an effort that would help the supply chain external spend, risk, and compliance to attain an "optimized managed state." This was characterized as a state in which: external spend was assessed via external market-intelligence-based research; pricing was "fair;" supplier selection was based on analytical market research; contracts were developed via a clear business process; procurement transactions complied with financial imperatives; and supplier risk was systematically managed through a formal sourcing process.

Launching Change on a Large Scale

Alegria and Shepherd sponsored a transformation team in November 2009; the team was directed by Joydeep Ganguly—Biogen Idec's Director of Operations Analytics—and Robert Ciamarra, associate director of PO&T sourcing, with academic guidance from North Carolina State University's Dr. Rob Handfield. The team devised a detailed transformation plan and initiated changes in three areas: (1) organization design; (2) governance; and (3) institution of process improvements within spend management, supplier selection and management, risk management, and market intelligence/analytics.

Each of the above categories is examined in detail below:

1. Organization Design Changes

The company made two major changes in its sourcing organization design. The first was the formation of a dedicated and decentralized sourcing team for the Pharmaceutical Operations and Technology area (called PO&T Sourcing and Procurement), reporting directly into PO&T. Previously, sourcing support for PO&T had been provided via a central sourcing group and the line functions themselves. The new team was composed of technical category managers, located at the site level to ensure tight integration with manufacturing engineering, development, and quality groups. While sharing best practices and working with the same concepts as their corporate counterparts, the team focused on sourcing and procurement efforts within direct materials, contract manufacturing, technical development, and distribution and logistics. The team was staffed primarily by individuals from various technical backgrounds, including manufacturing sciences and operations management. In addition, a portion of the new staff consisted of external sourcing experts from other industries. Collectively, they were very familiar with the activities being sourced, thus providing a sense of both credibility and technical advantage during negotiations and pricing analysis, because the sourcing analysts were experts in the areas they were representing.

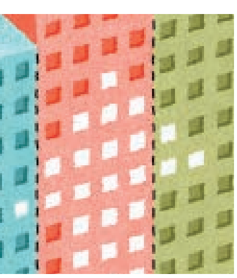
Secondly, category teams, led by category team managers within the newly formed PO&T Sourcing and Procurement group, were formed in the areas of raw materials, contract manufacturing, technology development, and distribution/logistics. The workspaces of the category team leads were located close to those of the functional users of these services (for example, the raw material team was placed close to the manufacturing operations) to foster maximum interaction and dialogue. A consistent sourcing approach was developed to ensure that strategies were data-driven and aligned with stakeholder expectations.

The objective of the organization redesign was to create a technical sourcing group that had analytical insights into "what" they were sourcing, had credibility with their suppliers and their internal stakeholders, and that interacted closely with procurement to use analytics to drive future negotiations.

2. Governance Changes

A Pharmaceutical Operations and Technology sourcing council was formed to create and guide supply chain policies and processes, and improve decision-making. The council comprised vice presidents and senior executives from operations, manufacturing, technical development, finance, tax, and quality functions. It reviewed major supply chain projects every quarter to ensure that they were strategically aligned and resourced appropriately. This type of council had never been held before, as supply chain activities had hitherto been spread out across the PO&T organization.

Category managers were mandated to bring new sourcing efforts to the council for approval, sponsorship, and commitment. For example, the council approves new supplier recommendations, non-budgeted spend with non-approved suppliers, and major strategy changes with regard to supply chain configuration. In addition, the facilitator of the council meeting—the operations analytics director—is tasked with presenting the monthly KPIs on the health of PO&T suppliers as well as the spend trends in order to ensure adherence to overall corporate goals. Because robust supplier approvals and/or changes were now being institutionalized, there was far less chance that suppliers would be selected based on the priorities or wishes of individual departments as opposed to organization-wide imperatives. This framework also enabled a uniform, data-driven basis for selecting which projects to pursue, and to commit them to completion.



The visibility and transparency produced by a tightly interlinked system of disciplines and metrics has assured the leadership team that the company's supply chain is under control.

3. *Process Improvements*

The following process areas received attention:

Sourcing Based on Market Intelligence. The team introduced a structured, cross-functional team approach, with teams organized by categories of spend (raw materials, contract manufacturing, outsourced development, engineering, and so forth) and with a dedicated category manager and a representative from every key functional area. The functional representatives were typically director-level, with the authority to commission resources toward sanctioned sourcing projects. The roles of this team were to establish priorities; authorize and sponsor sourcing projects; commission resources; and act as a steering committee for project teams as they advanced through each project milestone.

Sourcing projects were identified in one of three ways: corporate and divisional strategies (for example, mergers and acquisitions, partnership arrangements, etc.); program and/or team member objectives (such as technology initiatives, life-cycle management); and category portfolio analysis, whereby portfolios were analyzed for their business impact and complexity. Impact was measured as a combination of risk, service levels, and cost; complexity was gauged as a mix of technical, regulatory, and market protection—that is, in terms of patents or know-how. Regardless of where projects originated, it was important to establish and agree on the relative impact of the project on the business. Once projects were sanctioned, the category teams followed a phased sourcing process as shown in the model in Exhibit 2.

Contract Negotiation Business Process. Biogen Idec's managers saw that it would be critical to implement more efficient contract negotiation processes given the growth in the numbers of suppliers and subsequent contracts the company would have to implement. A new business process was created that began with the creation of an optimized guidance document that spelled out definitions of the types of contracts (master service agreements, quality agreements, and so forth), and the points at which each document would be needed. It also spelled out who would "own" the contracts and who was responsible for policing them.

In addition, a standard minimum terms sheet was created that spelled out the non-negotiable terms (for example, a legal section defines protection of intellectual property, termination clauses, and so on). This document ensured consistency in the terms received by the company. Also, the transformation team sketched out a process flow that mapped out exactly who develops a contract, who reviews it, when sourcing teams get involved and how, and who approves particular sections in an agreement. All PO&T contracts were funneled to its Sourcing and Procurement group to ensure that they were reviewed against the standard minimum term sheet and in compliance with the corporate transaction policy.

Lastly, as part of the process reengineering effort, the transformation team set up a contract storage and retrieval process where contracts were intelligently stored (standard nomenclature, intuitive and standard titles, etc.) in a central database, and could be retrieved easily. This eliminated any potential inertia that would exist in verifying contract terms when purchases were being made, and allowed the procurement group to quickly match purchase orders (POs) with contractual covenants.

Analytics. A standard set of metrics and analytics was defined to measure key elements within the supply chain. A dashboard was created for each category to track these metrics: 12-month rolling spend in category; top 10 highest spend suppliers within category; spend that was in a "managed state;" financial compliance; supplier risk indices, as measured by z scores; percentage of items dual-sourced within category; contract negotiation status within category; supplier quality scores (multivariate); number of sourcing projects worked on, and return on investment (ROI) for each; and percent of spend with preferred suppliers.

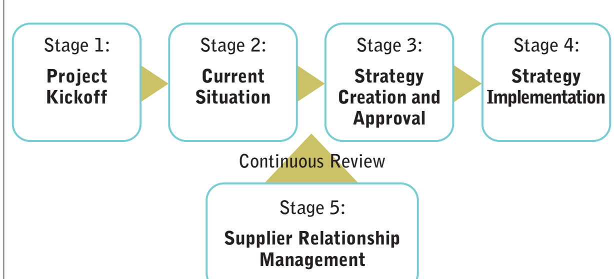
By adopting a "less is more" attitude towards metrics and analytics, the sourcing category managers were able to hone in on a few areas that needed attention, and drive improvements against the pertinent metrics.

In addition, sophisticated "should-cost" models were created for key high-spend materials and services, using past data as well as industry benchmarks. These models were used to determine entry positions into contracts and provided very useful negotiation tools when pricing analyses were being reviewed with various suppliers.

Procurement Process. One of the most important changes was the development of a routine PO recom-

EXHIBIT 2

Biogen Idec's Strategic Sourcing Model



mendation memo for all purchases over a certain dollar amount. The memo, prepared by the PO&T Sourcing and Procurement group, was a standard template that captured the essential justification, fair value, and rationale for the purchase. The idea was to provide PO&T management with visibility of the due diligence conducted prior to issuing the PO, as well as to demonstrate that all of the financial imperatives were met (such as ensuring that the pricing adhered to the contract and the supplier was an approved supplier). To emphasize the importance of P2P processes, the category managers and the broader team began to track PO processing times, and to define acceptable lead times.

Risk Management Tools. The PO&T Sourcing and Procurement group also re-engineered its overall risk management process, applying a three-pronged approach to manage and monitor supplier risk. To begin with, standard supplier scorecards were created that measured critical suppliers on the dimensions of performance, quality, and on-time delivery. The scorecards were used in discussions with key suppliers at quarterly business review meetings. They included elements of supplier performance that were deemed to be important from a drug supply perspective, such that reduction in performance would be construed as added risk. The intent was to use supplier scorecards, in conjunction with fair value pricing, to dual-source key materials and services and thereby make sure that the supply chain was always in a state of managed risk.

Second, the team adopted systems to enable monitoring of vendor continuity. The PO&T sourcing council championed a program in which critical suppliers were continuously policed using advanced financial analytics. The program involved publishing a quarterly report featuring key analytics on suppliers to ensure there were no risks associated with their ability to support the company's supply chain over time.

Third, standard risk scores were developed for each category, using a mathematical manipulation of the percentage of dual sourcing in each category, the percent spend with preferred suppliers, percentage of suppliers struggling financially, and the percentage of those with quality problems.

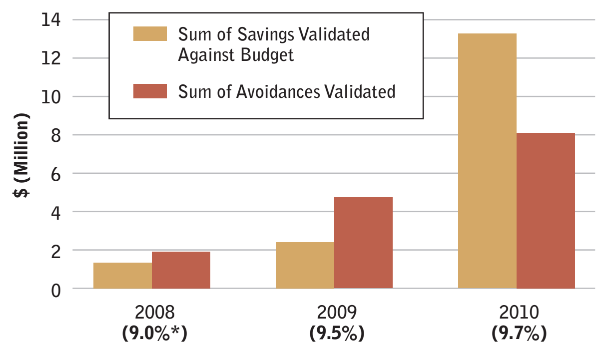
Eye-Opening Results

The results from the transformation were astounding. On an objective level, five areas that showed quantitative improvements were savings realized; improved management of external spend; procurement compliance; shorter PO processing lead-times; and risk reduction.

Using the refined business processes noted earlier and implementing the organizational changes, Biogen Idec's PO&T sourcing and procurement group drove savings in excess of $13 million (validated against budget), and avoided spend of more than $8 million in 2010. The aggregate savings achieved represented a 500 percent increase in total over the prior two years. In addition, the savings reflected a return of 15 times the total costs of operating the new PO&T Sourcing and Procurement group. (See Exhibit 3.)

EXHIBIT 3

Cost Savings and Cost Avoidance



* Sum of S&A as a % of Spend in Managed State

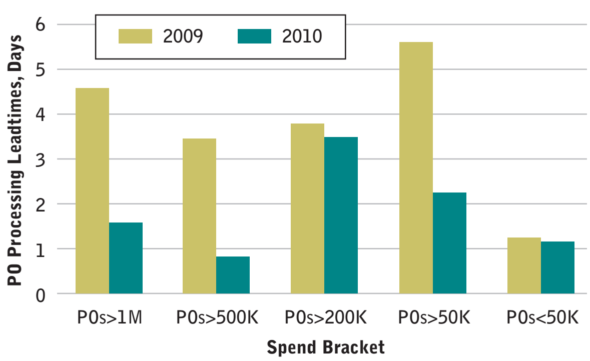
In terms of the "managed state" external spend, the improvements were dramatic: in 2010 over 90 percent of spend profile had been reassessed under new market-intelligence-based sourcing process, to get all the categories to an optimized managed state. This analytic was highly important because it showed that using the processes developed, more than four-fifths of external spend was being actively assessed—that is, cross-referenced with existing contractual covenants and either bid competitively or actively negotiated. A crucial benefit of reaching and being able to demonstrate the degree of diligence in managed spend was that it enabled senior management to have confidence in the processes. In turn, this paved the way for significant reductions in approval times for POs of greater than $500,000. (See Exhibit 4.)

A residual benefit of the new spend management discipline—and a sign of the effectiveness of the standard supplier scorecards—was the fact that supplier compliance numbers were sustained at well above 90 percent, as seen in Exhibit 5. Supplier compliance is an analytic that measures how many transactions with suppliers meet financial imperatives (adherence to contract, adherence to lead times, and so forth) as well as delivery and quality targets. By standardizing the way in which

By standardizing the way in which suppliers were being measured, and publishing the data to key suppliers, Biogen Idec was able to drive significant gains in compliance and greatly reduce supply chain risks.

EXHIBIT 4

Faster PO Approval Times



suppliers were being measured, and publishing the data to key suppliers, the team was able to drive significant gains in compliance, and in turn greatly reduce supply chain risks.

On a subjective level, the results were just as compelling. With new systems and processes in place, the confidence of line functions in the competence of the sourcing unit grew—to the point where they now actively seek out the group for all major initiatives.

Every sourcing project is supported by a strong business case, and new strategies are reviewed by the sourcing council. A business case is comprised of spend analytics, vendor risk analytics, additional market intelligence, "should-cost" models, and vendor continuity reports. In the past, supplier selection was often a function of the supplier's marketing strength, price was proposed by the supplier, and supply assurances were based on the relationships between suppliers and line functions. Now, however, the sourcing teams have become much more proactive in building strong negotiating positions and buy-in based on solid data and analytics.

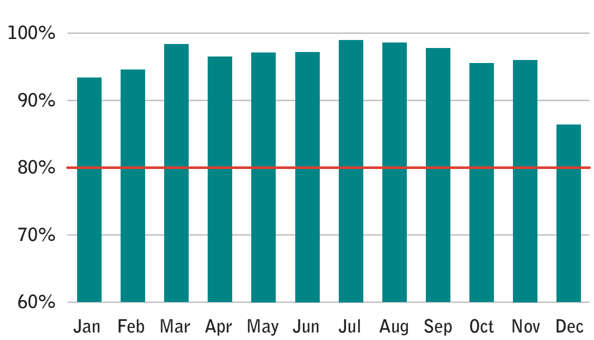
Once selected, new suppliers are vetted using a rigorous qualification process. For suppliers with above-average risk profiles, contingency plans are integrated into contractual terms and conditions, or alternative redundancies are identified. In addition, suppliers are now much more willing to work with Biogen Idec PO&T sourcing teams. Some have recognized Biogen Idec's requests for quotations as the clearest and easiest in the biotech industry to respond to.

Overall, Biogen Idec's bold transformation of its supply chain sourcing activities has produced an array of significant improvements. The visibility and transparency produced by a tightly interlinked system of disciplines and metrics has assured the leadership team that the company's supply chain is under control, and that all sourcing decisions are made in compliance with robust procedures that are aligned with the company's strategic objectives.

Recently, a senior executive asked a simple question via email: "How much are we spending with supplier XYZ this year, and what's their risk profile?" The category team leader was able to provide a document that was in the requestor's hands within the hour that provided a full report on spending, KPIs, savings opportunities, and performance scorecards for that supplier. The executive's response: "I love knowing that when I ask a question, I get the full analysis behind it. I used to get subjective viewpoints; now I get documented data!"

EXHIBIT 5

Improved Supplier Compliance



The Benefits of Early Involvement in CAPITAL EXPENDITURES

By Robert A. Rudzki and Robert J. Trent

Procurement and supply management personnel are becoming involved in more and more areas of company spend. But one category that to date has largely eluded them is capital expenditure projects. That's unfortunate because when procurement gets involved early in these capital projects, the advantages—operational, technical, financial, and more—can be profound.

A look toward the future suggests that supply personnel will be involved with just about every category of purchase expenditure. While managing direct materials has been the historic responsibility of procurement, why not also manage those troublesome indirect items? And, while we are at it, let's have procurement personnel apply their commercial expertise to the many services required to operate a business. But why stop there? Why not apply that procurement magic to capital expenditures? After all, capital projects require suppliers and financial resources. They practically beg for procurement involvement.

This article explores procurement involvement within capital expenditure projects. As the term is used throughout this article, involvement refers to an earlier rather than later point in the capital expenditure process. Research shows that on average the benefits of involvement are greatest when that involvement comes earlier in a project, such as during the concept or feasibility planning stages, rather than later.

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Understanding Early Involvement

Let's step back and talk about the concept of early procurement involvement. Early involvement is the process of relying on procurement personnel and resources, either physically or virtually, to provide support during functional and strategic planning, demand and supply planning, continuous improvement projects, capital project planning, and when developing new products and technologies. Involvement can take place formally, such as by membership on a project team, or informally through a consultative role, or even virtually.

• Competent supply professionals provide a wide range of expertise and value within a process, and during capital projects this could mean insight into materials, suppliers, and labor markets.

• The need to compress project development times demands different ways of doing business, and research shows that early involvement can take time out of a process.

• A continuing focus on the outsourcing of non-core capabilities and competencies results in a stronger reliance on suppliers, an area where supply professionals must step up and demonstrate leadership.

• Design changes become exponentially more complex and costly as product and project designs move through development stages, something that encourages bringing competent players to the table early so that better decisions will emerge.

• Early involvement directly supports various quality management principles, particularly quality at the source and the prevention of defects.

• Early procurement involvement is the catalyst for early supplier involvement.

The scope of procurement's early involvement must expand once supply groups evolve from a transactional-based purchasing model to a strategic supply model. While a seat at every table sounds good on paper, turning this into a reality is a bit more challenging. It requires human resources that are available to support other groups as well as personnel who have a solid knowledge of the needs of various functional groups. Let's be clear about an important point here: Procurement is an organizational support function, and as a support function it has, by definition, internal customers. It just so happens that the domain of those internal customers has expanded over time.

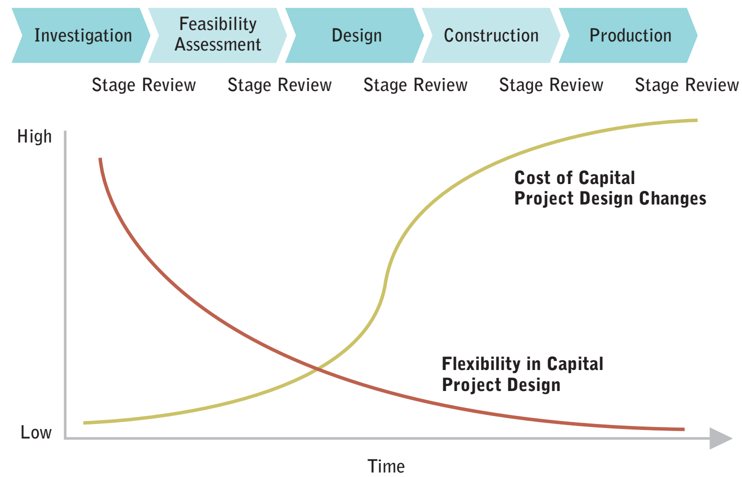
Whether in demand and supply planning, product development, or capital projects, the reasons behind early involvement of supply personnel are not difficult to understand:

• The need for continuous improvement demands new ways of conducting business.

One of the above points requires some elaboration. Exhibit 1 illustrates the inverse relationship between the flexibility to change a design—whether it is a product, equipment, or facility design—and the cost of design changes. While design costs are a relatively minor part of total costs, decisions made early in the process lock in a disproportionate amount of final costs. It is well accepted that the flexibility to make changes decreases rapidly as development progresses. Within project management we call this progression "stage gates," which this figure also shows. Early involvement seeks to include qualified participants so that better decisions will emerge that are not changed at a later date. The reasons for early procurement involvement are compelling. Any barriers to early involvement are usually self-inflicted and can be overcome.

EXHIBIT 1

Flexibility vs. Cost of Capital Project Design Changes



Stage gates from http://www.pd-trak.com/phasegatetemplates.htm

Procurement Early Involvement with Capital Expenditures

It is clear that the domain of early involvement is expanding. And that expansion is taking us to involvement with capital expenditures. Procurement involvement with capital expenditures should increase primarily for two reasons. First, the magnitude of the spending in this category can be high. And second, it is largely an untapped opportunity area.

The U.S. government defines capital expenditures as the total investment in new and used structures and equipment for a particular period. New structures and equipment include expenditures for new buildings, structures that have been previously owned but neither used nor occupied, new machinery and equipment, and other new depreciable assets. Used structures and equipment include the expenditures for buildings and other structures that have been previously owned and occupied, secondhand machinery and equipment, and other used depreciable assets. The government also includes new structures and equipment acquired through capital lease arrangements.[1] Over the last three years for which data are available, around 37 percent of total capital expenditures have been for structures and 63 percent for equipment.

Exhibit 2 identifies the sales, capital expenditures, and plant and equipment assets (capital assets) of some well-known firms. The table also shows the percent of total sales that capital expenditures represent. Sales data are obtained from the income statement, capital assets are from the balance sheet, and capital expenditure figures are from the cash flow statement. All data in this table are from 2008 rather than more recently available data. This was done purposely because after the economic crisis that started in 2008, capital expenditure figures, as well as revenue and income figures, declined dramatically for some companies—sometimes by 50 percent or more compared with earlier figures. This distorts what we are trying to achieve from this analysis, which is to present what the world looks like in a more steady state as it pertains to capital investment levels. Hopefully, current data are an anomaly rather than a new normal state. When times become difficult one of the first things corporate executives slash, along with travel and training, is capital expenditures.

A review of Exhibit 2 shows that industries, and companies within those industries, differ widely in their capital investment requirements. Airlines, for example, commit a large portion of their capital expenditures to aircraft. A single Boeing 777, for example, can cost $250 million. Contrast that to the relatively meager capital expenditure requirements of Apple, and to a lesser degree HP. These companies rely extensively on an outsourcing model that utilizes the assets of other companies. Some companies are simply more capital intensive than others. Intel, for example, spends $2 to 3 billion just to build and equip a single semiconductor facility.

A review of procurement involvement in various purchase categories reveals that involvement with capital expenditures represents a logical progression. Most would agree that the primary focus of supply professionals over time has been with direct materials. Responsibility for services, indirect spending, and capital equipment were often left to those groups that required those goods and services. These items simply were not on the radar screen of most procurement organizations. And, the focus of early involvement efforts to date has largely involved new product development.

While some purchases will never be the direct responsibility of procurement (spot-market oil purchases at oil companies, for example, are usually not procurement's responsibility), the trend today is for supply professionals to apply their skill wherever corporate funds are being committed. The bottom line is that capital expenditures represent serious cash outlays, both at the macro-economic level and at the firm level. And because the items that comprise capital expenditures usually bring with them a stream of expenses that extend for years, the effective management of this purchase category is important. At a leading global company, procurement will continue to expand its involvement by attempting to get a better view of all upcoming project concepts. While this is a challenge in a large, global company supply leaders want to know what is occurring in the concept stage across each business so procurement can evaluate involvement opportunities at the earliest possible date.

Many companies have specific policies that prohibit non-procurement personnel from making commitments with company funds. That said, variability often exists regarding the level and timing of procurement involvement as well as the level of expertise and sophistication of local procurement personnel. On smaller projects and in parts of a company where there are no dedicated capital procurement personnel, project managers usually drive the bid process and negotiations, and procurement carries out the contract. Strategic, complex projects should have dedicated capital procurement professionals assigned to the project team. And on larger projects where there is a need for dedicated personnel, procurement personnel can even be collocated with the project design team.

EXHIBIT 2

Capital Investment Expenditures of Well-Known Firms

$ (Billion)

Company	Sales	Capital Assets	Capital Expenditures	Expenditures/ Sales
Intel	$37.6	$17.5	$5.20	13.8%
Alcoa	$26.9	$17.7	$3.41	12.7%
Southwest Airlines	$11.0	$11.0	$.92	8.4%
Caterpillar	$51.3	$12.5	$4.01	7.8%
Target	$63.4	$24.1	$4.37	6.9%
DuPont	$32.8	$11.2	$1.98	5.7%
UPS	$51.5	$18.3	$2.64	5.1%
Eli Lilly	$20.4	$8.6	$.95	4.7%
Nucor	$23.7	$4.10	$1.02	4.3%
Dow Chemical	$57.5	$14.3	$2.28	4.0%
Procter & Gamble	$83.5	$20.6	$3.05	3.7%
American Airlines	$23.8	$15.7	$.88	3.7%
Apple	$32.5	$2.50	$1.09	3.4%
Kraft Foods	$42.2	$9.9	$1.37	3.2%
Wal-Mart	$404.4	$95.7	$11.50	2.9%
Boeing	$60.9	$8.8	$1.67	2.7%
Hewlett-Packard	$118.4	$10.8	$2.99	2.5%
United Technologies	$58.7	$6.3	$1.22	2.1%
Bank of America	$124.1	$13.2	$2.10	1.7%

* Represents 2008 data rather than more recent data due to the distorted figures from the economic downturn
Source: finance.yahoo.com

Adding Value Through Early Involvement

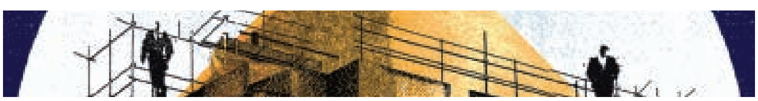
At many companies procurement has been involved early with capital projects for many years with success differing on a project-by-project basis. Historically, procurement involvement was not always consistent or viewed as valuable by project managers. This is due partially to the project manager's experience with procurement as a lower-level functional group that was not suited for strategic thinking or a belief that procurement did not understand the technicalities of capital projects. In fact, as with many organizations, the procurement organization was not the most widely respected or sought after group. In the eyes of the project manager, would involving procurement justify the costs of their service?

While specific value should accrue from involving procurement early in capital projects, supply leaders often find it challenging to separate the unique value derived from early involvement within complex capital projects. It is difficult to identify or partition specific causes that lead to a desired effect within dynamic environments. However, what is known for certain is that when a project has some level of failure—whether due to a lack of early procurement involvement, poor engineering, inadequate construction, or poor planning—the costs can be significant.

Early procurement involvement is sometimes not considered when project managers try to go it alone by getting suppliers to assist "for free" by developing preliminary designs. While at first glance this seems like a good thing, this often locks in that supplier's design, thereby eliminating a competitive selection process. Procurement creates value by avoiding a practice that serves to increase project costs by eliminating competition.

A number of issues can affect the success of capital projects—and this is exactly what early procurement involvement seeks to prevent. Perhaps first and foremost, the largest project issue involves "pushing the button" and the process does not work. A second issue involves being late with project completion, and a third issue is being over budget. Being too far under budget can also come into play. One major company found that to compensate for these issues project managers develop cost estimates that are too high, buy locally as much as possible to eliminate potential shipping issues, and spend freely to consume most of an inflated budget. Procurement's early involvement forces project leaders to look for the best total value, including low-cost country sourcing.

Because the items that comprise capital expenditures usually bring with them a stream of expenses that extend for years, the effective management of this purchase category is important.



Early procurement involvement in itself does not guarantee success unless the supply organization adds value to the process. Project managers may or may not value procurement involvement based upon past experience. In general, procurement personnel add value by understanding the needs of the project, which requires a more technical procurement perspective than normal procurement; understanding the market for the goods and services needed to support a project; and allowing project personnel to focus on the technical aspects of capital projects while procurement covers the commercial aspects. Value is also added by assisting in developing realistic material sourcing plans and contract plans, and negotiating agreements for the project team and business unit that address topics such as capital costs, total cost of ownership, and post-project support.

Additionally, early procurement involvement supports a coordinated (and leveraged) view across projects and businesses. Project personnel often see only their individual projects, and at times may want to use a supplier that a company is struggling with on another project. Procurement can leverage or bundle information and demand across projects, determine shop and contractor loads across projects, and provide a broader, more strategic view compared with project teams acting in relative isolation. The ability to see "the big picture" helps preclude situations where a company finds itself competing against itself when dealing with suppliers.

The bottom line is that engineers are conservative by nature and are not likely to endorse perceived risks (such as unknown or un-tested suppliers) unless they are convinced the risks are acceptable, including a risk contingency plan. Procurement personnel must therefore understand the engineer's perspective and be ready to address those concerns by demonstrating the value of early involvement.

When all goes well procurement's involvement with capital projects appears in the shadows, making it difficult to identify cost savings or avoidances from doing things the right way. When something goes wrong on a project, the absence of early involvement is one of many factors that might be responsible. Root cause analysis usually focuses on the technical aspects of failures rather than the lack or quality of early procurement involvement.

While it is still possible to provide some value if procurement involvement is later rather than early in the project planning process, cost accuracy usually goes down when there is less time to fine tune specifications and less time for a supplier to provide a level of detail that allows better pricing accuracy. The possibility of bringing in new or alternative suppliers is also limited. Ultimately, this will result in an increase in project contingency costs.

Evidence of Tangible Support

The observations in this section are based on first-hand experience at a major chemical company. At this company there are different kinds of support provided by procurement personnel during capital expenditure projects—evidence that represents evidence of procurement involvement. The first type of support involves working with engineering to develop the project scope and estimate project costs. The second type of support involves identifying long lead items that may need to be "pre-funded" and ordered before total project scope is approved or funded. A third support involves developing sourcing plans for materials and contract plans for construction labor. Finally, the fourth type of support is the development of comprehensive bid packages with a determination of what to include in materials and contract plans. Experience with many capital projects reveals that early procurement involvement can result in some tangible outcomes:

- An execution strategy plan that identifies whether the project will be carried out in house or outsourced.
- A material control plan that identifies materials

that must be expedited due to their criticality to the project schedule.

• A material sourcing plan that identifies equipment fabricators and manufacturers that have the capabilities and capacity to supply the critical equipment. Also, the material plan considers low-cost country sources. The material sourcing plan can also consider leverage opportunities with other projects.

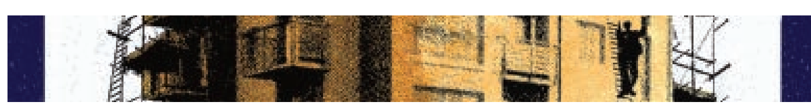
• A comprehensive contract and construction plan that addresses issues such as contract types, bidders, and construction planning efforts. The contract plan is integrally linked to the engineering plan, project schedule, and the availability of detailed information for bidding.

Evaluation Techniques for Capital Expenditure Projects

It is possible that capital expenditure projects will have finance personnel assigned to support complex analytic requirements. It is also possible these resources will not be available. In either case it is in the best interests of procurement personnel to understand the relevant financial terminology and approaches that support the analysis of capital projects. Remember an important point here: For procurement to be an active contributor during capital projects, it must have the respect of the groups it supports. And that means bringing a wide range of knowledge and project understanding to a project. Increasingly, this includes a combination of technical and financial knowledge.

Next-level supply organizations understand the need to merge supply management, supply chain management, and finance. In fact, the term "supply chain finance" is becoming increasingly commonplace when describing the application of financial tools and techniques within the supply chain space. Supply organizations must attain a certain level of financial competency since capital projects are usually evaluated on their financial merits. A study conducted by Aberdeen concluded that less than one-third of companies consistently consider financial topics such as cash flow and working capital elements as part of their procurement goals.[2] Concepts such as payback, net present value, and internal rate of return should not be foreign to procurement personnel who expect to be part of the capital expenditure process. It is hard to talk about capital projects without acknowledging their financial implications. Poor financial awareness will make procurement a less respected part of the capital expenditure process.

Early procurement involvement in itself does not guarantee success unless the supply organization adds value to the process.



Early Involvement by Design at Alcoa

Let's take a look at a company that understands how to involve procurement personnel during capital projects. Alcoa, one of the preeminent aluminum companies in the world, is a company that appreciates the importance of well-planned and executed capital projects.[3] Operating in dozens of countries in a variety of businesses, Alcoa is a capital-intensive entity that requires, among other things, mines, equipment, smelters, and aluminum refineries. At any given time Alcoa is executing multiple capital projects across its global businesses. These projects will range in cost from hundreds of thousands of dollars to over $10 billion.

Alcoa divides capital expenditures into sustaining projects and growth projects. A sustaining project is a capital project that is undertaken to sustain or improve current operations. Safety and environmental projects are included in this category. Growth capital projects often feature the greatest early involvement opportunities because they are usually the most expensive, complex, and visible. These projects involve capacity increases and often include the construction of new facilities. Across the company, Alcoa has many growth projects in its pipeline at different points in the process, ranging from concept/feasibility study to execution, although the number varies with timing and economics.

The involvement of a dedicated capital procurement group on capital projects is a mature process at Alcoa. In an earlier era procurement often had to convince internal customers to request its support, which was sometimes resisted because of the view that procurement only selected suppliers based on price. It was necessary to show that procurement could deliver a value proposition that focused on the total value to the project based on all cost factors including price, schedule compliance, delivery, output, maintenance costs, and warranties. Over time, Alcoa's capital procurement group has demonstrated that the greatest value is delivered when procurement is involved during all phases of the project from pre-project planning through execution, commissioning, and operations. Procurement is no longer at the point where it must prove the value of its involvement. Now, business units actively solicit procurement support.

Early Involvement Enablers: People and Structure

Beginning in 2005, Alcoa Procurement underwent a major transformation that resulted in the creation of a center-led global procurement organization. As part of this transformation the supply group recruited additional talent and provided training for its existing staff. In the capital projects arena, procurement recruited engineers, other technical personnel, and career procurement professionals into capital procurement roles in the newly designed organization.

Alcoa has a chief procurement officer who oversees a center-led, global procurement organization. Supply leaders believe strongly that the current organizational structure is a primary enabler for many leading supply practices, including early involvement with capital projects. Procurement involvement with capital expenditures is not an accident at Alcoa—it happens by design. The executive responsible for capital procurement, the director of capital commodity management, reports directly to a vice president that reports to the CPO in charge of global procurement. The director of capital commodity management is also on an executive team that is responsible for of all growth projects for Alcoa, assuring him visibility into capital plans.

Alcoa uses a matrix organizational design, which is not unusual with a center-led structure. While all supply personnel report into global procurement, many supply personnel are located in the businesses they support and have a dotted-line reporting relationship into the business. Alcoa's organizational design ensures that procurement's "seat at the table" at the corporate and business unit level is not an issue.

Three businesses make up Alcoa—Alcoa Global Primary Products (bauxite mining and refining and aluminum smelting); Alcoa Global Rolled Products (rolled fabricated products); and Alcoa Engineered Product Solutions (aerospace fasteners, power and propulsion, wheels, automotive, building and construction). Procurement supports each business group and has full-time personnel who focus exclusively on capital projects for each of these business units. There is a separate part of the global capital procurement group that is dedicated to large growth projects for the smelting and refining business. It is not unusual to transfer procurement personnel around the world to support Primary growth projects. This is where some of the largest capital projects and dollars reside.

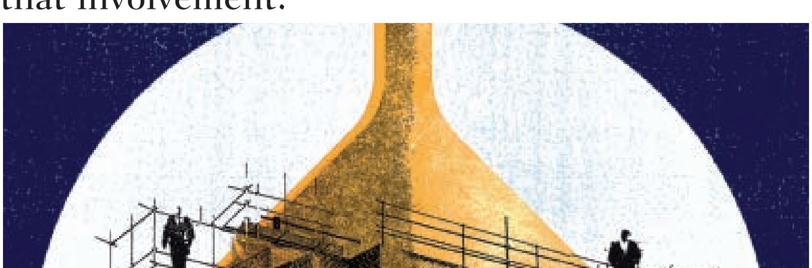
Early Involvement and its Impact on Suppliers

Suppliers have experienced some tangible changes from Alcoa's approach to capital expenditure projects. Suppliers know they have to "sharpen their pencils" when responding to capital project proposals. Early involvement has introduced competitive pressure as the supply organization evaluates the most qualified suppliers using advanced cost analytic approaches. Suppliers are required to provide greater cost detail in their proposals compared with earlier times. In return, suppliers know that business is awarded fairly based on the total cost of ownership. The days of "designing in" specific suppliers for a project are over.

A center-led procurement approach means procurement has visibility into all Alcoa capital projects worldwide. This offers the opportunity to provide additional business to suppliers that provide good support.

A center-led approach also results in company-wide consistency and standardization. Suppliers understand the proposal process, payment process, and the negotiation and contracting process at Alcoa. This is often not the case when an organization features a dozen business units developing their own supply processes, procedures, and practices, including those that support capital projects. Alcoa now speaks with a single voice to the supply market rather than speaking with many voices through different businesses and geographic regions.

The reality today is that procurement should be involved directly with any purchase category that involves significant dollars and where benefits are possible through that involvement.



The Benefits of Early Procurement at Alcoa

Supply leaders are clear when they discuss the benefits and outcomes from early procurement involvement with capital projects. They have seen first-hand the benefits that early involvement offers from project concept to completion:

• Early involvement at the concept stage helps with the development of clear specifications and scopes of work that require minimal changes later.

• The value of speaking to suppliers with one corporate voice allows a clear set of project rules to be established that facilitates a fair process.

• Project costs, including initial estimates and final costs, are more accurate when procurement is involved early. Procurement personnel use a varied set of sourcing tools and approaches when evaluating capital projects, including leveraging common requirements across projects, developing total cost of ownership models, "should cost" models based on data from market indices on materials and labor, and historical project data.

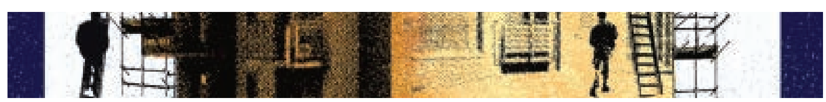
• Procurement now evaluates a wider choice of suppliers for selection, which leads to a competitive selection process and lower costs. Specific suppliers are not "designed" into a project proposal.

• Early involvement gives procurement an opportunity to provide valuable information about materials and labor availability. An assessment of labor availability in Iceland to support a growth project, for example, revealed a shortage of labor to support project construction. As a result, procurement along with project managers developed a plan in which suppliers built and preassembled modular construction for delivery to Iceland.

• Early involvement allows procurement to leverage common spending categories across multiple projects. Because procurement has visibility to the total capital project portfolio as well as the maintenance spending of the company, projects with some commonality can be bought together and advantages can be shared from leveraging the total commercial position. Leveraging has resulted in double-digit savings, improved schedules, and improved terms and conditions in the areas of liability, warranty, and damages.

• Early involvement allows the capital procurement team to involve the indirect procurement team in providing input into the strategies for spare parts, maintenance and ongoing service needs, thereby providing benefits outside of the capital spend.

The involvement of a dedicated capital procurement group on capital projects is a mature process at Alcoa.



Alcoa procurement has demonstrated how applying good talent, advanced sourcing tools, and early involvement can benefit capital projects. The capital procurement group is now invited at the earliest stages of projects to work with the businesses on their capital needs. And the project professionals at Alcoa would not have it any other way.

Concluding Thoughts

The reality today is that procurement should be involved directly with any purchase category that involves significant dollars and where benefits are possible through that involvement. Unfortunately, for a variety of often good reasons, procurement involvement has been severely lacking in the capital project arena. As it relates to the capital expenditure side, we often do not expect much beyond ensuring that contracts are properly loaded into the contract management system.

Capital expenditures cover a wide range of areas that demand specialized knowledge. Supply personnel that manage direct materials are expected to have a strong knowledge of the items they support. Why would a strong working knowledge be any less important when supporting capital projects? Leading supply organizations will recognize the potential benefits of developing capital project expertise that is respected and asked for across the entire organization. If anyone asks why procurement personnel should be involved early with capital projects, a proper response might be, "Why would they not?"

Endnotes

1 Source: www.census.gov.

2 "Pushing Procurement Savings to the Bottom Line, Increasing Corporate Competitiveness Both Dominating the CFO Agenda, Says AberdeenGroup." Business Wire. 2005. accessmylibrary. (August 31, 2010). http://www.accessmylibrary.com/article-1G1-137408915/pushing-procurement-savings-bottom.html

3 The authors would like to thank Christie Breves and Chris Taylor from Alcoa for their generous support during the development of this section.

SAMARITAN'S FEET: The TRIALS & TRIUMPHS of a GLOBAL NON-PROFIT

By Christopher Norek, Brian Gibson, and Manny Ohonme

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The supply chain management themes we've heard for years—improve operations, get lean, and reduce costs to improve profits—mainly target for-profit companies. Less attention has been paid to the supply chain challenges faced by non-profit organizations, and even less to those non-profits focusing on humanitarian aid. Like their counterparts in the private sector, non-profits must continuously improve their supply chain operations to control costs. Yet their ultimate goal is not to increase profits, but to ensure that the greatest portion of donations and resources go toward helping those in need.

Humanitarian needs fall into two categories. Some needs result from disasters such as the earthquakes in Haiti, the Tsunami in Sri Lanka, the earthquake and tsunami in Japan, or Hurricane Katrina in the United States. Other humanitarian needs are not brought on by any specific incident, but rather result from long-term, chronic conditions. Humanitarian efforts addressing this category of needs can be more difficult to conduct because they don't receive the significant exposure and outpouring of support that typically occur in the wake of a disaster.

Human health is the principal focal point of many humanitarian organizations working around the world. These groups understand that many illnesses are preventable if the necessary materials are made available to those at risk. A good example can be found in the work of the Gates Foundation providing mosquito netting to protect against malaria.

Prevention can also make a critical difference when it comes to illness and injuries related to the feet. Foot-borne illnesses, soil-transmitted infections and diseases, and parasites attacking the feet are common problems in areas where proper shoes are not

Moving much-needed athletic footwear to some of the most remote corners of the globe can be a daunting supply chain challenge. But the humanitarian aid organization Samaritan's Feet has persevered and is working steadily toward its goal of delivering 10 million pairs of shoes to 10 million people in 10 years. The lessons SF has learned along are instructive for any supply chain professional.

readily available. Common symptoms of these afflictions are digestive problems, lethargy, dehydration, and debilitating illness. Even in their mildest forms, these health issues may affect daily life, inhibit learning abilities, and stunt physical development. In some cases, the affliction can result in amputation or even death.

It is estimated that more than 300 million people wake up each day with no shoes to wear. Children, in particular, are at the greatest risk of contracting these infections, diseases and parasites from lack of footwear. While drugs can be used to treat patients (if any drugs are available), the real opportunity lies in the prevention of these problems. This is the mission of Samaritan's Feet (SF).

SF is a non-profit organization that was started by Nigerian-born Manny Ohonme, co-author of this article. When he was nine years old, Manny began seeing the world differently after a stranger from Wisconsin gave him his very first pair of tennis shoes at a basketball camp in Lagos, Nigeria. That first pair of shoes was the inspiration that led him to a basketball scholarship at the University of North Dakota–Lake Region and in 2003 to the founding of Samaritan's Feet.

SF today joins forces with its global community of more than 80,000 volunteers around the world, committed to making a difference in the lives of children. Ohonme and his team set out to accomplish a monumental task globally that started as a dream and, despite many stumbling blocks, has already turned into reality for more than 3 million impoverished children in over 60 nations worldwide.

Supply Chain Issues and Challenges

SF's mission is to protect people from harm's way by providing them with much-needed shoes. The goal is both clear and ambitious: to put 10 million pairs of shoes on the feet of 10 million children in the next 10 years. While the mission and goals are simple enough, the task of moving shoes across global supply chains to people in need is anything but. In fulfilling its mission, the organization encounters many logistics and supply chain challenges. Some of these are unique to the non-profit world, while others transcend organization type to impact for-profit companies and non-profit humanitarian aid organizations alike.

In addition to the typical issues of language barriers, cultural differences, and regulatory red tape, SF encounters supply chain challenges related to product, warehousing, inventory, transportation, and third party services. This article addresses each of these supply chain challenges along with the solutions that Samaritan's Feet has applied and the lessons learned. Finally, we describe some of the possible implications of the SF experience for supply chain professionals everywhere.

Product: All Donations Are Not Created Equal

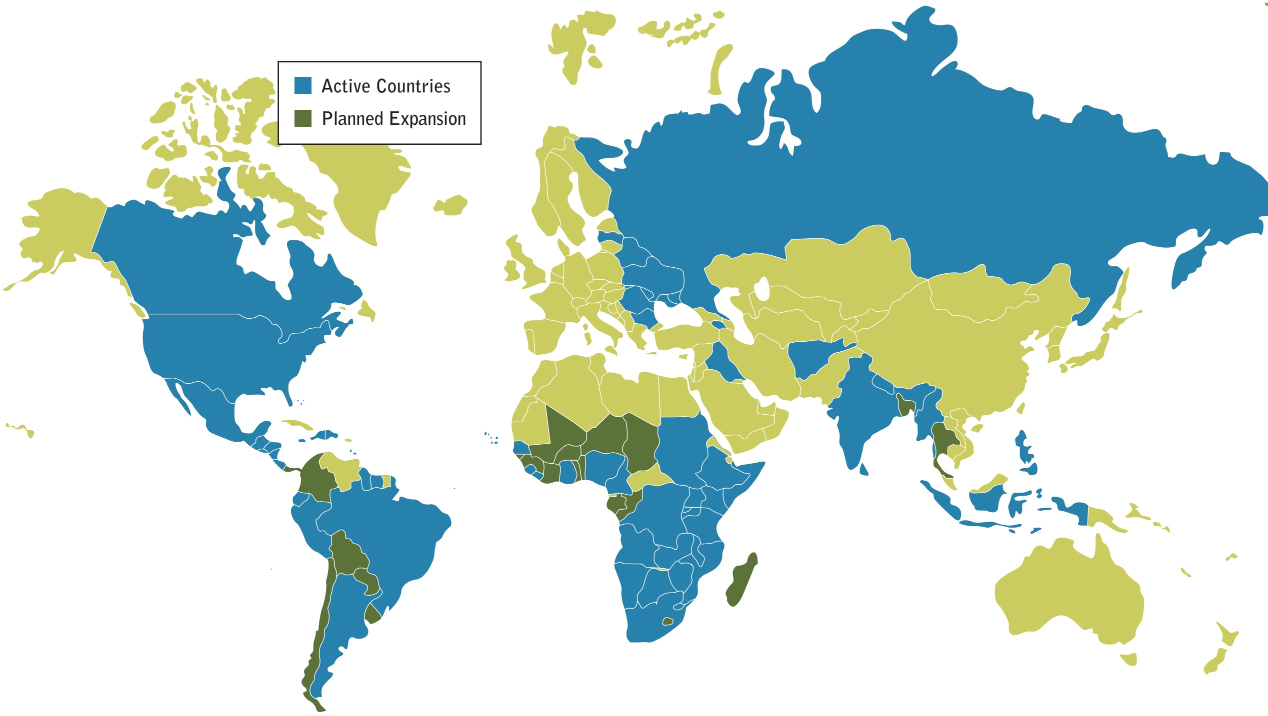
The Challenges. Donations are the lifeblood of non-profit organizations. Monetary gifts are particularly beneficial because they are readily transferable to the locations of greatest need with limited effort or minimal additional cost. In SF's case, monetary donations can be used to direct-source shoes from vendors near demand points, thereby avoiding unnecessary transportation expenses. Also, these cash donations give SF leverage to procure shoes at discounted prices, which often means that the organization can buy more product for its money.

Bulk donations of new shoes also are beneficial and processing the receipts is relatively straightforward. However, these donations are not always well-aligned with demand from the standpoint of time or geography. Hence, SF may incur inventory-carrying costs to store bulk donations until they are needed, and then transportation costs to move the goods to demand locations. (The accompanying sidebar relates SF's experience with one large bulk donation from Sears Holding Corporation.)

Though donors have the best of intentions, some footwear does do not fit SF's mission. The organization focuses primarily on distributing new athletic shoes. It also distributes school shoes, sandals, and EVA foam shoes. Donations of other types of footwear (dress shoes, high heels, boots, for example) bring logistical and disposition challenges. SF needs to find users for these items; merely discarding them is not an option. Used or poor

EXHIBIT 1

Samaritan's Feet World Map



quality shoes, which are not distributed to SF's clients, present yet another disposition challenge. Though gently used shoes can be a great resource for recycling, they come laden with their own unique set of supply chain challenges, costs, and sometimes conflicting operational workflows.

The Solutions. A simple solution to the donation dilemma would be to accept only cash contributions and purchase new shoes with this money. Yet to do so exclusively would reduce total donations and de-personalize user experience and the SF mission. It would also preclude individuals and groups from directly engaging with SF and the connection to people in need. So Samaritan's Feet actively encourages interested groups to conduct shoe drives and provides a step-by-step process for running a successful campaign. To assist in the effort, SF will assign to the fundraising group an "ambassador" who understands the organization's donation needs and supply chain constraints.

Many of the 80,000 global volunteers assist with the time-consuming activities of sorting and processing donations at the SF warehouse in Charlotte, N.C., and other locations around the world. For those shoes that do not fit the desired profile, SF seeks out organizations that can use them in their assistance programs. For example, dress shoes are donated to non-profits that help people transition back into the workforce and winter dress boots go to people in cold and arctic regions of the world.

The Lessons Learned. Just as for-profit companies benefit from collaborating with suppliers, SF has learned that it can build stronger relationships with donors that go beyond contributions. The following opportunities have been identified:

- Engage donors in the distribution process to improve supply chain efficiencies. The more donors are involved in the process, the more likely they will be to support and participate in supply chain improvement efforts.
- Enlist key supply chain leaders and volunteers from logistics, retail, and manufacturing with specific resources and expertise to drive projects, tasks or entire operations. For example, past and present SF board members with experience and know-how in third-party logistics have been indispensable in finding reduced or donated shipping and domestic storage.
- Pursue new opportunities with donors and donations that don't fit the SF profile. For example, have them send worn out shoes to a recycler who then pays SF for the recovered materials.

Warehousing: Creating a Responsive Distribution Network

The Challenges. Unlike many non-profit agencies that have a local mission and limited scope of operations, SF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has a global vision that has rapidly evolved. (See map on page 46.) While the organization has been able to respond to needs around the globe, the process has not always been a model of long-range supply chain planning and strategic network design. In reality, the network has been cobbled together as best as possible to meet immediate needs.

Complicating matters, to gain access to large-scale donations, SF must defer to the stipulations of its donor organizations. This means taking donations wherever and whenever they are made available—regardless of any inconvenience or incremental cost. Thus, it is essential for SF to build flexibility and agility into its distribution network. Failure to do so could result in donor frustration and fewer partnering opportunities in the future.

Warehousing is key to creating a responsive network. Like all growing organizations, Samaritan's Feet needs affordable and strategically located facilities to promote operational efficiency. Moreover, these facilities need to be relatively clean and secure to protect shoes against damage and theft. That's a hard enough combination to find in the United States—and a virtual impossibility in many developing countries.

The Solutions. SF has been working feverishly to keep pace with its storage needs for several years now. The receipt of 1.44 million pairs of shoes in 2009 quickly stretched SF's original Charlotte, N.C., distribution facility beyond its capacity. Rapid expansion was an absolute necessity and the organization acted quickly. It established primary storage facilities in the United States, Africa, and South America as well as temporary facilities on an as-needed basis.

SF relies on partnering and creative solutions to address its growing storage needs. Rather than purchasing or leasing dedicated facilities, it often chooses to partner with other organizations to share capacity in suitable facilities. The organization also leverages the partner's relationships and knowledge of warehousing options in particular countries.

If appropriate space isn't readily available, SF must become a bit more creative. In some cases, the organization will seek out a partner with a secure compound to hold the product. If SF can safely and securely do so, it will purchase a used seaworthy container, ship it with product from origin, and drop it in a secure compound. Another option is to purchase a cheap, dry container in-country that can be secured. Containers can provide valuable temporary as well a semi-permanent storage space until the product is distributed or until other warehouse space can be arranged.

The Lessons Learned. Agility is not the exclusive domain of for-profit supply chains. SF needed to establish flexible capacity and develop creative solutions to enhance distribution network efficiency. Relevant opportunities identified include:

- Avoid owning and leasing facilities whenever possible. This helps to scale global capacity up or down as dictated by major donations, special projects, and demand.
- Use alternate sources of labor to keep warehouse wage expenses manageable. Going forward, SF will increasingly utilize volunteers and interns in their facilities. Timing for this seems right as more schools are looking for real-world experience for their students as well as community service opportunities.
- Strategically align with companies that have available capacity to donate and the capabilities (network contacts, board members, and so forth) to support SF's network.

Inventory: Visibility into Geography and Nature of Demand

The Challenges. Even though Samaritan's Feet is a non-profit and relatively young, it experiences the same visibility headaches of a multinational for-profit company. With seven distribution facilities on three continents and a willingness to bring shoes to any location in need, SF faces a huge task in maintaining effective inventory oversight. It cannot be demand-driven and needs-responsive without adequate and up-to-date knowledge of inventory levels across its network.

Adding to the complexity of inventory visibility is the product variation of the shoes distributed. Inventory information by size, gender, and style must be captured and monitored at the distribution locations. SF needs this information to effectively replenish depleted inventories while avoiding unnecessary movement of shoes that may already be in strong supply at a particular location.

A final inventory visibility problem relates to SF's willingness to mobilize the inventory and serve remote regions of the world. This has led to the wide range of permanent and temporary storage facilities in the SF network. While SF's permanent distribution operations can leverage inventory management technologies and processes, other facilities are relatively primitive and unable to benefit from standard operating procedures.

The Solutions. SF recognized that a multiple facility, complex inventory scenario is best solved with a robust warehouse management system (WMS). Given the variety of facilities in the network and the organization's desire to limit its investment in technology, SF felt that the best solution would be a web-based WMS—that is, a Software-as-Service (SaaS) model. After considering the options, SF implemented RedPrairie's Smart Turn WMS solution to maintain visibility across its network. This solution actually simplifies the process even in remote locations

The on-demand application enables SF to have WMS

Profile of Samaritan's Feet Supply Chain

2009 Revenue: $32,000,000

Shoe Donations Received and Processed in 2009: 1.44 million pair

Global Staff: 30

Number of Volunteers Globally Since Inception (2003): 80,000

Countries with projects: 60+ (Africa, South America, the Caribbean, Asia, Middle East, Eastern Europe, and North America)

Headquarters: Charlotte, N.C.

Warehouse Locations: Charlotte (3); San Bernardino, CA; Indianapolis, IN; Greencastle, PA; Washington DC; Cape Town, South Africa; Sao Paolo, Brazil; Lagos, Nigeria; Lima, Peru

WMS Software: RedPrairie Smart Turn

Key Modes of Transportation: Ocean, Ground, Rail, Air, and Parcel

Supply Chain Partners: Transportation Insight, LLC (Transportation) and Bonded Logistics (Warehousing); Mission Expeditors (Ocean); UPS and FedEx (Parcel)

Type of Shoes: 90% new athletic shoes, 10% school shoes and sandals

Source: www.samaritansfeet.org

capabilities in all facilities regardless of infrastructure type and sophistication. Another benefit of a SaaS tool is that there is no infrastructure to install, maintain, or remove when locations are added, eliminated, or moved. Ultimately, SF was able to establish a critical combination of inventory agility, accuracy, and insight for its network.

SF's inventory capabilities were put to the test during the 2010 World Cup in South Africa. The product mix was out of alignment in SF's South African distribution facilities. Specifically, the Gordon's Bay facility outside Cape Town had only adult sized shoes and lacked inventory of much-needed children's sizes. Fortunately, the WMS enabled SF to quickly find an abundance of children's shoe inventory at its Eastern Cape warehouse, also in South Africa. Without a visibility system, SF would have been forced to purchase shoes locally or expedite them from faraway facilities. Either proposition would have been extremely expensive.

The Lessons Learned. Just as for-profit companies benefit greatly from demand visibility so does SF. The organization has an acute need for a single view of inventory worldwide to be able to balance its product mix. To better respond to immediate needs and future projects, SF must:

• Identify and train regional coordinators in inventory management. Even with automation, there is a significant human component involved in tracking and managing inventory. Regular oversight and inventory updates at the regional and country levels also limits inventory shrinkage.

• Fully capitalize on the ability of the web-based WMS to collect and manage data remotely. Simplified processes help shorten the learning curve of training and reporting of good data. Making reporting less cumbersome and less complicated will help ensure regular and accurate updating. Web-based systems also help avoid the expensive investment in technological infrastructure such as computers and scanners at its facilities.

• Leverage available mobile technology (smart phones, tablets with a simple mobile WMS application) rather than PCs or even costly notebook computers for inventory tracking and management. Mobile applications enable SF to get instant updates from any warehouse location in the world as well as the ability to report on a move from anywhere.

Transportation: Securing Capacity and Low Costs

The Challenges. SF's largest expense outside of shoe procurement and travel is freight transportation. Like all shippers, it must overcome capacity constraints, rising rates, and in-transit product safety issues. In addition, SF encounters transportation flow challenges as their destination points may be remote and the routes unconventional to say the least.

Throughout the recession, available transportation capacity had shrunk. Some of this was due to carrier bankruptcies; in other cases, carriers reduced capacity to maintain rates and counter the effects of lower demand. The net result has been the removal of excess capacity from the system, capacity that SF previously sourced as donated backhaul transportation.

Combine delivery to some of the most troubled parts of the world with a product that is coveted by thieves and the real magnitude of the transportation challenge becomes crystal clear. Getting the product to the destination port is in many instances the easy part of the trip. The real headaches begin at the destination port during the entry process and persist on to the final leg of delivery. For example, SF has had an entire container of donations disappear from bonded storage at a port in West Africa. The organization is still working to resolve the loss claim.

The Solutions. Samaritan's Feet has taken a multipronged approach to overcoming transportation obstacles.

First, it brought in knowledgeable transportation experts to manage freight flows and develop creative solutions to its freight predicaments. Unlike many non-profits, SF now has on staff a full-time director of logistics and supply chain. Supply chain experts also serve as members of the organization's Board of Directors and Board of Advisors.

Because SF doesn't have consistent volume, it is difficult to lock in needed capacity and low rates with transportation contracts. Fortunately, the organization's freight flows on low-demand backhaul routes in some regions of the world. So occasionally this presents opportunities for SF to seek partnerships with carriers and intermodal companies to move freight at reduced backhaul rates. Ideally, the freight will move as a donated service from the carriers, though this is rarely the case.

To minimize the risk of product loss, SF closely monitors freight flows for potential problems and works to avoid political hotspots. Likewise, it seeks to limit dwell time at ports where the athletic shoes become prime targets for theft. SF seeks to partner with people who have a strong track record of quickly clearing goods through customs. In many cases, but not all, SF as a humanitarian organization is able to get the donated athletic shoes classified as "duty free."

The Lessons Learned. With global shipping capacity decreasing and rates increasing, a not-for profit has to be very creative in transportation arrangements. Some opportunities are to:

• Increase the use of intermodal (piggyback) where available to counter the capacity crunch and rate increases of over-the-road truckload.

• Seek in-kind donation of transportation from moving companies like North American Van Lines who have shared backhaul capacity as well as providing deep discounts to move last-minute shipments or donations.

• Partner with third party transportation management companies and use their rate umbrella to secure the best rates.

• Seek additional backhaul opportunities to international locations that are primarily exporting to (rather than importing from) the United States.

Coordinating a Massive Donation in Two Weeks

Imagine getting the news about a donation of one million pairs of shoes from Sears Holdings Corporation, the parent of Kmart. Great news until you discover that you have only two weeks to organize the transportation and storage of 280 truckloads of the shoes.

Samaritan's Feet received that call in December 2009. The donated shoes were ready to be picked up from Kmart returns centers, but with one important stipulation: the operation could not affect any of the post-holiday activities at those returns centers. At the time, SF had only one facility in Charlotte, N.C., which would be receiving loads originating from multiple Kmart locations.

Literally overnight, SF's mindset needed to transition from a non-profit humanitarian aid organization to that of an efficient supply chain network operator. SF responded by enlisting the help of supply chain professionals, 3PL service providers, and government entities to manage the flow and storage of the massive donation.

Transportation Insight, one of the group's supply chain partners, managed every aspect of moving the 280 loads. North American Van Lines and Bonded Logistics set up warehouse operations across the country to process and store the shoes. Warehouse capacity was provided at no cost by the State of Indiana (75,000 sq. ft.), the City of San Bernardino (50,000 sq. ft.), and underutilized manufacturing mills in North Carolina.

The project was a success. Samaritan's Feet handled every truckload of shoes without a single donor issue. And in the process, an efficient distribution network was established. Subsequently, SF was able to easily assimilate a donation of 300,000 pairs of new shoes from Homeland Security into the network.

3PL Partners: Never Too Many Cooks in the Kitchen?

The Challenges. It's hard to say no to offers of help when you do not have an abundance of in-house supply chain expertise or resources. A relatively young non-profit like SF doesn't have the financial wherewithal to staff and manage facilities in every region in which it is trying to help people. Thus, the assistance provided by 3PLs is both appreciated and essential. Third parties possess the capabilities, infrastructure, and knowledge needed for operational efficiency in regions where SF has a limited presence.

Problems can arise, however, when the pool of service providers grows rapidly and the supply chain network becomes fragmented and dysfunctional. Yet while SF feels that there can never be "too many cooks in the kitchen," this situation at times had made the organization vulnerable to certain supply chain problems. These include the following: simple processes became difficult, cumbersome, and inconsistent across regions; communication challenges arise, especially when dealing across cultures; and maintaining a global view of inventory becomes more difficult. In short, SF needs to be ever vigilant that the presence of multiple third parties never impedes its mission of serving people in need.

The Solutions. Intelligent partnering is the key to success for non-profits like Samaritan's Feet. The organization learned the hard way that not every offer of help should be immediately accepted. The capabilities of potential partners must be vetted, their market expertise verified, and their fit within the existing network assessed. This qualifying process needs to take place before any working relationship is established.

Whenever possible, SF uses partnering opportunities to empower indigenous people. These individuals often prove to be adept at working at the end distribution point and handling clearance at the port and movement inland. Yet while SF seeks to empower the indigenous population, it does not do so at the expense of supply chain expertise and efficiency. SF's approach—which has proven successful so far—is to work with trusted, experienced freight forwarders and 3PLs. And in many instances, where SF needs to quickly access local experience and relationships, it seeks out an experienced non-profit organization that is already established on the ground. This was the case when SF partnered with the Zimbabwean Organization of National Healing and Reconciliation to ship a truckload of 5,000 pairs of shoes from South Africa for distribution throughout the country.

The Lessons Learned. SF has to be proactive in identifying requirements and partners, particularly in areas where proven capabilities are weak or absent. Some opportunity areas that should be pursued include:

• For each project, clearly map out which resources are needed (people, transportation capacity, storage capacity, etc.), the quantity of resources needed, and the required timeframe.

• Do capability and capacity checks of 3PLs to be used in each country before engaging them. This would include conducting reference checks on the providers to ensure that they have the capabilities they claim to have.

• Continue to reach out to other non-profits around the world. Compare and contrast operating footprints and expertise to better identify partnership opportunities.

• Become familiar with variances in customs processes across countries.

Solutions to Consider

In this persistent, difficult economic climate, business leaders will continue to look at supply chain as a key to preserving limited company resources. Supply chains, especially those in a non-profit organization, will be pressed to do even more with less and be nimble enough to react wherever a need exists. In response to these pressures, SF is constantly developing innovative supply chain solutions and approaches. Many of these can be applied effectively in both non-profit and for-profit environments:

Control the product mix to streamline operations. By avoiding products that are not central to the core mission, organizations can reduce inventory levels, warehouse resources, and supply chain complexity. SF accomplishes this by focusing mainly on new athletic footwear.

Leverage opportunities to establish operations within demand regions. This can reduce transportation costs and provide access to reasonably priced labor. This approach also helps to promote regional economic development, empower the local workforce, and increase visibility of the mission—all key tenets of the SF mission.

Establish inventory visibility to control supply and cost of regional storage. Simplifying processes, training local staff to maintain accurate data, and using low-cost technologies enables rapid and accurate inventory updates. SF can gain excellent visibility even when storing inventory in a dropped container.

Develop operational and staffing resource flexibility to respond to volume fluctuations. SF's core staff is supplemented by a volunteer base to manage the processing of large-scale donations. Also, SF uses temporary facilities and consolidates regional operations as appropriate. Similarly, for-profit organizations can achieve flexibility though the use of 3PL facilities and of temporary and part-time labor.

Invest in qualifying and selecting supply chain partners. Finding partners with both a desire to help with the SF mission and the required supply chain expertise and local knowledge is an arduous but eminently worthwhile exercise. When strategic relationships are built on mutual trust, capabilities, and cultural fit, the potential for supply chain success is greatly enhanced—in any type of organization.

In its brief lifespan, Samaritan's Feet has encountered significant supply chain challenges on the way to becoming a truly global operation. The ability to identify and execute innovative solutions to meet these challenges has helped the organization mature and expand its services to more people in need in more locations of the world. The good news is that SF is quickly moving toward its goal of putting 10 million pairs of shoes on the feet of 10 million people in 10 years—the 10/10/10 goal. Solid supply chain management is a critical part of that effort.

Authors' note: *Readers interested in helping with Samaritan's Feet are invited to contact Manny Ohonme at manny@samaritansfeet.org or call toll free 1.866.833.SHOE (7463). To learn more about Samaritan's Feet, visit www.samaritansfeet.org.*

Procurement Outsourcing: Proceed with Caution

By Chris Ahn, Rodrigo Slelatt, and Ricardo Ruiz-Huidobro

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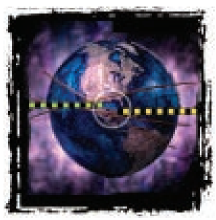

Procurement is not as easily outsourced as many other transactional or non-strategic functions—that's because it ties directly into the business's profit-and-loss statements. Despite a substantial growth in outsourcing in the past several years, procurement outsourcing is less than 2 percent of all outsourcing activities, according to a comparison of A.T. Kearney indirect procurement studies (2007-2010).

Only a handful of companies are considered experts at outsourcing procurement and, to date, most procurement outsourcing is limited to select portions of indirect spend. It is difficult to envision it expanding to all indirect spend areas across companies, let alone into direct spend. Expectations that procurement outsourcing will achieve high growth over the next several years may need to be tamped down.

In fact, we have recently worked with companies in the process of backing out of procurement outsourcing deals they signed just a few years ago. One large U.S.-based multinational that considered all indirect sourcing categories to be "nonstrategic" undertook a sizeable outsourcing deal that did not result in substantial benefits in very many categories. Another global company that "mixed" procurement into a broad outsourcing contract concluded that it was paying too much for average results. Both companies now recognize that their due diligence efforts during the vendor selection and contracting processes were less than adequate.

These experiences exemplify why companies planning to begin procurement outsourcing efforts, or intensify already started programs, should do so cautiously.

What You Need To Know

A thorough analysis is a must when considering procurement outsourcing. You must be honest about your current capabilities when determining what facets of procurement you might outsource. For instance, do you outsource strategic sourcing? Category management? All procurement operations from buying through payments?

Strategic sourcing or category management should not be outsourced in isolation, in most cases. Yes, an external provider can perform strategic sourcing alone to cut costs quickly with minimal transformation or change management. But the benefits will be short lived unless you subsequently develop a sound category management capability. The development process will help acquire skills and know-how that were not already available and build discipline in the procure-to-pay chain. But doing so requires substantial change management efforts that vendors will find challenging to drive, especially when they are not in control of the purchasing operations. Outsourced category management brings fees for service that can exceed the cost of bringing this expertise in-house, especially where there is scale to leverage.

A preferred operating model involves outsourcing procurement operations as a first step and combining end-to-end solutions for specific categories. The former arrangement helps to realize savings in labor arbitrage and improve efficiency by outsourcing non-core activities. It also yields data transparency that can result in further savings due to improved spend management and provides a solid starting point for incremental outsourcing. A combined end-to-end category solution allows for maximum savings potential from a non-core business area and encourages vendors to "put some skin in the game" by committing to specific savings targets.

Of course, agreeing to this requires ceding control over decisions in the selected categories, combined with lots of change management and collaboration to realize savings.

Clearly, if you are considering procurement outsourcing you must be open to change and be willing to let the outsourcing vendor drive that change to promote long-term savings. You must also understand all potential costs—both upfront and ongoing—before engaging vendors.

Contract Cautiously

Deciding to pursue procurement outsourcing also means undertaking a formal vendor selection process, as vendor solutions and contracting methods vary widely in this relatively immature outsourcing field. While a customer service leader today can contract with a contact center vendor and feel secure about the outcome, the same cannot yet be said about the procurement leader who is looking to outsource. Each service provider's specific capabilities, solutions, and service offerings are different, as is the category-specific know-how each possesses. Most importantly, a full understanding of the value proposition in terms of costs weighed against potential savings and other benefits is needed.

You must be honest about your current capabilities when determining what you might outsource.

Determining which aspects of procurement to outsource and which vendor solution to adopt are the basic first steps toward successful procurement outsourcing. Yet the ultimate success or failure of a deal can very well lie in the contracting process. At this time, there are too many ways to land a procurement outsourcing contract, and the variety of options is actually a negative. You need to have a very clear picture of the fees that you will pay for the service and the benefits you should expect in exchange.

Vendors may charge a fee as a percentage of managed spend, charge a fixed price per full-time equivalent (FTE), charge a percent of savings achieved or even offer to negotiate a gain-sharing agreement. Deals built around percentage of managed spend bring clear cost and invoicing, but can result in high ongoing fees and the risk of operating loss if savings are not committed.

Price per FTE deals, which we endorse for procure-to-pay outsourcing, present a clear picture around costs that make them easy to audit. The downside of FTE deals is that when contracts include category management, what is in fact a high-value-added service is treated like any other type of transactional outsourcing. This blurs the value of the spend management skills incurred, which actually go beyond that FTE.

Contracts that include one-time charges upfront typically bring negative cash flow in the first year or two of the arrangement. But they are fairly transparent and help to incur a real cost in the right category rather than realizing it later through high long-term fees. Although gain-sharing agreements create the appearance of a partnership and potential upside, the concept tends to be blurry in execution. Because gain-sharing relies on trust, disputes may arise around how much in savings were realized should the signatories of these multiyear contracts move on—thus, we rarely favor this type of arrangement.

Delivering Results: Deal After Deal

Procurement outsourcing is an emerging practice, but is certainly not an arrangement to be entered into lightly. For several companies, it has not yielded the expected results. Companies with the most to gain tend to be those with annual revenues between $1 billion and $5 billion, as they rarely invest heavily in procurement capabilities and are keenly focused on growth. Companies in this range lack the scale to make significant headway by pooling their own spend across the business, but can outsource indirect categories to a vendor that will in turn bundle this spend with that of other companies to obtain favorable terms. Consumer products and financial services companies have been making significant inroads in procurement outsourcing based on a combination of their familiarity with outsourcing other functions and their sizable (but undermanaged) indirect spend.

Procurement outsourcing is also unique when compared to the many other types of business process outsourcing (BPO); it does not come with the baked-in guarantees that vendors can deliver as in other functions. An early willingness to share spend data and an honest assessment of present-day capabilities is a must during the vendor selection process. Where a capability is found to be lacking, the question then is whether it can be improved through an internally focused effort or by outsourcing.

The pilot approach discussed earlier offers a cautious on-ramp, with the potential to expand efforts by adding more categories or moving up the chain to more tactical aspects such as strategic sourcing and category management. As it happened with the now more popular outsourced functions, the best way to eliminate "buyer's caution" in procurement outsourcing is for a group of vendors to deliver sustainable results and operational efficiencies—and do so deal after deal.

Tallying the Benefits of S&OP

Benchmarking data show that adopting an S&OP program in conjunction with close collaboration with suppliers and customers can deliver major advantages in key performance areas.

By Rob Spiegel,
APQC

Collaboration has become one of the profession's guiding ideals. And while collaboration in supply chain management typically conjures visions of data sharing with suppliers and customers, it's important to remember that collaboration looks internally, too. Recognizing this, more and more companies are embracing sales and operations planning (S&OP) to end the inefficiency inherent in functional silos working in their own world. In effect, they are using S&OP to foster internal collaboration—i.e., to let the right hand know what the left hand is doing within the organization.

The downside potential of clinging to a silo mentality can be huge. It's estimated that much of the massive inventory build-up that occurred in the electronics industry during the downturn in 2001 may have been avoided if sales, marketing, and finance had shared accurate demand information with the supply chain managers.

Information sharing between the supply chain and other internal business functions is really what S&OP is all about. The ultimate goal is to achieve the following benefits:

- greater visibility of demand and supply;
- better promotional planning;
- improved product lifecycle management;
- improved inventory management;
- better revenue management; and
- more accurate budget forecasting.

A Distinct Approach to Planning

While its principles were formulated many years ago, S&OP has become a common supply chain activity only in recent years. According to APQC Open Standards Benchmarking data, 76 percent of organizations surveyed have now developed a formal sales and operations planning process. A full 63 percent have a centralized supply chain planning operations structure. Because of the global nature of supply chains today, some organizations reported a supply chain planning structure that includes a mix of centralized and decentralized by region.

While S&OP supports the traditional business planning process, it is different from that process in important respects. The S&OP process typically reviews planning at a higher level than traditional planning. This is reflected in planning meetings that take place monthly and yearly as opposed to the daily or weekly meetings of the more tactical traditional planning. Also, senior management is usually more heavily involved in S&OP than they are in tactical planning sessions, seeking to encourage consensus for a single operating plan across business functions.

According to Hitachi Consulting, the types of information that get examined at an S&OP meeting typically include:

• forecasted demand and corresponding revenue;
• production plan and cost-of-sale projections;
• inventory positions/levels;
• financial budget vs. actual comparison (P&L, balance sheet and cash flow);
• raw material purchase projections;
• forecasted capacity utilization compared to past performance; and
• forecasted labor utilization compared to past performance.

S&OP combines a view of demand and supply. It often begins with a demand plan across a specific time period such as 12 or 24 months. A supply plan is then created for the same period by the supply chain team in collaboration with marketing and sales. Demand and supply are justified to develop an operating plan. The goal is to gain consensus on what will be sold and what revenue will be produced for each product each month. This gives the supply chain function visibility into actual demand. This improved visibility, in turn, allows the supply chain team to create a more efficient flow of materials.

EXHIBIT 1

Impact of External Demand Collaboration on Key S&OP Measures

Selected S&OP Measures	Low Collaboration	High Collaboration	N
Inventory carrying cost as percentage of average annual inventory value	16.0%	8.0%	38
Return on assets	11.0%	15.9%	33
Shrinkage as a percentage of total revenue	0.16%	0.05%	38

Note: The "Low" column indicates the median performance level for organizations that have only a small degree (1-2 on a five-point scale) of external demand collaboration with customers. The "high" column indicates the median performance level for organizations that have a high degree of external demand collaboration with customers (4-5 on a five-point scale).

EXHIBIT 2

External Supply Planning Collaboration with Suppliers on Key S&OP Metrics

Selected S&OP Measures	Low Collaboration	High Collaboration	N
Demand/supply planning costs per $1,000 revenue	$3.43	$1.98	45
Number of FTEs for the supply chain planning function per $1 billion revenue	27.12	12.97	53

The Benefits of S&OP

There are a number of efficiencies associated with S&OP, especially when its measures are combined with external collaboration on both the demand and supply side. APQC's Open Standards Benchmarking shows that organizations that have a high level of external demand collaboration in their dealings with customers had half the inventory carrying costs (as a percentage of average annual inventory value) as those with low levels of demand collaboration (see Exhibit 1). Likewise, those with high collaboration displayed better return on assets and lower shrinkage as a percentage of total revenue.

External demand collaboration involves bringing the customer's view of demand into the planning process. External supply collaboration brings the view of suppliers into the process. The combination of these external views can smooth out any disruptions due to demand spikes or supply shortages.

Those organizations with high levels of demand collaboration also show a better finished goods inventory turn rate that the low collaborators—15.2 turns vs. 7.6 turns. With regard to staffing levels, the collaboration leaders needed only 9 full time equivalent (FTE) personnel in supply chain planning per $1 billion in sales. By contrast, those with low collaboration needed 24 FTEs to perform the same function.

A number of other improvements were reported by those organizations that collaborated closely with suppliers on S&OP measures. For example, they recorded demand and supply planning costs that were nearly half that of companies that reported low levels of collaboration (see Exhibit 2). The difference in the number of FTEs required for the planning process was even more dramatic; those organizations practicing high collaboration needed less than half as many FTEs for planning as those with low collaboration.

Among the other advantages, organizations using a high level of collaboration with suppliers on S&OP measures had a cost of goods as a percentage of revenue of 44 percent. That number for low collaborators was 73 percent. As for the finished goods inventory performance, for those organizations with high collaboration, the turn rate was 14.5. Those with a low level of collaboration reported a finished goods inventory turn rate of 7.6.

Even when external collaboration is not factored into the reporting equation, those organizations with formal S&OP programs significantly outperform the others. According to data from APQC Open Standards Benchmarking, companies with S&OP programs in place reported demand and supply planning costs of $2.00 per $1,000 in revenue. This compares to $3.34 per $1,000 in revenue for those organizations with no formal S&OP program.

The same pattern emerged with respect to finished goods turn rate. Organizations with formal sales and operations planning reported a median turn rate of 10.70 vs. organizations with no formal S&OP reporting 6.75. The number of FTEs required for supply chain planning functions per $1 billion in revenue was 13 for those organizations with formal S&OP. For those without formal S&OP, the FTE number was 23. The overall supply chain management costs per $1,000 in revenue was $58.70 for the formal S&OP companies. Overall costs were almost twice that—$106.90 per $1,000 in revenue—for those organizations with no formal S&OP in place.

Numbers Tell the Story

While it is not prudent to causally assert that S&OP practices will necessarily deliver consistent efficiency improvements, it is clear that organizations using S&OP in conjunction with external collaboration with suppliers and customers enjoy a range of advantages over those organizations that do not. APQC Open Standards Benchmarking shows that organizations with a high level of collaboration display greater levels of efficiency across a number of S&OP metrics, including planning costs, number of full-time equivalent personnel required for planning, return on assets and inventory carrying costs. Other efficiencies shown by high collaborators include improved inventory turn rates, a lower cost of goods as a percent of revenue, and reduced shrinkage.

All in all, the numbers make a very compelling case for S&OP.

Rob Spiegel is Knowledge Specialist–Supply Chain for APQC.

About APQC: A member-based nonprofit founded in 1977, APQC is the leading resource for performance analytics, best practices, process improvement, and knowledge management. For more information, visit www.apqc.org or call 713-681-4020.

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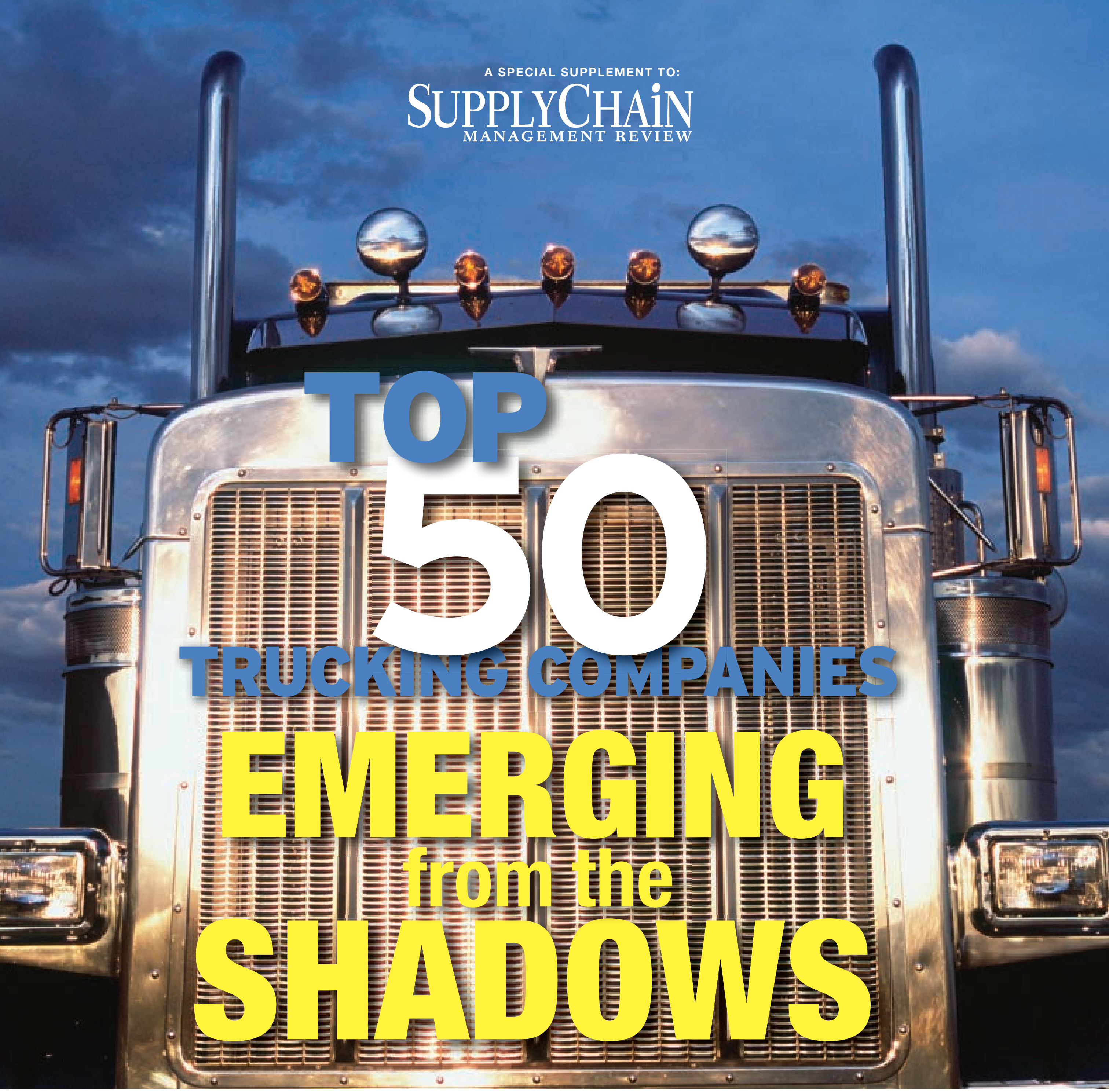

TOP 50 TRUCKING COMPANIES

EMERGING from the SHADOWS

By **John D. Schulz**, Contributing Editor

Leading trucking company CEOs say it's time to pay down debt and put profit to work to recapitalize their businesses—all at a time of tightening capacity. For shippers, the days of rock bottom rates could be long gone.

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What do the Top 50 trucking companies have in common? That's easy. Leading CEOs and trucking analysts agree that their shared traits include shrewd and experienced management teams, an obsession with service and operational details, an ability to react quickly to market conditions, and a motivated work force.

Emerging from the roughest three-year economic cycle since the industry was deregulated, CEOs from sister magazine *Logistics Management's* list of the Top 50 trucking companies say that they're now focused on improving yield and profits. That's at the same time they're increasingly tailoring their services for each specific customer to satisfy changing shipper demands.

What's making the Top 50 tick? According to David Ross, trucking analyst for Stifel Nicolaus, the most important aspect of any Top 50 trucking company is the strength, ability, and breadth of experience of its management team.

"Management is number one," says Ross. "They all run the same trucks along similar networks, but it's how you run them that makes the difference. The best make the right decisions on how much to charge, what kind of capacity to bring on, and how much equipment to buy. It all starts with management."

HOW THE TOP 50 ROLL

FedEx Freight this year surpassed YRC Worldwide as the nation's largest less-than-truckload (LTL) carrier. It is at the forefront of industry changes. Bill Logue, president and CEO of FedEx Freight, says he draws his cues from Fred Smith, the founder and CEO of

TOP 25 LESS-THAN-TRUCKLOAD CARRIERS - 2010 REVENUES (Including fuel surcharges)

RANK	CARRIER NAME	2010 REVENUE ($ MILLIONS)	COMMENTS
1	FedEx Freight	$4,421	Revenue adjusted to calendar quarters Includes FedEx National LTL
2	Con-way Freight	$3,026	Surpassed YRC National as second largest LTL carrier
3	YRC National	$2,642	Includes YRC, Inc. (former Yellow and Roadway) and YRC Reimer brands
4	UPS Freight	$2,002	Completed first full year with union workers
5	ABF Freight System	$1,395	Expanding regional service in Western U.S. during 2011
6	Old Dominion Freight Line	$1,377	Most profitable public LTL carrier
7	Estes Express Lines	$1,352	Largest privately-held LTL carrier
8	YRC Regional	$1,257	Includes Holland, Reddaway, and New Penn brands
9	R+L Carriers*	$1,077	Includes R+L, Gator, Greenwood, and Paramount brands
10	Saia Motor Freight Line	$836	Coverage of 34 states
11	Southeastern Freight Lines*	$723	12 Southeast states. Launched logistics division in Jan. '11
12	Vitran Express	$582	Acquired Milan Express (Feb. '11). Coverage in 34 states with Milan
13	Averitt Express	$495	Southeast coverage. Member of Reliance Network for national coverage
14	Roadrunner Transportation	$410	Acquired Bullet Freight (Dec. '09). Light-asset carrier
15	AAA Cooper Transportation	$399	Coverage in 15 states primarily in the Southeast
16	Central Transport International*	$354	Full coverage of 33 states
17	New England Motor Freight	$317	15 Northeast and Mid-Atlantic states
18	Pitt-Ohio Express	$275	Mid-Atlantic coverage. Member of Reliance Network for national coverage
19	Dayton Freight Lines*	$257	11 Midwest states
20	A. Duie Pyle*	$231	13 Northeast states
21	New Century Transportation	$170	Light-asset load to ride hybrid LTL operation
22	Central Freight Lines	$150	Coverage in 14 states primarily in the Southwest
23	Daylight Transport	$144	Light-asset with concentration on West Coast
24	Oak Harbor Freight Lines	$129	Coverage in 5 Western states
25	Ward Trucking	$114	10 Mid-Atlantic states
	2010 TOP 25 TOTAL REVENUES	**$24,070**	
	ALL OTHER LTL CARRIER REVENUES	**$3,401**	
	2010 TOTAL LTL MARKET REVENUES	**$27,471**	

Note: Revenues for LTL operations only, unless otherwise indicated
*Revenues primarily LTL and include less than 10% for truckload and other services
Source: Company reports and SJ Consulting Group estimates
Prepared by SJ Consulting Group, Inc.

FedEx Corp. Logue says no detail at any of FedEx's operating units is too small for Smith to ignore.

"It's a culture created at the top," says Logue. "Fred has always emphasized that we are in business for the customer. But it's our employees who make that customer expect great things. We try and make every employee responsible for that customer treatment."

According to Douglas Stotlar, president and chief executive officer of Con-way, the No. 2 LTL carrier on our list, says that he sees several common characteristics in his operation and those of his chief competitors, including comprehensive

TOP 25 TRUCKLOAD CARRIERS - 2010 REVENUES (Including fuel surcharges)

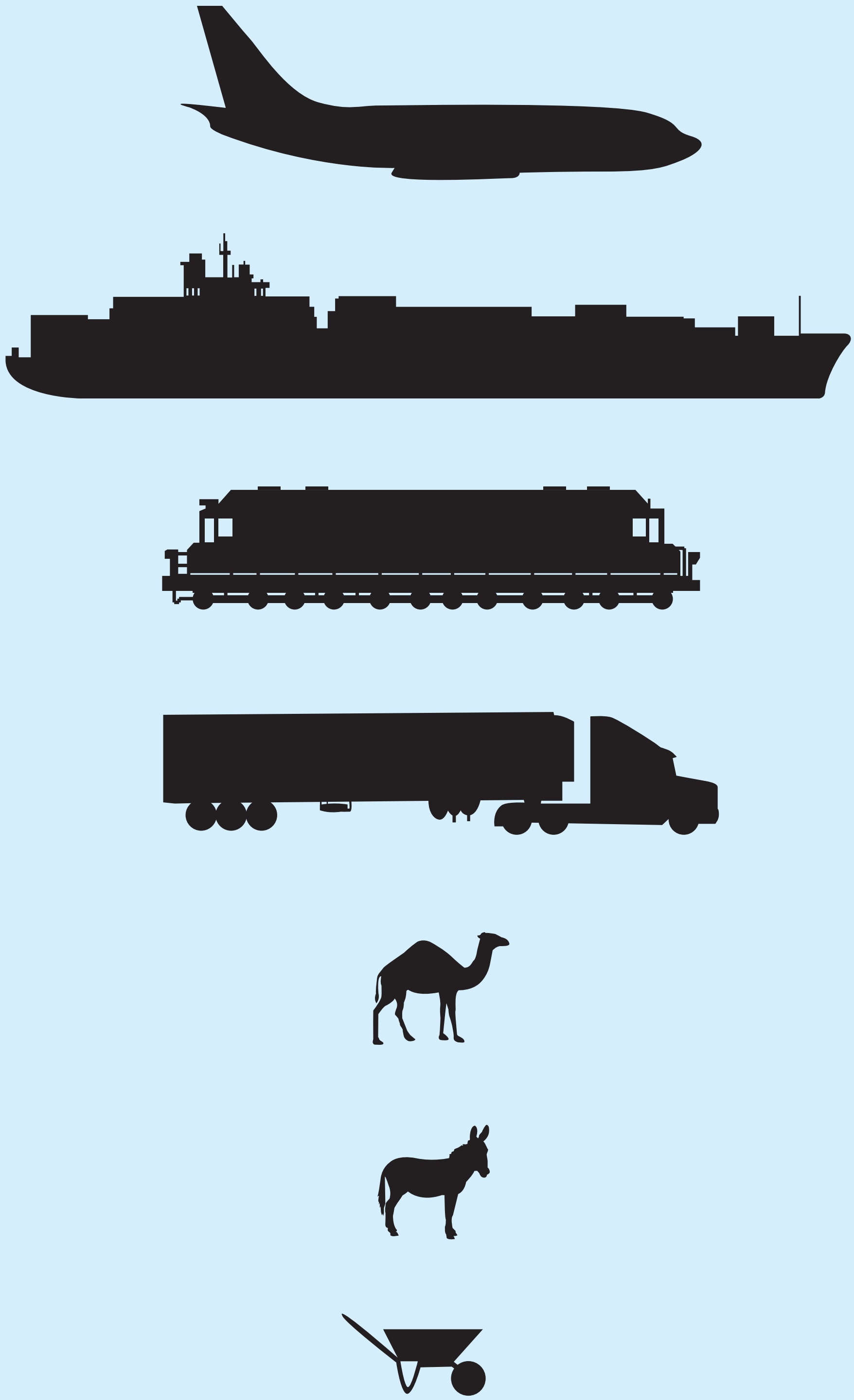
RANK	CARRIER NAME	2010 REVENUE (In $ millions)	SUBSIDIARY PORTFOLIO / COMMENTS
1	Swift Transportation	$2,631	Swift Transportation
2	Schneider National	$2,350	Schneider National, Schneider National Bulk Carriers
3	Werner Enterprises	$1,542	One-way Truckload, Dedicated, Cross-Border
4	U.S. Xpress Enterprises	$1,450	US Xpress, Xpress Global Systems, Xpress Direct, Total Transportation, Arnold Transportation, Abilene Motor Express, C&C Transportation, Smith Transport, Pinner Transport
5	J.B. Hunt Transport Services	$1,386	J.B. Hunt Truck, Dedicated Contract Services
6	Prime*	$1,019	Flatbed, Refrigerated, Tanker
7	Crete Carrier Corp.	$841	Crete Carrier, Shaffer Trucking, Hunt Transportation
8	C.R. England	$835	England North America, England Mexico, England Dedicated
9	Knight Transportation	$659	Knight Transportation, Knight Refrigerated
10	CRST International	$612	CRST Expedited, CRST Malone, CRST Dedicated Services
11	Covenant Transport	$603	Covenant Transport, Southern Refrigerated Transport, Star Transportation
12	Ruan Transportation Management Services	$591	Ruan Dedicated Contract Carriage, Bulk Transportation
13	Celadon Group*	$542	Celadon Trucking, Celadon Logistics, Jaguar, Celadon Canada
14	Stevens Transport	$501	One-way, Dedicated, Expedited
15	Heartland Express	$500	Heartland Express
16	Ryder Systems	$483	Dedicated Contract Carriage
17	Con-way Truckload	$461	Con-way Truckload
18	Western Express	$432	Truckload Van, Dedicated, Flatbed
19	Penske Logistics	$422	Dedicated Contract Carriage
20	Dart Transit	$415	Dart Regional, Dart Dedicated
21	Interstate Distributor Co.	$413	IDC - Specialized Services, Heavy Haul, Temperature Controlled, Dedicated
22	Anderson Trucking Service	$409	ATS Inc., ATS Specialized, SunBelt Furniture Xpress, Midwest Specialized Transportation, Warren Transportation
23	USA Truck	$402	USA Truck
24	NFI	$401	NFI Dedicated, NFI Transportation
25	Marten Transport	$393	Marten Transport
	TOTAL TOP 25 TRUCKLOAD CARRIER REVENUES	$20,293	

Note: Revenues are for truckload operations and exclude intermodal, logistics and other services
*Revenue adjusted to reflect calendar quarters
Source: Company Reports and SJ Consulting Group estimates
Prepared by SJ Consulting Group, Inc.

service offerings, the ability to execute at high levels against stated service standards, and customers who appreciate a level of consistency.

Astute carrier executives are quick to point out that the lowest rate may not mean the best value. Increasingly, carriers are "bundling" their services to meet ever increasingly exacting shipper needs. As Stotlar said: "The price/value proposition we offer works to our customers' advantage."

Chuck Hammel, president of Pitt Ohio, No. 18 on the LTL list, agrees with Stotlar and says that he sees several similar trends. He's seeing more need for time-definite services, and also a move toward LTL shippers trying to increase volumes to qualify



for a truckload shipment. Toward that end, Con-way recently bought Contract Freighters Inc., a major TL carrier, and now ranks as the 17th-largest TL carrier in the nation.

Hammel says he's also seeing more shippers seeking out financial information about their carriers. He says financially strong carriers will have an edge as shippers, under the new CSA 2010 standards, are able to find out more information about individual carriers.

"Carriers who are strengthening their balance sheets by paying down debt, recruiting the best drivers, and adjusting their pay and benefits to stay ahead of what could be a looming driver shortage will have an advantage," Hammel says.

2007-2010: Staying alive

The period from 2007 to 2010 was perhaps the roughest three-year economic cycle for the trucking industry since deregulation in 1980.

Trucking's solution: "Reindustrialize" the U.S.

Trucking industry leaders are unanimous in choosing the No. 1 thing on their wish list of priorities to increase freight volumes, improve rates, and create better services: Reindustrialize America.

Trucking volumes are split roughly half and half between retail and industrial. But the industrialized portion of the business has been shrinking for decades, as the U.S. increasingly became a service economy.

"There's only so much retail," says Myron P. "Mike" Shevell, chairman of the Shevell Group, which includes Northeast regional LTL giant NEMF and truckload carrier Eastern Freightways. "There is virtually no clothing made in the U.S. You've got to produce goods to survive."

How bad is the U.S. industrial base? Consider a few facts:

- The U.S. has lost approximately 42,400 factories since 2001.
- In 2008, 1.2 billion cell phones were sold worldwide. Not one was made in the U.S.
- The U.S.has lost a total of about 5.5 million manufacturing jobs since October 2000.
- In 1959, manufacturing represented 28 percent of U.S. economic output. Today, it represents about 9 percent of all non-farm jobs.
- Today about 12 million Americans worked in manufacturing. The last time less than 12 million Americans were employed in manufacturing was in 1941.
- Dell Inc., the computer giant, is expanding operations in China with an investment of over $100 billion over the next decade. Dell now employs more people overseas than in the U.S.
- Consumer spending accounts for 70 percent of GDP. Of that amount, more than half is spent on services.
- The U.S. has lost 32 percent of its manufacturing jobs since the year 2000.

There are signs, however, that these disturbing trends could be changing. For the first time since 1997, U.S. manufacturing jobs increased. Last year U.S. manufacturing grew by 1.2 percent, or 136,000 jobs. That figure is expected to grow by another 330,000 manufacturing jobs this year, or 2.5 percent, according to IHS Global Insight and Moody's Analytics.

Fortunately, there are serious people who believe the deindustrialization of this country is nothing short of a national crisis. President Barack Obama long has called for a reindustrialization based on "clean" energy jobs and other 21st-century endeavors. His efforts to create a network of high speed rail projects is an example, but hardly the only one.

Manufacturing jobs are actually the "shining star" of this economic recovery, Thomas Runiewicz, an economist at IHS Global Insight, recently told *The Wall Street Journal*. There are several reasons for this manufacturing rebound:

1) Quality: The U.S. worker has continually proven to produce a superior product, albeit perhaps not at the lowest possible price.

2) Onshoring: The trend to offshore outsourcing has begun to end as U.S. manufacturers discover advantages to producing goods here.

3) Excess U.S. industrial capacity and infrastructure: This nation's cities are full of potentially high quality real estate and brick and mortar locations that can easily be retrofitted to nearly any industry.

According to Runiewicz, examples abound. Whirlpool Corp. has 39 factories worldwide but recently decided to modernize and expand its plant in Cleveland, Tenn., to meet rising demand. Dow Chemical is building an 800,000 square-foot factory at Midland, Mich., to design and make hybrid batteries in order to be close to the auto plants of this country. Caterpillar is building a $120 million plant in Victoria, Texas, to build heavy machinery that used to be built in Japan.

All these expansions, and many more, potentially have dollar signs dancing in U.S. trucking executives' heads. That's because eventually every one of those products will be shipped on a truck, even if the long-haul perhaps is handled by intermodal rail.

So while America may never be the industrialized giant it was in the 1950s, it appears it doesn't have to be the manufacturing ghost that it's been in the past decade or two.

"Nobody in this country should be getting a free meal—they should be working either in the private sector or on city, state, or federal projects," Shevell says. "At least then you're paying them for work received. Then they might be buying some goods made in this country. If not, what's the point?"

—By John D. Schulz, Contributing Editor

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It saw even top-flight carriers like FedEx Freight and Con-way post their first quarterly losses in their history. Some marginal carriers such as Jevic Transportation, C.W. Johnson Trucking, Alvan Motor Freight, and Boyd Logistics and Cargo Transportation Services declared bankruptcy or closed. Others, such as LTL giant YRC Worldwide, teetered on the brink after losing in excess of $2.3 billion over the past three years. To the surprise of many, YRC is still afloat, although it has moved down the list in revenue.

But the successful carriers quickly adjusted to the market downturn, and are now poised to take advantage of the reduced capacity in the market place.

Mark Rourke, president of transportation for Schneider National, the No. 2 truckload (TL) carrier on the list, says it tightened up capacity by 10 percent, taking as many as 1,400 power units off the road.

"Like most large truckload companies, Schneider's capacity peaked in 2008. We tightened up about 10 percent of capacity, and as we come out of this we're keeping our numbers there and will focus on returns. We're not building the church for Easter Sunday any more."

—Mark Rourke, Schneider National

Schneider was not alone. J.B. Hunt, No. 5 on the TL list, reduced its over-the-road truck capacity by more than 1,400 units, or 27 percent, during the nadir of the downturn. Werner Enterprises, our No. 3 TL carrier, took out 950 trucks, or 10 percent of its capacity. Swift Transportation, the largest TL carrier, reduced its fleet by 2,750 trucks, or 15 percent, in order to cope with declining freight demand, according to figures compiled by analyst John G. Larkin of Stifel Nicolaus.

"Like most large truckload companies, Schneider's capacity peaked in 2008," says Rourke. "We tightened up about 10 percent of capacity, and as we come out of this we're keeping our numbers there and will focus on returns. We're not building the church for Easter Sunday any more."

LTL carriers had a tougher time reducing their overhead, and that explains the unprecedented quarterly losses at carriers such as FedEx Freight and Con-way. That's because, unlike TL carriers that operate largely point to point, LTL carriers operate and maintain intricate hub-and-spoke networks of terminals and breakbulk facilities.

But even so, the LTL industry was shrunk from a $32 billion industry in 2007 to about a $28.5 billion sector today—a $3.5 billion reduction. Or, as Con-way's Stotlar says: "A company the size of Roadway has come out of the market as far as capacity is concerned."

There were significant capacity reductions by major carriers. In November 2008, Con-way shut 40 locations to match volume levels. Recently, FedEx took out 100 locations in its recent network redesign. "LTL capacity is probably closer to equilibrium now than it has been in a long, long time," adds Stotlar.

It's nearly impossible to close a low-volume terminal without affecting service, so LTL carriers were more vulnerable to reduced profitability during the downturn. So they reduced head counts where they could, and went lean in hiring in order to stay in business.

"The downturn in the economy meant that many service providers did not need to hire, thus we did not bring new blood into the business," says Steve O'Kane, president of A. Duie Pyle, No. 20 on our LTL rankings. "For example, for an 18-month period, for all 2009 and the first half of 2010, we did not put anyone through our own driving academy. That was simply because we did not have driving jobs for them."

According to Myron "Mike" Shevell, chairman of the Shevell Group, which includes top Northeast regional carrier New England Motor Freight (NEMF): "LTL carriers are at the mercy of so many things that we have no control over. We have no control over tolls, fuel, no control over driver supply or whom we can put to work. We're running four driver schools. It costs a fortune to do that; but without them, there would be nobody to haul the freight."

2011: Time to recapitalize, reorganize

This year is a time for change, top carrier executives agree. Having ridden out the storm, leading trucking executives say it's now time to focus on profits. Fleets need money to recaptitalize after three lean years and shippers should be bracing for higher freight rates across the board, they say.

"Customers understand it," says FedEx Freight's Logue. "Yield improvement is very important right now. It's been three or four tough years, and we need to rebound in terms of profitability in order to reinvest in our businesses."

That's already starting to happen. Last year, sales of new Class-8 trucks rose nearly 15 percent year over year, while medium-duty truck sales zoomed 24.7 percent to 271,992 units, according to WardsAuto.com.

Carriers are adjusting their networks to meet customers' needs. Often, that has meant reinventing long-haul truckload networks into a series of regional networks in order to place trucking equipment and drivers closer to their customers as shippers have increasingly created a series of five or six regional distribution networks to cover the country.

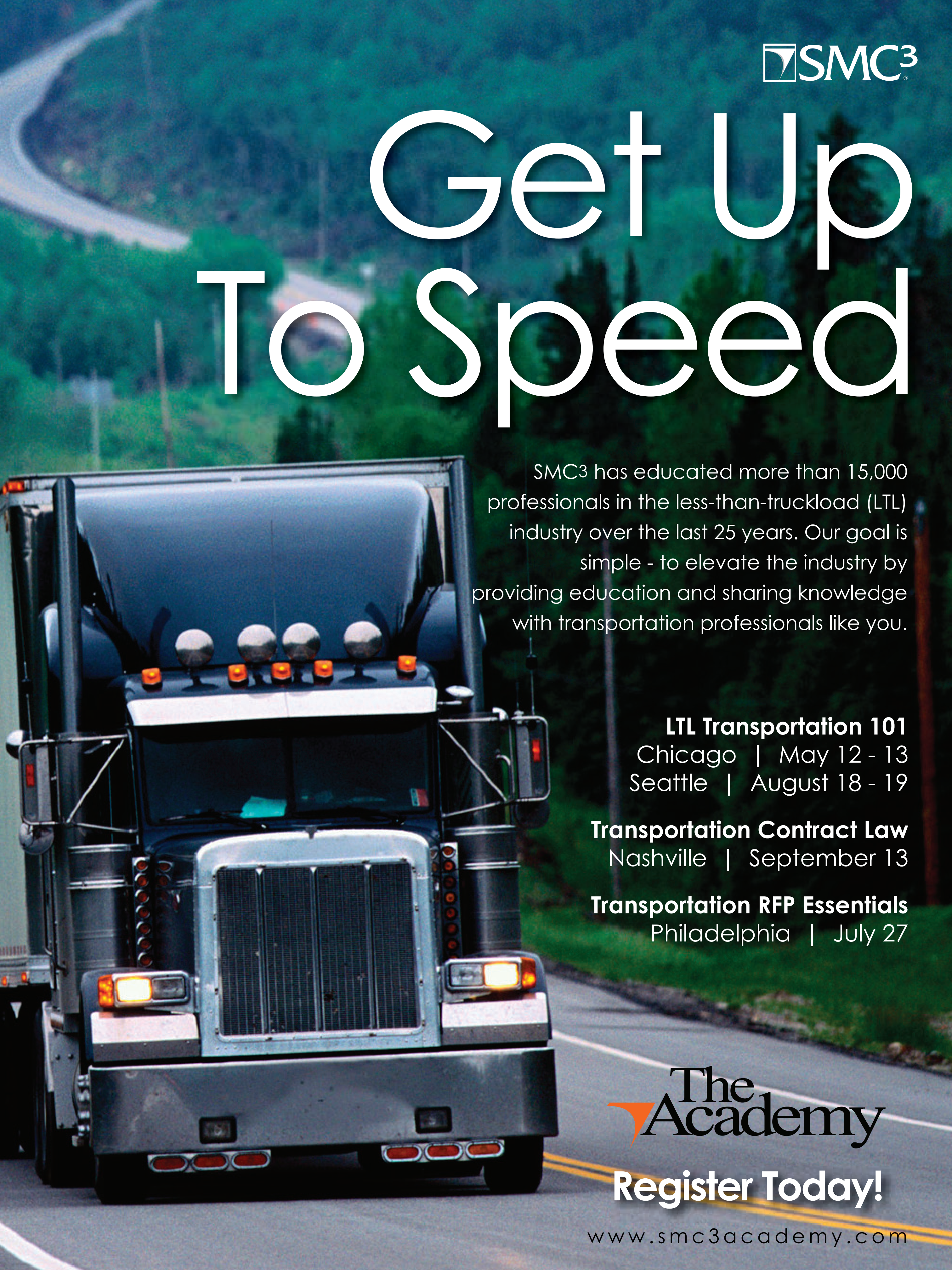
"We've been a long-haul trucker for 75 years, but now we have 50 percent of our business in regional configuration," says Schneider's Rourke. "We have reinvented ourselves."

That's because that's where shipping is going.

> "LTL capacity is probably closer to equilibrium now than it has been in a long, long time."
>
> *—Douglas Stotlar, Con-way*

Because more long-haul freight is moving on the railroads, Rourke says the over-the-road emphasis is on short-haul (under 750 miles) going by truck.

"Previously, in our long-haul network, we might have dispatched a truck once a day," Rourke says. "In our new regional model, we dispatch that truck on average one and a-half times a day. The intensity has picked up the entire pace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across our operation."

This has occurred in response to changing shipper demands. "They've deployed inventory closer and closer to the end user, whether it's industrial or retail freight," Rourke says. "We've studied the demands of the market and that's why we've made the change."

Similarly, LTL carriers have tweaked their operations. Pitt Ohio recent expanded its service offerings, adding a small package service, heat-track service, temperature control, truckload, and logistics capabilities.

Averitt Express, No. 13 on the LTL list, has historically been a Southeast regional carrier. But it has changed with the times, joining Pitt Ohio and four other regional LTL carriers to form the Reliance Network. That consortium, launched in 2009, has grown to be the eighth-largest LTL network nationally, according to a recent Raymond James analysis.

"Regionalized distribution networks are popular in the industry because they offer quick and flexible services," says Phil Pierce, Averitt's executive vice president of sales and marketing. "However, many shippers have long-haul LTL needs. The challenge with regionalized networks has been shipping outside of the network; so, in response to this, Averitt participated in forming the Reliance Network."

Similarly, FedEx Freight recently transformed its operations from separate long-haul and regional operations into one network handling both types

> "Customers understand it…Yield improvement is very important right now. It's been three or four tough years, and we need to rebound in terms of profitability in order to reinvest in our businesses."
>
> *—Bill Logue, FedEx Freight*

of freight. It also changed the nomenclature from "regional" and "long haul" to "expedited" and "economy" and pricing that freight accordingly.

More and more, freight is being priced according to its distinct characteristics and its cost within a carrier's network. Shippers who tend "driver-friendly" freight (on pallets with no waiting time for drivers on pickups and deliveries) will be getting spared the higher increases that other customers might face.

> "For an 18-month period, for all 2009 and the first half of 2010, we did not put anyone through our own driving academy. That was simply because we didn't have driving jobs for them."
>
> *—Steve O'Kane, A. Duie Pyle*

"If a shipper is making it as easy as possible for freight to be picked up, that allows us to be much more flexible on rates," adds FedEx Freight's Logue.

Road ahead

The coming capacity crunch and carriers' new-found emphasis on profits means only one thing for shippers: higher freight rates.

On the TL side, analysts and executives say privately that shippers can expect rate increases of perhaps as much as 7 percent to 8 percent, net of fuel surcharges. On the LTL side, which has slightly more excess capacity currently, rate increases of 3 percent to 5 percent are more likely.

"As our volumes grow, we're working on the yield side," says FedEx Freight's Logue. "Increasingly, we are looking at every account and asking ourselves: 'Is this a good long-term decision for this shipper?' I would say everybody is in that same situation."

Con-way's Stotlar couldn't agree more. "Everybody is committed to getting margins back to re-capitalize their fleets," he says. "The industry seems to be in lock step that we have to improve margins. We were successful in getting rate increases last year and that continues into 2011."

NEMF's Shevell says rate increases are essential for carrier survival in an era when a new Class-8 truck costs about $125,000, diesel is threatening to break the $4 plateau, and increased wages for qualified drivers are necessary as government programs such as CSA 2010 threaten to eliminate as many as 150,000 unsafe long-haul drivers.

The days of shippers beating up their carriers over rates and then dropping them in favor of a cheaper-priced carrier are ending, Shevell predicts. "There are shippers who laugh and say we'll give it to the next carrier, but it's coming to a point where the next carrier will be gone too," adds Shevell.

In fact, there's only a few regional carriers left in the Northeast and Midwest. Shevell is warning shippers that the same mega-consolidation that has happened to airlines and railroads could be happening to trucking, which would be a disadvantage to shippers.

"When that happens, capacity is going to be tight," Shevell warned. "The shippers who gets capacity will be the ones who have taken care of their carriers. The days of running roughshod on rates are over."

That's because capacity is tightening. Although it's difficult to gauge precise trucking capacity at any time, most carriers say they are approaching the "sweet spot" when tight capacity enables them to raise rates year over year in the mid-single-digit range. This last occurred during the period from 2002-2006 when carriers say they enjoyed the best pricing power since deregulation in 1980.

"Our view is that capacity is at its equilibrium," says Schneider's Rourke. "The spot market is indicative of what's available in terms of capacity. What we're seeing is that the truckload industry appears to be at or slightly short of capacity; so there's little doubt that rates are certainly going up."

Schneider is predicting overall rate increases of 5 percent to 7 percent, net of any increase in fuel surcharges. Analysts agree. "It's a positive environment for carriers," says analyst Ross. "Pricing (discounting) got a little too aggressive the last two years. Most of those guys at the top are unprofitable, and we think there will be capacity constraints. That's good for the carriers."

And probably not so good for shippers—at least those shippers who have enjoyed rock-bottom freight rates the past three years. □

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ATA February tonnage data is down sequentially, up annually

TRUCK TONNAGE SAW ITS FIRST decline in three months, according to data released recently by the American Trucking Associations (ATA).

The ATA's advance seasonally-adjusted (SA) For-Hire Truck Tonnage index dropped 2.9 percent in February following 3.8 percent and 2.5 percent gains in January and December, respectively. Prior to those sequential gains, November was up 0.6 percent and September and October were up a cumulative 2.8 percent.

The current SA index is 113.3 (2000=100) in February, following January's 117.1, which was its highest level since January 2008. December's SA index of 112.7 was the highest it had been since September 2008 at that time. The cumulative December and January SA was up 6.1 percent.

The SA index was up 4.2 percent compared to February 2010, which was short of January's 7.6 percent annual gain. On a year-to-date basis, the SA is up 5.9 percent compared to 2010.

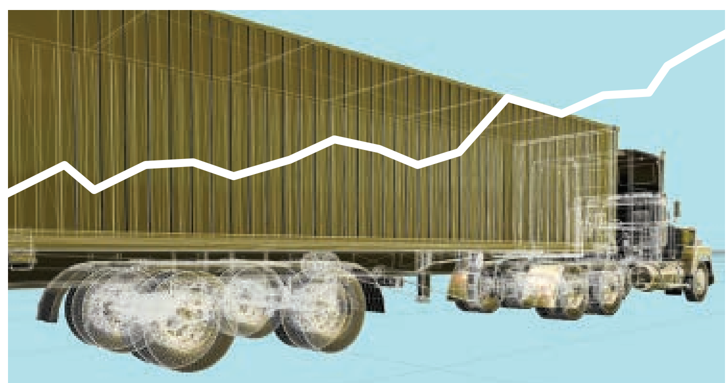
The ATA's not seasonally-adjusted (NSA) index, which represents the change in tonnage actually hauled by fleets before any seasonal adjustment, was 102 in February, down 2.8 percent from January's 105.4.

Some industry analysts maintain that the not seasonally-adjusted index is more useful, because it is comprised of what truckers haul. As defined by the ATA, the not seasonally-adjusted index is assembled by adding up 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.

"Tonnage is not going to increase every month, and in general I'm very pleased with freight volumes early this year," said ATA Chief Economist Bob Costello in a statement. "I'm hearing a significant amount of positive news from fleets and that the largest concern continues to be the price of diesel fuel, not freight levels."

Costello added that harsh weather throughout much of the country in February likely contributed to the sequential decline.

And as Costello pointed out, the prevailing mood in the market is one of optimism in terms of demand and volume, according to carriers and shippers. This is notable considering the myriad challenges occurring, such as high unemployment levels, increasing fuel prices, and various regulatory efforts that are likely to impact the trucking industry to a degree.



Carriers have repeatedly told *LM* that the current market outlook is "slow but steady" and is likely to remain that way for the foreseeable future.

"We are seeing the same things that the ATA data is showing," a trucking executive recently said. "February was relatively firm, but just like January it was somewhat negatively impacted by the severe winter weather affecting many parts of the country."

The carrier executive also pointed out that with the supply and demand of capacity much more closely balanced this year, a continued uptick in tonnage will create greater challenges for shippers needing trucks. He said that other items that will further squeeze capacity include CSA 2010 and the proposed changes to the Hours of Service (HOS) rules.

—Jeff Berman, Supply Chain Group News Editor

Much ado about oil

*A blog by **Jeff Berman**, Supply Chain Group News Editor*

While looking at mainstream media news sites, an item in *The New York Times* recently caught my attention.

Maybe it caught your attention, too. Here is the headline:"Obama to Set Goal of One-Third Cut in Oil Imports."

Given the current situation, with oil barrel prices hovering around $100 and diesel approaching $4 per gallon, that headline, again, is really an attention-grabber as far as I can tell.

In short, the article explains how in a speech Obama will be giving at Georgetown University, he will discuss how the "United States needs, for geopolitical and economic reasons, to reduce its reliance on imported oil," with more than half of the oil burned in the country today coming from overseas and Mexico and Canada.

It also notes that when prices go up we all panic, and when they go down, we resume our previous habits.

Of course, there is more to it than that. This current run up in prices, coupled with carriers focused on yield improvement does not help shippers run cost-efficient supply chains. But those are the cards currently being dealt at the table.

Shippers are clearly concerned about the pace of these increases, as they are largely on the hook for them, financially-speaking, with fuel surcharges passed along to them by carriers on top of freight rates. Should prices continue to head north, it could likely limit future growth as well increase the cost of doing business, as it likely it already.

In recent weeks, there has been talk of the White House opening up the country's Strategic Petroleum Reserve to alleviate pain at the pump for shippers, carriers, and consumers alike. And there has been a buzz of late about natural gas and how that could off-set our expenses and reliance on fossil fuels. There also are many companies making tremendous progress on alternative fuel vehicles for freight operations, too.

These things are very promising and could make a legitimate difference down the road. But with no defined deadline in site for when they could be fully applicable and depended on, it is the same old story for now—a story that is getting tired and repetitive.

Oh, yeah, there is also that little issue of zero meaningful forward progress on energy legislation in our country. Given the divided political party lines that are the new normal in the U.S., that is hardly surprising.

It seems like Obama's speech will bring to light the things that need and should be done for the most part. The hard part is actually getting there. ☐

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BTS says surface trade with NAFTA partners up 24.3 percent annually in 2010

TRADE USING SURFACE TRANSPORTATION between the United States and its North American Free Trade Agreement (NAFTA) partners Canada and Mexico was up 24.3 percent in 2010 compared to 2009, increasing to $791 billion, according to data released by the United States Department of Transportation's Bureau of Transportation Statistics (BTS). BTS officials said the 24.3 percent annual increase is the largest annual increase for the time it has been collecting this data.

Surface transportation, according to the BTS, is comprised mainly of freight movements by truck, trail, and pipeline, and nearly 90 percent of U.S. trade by value with Canada and Mexico moves by land. According to the BTS, 86.2 percent of U.S. trade by value with Canada and Mexico moved on land in 2010, and total North American surface transportation trade value in 2010 was up 13.4 percent compared to 2005 and up 37.5 percent compared to 2000.

But despite the increase, the value of North American surface trade in 2010 is below 2007 and 2008 levels, according to the BTS. And it added that total North American surface transportation exports in 2010 were up 25.1 percent over 2009, with exports up 23.3 percent annually.

BTS said the value of U.S. surface transportation trade with Canada was up 22.1 percent year-over-year in 2010 at $471 billion. Imports carried by truck were valued 17.3 percent higher in 2010 compared to December 2009, said the BTS, and the value of exports carried by truck was up 21.8 percent.

The value of U.S. surface transportation trade with Mexico was up 27.6 percent year over year in 2010 at $320.3 billion. Imports carried by truck were valued 26.5 percent higher in annually, said the BTS, and the value of exports carried by truck was up 24.3 percent.

—Staff

Uproar over proposed HOS regulations not abating anytime soon

A blog by ***Jeff Berman****, Supply Chain Group News Editor*

As you probably already know, not too long ago the Federal Motor Carrier Safety Administration (FMCSA) floated the idea of reducing available daily driving time for truck drivers by one hour from 11 to 10 hours per day.

Needless to say, this was not well received, and not surprisingly, it seems to have become even less popular than it was when first introduced.

The reasons for this vary. But in most cases it comes back to the fact that the current regulations are safe and reasonable, with an ample amount of data available to back that up.

The new FMCSA proposal released perhaps as an early Christmas present (more likely a lump of coal) on December 23 is comprised of the following:

- Dropping available driving time from 11 to 10 hours per day.
- Retaining a portion of the "34-hour restart" provision by allowing drivers to restart their weekly clock by taking at least 34 consecutive hours off-duty. However, the restart provision would be revised by requiring that it include two.
- Decreasing daily "on-duty" time from a maximum 14 to 13 hours. Drivers would continue to be allowed to drive either 10 or 11 hours within a 14-hour "window."
- Requiring a minimum 30-minute break after a maximum of 7 hours driving or working in order for a driver to continue driving.
- Permitting the standard 14-hour window to be extended to 16 hours twice a week.

These are, in sum, pretty major changes. And to get an idea as to the potential negative impact they could have on supply chain management operations for shippers across the nation, look no further than what my colleague John D. Schulz wrote in an article for sister magazine *Logistics Management* in January.

"The Federal Motor Carrier Safety Administration's (FMCSA) trial balloon to reduce by one hour (from 11 to 10) the actual time a truck driver can be driving is a horrific idea, unbased in science or data, that would conservatively cost the U.S. economy $2 billion in lost productivity, and probably much more in inefficiency and additional infrastructure requirements."

Starting to get the picture here? Try this one from Stifel Nicolaus Managing Director John Larkin on for size. This is from a recent FMCSA listening session on the impacts associated with the FMCSA's proposed changes to HOS rules.

"We believe the proposed HOS rules would make driving a truck, already a difficult profession with more than its fair share of irritations, less appealing to many workers (due both to lifestyle factors and possibly less pay). Therefore, we believe that tightened HOS rules, combined with other safety regulations, could exacerbate an upcoming driver shortage driven by volume growth and unfavorable driver demographics. Some carriers may experience near-term cost increases associated with hiring/training/retaining drivers and rerouting freight through alternate terminals. Longer-term, tightening HOS rules will likely serve as one of several regulatory actions that will constrain driver and capacity availability. We believe that in the presence of tight driver and capacity availability, trucking rates should increase at faster trajectory than trucking costs despite expected increases to certain expense line items."

Well, here is one more opinion from Rick Gaetz, president and CEO of Vitran Corporation.

"These changes would tighten a tight market even further," Gaetz told me. "I think no one will ever know when the perfect regulation is drafted. Much time and effort and great expense goes into the study of driver hours, driver fatigue, and safety, and I think we are pretty close to having it right—where things stand now. The key measurement is safety, and statistically it appears and feels safe under the current format. The industry has to operate efficiently and safely, and those two lines are crossing very close right now in terms of working properly."

At the end of the day, we can only hope that the powers that be in the federal government truly take into account the potential backlash these changes could produce. Until then, we can only speculate on what may happen, but if the proposed changes become official, then we can all expect to see supply chains become shorter and more costly.

Let's hope for a better outcome than that. □

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Trucking rates poised to continue upwards, according to Transport Capital Partners' survey

Even though the trucking industry appears to be benefitting from relatively healthy volume growth, there are enough obstacles in the way to make its future outlook somewhat cloudy. That is the consensus of a recent survey from Transport Capital Partners (TCP).

TCP's Fourth Quarter Business Expectations Survey typically polls about 200 trucking executives on various industry-related topics to gain insight into what the market is thinking on different issues, including demand, government regulations, capacity, and, especially of late, oil and gas prices.

Some of the survey's chief findings included two-thirds of executives indicating they are optimistic about growth in 2011 when it comes to volume and rate increases, and 45 percent of carriers stating they are interested in making an acquisition in the next 18 months–coupled with about 1 in 5 carriers showing interest in selling their business.

Another main theme was how capacity has been tightening due to things like bankruptcies, exporting of used equipment, and fewer new truck purchases, according to TCP.

"Carriers are optimistic, because the economy is going to improve, but that depends on Congress and Wall Street not doing things that are not smart," said TCP Partner Lana Batts.

"Barring factors that nobody can control, carriers are feeling pretty good. The other side of that is capacity is so constrained, with carrier not buying replacement vehicles over the last three years and not expanding their fleets,"added Batts. "As a result, the old law of supply and demand is going to play out. When capacity does expand, rates do go up."

These rate increases, said Batts, are already occurring and are very apparent on the spot market, too. What this means for shippers is that motor carriers have no interest in adding capacity at this point.

Instead, she explained, they need to replace old trucks, because replacement costs for older vehicles are very high, and the actual amount of capacity carriers truly want to increase is miniscule. This is due to the fact that truck buying activity was quelled in 2008 to 2010, with the majority of truck buying activity occurring being allocated for replacement trucks only to a large degree.

"What the motor carrier industry is saying is 'I have to take care of my balance sheet first,'" explained Batts. "And the fastest way to do that is by increasing rates, not by adding trucks. The reality is trucks today cost $120,000, whereas in 2006 it would have costs $70,000 to $80,000. Today we are still seeing 2006 rates, which defeats the purpose of adding trucks if 2006 rates are still in effect."

What's more, the impact of CSA on truck buying activity and capacity is also significant. Batts said that a portion of carriers that received CSA-related warning letters from the Department of Transportation will shut down, resulting in lost capacity, coupled with low driver ratings, too.

> "What the motor carrier industry is saying is 'I have to take care of my balance sheet first.' And the fastest way to do that is by increasing rates, not by adding trucks."
>
> *—Lana Batts, TCP Partner*

And the heavily-contested DOT proposal to cut back on available driving time from 11 hours per day to 10 will also remove capacity. This capacity will not simply be replaced by adding more trucks, according to Batts. Instead, rates will be raised.

"All of these things coming together for the trucking industry are creating a perfect storm in a positive sense, with the only way for rates to go being up," said Batts.

—Jeff Berman, Supply Chain Group News Editor

Lynden subsidiary acquires Port Side Trucking

IN MARCH, Pacific Northwest-based refrigerated motor carrier Brown Line, LLC, a subsidiary of Lynden Transport, acquired the operations of Port Side Trucking, a Kent, Wash.-based refrigerated trucking company. Financial terms were not disclosed.

Lynden Director of Marketing and Media David Rosenzweig said that the primary reason for this deal was that Port Side was a good fit for Brown Line and presented a market opportunity to increase volume, and add several lanes to its existing business.

Brown Line provides shippers with temperature-controlled, less-than-truckload (LTL) specialized service along the West Coast, as well as scheduled service to San Francisco, Los Angeles, Phoenix, San Diego, Chicago, Boston, and Minneapolis from the Puget Sound and Southern British Columbia. Port Side offers service from the Pacific Northwest to Boise, Salt Lake City, Denver, and Portland, Ore.

Company officials said the routes the company is gaining from Port Side will benefit shippers served by both Brown and Port Side and provides a seamless, high-quality refrigerated delivery network.

Rosenzweig added that Port Side was an attractive acquisition because it also carries refrigerated food commodities but to different markets not previously served by Brown Line. “There are a large number of customers who did business with both companies,” he said. Now those customers can reach all the market locations from a single source. One call for all of the customers’ needs.”

“Port Side serves markets that complement our existing services and allows us to offer customers a true one-stop-shop for shipping all temperature-controlled commodities,” says Jason Jansen, Brown Line President, in a statement. “Brown Line’s specialty is shipping seafood and other delicate freight. Now we can offer customers additional delivery areas and a variety of choices in shipping fresh, frozen, and non-refrigerated freight. We are now positioned to serve the West Coast, Midwest, Northeast, and British Columbia with the fastest door-to-door service available.”

—Jeff Berman, Supply Chain Group News Editor

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