Peerless MEDIA, LLC

JULY/AUGUST 2013

SUPPLYCHAIN MANAGEMENT REVIEW®

www.scmr.com

The Quest for EXCELLENCE Continues

FEATURES

10 Profiles in Supply Management Excellence
By Ram Narasimhan, Tobias Schoenherr, and Joseph Sandor

16 The Social Side of Supply Chain Management
By Adrian Gonzalez

22 How to Handle "Extreme" Negotiations with Suppliers
By Jonathan Hughes, Jessica Wadd, and Jeff Weiss

30 What Makes a Winning Procurement Organization?
By William Atkinson

34 10 Trends for the Next 10 Years
By Sumantra Sengupta

COMMENTARY

Insights 4

Global Links 6

Talent Strategies 8

THE OPERATIONS ADVANTAGE 40

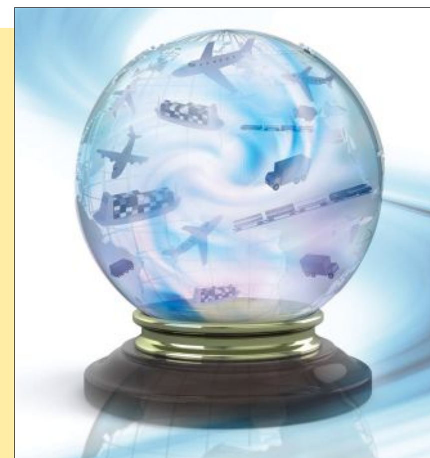
BENCHMARKS 74

SPECIAL REPORT

Top 50 3PLs

Third-Party Logistics: Seeing into the Future

Page S42



SupplyChain247

supplychain247.com

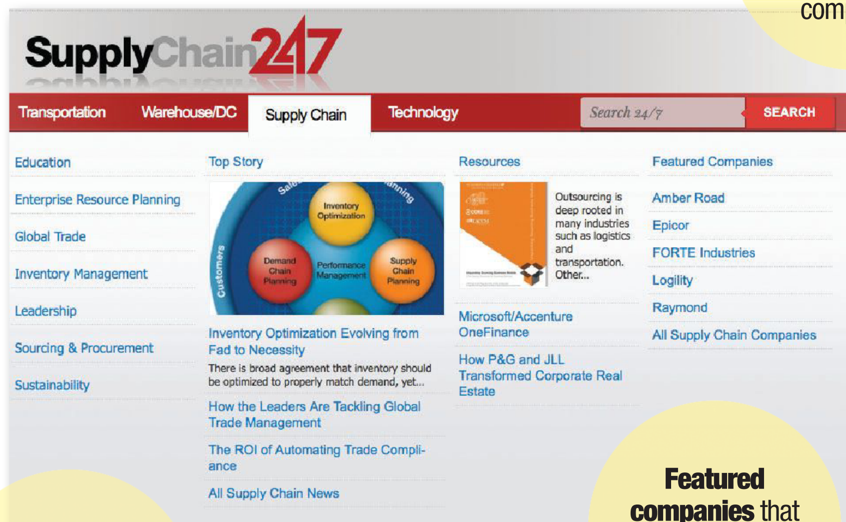
Find everything you need when researching companies, trends, and industries.

Supply Chain 24/7 is the ultimate online business resource for transportation, distribution, logistics and supply chain professionals.

Your *best* business resource for:

- News
- Best practices
- Trends
- Case studies
- White papers
- Webcasts
- Research
- Special reports
- Blogs

and *much much* more!



Search engine can search across content elements and by specific companies

Trending news and features

Featured companies that are relevant to the specific topic

Visit **supplychain247.com**.
Begin your experience today.

July/August 2013 Volume 17, Number 4

SupplyChain Management Review

Illustration by Susaro

FEATURES

10 Profiles in Supply Management Excellence
Michigan State University convened an "Executive Summit" of recognized supply chain leaders to address this pivotal question: How do you extend the frontiers of supply management excellence and build a solid competitive advantage? The answer comes in best practices of four of those leaders profiled here—John Deere, Bloomin' Brands, Alcon, and IBM.

16 The Social Side of Supply Chain Management
Social media can—and should—play a central role in supply chain management. After all, says well-known supply chain analyst Adrian Gonzalez, social networking is not really about socializing, but about facilitating people-to-people communication and collaboration—which is at the heart of managing and executing supply chain processes. This article lays out the business case for social media.

22 How to Handle "Extreme" Negotiations with Suppliers
When negotiating in high-stakes, high-risk ("extreme") situations with suppliers, the tendency is to act quickly and forcefully. Yet acting in haste to look in control often leads to disappointing, even dangerous, results. The experts from Vantage Partners offer a better approach: slow down the pace of the negotiation, understand the other side's position, and work toward a more collaborative negotiation process.

30 What Makes a Winning Procurement Organization?
More and more leading companies are emphasizing their procurement and supply management capabilities as a key market differentiator, and hallmark of business success. But what does it take to develop that needed expertise? Business writer William Atkinson spotlights a handful of select characteristics that, if carefully cultivated, can lead to a winning procurement organization.

34 10 Trends for the Next 10 Years
10 major trends will shape the future of supply chain management over the next 10 years, believes management consultant Sumantra Sengupta of EVM Partners. Yet creating and implementing strategies to respond effectively to these challenges will pose a formidable challenge for supply chain professionals. The first step is to understand the nature of these mega developments now underway.

S42 SPECIAL SUPPLEMENT
The Top 50 3PLs

COMMENTARY

4 Insights
The Promise and Pitfalls of Big Data
By Larry Lapide

6 Global Links
Manufacturing and Retail Supply Chains in Flux
By Patrick Burnson

8 Talent Strategies
Global Virtual Teams: How Are They Performing?
By Shardul Phadnis and Chris Caplice

40 The Operations Advantage
Improving Large-Format Home Delivery
By Jeff Ward and Kumar Venkataraman

74 Benchmarks
Sustainability Initiatives Can Lead to Closer Relationships
By Becky Partida

To subscribe: Subscribe or renew online at www.scmr.com/subscribe or call (800) 598-6067. (Outside of the U.S., call (508) 663-1500 x-294). Email customer service at scmrsubs@ehpub.com.

Author's Guidelines: Interested in writing an article for possible publication in *Supply Chain Management Review*? See our Guidelines for Authors on www.scmr.com.

Reprints: Reprints of articles from this issue and past issues are available from The YGS Group. Contact Danielle Marsh (800) 290-5460 ext. 1550; danielle.marsh@theygsgroup.com

Editorial Advisory Board

- **Jack T. Ampuja** Niagara University
- **Joseph C. Andraski** The Collaborative Energizer
- **James R. Bryon** IBM Consulting
- **John A. Caltagirone** Loyola University Chicago
- **Brian Cargille** Hewlett Packard
- **Robert B. Handfield** North Carolina State University
- **Jim Kellso** Intel
- **Nicholas J. LaHowchic** Tompkins Associates
- **Hau L. Lee** Stanford University
- **Robert C. Lieb** Northeastern University
- **Clifford F. Lynch** C.F. Lynch & Associates
- **Eric Peltz** RAND Supply Chain Policy Center
- **James B. Rice, Jr.** Massachusetts Institute of Technology
- **Larry Smith** West Marine

Supply Chain Management Review® (ISSN 1521-9747) is published 7 times per year (Jan/Feb, Mar/Apr, May/Jun, July/Aug, Sept/Oct, Nov, Dec) by Peerless Media LLC, a Division of EH Publishing, Inc., 111 Speen St, Ste 200, Framingham, MA 01701. Annual subscription rates: USA $199, Canada $199, Other International $241. Single copies are available for $60.00. Send all subscription inquiries to Supply Chain Management Review, 111 Speen Street, Suite 200, Framingham, MA 01701 USA. Periodicals postage paid at Framingham, MA and additional mailing offices. **POSTMASTER: Send address changes to: Supply Chain Management Review, PO Box 1496 Framingham MA 01701-1496.**

Reproduction of this magazine in whole or part without written permission of the publisher is prohibited. All rights reserved. ©2013 Peerless Media LLC.

The most thought-provoking supply chain experience of your career awaits you.

CSCMP's
ANNUAL GLOBAL
CONFERENCE 2013
OCTOBER 20-23 DENVER

One conference—hundreds of opportunities.

October 20-23, 2013, Denver, Colorado, USA

CSCMP's Annual Global Conference—*designed exclusively for you*—will empower you with 21st century know-how and unconventional perspectives. Discover new ways of looking at the issues of the day; rediscover what you love to do. And the people you'll meet will transform your business and your career.

All New Program!

- Top-notch general session speakers
- Redesigned Supply Chain Exchange
- Exclusive supply chain insights
- Breakthrough educational sessions
- Global networking experiences

Keynote Speaker, **Felipe Calderón**, former president of Mexico, presents *Expansion, Innovation, and Transformation: What It Takes to Lead*, offering key insights into strategic policymaking and implementing long-term solutions in our interdependent world.

Closing Session Speaker, **Mike Rayburn**, entertainer, business owner, comedian, author, guitarist, and philanthropist entertains us with his hilarious, musically amazing, motivational session, *What If and Why Not?*

Register at cscmpconference.org by August 31, 2013 and save $150 US on regular registration rates!

Council of Supply Chain Management Professionals

CELEBRATING 50 YEARS

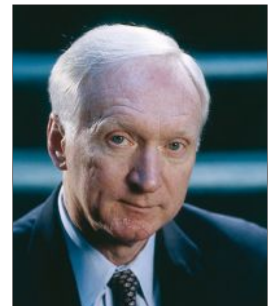
It's Been a Great Run!

I can't believe it's been 16 years. Back in 1997—the dawning of the supply chain age, if you will—we founded a fledgling magazine called *Supply Chain Management Review* (*SCMR*). The rational behind this move seemed pretty straightforward at the time. Our company (then Reed Business Information) had traditional magazines in just about all of the functional areas that were being placed under this new discipline called supply chain management.

We had a traffic/transportation magazine (I was editor of that one) as well as publications covering warehousing, purchasing, materials handling, plant management, industrial distribution, packaging, and more. What we didn't have—and what we believed was sorely needed—was a publication that covered all of these functional areas in an integrated manner. So from that standpoint, the decision to launch *SCMR* was relatively easy.

The harder part became how to distinguish the magazine from the others in the field. We decided to clearly differentiate ourselves in a number of ways. First, the publication would cover topics across the spectrum of supply chain management—from sourcing to customer service and reverse logistics, and everything in between. Second, much of the content would be strategic in nature and, as such, would devote sufficient space to cover a subject appropriately. Finally, we would aim the editorial material at an upper level audience of practitioners, who were assuming broader supply chain-related responsibilities at an increasing rate. Put another way, we would make *SCMR* the *Harvard Business Review* of supply chain publications.

So why am I bringing up all of this history? It's because this is my last issue as editorial director of *Supply Chain Management Review*.



Frank Quinn, Editor
fquinn@peerlessmedia.com

I'm so thankful for so many things as I wind up my career. I've been blessed with a hugely talented creative director and art staff, unflaggingly supportive production people for the magazine and our growing number of online products, a smart and forward-looking publisher, and an almost continuous flow of great articles from the best minds in the supply chain business—practitioners, educators, consultants, analysts, business authors.

In thinking about those whom I'm indebted to for the success of *SCMR* over 16 years, there is one constituency that must rank first on the list—you, the reader. You've been loyal and supportive of us from the beginning. You have stood with us through the economic downturn and have wholeheartedly embraced the new online products we've developed in response to your growing and changing information needs. The best way to say it is the simplest: Thank you!

The next editorial that you see in this space will be from my successor, Bob Trebilcock. Bob is a veteran editor and writer with a broad and in-depth knowledge of warehousing and materials handling—two core components of the supply chain process. *SCMR* will be in good hands under his stewardship.

Francis J. Quinn

SUPPLYCHAIN MANAGEMENT REVIEW

Editorial Offices
111 Speen St. (Suite 200),
Framingham, MA 01701-2000
1-800-375-8015

Francis J. Quinn
Editorial Director
fquinn@peerlessmedia.com

Sarah Petrie
Managing Editor
spetrie@peerlessmedia.com

Mike Roach
Creative Director
mroach@peerlessmedia.com

Wendy DelCampo
Art Director
wdelcampo@peerlessmedia.com

Patrick Burnson
Executive Editor
pburnson@peerlessmedia.com

John Kerr
Special Projects Editor
johnkerr@ergoeditorial.biz

Jeff Berman
Online News Editor
jberman@peerlessmedia.com

Kelly Jones
Production Manager
kjones@peerlessmedia.com

Subscriber Services
scmrsubs@ehpub.com

Brian Ceraolo
Group Publisher
bceraolo@peerlessmedia.com

Peerless Media LLC

Peerless MEDIA, LLC

InSIGHTS

B Y LARRY LAPIDE

The Promise and Pitfalls of Big Data

Implementing a Big Data project might make sense for your organization. But before you start investing in the time and resources required, make sure the effort will ultimately enable you to differentiate between the beneficial "signals" and the distracting" noise."

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

The latest hype around "Big Data" is fueled by the vast amounts of information being generated by the Internet. There appears to be boundless enthusiasm for solving the most pressing business problems by leveraging lots of data streams.

The concept of Big Data is not new. It really began with the invention of the printing press, which enabled information to be generated at an exponentially growing rate. Since the dawning of computers and later the Internet, Big Data got even bigger and grew even faster. Luckily, computing capabilities have kept pace so that the data could be more easily and accurately assembled and analyzed.

Picking the right data streams is extremely important, since not all data is information. Information supports improved decision-making, and not all data is useful for that. Generally, data becomes information when it is used within a decision-support system that has an underlying business model and principles imbedded within. However, can all the data now available really provide information significant enough to improve business operations? Or is Big Data just more data?

Implementing the new Big Data is a big deal. And supply chain managers will no doubt struggle with the question of whether to implement it within their companies. They'll need to decide whether it makes sense to expend the enormous amounts of time, money, and other resources required to begin this effort. And they need to know whether this might distract them from pursuing other opportunities requiring significantly less effort. Even more important, they'll need to carefully assess whether implementing Big Data will increase their "signal-to-noise ratio" enough to yield benefits sufficient to cover the large investments. Signal-to-noise ratio? What's that?

The Signal and the Noise

I just finished a book written by Nate Silver, The Signal and the Noise: Why So Many Predictions Fail—But Some Don't. I recommend it as a must-read for forecasters, planners, and supply chain managers. The author uses the concept of a "signal" versus "noise" from electrical engineering. Whenever an electrical signal is transmitted, spurious noise distorts it along its path to a receiver. So engineers need to focus on developing receivers that pull out the noise in order to understand the original signal. The lower the signal-to-noise ratio, the harder it is for the receiver to pull out enough noise. In the business world, the signal of interest is the "truth"; the receiver is a manager trying through analytic means to decipher what is true from among myriad confounding (noisy) data signals.

Silver discusses "the promise and pitfalls of (the fashionable term) Big Data". The promise is whether volumes of data will "obviate the need for theory, and even the scientific method", while the pitfall is that too much data might be distracting and provide little knowledge about the truth.

Silver provides useful insights about glean-

ing information from data. The author researched prediction across a wide swath of arenas and describes how each successfully and unsuccessfully tackles problems leveraging various types of data. He offers nuggets of advice for managers to help filter out the signals in Big Data—specifically, those that improve prediction from the noise that might confuse and not be fruitful.

Silver gives a good overview discussing, for example, the successes and failures in sports and gambling predictions, including baseball, chess, and poker. He also addresses prediction in the social sciences such as economies and political elections. Some discussion deals with areas virtually impossible to predict, such as terrorist attacks, financial market bubbles, earthquakes, and global climate change. Lastly, Silver discusses some of the successes in forecasting the spread of infectious diseases and the weather.

This book should offer some comfort to managers in that our business forecasting and planning issues are less problematic than for earthquakes, terrorism, and global climate change!

Lessons from Downstream Data

Big Data is certainly not new to supply chain management. The industry has been working on the use of downstream demand signals—a Big Data concept—since 1992 when Wal-Mart began offering POS data to suppliers via RetailLink. Suppliers have been evaluating how to get maximum value out of the voluminous amount of data that the retail giant offers, as well as the data other retailers now provide.

The industry has conducted a great many pilots using downstream data, believing there is great value to be obtained from these signals. Piloting and other efforts have largely shown that while there is value to be gained, it is not worth implementing downstream data as "big-deal" projects, which would include the development of big Demand Signal Repositories (i.e., data bases).

Supply chain managers feel that the downstream data is too detailed and cumbersome to process, especially for all products and for an entire customer base. Instead, they favor focusing on a few elements of downstream data, often from major customers and important products. For example, many feel that instead of assembling a large amount of detailed POS and inventory data, aggregated data streams will suffice. The lesson learned is that it is better to focus on a few signals, and treat the rest of the downstream data as noise.

Search for a Few Good Signals

I've come across a multitude of industry examples of good portending signals. I have also seen others that, while seemingly predictive, were impossible to derive real value from. A few of my favorite examples of both types are discussed below.

- While I was a graduate student, a CEO came to visit our campus and was asked how he was able to manage effectively given all the information he received. He said he first looked at one metric: interplant shipments. If these were too high, there was a mismatch between supply and demand; either some plants were producing too much or too little, or certain sales territories needed to be better aligned. Interplant shipments that were too low indicated inventory excesses or insufficient sales (other misalignments of supply and demand). In either case, he instinctively knew he had to look deeper at other metrics only when this one indicated a supply-demand imbalance.
- The early identification of "winners" and "losers" in the book, media, and software industries is critical to profitability. To do this, these businesses capture sales during the introduction of a product at a few retail outlets. For example, many track sales at some trendy stores in New York City and Los Angeles to get early readings of their winning and losing product introductions. (Of course, many now track Amazon sales as well). These predictive signals go a long way towards continuing the successful launch of a winner, and a rapid phase-out of a loser.
- During a panel I moderated on downstream demand-signals, a VP from a cosmetics company lamented about the lack of good demand signals for his trendy products. He gave an example where Lady Gaga had worn a very unusual nail polish at one of her concerts. The sales of the nail polish immediately took off, the company ran out of the product, and their suppliers quickly ran out of materials to make more. The company scurried about to try to get supply, yet missed a lot of sales opportunities. These types of sales spikes are noise rather than signals because they are impossible to get demand signals from which they could be predicted. In essence, they are equivalent to the prediction of earthquakes in this VP's business.

In summary, if you are thinking about implementing Big Data at your company, make sure to first identify a few good predictive signals before building an expensive database to house them. Looking at lots of noisy data will confuse things and decrease your signal-to-noise ratio, rather than increasing it. You'll definitely get your signals crossed and get too little information out of the data to support improved decision-making.

BY PATRICK BURNSON

Manufacturing and Retail Supply Chains in Flux

Wholesale, rapid changes in both of these sectors are requiring supply chain managers to respond with speed and smart decision-making.

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

When Gartner's 2013 Supply Chain Top 25 came out last May, it signaled a shift in "demand-driven leadership" with a handful of new multinationals moving up in the rankings. Further evidence that significant changes are taking place in our industry surfaced with two new reports demonstrating disruption in global linkage in the manufacturing and retail sectors.

The first comes from IDC Manufacturing Insights, which recently released "Business Strategy: The Journey Toward the People-Intensive Factory of the Future." This report notes that over the last 15 years, the manufacturing industry was essentially neglected with respect to other industries and was not considered a good industry for local investors as well as investors from the world's most advanced economies. However, the situation is rapidly changing, analysts maintain.

IDC says that governments worldwide now better understand that an economy based on service alone cannot survive in the long run. Manufacturers themselves are going back to basics and putting a renewed premium on production knowledge driven by the need to protect and enhance their technology. They realize that the direct involvement in production operations fosters innovation and improves customer service.

All of these factors have combined with the rise in transportation costs as a consequence of oil price developments and the need to produce closer to clients for better flexibility and service. The net result: In several developed countries, including the U.S. and U.K., some manufacturers are favoring "insourcing" initiatives.

"The manufacturing industry is back onstage in developed countries worldwide. Governments, media, manufacturers themselves, and their people are all changing their mindset with a stronger focus on production," says Pierfrancesco Manenti, Head of IDC Manufacturing Insights, EMEA, and Practice Director, Operations Technology Strategies.

Avoiding Future Shock

This trend is confirmed by IDC survey results, where more than 43 percent of global manufacturers declared that they have a formal process in place to look at how factories and plants will be organized in the near term. This highlights how manufacturers are starting to design their factory of the future now to get ready for a massive change that will last for the next generation.

It's important to note that for more than 56 percent of respondents, the factory of the future will be measured according to its production capability and flexibility, not merely efficiency and production capacity. Furthermore, the survey indicates that over the next five years about 10 percent of Western enterprises will move away from make-to-stock (MTS) to adopt make-to-individual (MTI).

Another key takeaway, say IDC analysts, is that in five years, 47 percent of manufacturers will produce modular platforms centrally while using local small factories, suppliers, and

distributors to tailor final products for local demand. This means that manufacturers will have to build a "global plant floor," harmonizing, supervising, and coordinating execution activities across the company's and suppliers' network of manufacturing operations.

Despite growing plant automation, people—and the flexibility and decision-making capabilities they provide—will be at the center of the factory of the future. Finding skilled workers will prove to be a key issue in the industry, analysts conclude. They point to the fact that 64 percent of respondents expect their production processes to be largely or completely digitized in the next five years.

Finally, more than one fourth of manufacturers will invest over 25 percent of their total ICT (information and communications technology) budget for plant-floor IT.

"We are about to witness a new generation of manufacturing enterprises where operational processes on the plant floor—at the very heart of the enterprise—are considered the centerpiece of this transformation," Manenti concludes.

Retail Shake Up

And while the global manufacturing industry is passing through probably one of the most complex market contexts ever, a similar supply chain story is unfolding in the retail sector.

According to Jones Lang LaSalle, omni-channel selling and consumer demands are raising the bar, as retailers must compete on service to stay in the game. Demands, such as same-day delivery or ship-from-store, require retailers to adapt their supply chain network and store formats sooner rather than later. This transformation means that in five years, the retail supply chain may be unrecognizable from the infrastructure that exists today.

"Brick-and-mortar stores are becoming more than just a point of sale—they're an essential component of the supply chain as pick-up/drop-off locations for e-commerce orders," said Kris Bjorson, International Director and leader of Jones Lang LaSalle's Retail/e-commerce Distribution group. "This additional role offers the retail store another sales opportunity to entice customers to add to their order, or to try new products."

Analysts have identified five key retail supply chain movers:

1. "Omni-channel" distribution strategy has become a reality for retailers, and it means seamlessly serving customers via all available channels such as web, mobile, in-store, catalogue and so on, typically fulfilling same-day and next-day delivery promises. These individual shipments to customers are vastly different from replenishing the inventory in a store on a weekly basis. In short, online and mobile delivery has turned every customer into a point of sale, and every distribution center into an individual customer service location.

2. Leveling the playing field between brick-and-mortar stores and internet-based retailers is the goal of the Marketplace Fairness Act, the proposed federal legislation that expands the collection of sales tax by online retailers and is overwhelmingly popular in the Senate. Even though it means new taxes for online retailers, it actually focuses on tax collection, not the new taxes themselves. While the industry knows the changes that result from the final legislation will be profound, the jury is out on how the specific implications will play out—and who the winners and losers will be.

In five years, global retail supply chains may be unrecognizable from the infrastructure that exists today.

3. 3D printing is beginning to have a real impact on manufacturing, the supply chain, retail, and ecommerce. The breadth of creative possibilities are staggering, as new products become cheaper to bring to market, me-tail-driven consumers get to design more of their own uber-customized products. At the same time, some brick-and-mortar stores now offer walk-in customers tools to create precisely the product they want.

4. The convenience of digital devices and advancement of internet speeds enable books, music, computer games, and other entertainment to be download-only purchases. This transforms the retail supply chain in a unique way.

5. The rise in pop-up temporary stores where large brand retailers may showcase a new product or a guest designer to create buzz and drive sales. We see former retail space being used by schools, churches, clinics, fitness centers, and dental offices. As the sector changes, retailers and retail landlords must be creative.

"Never has change come so fast, and so furious, in the history of retail," says Greg Maloney, Americas CEO and President of Jones Lang LaSalle Retail. "The good news is that both retailers and their supply chain partners are responding, evolving to rise to the challenges and opportunities posed by the omni-channel paradigm, the advent of 3D manufacturing, changes to tax law, and being creative with remaining retail space." □

TALeNT STRATeGIES

Global Virtual Teams: How Are They Performing?

By Shardul Phadnis and Chris Caplice

Dr. Shardul Phadni is a Postdoctoral Associate at the MIT Center for Transportation and Logistics (MIT CTL). He can be contacted at shardul@mit.edu. Dr. Chris Caplice (caplice@mit.edu) is Executive Director, MIT CTL.

What should the manager of a team of globally dispersed individuals do to improve the team's performance? This is a vital question for many supply chain managers today as Global Virtual Teams (GVTs) become more the rule than the exception.

In a 2012 survey of its members, the Society for Human Resource Management found that 46 percent of the organizations polled were using virtual teams. Two out of three multinational firms in the survey used GVTs, and 28 percent of the firms with U.S.-based operations relied on these groups. Survey respondents rated "building team relations" as the single biggest factor that could affect a team's success.

The MIT SCALE (Supply Chain and Logistics Excellence) Network, an international alliance of research and education centers, is engaged in research to help identify the aspects of teamwork that have the biggest impact on performance. The findings will also provide guidance for managers on the most effective team-building initiatives.

Global Game

The research is based on the 2013 SCALE Challenge. This four-month long competition involves student teams from the four SCALE centers in North America (Cambridge, Mass.), South America (Bogota, Colombia), Europe (Zaragoza, Spain), and Asia (Kuala Lumpur, Malaysia). A total of 98 Master's students participated. These were divided into 20 teams of four or five individuals, with each team including at least one student from each of the four centers.

The teams competed in an online, multi-round, multi-player supply chain simulation game called "The Fresh Connection" (for more information go to: http://www.thefreshconnection.eu). In this game, an orange juice supply chain is managed by four functions along with a CEO. The goal: to maximize the return on investment (ROI). The simulation application computes the ROI for each team after each simulated round. The team with the highest ROI wins. The benefit of using this game to explore what affects the performance of virtual teams is that it provides a quantitative, single-number performance metric (the ROI) that the competing teams strive to maximize.

Twelve rounds of the competition were played between September 2012 and January 2013. The team members had not met prior to the start of the game. For the first six rounds they performed as GVTs, using remote communications channels such as Skype and email. But the last six rounds were played face-to-face in Cambridge, during an annual gathering of SCALE students.

Performance Findings

Over the entire 12 rounds of the simulation we evaluated nine attributes of teamwork four times (after rounds 2, 4, 6, and 7). The attributes were based on standard constructs of teamwork from Organization Theory. We also gathered information about the communication methods used by the teams and the level of engagement of team members. Self-report questionnaires were used to obtain this information, completed by the students individually before they were informed of their team's performance in the latest round of the simulation.

In addition to the teamwork attributes, we collected data about five student demographic characteristics (age, gender, country of origin, personality profile, affiliated SCALE center) and three individual performance attributes (work experience, GRE/GMAT scores, and rank in the program). We performed statistical analyses to determine which of the individual and team attributes had the biggest impact on the team performance (ROI) in each round. Below are three interesting results from our analyses.

1. A few individual attributes matter. The performance of a Global Virtual Team is positively

related to the analytical reasoning ability of individual team members (as measured from GRE/GMAT analytical score). Interestingly, none of the other individual attributes we evaluated—work experience, age, gender, quantitative or verbal skills as measured by GRE/GMAT quantitative and verbal scores—explained the variation in team performance.

The importance of analytical reasoning ability in a simulation that requires tactical business thinking is not surprising. However, the apparent unimportance of other factors such as quantitative skills or work experience is counter-intuitive. This may not be valid for some other decision contexts, such as those requiring extensive statistical analyses or dealing with change management issues.

Another surprise: individual team members' class rank (based on the fall semester GPA) also explained a small variation in team performance, but in a counter-intuitive direction, higher class rank (i.e., towards the top of the class) predicted worse team performance.

2. Trust is key. The single most important teamwork attribute affecting the virtual teams' performance was the level of trust between team members. The "intra-team trust" attribute was measured using three questions in the survey about the degree of trust in other team members, whether colleagues can be relied upon to keep their word, and if team member work needs to be checked. Surprisingly, none of the remaining eight teamwork constructs explain variation in performance.

Our analysis also showed that in addition to "intra-team trust," three other teamwork attributes might influence team performance: "Team efficacy" (individual team member's belief that his/her team is capable of accomplishing the team's goal), "psychological safety" (an individual's feeling that s/he is treated by other team members a valued team member), and "team composition" (individual's belief that his/her team is composed of competent individuals).

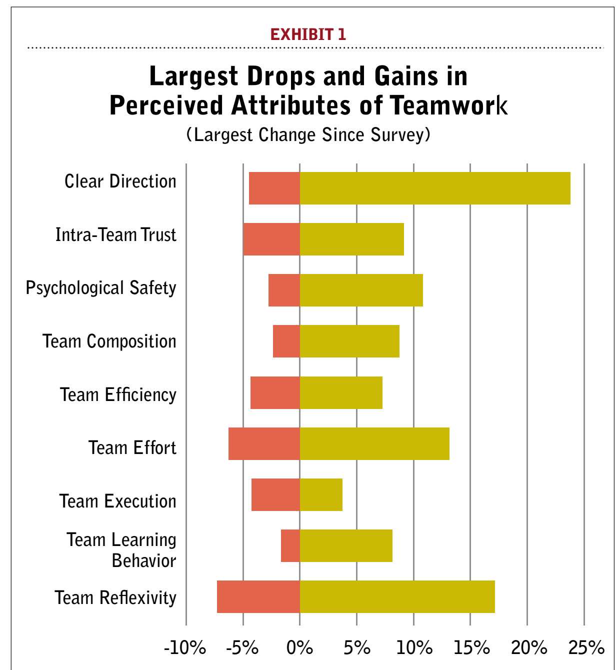
3. Teamwork attributes follow the same pattern. All nine attributes (shown in Exhibit 1) of teamwork exhibited an identical pattern over the course of our survey. Every teamwork attribute deteriorated by between 1.5 and 7.5 percent over the course of three months when the students competed in GVTs. (While observing the same pattern in all nine attributes is more than coincidental, the current sample size does not allow us to stake this claim with confidence.) Subsequently, all nine attributes experienced a sharp increase over the highest levels experienced by the virtual teams—by between 3.5 and 24 percent—after the students met their teammates and made decisions for the next simulation round in person. Exhibit 1 presents the largest drop and gain in the perceived quality of each teamwork attribute.

Certainly, the students' perceived quality of teamwork was higher when working in real time, as opposed to their experience as part of a GVT. The three attributes of teamwork experiencing the highest increase after in-person meeting were the following: having a clear direction (increase of 23.7 percent), team members' reflection on their team's decision-making (17.1 percent), and the evaluation of whether teammates gave their best to achieve the team's goal (13 percent).

EXHIBIT 1

Largest Drops and Gains in Perceived Attributes of Teamwork

(Largest Change Since Survey)



Interestingly, none of these attributes were among the top four that exhibited the highest correlation with team performance. The most important teamwork attribute, "intra-team trust," experienced only a modest gain of 9.2 percent over the highest level experienced in the first three rounds. Thus, even though members of the virtual teams may not value the quality of their teamwork as highly as those working in co-located teams, the performance deterioration from using virtual teams instead of real teams may not be as high as that suggested by the big gap in some teamwork attributes.

These results provide some interesting insights into the functioning and performance of the GVTs. We will be conducting a follow-on study in the Fall of 2013 to explore in more detail how some individual characteristics, teamwork attributes, and collaboration methods influence their performance.

Pointers for Better Teams

What are the key takeaways for someone managing a global team? Our preliminary analyses suggest that the biggest gain could come from initiatives to build trust among the team members. Managers should also make an effort to nurture this trusting environment over time. In addition, recruiting individuals with high analytical reasoning may improve team performance, at least in situations where GVTs tackle decisions requiring high analytical competence.

Profiles in Supply Management

How do you extend the frontiers of supply management excellence and build a solid competitive advantage? Answers to this pivotal question emerged from an Executive Summit of supply chain leaders convened recently at Michigan State University. The four companies profiled here, all participants in that summit, have adopted principles that promote excellence and continue to expand that frontier.

By Ram Narasimhan, Tobias Schoenherr, and Joseph Sandor

Dr. Ram Narasimhan is the John H. McConnell Professor of Business at the Eli Broad Graduate School of Management, Michigan State University. Dr. Tobias Schoenherr is an Assistant Professor and Dr. Joseph Sandor is Hoagland-Metzler Professor of Practice, both at the Broad Graduate School. The authors can be reached respectively at narasimh@bus.msu.edu, schoenherr@bus.msu.edu, and sandor@bus.msu.edu.

The last few decades have shown that supply management is a fundamental ingredient of business success. As companies rely increasingly on their supply chain partners, driven primarily by external developments such as rising customer demands and globalization, the importance of supply management has grown accordingly. Firms now compete based on their supply management excellence as part of an integrated network, as opposed to individual firms competing against each other.

In this environment, "good" supply chain management, in and of itself, may have lost its order-winning characteristic. Simply being "on par" with the competition is no longer enough; it simply brings you to the competitive frontier. Extending that frontier of supply chain excellence requires the aggressive pursuit and adoption of best practices. By extending that frontier, the company can differentiate itself from the competition and build a powerful competitive advantage. However, the question that remains to be answered is: How can a firm raise the level of its supply management practice to extend their performance frontier and derive that competitive edge?

To address this critical question we invited supply management executives from 25 leading companies to participate in an Executive Summit at Michigan State University (MSU) in the fall 2012. This was the fourth edition of MSU's Executive Summit, which has become a leading venue for sharing advanced supply management approaches. Participants were

Excellence

senior executives from firms recognized for their supply management excellence. The presenting companies included Coca-Cola, Whirlpool, IBM, MASCO, Cisco, Alcon, John Deere, and Bloomin' Brands. Academic representatives from MSU facilitated the event. Our objective was to learn first-hand from these successful firms how the frontiers of supply management excellence can be extended.

Based on the presentations by the executive participants and the subsequent interactive discussions among the attendees, we identified *four key principles* by which these leading firms are extending the frontier of supply management excellence (see also Exhibit 1):

1. Recognizing and managing complexity.
2. Leveraging integration.
3. Promoting talent management.
4. Utilizing supply chain analytics.

In this article, we illustrate how the participating firms are applying these principles to advance their supply management excellence. In particular, we focus on four organizations: John Deere, Bloomin' Brands, Alcon, and IBM.

Recognizing and Managing Complexity: John Deere

Complexity in supply management is the result of many factors. The list includes unintended consequences of product design variance and complexity, financial and supply disruptions, capacity risk stemming from globally dispersed supply networks, natural and man-made disasters, compliance and potential liability issues associated with lack of compliance, operating and logistics risk, political instability, and supplier relations management at a global level. Excellence in managing complexity in supply management requires attention to most, if not all, of these issues—coupled with continuous improvement.

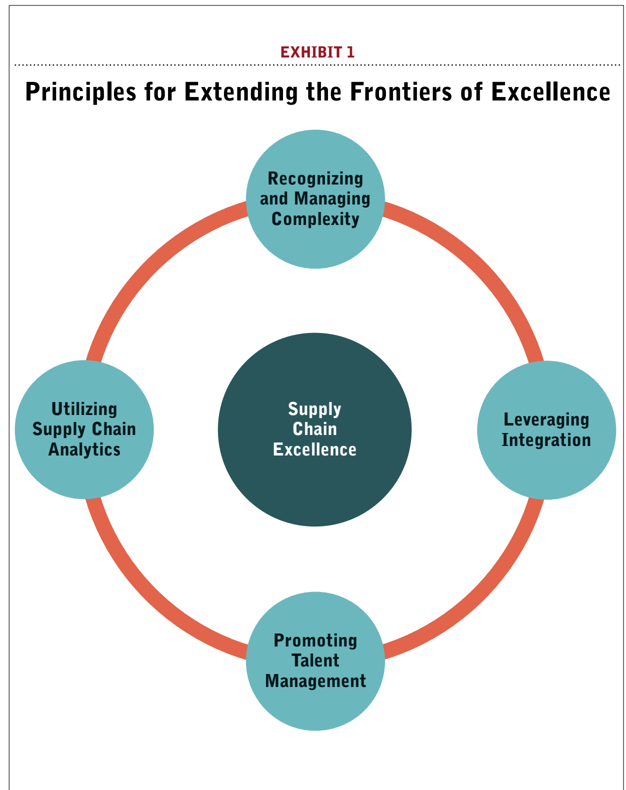
A company that excels in recognizing and managing complexity is John Deere. With a total spend of $18 billion and 24,000 suppliers, John Deere has mastered the art of risk management by effectively recognizing and managing complexity in its supply network. This producer of heavy equipment for the agricultural and

construction industries has developed an integrated global supply management risk system to mitigate risk and plan recovery. The system integrates financial risk processes with information from Moody's and Dun & Bradstreet, providing insight into the suppliers' ownership or payment changes, as well as press releases covering the supplier. While the system initially was standalone, it is now built into the risk management process and directly connected to supplier performance. Daily corporate security updates on country events are provided via WorldCue, which offers up-to-date information on security threats and disasters. Currently, 800 suppliers are covered by this tool.

Links within the supply risk management tool also exist to specific region or country characteristics and events, such as trade barriers in place, specific tariffs, and natural disasters. For example, John Deere can spot tornados using the internet tool, immediately identify suppliers in the impacted area, and then obtain direct contact and order information (including forecasted volumes, part numbers, and so forth) from within the system. These suppliers can then be readily contacted and early delivery can be requested if current inventory is not sufficient to cover the projected shortfall should the supplier fail to deliver because of the natural disaster. John Deere has used similar approaches in the past to predict which suppliers were likely to be affected by river floods. The system also stores past events as well as actions implemented and the results ensuing from those actions so that a knowledge database can be built. With these approaches, Deere can more effectively reduce risk and manage complexity.

EXHIBIT 1

Principles for Extending the Frontiers of Excellence



The critical question: How can a firm raise the level of its supply management practice to extend its performance frontier and derive that competitive edge?

Another way in which John Deere recognizes and manages complexity is through its supplier performance monitoring tool, which integrates traditional statistical process control (SPC) approaches. Between 750 and 1,000 direct suppliers now are proactively monitored and managed by this monitoring tool. Specifically, a web-environment was developed that asks suppliers a set of questions twice a year, covering an 18-month forecast period. Issues assessed include, for example, how comfortable the supplier feels with respect to second- and third-tier suppliers as well as any existing or projected capacity constraints. Deere's approach points to the importance of managing complexity in the supply network not only at the tier-one level, but also at lower levels in the supply network. With closely interconnected supply networks, coupled with just-in-time manufacturing and close-to-zero inventories, this deeper monitoring of suppliers is at the core of Deere's successful approach to managing complexity. The key activities are to proactively monitor capacity and the potential for supply disruption and impending disasters—and to then develop appropriate responses. Output reports are received every week. If there is a capacity issue, an action plan is developed to address the capacity shortages.

The system is constantly undergoing enhancements. To illustrate, in 2012, in order to increase compliance, Deere incorporated modules pertaining to a supplier's code of conduct and risk audit. One of the key issues addressed was restricted materials, such as conflict minerals. The objective is to automate searches for suppliers so that violations are immediately communicated and noticed. To achieve this objective, Deere held discussions with 69 of the most critical suppliers—on an

executive-to-executive level—to identify whether they had business continuity planning and risk management approaches in place, and with their suppliers. In addition, the company joined the Supply Chain Risk Leadership Council (SCRLC) to cooperatively develop supply chain risk management best practices. (For more on the SCRLC, see accompanying sidebar.). The intent was to develop industry standards pertaining to risk management and to facilitate compliance on the suppliers' part.

The Supply Chain Risk Leadership Council

The SCRLC Vision: Create a cross-industry council comprised of world class manufacturing and services supply chain firms that will work together to develop and share supply chain risk management best practices.

SCRLC Mission: Work together to create best-practices supply chain risk management standards, processes, capabilities, and metrics to be adopted within our respective organizations. Leverage this best-practices effort to proactively initiate consistency across industries and their related organizations/councils. Enable standardization across industries where applicable and become "industry integrators" for the betterment of a more efficient and consistent risk management environment.

For more information on the SCRLC, including a list of members, visit www.scrlc.com.

Leveraging Integration: Bloomin' Brands

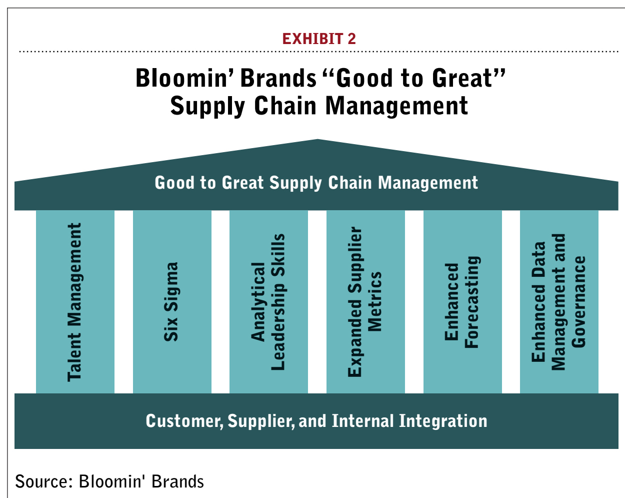
Another important principle emerging from the Executive Summit is the ability to leverage integration. This goes above and beyond merely communicating with suppliers and customers; it entails tapping into their unique resources and knowledge repositories. Bloomin' Brands, the owner of the Outback, Carrabba's, Fishbone, and Flemings concepts, excels in this dimension.

With $1.2 billion spend in commodities, consisting of mostly beef and seafood, the company realized the need to switch from procurement to supply management. Bloomin' Brands has evolved from a mostly reactive "purchase price management" philosophy in 2009 to a "good to great supply chain management" vision that will be fully realized this year. Key pillars of this new mindset are talent management, Six Sigma, analytical leadership skills, expanded supplier metrics, enhanced forecasting, and improved data management and governance. Fundamental to achieving the enhanced supply management vision were customers, suppliers, and effective internal integration. (Exhibit 2 depicts the "good to great" concept.)

The company created a research and analytics team to get it closer to the customer and obtain feedback. This *customer integration* initiative would inform the innovation strategy—namely, to maintain differentiation between the various concepts, and to maintain a continuous cycle of innovation and productivity. The goal was to identify $50 million in spend reductions per year, and to use these savings to fund innovations. This strategy is aimed at "self-funding" innovation and productivity improvement initiatives. Reinvesting in promoting supply management excellence is a distinguishing aspect of this approach. The company developed long-range productivity plans across five key areas. These included sourcing scale, food cost reduction, supply chain efficiencies, headcount and labor cost optimization, and facilities management.

EXHIBIT 2

Bloomin' Brands "Good to Great" Supply Chain Management



Source: Bloomin' Brands

Bloomin' Brands also has pushed integration with suppliers to new levels, sharing strategic information and collaborating when needed. To illustrate, in this industry there has not been a good correlation between cattle futures and what the company needs—i.e., prime cuts. However, suppliers (slaughter houses) can help hedge against this inherent uncertainty. For example, Bloomin' Brands may obtain insight from its suppliers that Wal Mart and/or McDonalds just placed large orders for the ends of the cow, which would then mean that the middle of the cow should be more competitively priced. This illustrates the principle that the *integration of external market intelligence* can be a valuable source of added supply management value.

Last but certainly not least, *internal integration* led to

the sharing of process information and the identification of improvement opportunities. Total cost of ownership analyses proved to be a valuable tool in this regard. For example, for their popular Outback dish of "Shrimp on the Barbie," a lot of preparation work had to be done in the kitchen right before the final serving of the meal. This work consisted of assembling the shrimp on the individual skewers—taking time that staff members felt could be more effectively spent on other activities. Further investigation revealed that, in fact, the supplier could easily perform this activity right off the dock, saving a process step in Outback's kitchens. In addition, the supplier could perform this task more efficiently, leading to only a minor increase in cost. These practices of Bloomin' Brands illustrate how competitive advantage can be gained from innovative supply management that stresses integration, both internal and external.

One way in which John Deere recognizes and manages complexity is through its supplier performance monitoring tool, which integrates traditional statistical process control approaches.

Promoting Talent Management: Alcon

A third principle that became apparent from the presentations and discussions at the MSU Executive Summit centered on talent management—more particularly the development of talent and the sharing of best practices. Alcon exemplifies the successful application of this principle. The company is a leader in ophthalmic surgical products. It also offers the leading multi-purpose contact lens disinfecting solution and a comprehensive portfolio of pharmaceutical products for chronic and acute diseases of the eye. Operating in 75 countries, Alcon achieved $10 billion in sales during the 2011 fiscal year. The merger with Novartis in 2011 accelerated its superior talent management approach, enabling Alcon to attract top talent and offer intriguing career opportunities.

Alcon's strategy to accelerate growth is founded on four strategic pillars:

• Pipeline enhancement, which aims to develop differentiated products to solve unmet needs.

• Commercial execution, whose objective it is to accelerate growth of all promoted products.

• Operational effectiveness, which aims to optimize how work is conducted.

• Organizational development, which strives to enhance the company's competitive advantage through its talent.

Underpinning all of these pillars is a genuine belief companywide that talent is of utmost importance to the organization. The objective is to foster a companywide talent mindset, creating focus on ownership for managing and developing people. The executive from Alcon who participated in the summit put it this way: "The achievement of the pillars also relies on agile leaders who practice inclusive leadership to drive performance and build capabilities in themselves, their teams, and the organization." The objective here is to enhance commitment to the company by creating an environment of engagement, appreciation, and accountability.

One way in which Alcon achieved exceptional talent management was by developing and implementing programs to assure the quality and quantity of leaders in the pipeline, sufficient to meet the company's future business needs. One such initiative was the Rotational Assignments Developing Alcon Researches (RADAR) program, which was facilitated and closely supported by human resources. The program's focus was to develop the next generation of global supply chain leaders for the company. The program consists of multiple stages that gradually increase the candidate's scope of leadership responsibility. As part of the development program, candidates were assigned real jobs with real business risks. Senior managers and local site managers served as mentors throughout the development process. Through the RADAR program, Alcon was able to improve the quality and accelerate the pace of talent management. Specifically, it increased the probability of filling identified "build" positions with internally developed candidates while increasing the number of "ready-to" successors for key roles.

Alcon realized the need for better talent management by assessing the current realities. In doing so, it saw significant talent shortages in certain occupations, industries, and locales as well as an insufficient number of people with the right skill sets to fill needed positions. Contributing to the severity of this situation is that talent distribution is uneven, and that there are leadership succession gaps. With the RADAR program, Alcon is aiming to promote talent management and thus extend the frontiers of supply chain excellence.

Utilizing Supply Chain Analytics: IBM

A fourth key principle enabling companies at the Executive Summit to extend the frontiers of their

supply management excellence revolves around supply chain analytics. IBM serves as an exemplar of this. Through its visibility solutions, IBM aims to extract useful insight from enterprise data, and thus decrease complexity in the supply chain. Utilizing business intelligence and advanced analytics, IBM believes that companies can move from a merely reactive and descriptive use of data to a predictive and prescriptive use. And because one tool does not fit all contexts, the company has deployed more than 25 analytics and visibility solutions within its integrated supply chain strategy. These instruments include the IBM Buy Analysis Tool, the Critical Parts Management Tool, the Quality Early Warning System, and Supplier Risk Management.

The IBM Buy Analysis Tool (iBAT) is a visibility and analytical platform to enable better channel management. It includes advanced analytical modeling of daily demand signals, and enables optimized replenishment decisions under price protection. With the system, IBM reduced price protection expenses by 80 percent, inventory by 30 percent, and returns by over 50 percent. Additionally, IBM received numerous awards for the system, such as the Tech Data 2010 Inventory Optimization Award and the CRN Channel Champion Award.

The Critical Parts Management Tool provides visibility, management, and optimization of critical parts across all upstream tiers of the supply chain. With this system, IBM achieved network visibility into more than 100 suppliers providing 60,000 stock keeping units. The tool also made the management of shortages easier, leading to a 10-percent cost reduction. Further, it helped IBM achieve higher levels of customer satisfaction and greater agility in handling supply constraints in Asia during 2011. The system received the Institute for Supply Management-Michigan State University Award of Excellence in 2012, and the ML 100 Manufacturing Leadership Award.

Another IBM tool, the Quality Early Warning System (QEWS), identifies trends before traditional statistical process control can do so. Using proprietary IBM technology, the software system is able to detect and prioritize quality problems earlier and with fewer false alarms. The system is coupled with push alert functionality for the company and its suppliers in order to proactively detect and manage quality issues at any stage of the product lifecycle. One key benefit of this system: a total of $50 million in cost savings, consisting of approximately $10 million per year in hard warranty savings. The QEWS also enabled IBM to become more proactive in its quality management initiatives, allowing it to identify and resolve issues before they become real problems. It also improved overall quality process efficiency and effectiveness.

A last solution we would like to highlight is the Supplier Risk Management tool, which provides a systematic approach to understanding and mitigating supplier risk. The system protects against the loss of revenue and profits by minimizing the likelihood and severity of supply disruptions. It consists of the three process steps: risk assessment, risk mitigation planning, and ongoing risk monitoring and control.

The first step consists of cataloging supplier risk exposure across multiple risk categories, performing a probability-based risk assessment, and implementing an automated tool. The second step involves the development of risk mitigation strategies with processes for executive approval, the establishment of control limits for each risk element, and the implementation of new business processes and escalation paths. The elements of the third step include monitoring risks against specified threshold limits, updating proactive risk mitigation strategies as risk exposure evolves, and involving the sourcing community at large in handling crisis situations.

The Supplier Risk Management tool is able to uncover multiple risks and assess their likelihood and potential impact. It addresses risks with formal mitigation plans, and provides a consistent risk management approach across brands and commodities. In addition, trends and patterns are revealed by systematic risk analysis. The system was honored as a finalist for CSCMP's Supply Chain Innovation Award. It also received high accolades at the 2012 Business Insurance Risk Management Summit.

Overall, the four tools spotlighted here demonstrate how IBM was able to leverage strategic supply chain analytics to extend the frontier of supply management excellence. Critical to the success of these initiatives was the willingness and ability of people to change, underscoring the notion that process leadership and execution expertise is even more important than the mathematics underlying the tools. A further lesson learned was the appropriateness of starting small. As such, a more iterative approach enables the firm to improve capabilities along the way, and to build progressively stronger stakeholder support. Finally, an appropriate incentive structure needs to be in place, rewarding engagement and achievement.

This article highlighted four key principles derived from Michigan State University's 2012 Executive Summit: (1) recognizing and managing complexity; (2) leveraging integration; (3) promoting talent management; and (4) utilizing supply chain analytics. These principles represent best practices of successful companies and at the same time provide guidance for others to extend their frontier of supply management excellence and deliver competitive excellence.

The Social Side of Supply Chain Management

By Adrian Gonzalez

Adrian Gonzalez (adrian@adelantescm.com) is the founder and president of Adelante SCM, a peer-to-peer learning and networking community for supply chain and logistics young professionals. In addition, he is the founder and director of Logistics Viewpoints, a leading blog focused on logistics trends, technologies, and services. He is also the founder and host of Talking Logistics, a weekly online video talk show.

Social media can—and should—play a central role in supply chain management. After all, social networking is not really about socializing, but about facilitating people-to-people communication and collaboration. And isn't that at the heart of managing and executing supply chain processes—and in the process achieving a measure of excellence?

In 1996, when I was a young engineer working at Motorola, there were only a handful of employees—in a few hand-picked departments—who were allowed access to the Internet and external websites from their work computers. I was not one of them, so I had to sneak to my friend's cubicle after work hours to surf the Internet. I was living in Arizona at the time and searching for a job back east, and my dial-up connection at home was painfully slow.

Motorola, like many companies then, was treading very carefully and slowly toward the Internet era. The company feared that employee productivity would drop significantly if everyone were given access to the Web. Managers were concerned that everybody would be wasting hours surfing the Internet instead of working. Motorola also worried about having to deal with a whole new set of HR issues if employees started visiting "inappropriate" (read: pornographic) websites.

Other companies at the time were equally cautious and fearful. One supply chain executive, for example, told me at a workshop last summer that his company required employees to fill out a permission form if they wanted to email somebody outside the company.

Less than four years later, however, as we welcomed the new millennium, we found ourselves at the height of the dot-com era. This was a time where the "e-" prefix was attached to every business process, and every startup with ".com" in its name received outrageous valuations. The dot-com bubble ultimately burst, but not before the Internet and Web had transformed the way people and companies worked. "E-business" simply became "business" again.

I believe we are at a similar inflection point today with "social" technologies. Many companies are treading slowly and cautiously toward the "Social Era," echoing the same fears and concerns they had about the Internet and Web 20 years ago. In fact, 30 percent of the supply chain professionals we recently surveyed reported that their companies currently block access to social media sites (see Exhibit 1). At the same time, however, 45 percent of the respondents said that "social networks will make supply chain processes more efficient, responsive, and cost effective" over the next five years. Another 30 percent said that "social networks will transform supply chain processes (for the better) in ways we can't imagine today" (Exhibit 2, page 18).

especially if we believe that our way of doing things is better (easier and faster) than the new way being proposed.

Supply chain executives also view social networking as more work. To paraphrase what I often hear from them: "I barely have enough time in the day to get through my emails and voicemails; how do you expect me to use yet another system to keep track of discussions and status updates?"

But the biggest obstacle of all is the inability for companies to quantify the business value of using social networking technologies (Exhibit 3). How much money will we save? How much more productive will we be? Most companies can't answer these questions yet, which is why getting buy-in from workers (and upper management) is difficult. It's the classic chicken-and-egg problem: It's hard to answer these questions until you try it, but it's hard to get approval to try it without having these answers.

The reality, however, is that social networking is not about socializing, but about facilitating people-to-people communication and collaboration, which is at the heart of managing and executing supply chain processes. Social networking goes well beyond Facebook, LinkedIn, and Twitter—it includes virtually all of the leading software vendors that companies currently use to manage their business processes.

We're seeing the rise of Supply Chain Operating Networks, the business equivalents of Facebook and LinkedIn, which are enabling communities of trading partners to communicate, collaborate, and execute business processes in more efficient, scalable, and innovative ways.

If deployed and used correctly, social networking will result in less work, not more for business professionals.

The survey results align well with what I've been hearing from supply chain executives in the numerous workshops I've conducted on this topic over the past few years: "We know social networks will transform supply chain processes, we just don't know how exactly, and where to start, and why."

Perception vs. Reality

Many supply chain executives and companies are stuck on the starting line because they can't get past the word "social" and the perception it creates. "We come to work to get things done, not to socialize," said an executive at one of my workshops, "so I don't see any role for social media in supply chain management."

When supply chain executives hear "social media," they immediately think Facebook, LinkedIn, and Twitter. And because these publicly available sites lack any supply chain and logistics context, they can't see how these social networks will help them manage their transportation and warehousing operations, for example. Simply put, the term "social media" has an image problem in supply chain circles. It carries a lot of baggage, and other names being used, like "enterprise social software," aren't much better.

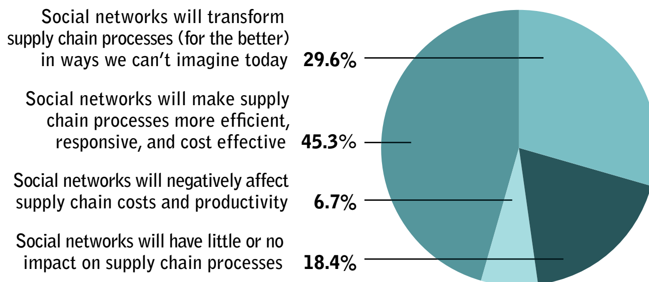
Change management is another roadblock. Just because you deploy a social networking tool and tell people to use it doesn't mean that they will. When confronted with new technologies and processes, many people react this way: "By the time I figure out how to do something this new way, I could have done it my way five times over." We are creatures of habit, and getting us to change is not easy,

Deconstructing Social Networking

Let's get past the terminology for a moment and think about the most fundamental element of supply chain management: people-to-people communication.

Every day, you communicate with people inside and outside your company—mostly via email, telephone, or face-to-face—to get your job done and resolve the countless exceptions that occur along the way. You exchange information and documents with colleagues and business partners, who you've organized into email groups and telephone lists. You have countless emails and electronic documents saved on your hard drive, and a filing cabinet full of printed documents.

In short, as a supply chain professional, you are continuously communicating and collaborating with a broad community of people. But are the tools and methods you currently use to communicate and collaborate the most



effective and efficient in all situations?

If you're still receiving emails with attachments and countless people in the cc list (who sometimes reply to all, and sometimes don't), then the answer is clearly no.

If there are multiple versions of the same document, saved in multiple places, and nobody knows which version is the most current, then the answer is clearly no.

If your response to solving a problem is to gather people in a conference room for an "all hands on deck" meeting, even though half your employees (who might know the solution) reside six time zones away, then the answer is clearly no.

At its most basic level, you can think of "social networking" as another set of communication and collaboration tools in your toolbox. These tools include discussion forums (think LinkedIn groups), document sharing (think Dropbox), video conferencing (think Skype), texting and micro-blogging (think Twitter), video and photo sharing (think YouTube and Instagram), and blogs and wikis (think Wikipedia). These tools don't necessarily replace emails, phone calls, or face-to-face meetings. But they are arguably more effective in situations where many people, across multiple groups and companies, and across different time zones and geographies, need to communicate and collaborate.

And just like you have an email address and a telephone number—your identities on email and telephone networks—you have a "profile" on a social network, which allows you to connect, communicate, and collaborate (using the tools mentioned above) with other network members. And just like your email groups and telephone lists, you now have network contacts and discussion groups that you manage.

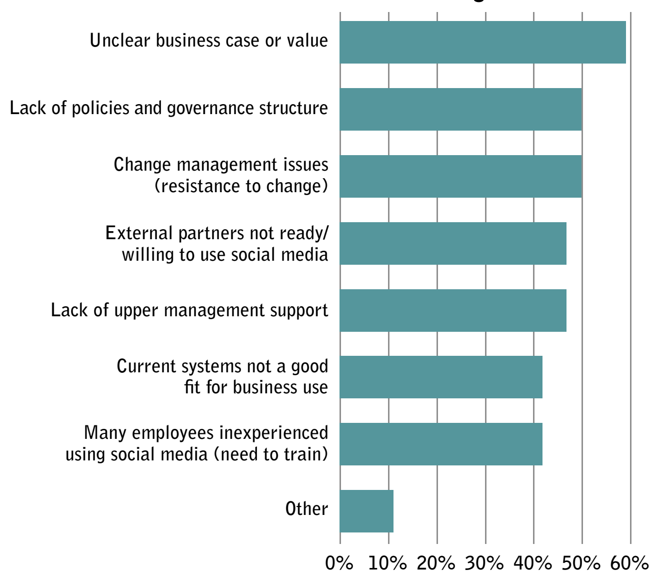
In my experience, when supply chain executives get past the terminology and understand that social networking, at its most basic level, is another medium for people to communicate and collaborate with each other—and, in many cases, is more productive than email and other communication methods—they are more receptive to exploring the opportunities social networking presents to enhance their supply chain processes.

Beyond Facebook, LinkedIn, and Twitter

Another thing that helps supply chain executives get over the initial hump is recognizing that "social networking" goes beyond Facebook, LinkedIn, Twitter and other publicly accessible sites. It also includes best-of-breed "enterprise social networking" vendors (such as Yammer, Jive, and Moxie Software) and virtually all leading ERP and supply chain software vendors, as well as startups, that are incorporating social networking capabilities into their solutions.

In June 2012, for example, Microsoft acquired Yammer, often referred to as "the Facebook for business," for $1.2 billion. A few months earlier, SAP announced that it had hired Sameer Patel as global vice president, Enterprise Social Software, "to lead the solutions and go-to-market for collaboration and social software from SAP." In November 2011, Manhattan Associates announced Manhattan SCOPE Social, where it integrated Yammer with its labor management solution. And last summer, Cloud Logistics, a startup logistics software company, entered the market with a solution built from the ground up with social and mobile in mind.

A driving force behind this trend is the "consumerization of IT," which Wikipedia defines as "the growing tendency for new information technology to emerge first in the consumer market and then spread into business and government organizations." As a generation of workers who



have grown up in the Web/Mobile/Social era enter the workforce, they expect their work applications to have the same "look and feel" and ease-of-use as the applications and websites they use at home. And because it's becoming increasingly difficult for enterprise software vendors to compete solely on features and functions anymore, they are starting to compete on other fronts, including design. Infor is a great example. The company has invested heavily to enhance its user experience and make business applications "as easy to use, attractive, and inspiring as personal technology."

Despite the growing momentum, however, we are still in the early stages of companies using social networking solutions in business, particularly for enabling supply chain and logistics processes. Almost 62 percent of the supply chain professionals we surveyed said that their companies hadn't implemented a social networking solution yet, while another 27 percent didn't know (see Exhibit 4). The low adoption rate is partly due to the challenges discussed earlier, as well as the fact that social networking capabilities are less developed for supply chain applications at the moment compared to other business functions, such as marketing.

The Rise of Supply Chain Operating Networks

While I've discussed how social networking enables people to communicate and collaborate in new ways, social networking also applies to companies and how they work together. Over the past decade we've seen the rise of Supply Chain Operating Networks—such as Ariba, Descartes, GT Nexus, Elemica, E2open, LeanLogistics, One Network, and others—that are the Facebook equivalents in the supply chain and logistics world. While Facebook connects people and maps their relationships to one another via a "social graph," these business networks connect companies together and map their relationships to one another via a "commerce graph."

The Supply Chain Operating Network (SCON) model has its roots in the industry marketplaces and exchanges that emerged during the dot-com era; the model further evolved as software-as-a-service (SaaS) solutions gained traction in the market. Simply put, supply chain operating networks bring together trading partner connectivity with SaaS applications. Instead of companies creating hundreds or thousands of one-to-one connections with their trading partners, they make a single connection to the business network, where their trading partners and thousands of other companies are also connected. In addition, they use the SaaS applications that reside on the network to communicate, collaborate, and execute business processes in more efficient, scalable, and innovative ways.

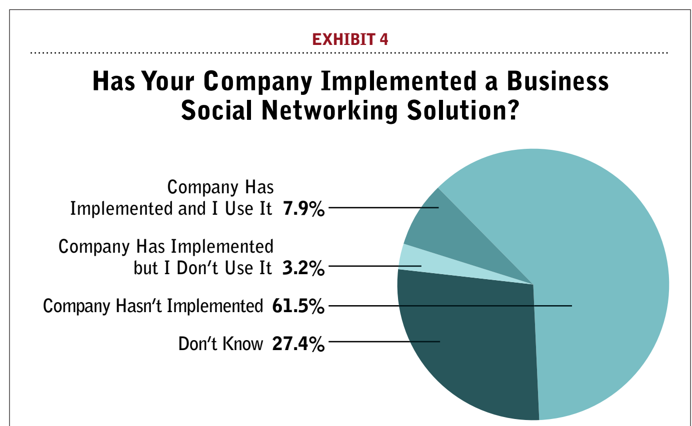
We're also seeing the "consumerization of IT" with Supply Chain Operating Networks. In May 2013, for example, Elemica introduced a new network platform with "built-in social collaboration [that] gives clients the ability to discover, create, and build new or more robust business relationships faster." Also in May, at the company's user conference, Ariba demonstrated how it is integrating its online user community, Ariba Exchange, into its user interface, providing users with a source of network intelligence as they execute their tasks. And last November, Descartes unveiled Descartes Community, a service that "helps to facilitate inter-enterprise business processes, allow members to gain a better understanding of their business partners' capabilities, search for new ones and engage in collaborative activities that improve individual company and industry performance."

As with traditional enterprise software, we're still in the early stages of Supply Chain Operating Networks enabling social capabilities. Which capabilities have the greatest potential to improve supply chain and logistics processes? Our survey respondents ranked "The ability to connect (like LinkedIn) with business colleagues and external contacts" number one, followed by "Document sharing and collaboration" and "Discussion forums to discuss business-related questions and topics with colleagues and external business partners." In short, two of the top three capabilities are related to peer-to-peer learning and networking, which underscores the role and importance of people-to-people communication in supply chain management. Rounding out the top five were the ability to post/share pictures, video, and other multimedia and to search for new customers using various filters.

Due to an oversight on my part, the survey did not include what I view as the greatest value a social business network has to offer: network-based business intelligence and analytics. We're already seeing this in action. LeanLogistics, for example, is leveraging transportation data flowing through its network—such as rates, carrier performance, and transit times—to develop a "transportation

EXHIBIT 4

Has Your Company Implemented a Business Social Networking Solution?



index" that gives users of its TMS visibility to market-level trends. Ariba's Services Procurement solution is another example. The solution automatically presents a user with network-based intelligence and recommendations (based on real-time data from the Ariba Network and various third-party data sources) about labor rates, lead times, job skills, and other information to help the user make smarter decisions about the task he is performing.

The ability to discover and establish new business connections, either company-to-company or person-to-person, is another key value proposition of social business networks (the survey respondents ranked it in the middle of the pack). By searching the commerce graph, network participants can conduct queries such as:

• Battery suppliers in China that your industry peers have liked.

• 3PLs with warehouses in Nevada and Tennessee with automotive connections.

• Professionals with S&OP experience in retail who speak Spanish and live in Canada.

• Trucking companies in Utah with more than 10 refrigerated trucks with the most likes.

• Companies your Tier 1 suppliers are connected to in China, India, and Brazil.

• TMS and WMS applications your connections like.

Quantifying the Business Value

How do you quantify the business value of social networking? It's the most common question I get from supply chain executives, and it's a difficult one to answer because relatively few companies are using social networking tools today in supply chain applications, and even fewer are talking about their experience to date. TEVA Pharmaceuticals, Home Depot, and GE are some of the exceptions. Based on their case studies and conversations I've had with other early adopters, here are some areas where companies can achieve measurable business value via social networking:

Exception Management. Exceptions are the norm in supply chain management (delayed shipments, supply shortages, unexpected demand spikes, and so on). Social networking can help companies identify and resolve exceptions faster and more effectively, especially because responding to exceptions often requires collaboration and communication between many different people, and existing approaches (back-and-forth emails, endless conference calls) are inefficient.

That was certainly the experience of TEVA Pharmaceuticals. In a webcast back in 2011, Tony Martins, the VP of Supply Chain at TEVA Canada at the time, described the market volatility present in the pharmaceutical industry and the challenges they faced responding to swings in demand. "What is needed [in a dynamic business environment] is a supply chain of rapid response," Martins said. "Many people who work in the materials business [and] talk about supply chains and the speed of supply chains [have historically] thought about systems talking to systems across enterprises and about processes. But in reality, the speed of the chain is not really related to the systems used by the various companies—it's all about people, and people talking to people."

TEVA implemented Moxie Software's social networking solution, which enabled a process Martins called "spontaneous association." He defined this as "the capacity that a group of individuals of multiple skills have to spontaneously combine their skills to respond to a problem without being directed." By managing exceptions more quickly and efficiently, TEVA reduced manufacturing cycle time by 40 percent in four months and improved lead time from upstream suppliers by as much as 60 percent.

GE is also solving problems faster thanks to the implementation of a social networking platform called GE Colab, which enables employees to communicate and collaborate more effectively across business functions, geographies, and business units. In an interview published by MIT Sloan Management Review in November 2012, Ron Utterbeck, GE's CIO for GE Corporate and the Advanced Manufacturing Software Technology Center in Michigan, mentions the following statistics: "One in three of the connections that we have on the site are across functions. One in four is across geographies, whether between North America and Asia, Europe, South America. And one in five is across our business units."

Risk Management. Supply chain management is also about managing risks. And because risks are dynamic in nature, with new ones emerging all the time, companies must continuously study the landscape and determine which risks are worth addressing now and how. Social networking can provide companies with more timely insights about emerging risks and events, enabling them to take corrective action sooner and thus prevent (or minimize the impact of) a supply chain disruption.

According to a *Wall Street Journal* article ("Decoding Our Chatter," Robert Lee Hotz, October 1, 2011): "When Virginia's magnitude 5.8 earthquake hit [in August 2011], the first Twitter reports sent from people at the epicenter began almost instantly at 1:51 p.m.—and reached New York about 40 seconds ahead of the quake's first shock waves. The first terse tweets also outpaced the U.S. Geological Survey's conventional seismometers, which normallycan take from two to 20 minutes to generate an alert." The article also highlights how researchers and firms are mining Twitter messages "to monitor political activity and employee morale, track outbreaks of flu and food poisoning, map fluctuations in moods around the world,

predict box-office receipts for new movies, and get a jump on changes in the stock market."

Innovation and Continuous Improvement. Social networking can help companies generate more—and better—ideas for improving supply chain processes and solving existing problems by tapping the collective insights, knowledge, and expertise of employees across all levels of the enterprise (and beyond). If companies are already using "crowdsourcing" to drive innovation in product development, why not apply the same concept to drive innovation in supply chain management? In short, social networking can have a positive impact on metrics related to continuous improvement and the ongoing development and sharing of best practices.

That has been Home Depot's experience with its social networking site called "The Warehouse." At the 2011 CSCMP Annual Global Conference, Tricia Mims, Senior Analyst, International Logistics at Home Depot at the time, described it this way: "Store and DC associates, as well as the corporate store support center, use the site for internal communication and knowledge transfer of innovative ideas and best practices for just about any issue impacting the business. The ability to capture information on the obstacles that associates face allows the Home Depot to analyze and formulate solutions."

The Way Forward

Some of the best advice I've seen comes from the GE case study, including these three recommendations:

1. Focus on power users, not business function. Investments in technology are often driven by the needs of a specific business function. A big obstacle many companies face with social networking tools, however, is that they don't know where to begin, where within the company to conduct the first pilot test. GE took a different perspective. Instead of looking for WHERE to begin, the company looked for WHO to begin with. "We rolled it out to our power users," Utterbeck explained in the article. "We didn't focus on a function—the functionality [in the platform] is needed by every function. We really sought out the most experimental people in the different functions, and seeded [the network] with them and then got their feedback."

2. Don't wait for the "perfect" solution to get started. First, the perfect solution doesn't exist, and won't ever exist, so stop waiting for it. And second, you don't know what you don't know— in other words,because social networking for business is a new frontier, the only way to truly know what you need and want is to start the journey and see where it takes you. In GE's case, the company started with a base product and "extended the heck out of it" based on feedback from power users. According to Utterbeck, "We launched [the platform] knowing that it was good enough to get people to start moving on it, and then we started to get feedback…and we incorporated that feedback into quick releases."

3. Don't waste time coming up with an ROI. The challenge of quantifying the business value of social networking didn't stop GE from getting started. "We haven't tried to come up with an ROI," said Utterbeck in the article. "Haven't wasted a moment's notice even thinking about it." GE tracks usage, adoption, how people are using the system, and what their connections are. Utterbeck goes on to say, "The biggest thing about usage is that no one in this corporation has to use this platform to get their job done. It's not a system that people have to go to, but people still come back every single day. They come back because it makes their job easier, because they're getting value out of it. Going and spending money on ROI would be, honestly, in my opinion, just a waste of money because your true value of this is people are coming back."

I'll also add the following recommendations:

• Don't get caught up with buzzwords. Focus instead on the work that needs to get done, and see if social networking tools are a better, more effective solution than email, conference calls, and other ways you're currently communicating and collaborating with colleagues and external partners.

• Encourage young professionals on your team to take a leadership role in finding opportunities to improve existing processes using social networking tools and to train/mentor colleagues who are less experienced using these tools.

• Develop guidelines, a training program, and a governance structure on social networking use that allows employees to experiment and innovate, but also clearly defines roles, responsibilities, and boundaries.

Best Is Yet to Come

In five years, if not sooner, we won't be talking about "social networking in business" any more. It'll just be business as usual, just like "e-business" became business again.

Although I didn't talk about mobile technologies in this article, most of the innovation we'll see moving forward will come from the convergence of social networking and mobile computing (the use of smartphones and tablets).

And finally, thanks to the consumerization of IT and the growing recognition by technology companies and customers that "software is not enough" when it comes to supply chain management, I predict we'll see more innovation and market adoption of supply chain operating networks (or, if you prefer, "social business networks") over the next two to three years than we've seen in the past decade. How these networks will continue to evolve and interoperate remains an open question, but I'm very bullish on the future. Stay tuned because I believe the best is yet to come.

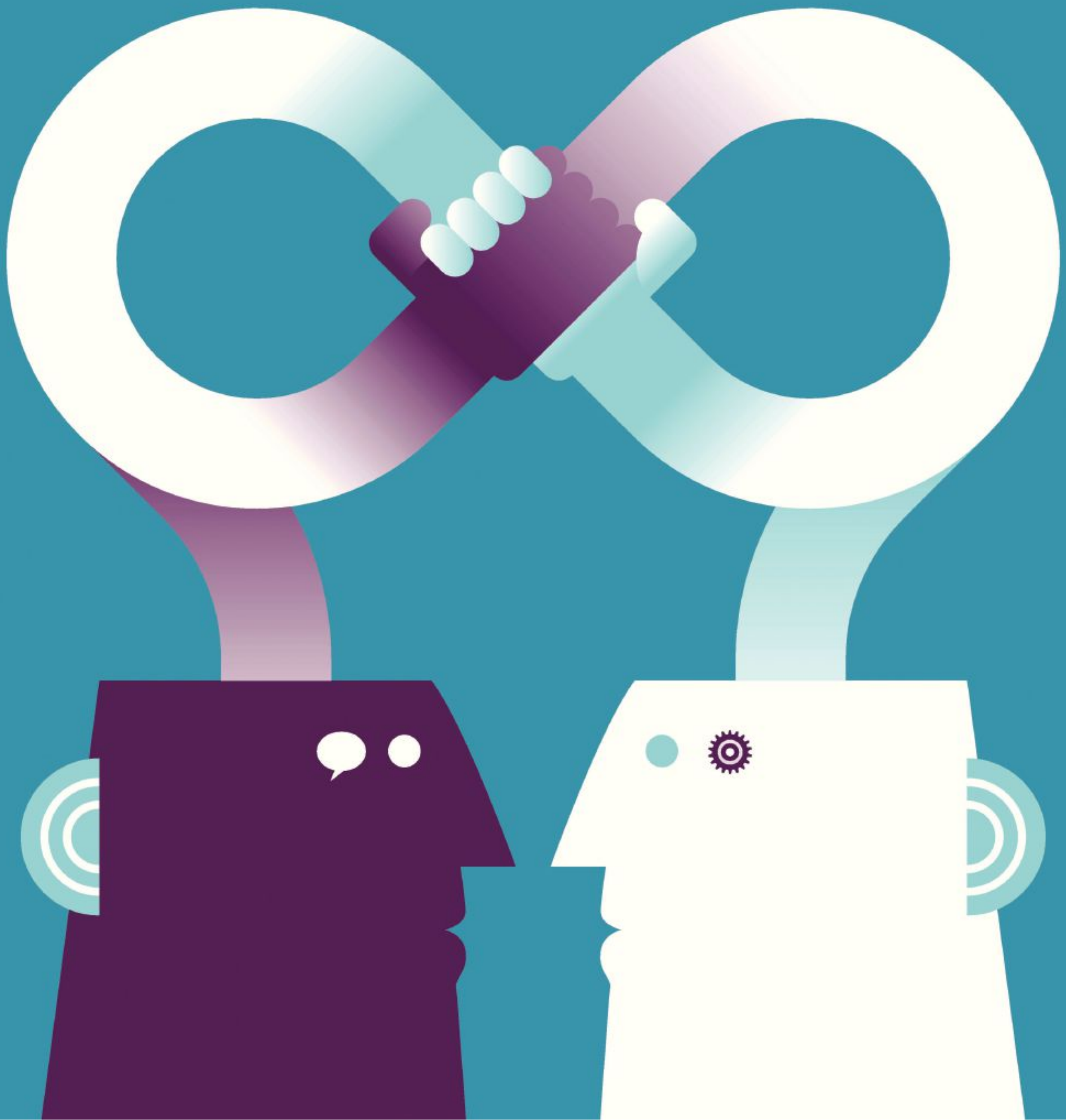
How to Handle "Extreme" Negotiations with Suppliers

By Jonathan Hughes, Jessica Wadd, and Jeff Weiss

Jonathan Hughes is a partner and head of the sourcing and supply chain practice at Vantage Partners, a global strategy and management consulting firm. Jeff Weiss is a partner and head of the firm's sales effectiveness practice. Jessica Wadd is a senior consultant at Vantage Partners, and a member of the firm's supply chain practice. They can be reached at: jhughes@vantagepartners.com; jweiss@vantagepartners.com; and jwadd@vantagepartners.com.

When negotiating in high-stakes, high-risk ("extreme") situations with suppliers, the tendency is to act quickly and forcefully. Yet acting in haste to take charge and look in control often leads to disappointing, even dangerous, results. A better approach: slow down the pace of the negotiation, understand the other side's position, and work toward a more collaborative negotiation process.

In 2010, Jeff Weiss and Jonathan Hughes, together with Major Aram Donigian, published an article in the *Harvard Business Review* entitled "Extreme Negotiations." That article explored lessons from the U.S. military about negotiating in high-stakes, high-pressure situations—lessons with potential relevance to complex negotiations in the business world. A key insight underlying the ideas from the article is that negotiation behaviors tend to be deeply ingrained



and are often reactive rather than deliberate, especially under conditions of significant stress. By carefully analyzing how military officers in theater were often able to defuse dangerous situations, five replicable strategies emerged. Although these strategies differ from most people's default reactions to stressful negotiating situations, the ability to implement them can indeed be learned.

This article is a companion to the *Harvard Business Review* piece, and addresses how the same approaches can be employed in especially challenging negotiations with suppliers. Over the past several years, we have helped sourcing and supply chain executives and professionals employ these strategies when traditional forms of leverage seemed unavailable (for example, with single and sole source suppliers), and/or when business-critical

suppliers seemed to be engaging in opportunistic or even adversarial negotiation tactics. These strategies are not only useful at the bargaining table, but can (and should) also serve to reshape planning and positioning far in advance of formal negotiations.

Strategy 1: Broaden your field of vision, question assumptions, and re-think objectives.

Start by identifying key assumptions and subject them to scrutiny; use negotiation planning and execution to continually gather new information and revise strategies accordingly.

To do this . . .	
Avoid	Instead, try
Assuming you have all the facts: "Look, it is obvious that…"	Being curious: "Help me understand how you see the situation."
Assuming that the supplier is biased (but you're not).	Being humble: "What do I have wrong?"
Assuming the supplier's motivations and intentions are obvious (and likely nefarious).	Being inquisitive: "Is there another way to explain this?"

One hallmark of "extreme" negotiations is a feeling of danger that creates pressure to act fast, and thus reduce the level of perceived threat. In the face of this pressure, negotiators often begin acting before they fully assess the situation. They react, quickly, based on a gut feel and initial perceptions. Given the added pressure to look strong and gain (or remain in) control, they tend not to test or revisit their initial assumptions even as the negotiation progresses. As a result, they often negotiate based on incomplete or incorrect information. This often leads to conflict, impasse, or, at best, a resolution that addresses only a part of the problem or opportunity at hand.

A senior sourcing executive for the research division of a major pharmaceutical company approached us a few years ago for assistance with a complicated, high-stakes negotiation. The company had a contract with a single-source supplier that comprised hundreds of millions of dollars in spend. The supplier appeared to have most (if not all) the leverage—and the sourcing team felt that leverage was increasing with every day that brought expiration of the current agreement closer. The supplier was the largest in its industry, and seemed clearly to be the only company with the scale and capabilities necessary to meet the pharmaceutical company's needs. Additionally, through various strategic projects and supply chain initiatives, the supplier had become deeply embedded in the customer's organization, such that switching costs, even if there were an alternate supplier, were deemed to be unacceptably high.

Despite substantial pressure to move quickly and decisively, the sourcing team decided to conduct a series of focus groups with internal stakeholders to identify and prioritize what they would like to see improved under a new contract. To their surprise, the team discovered high levels of dissatisfaction with the incumbent and unexpected openness to considering alternative solutions (both for day-to-day equipment and services, as well as for support on strategic supply chain initiatives underway with the current supplier)—even if that meant a difficult transition period. Moreover, further evaluation of marketplace options indicated that there was another supplier that might be able to provide the full breadth and global scope of services that the company required.

In a significant deviation from their original plan, the sourcing team decided to conduct a non-traditional RFP process—one consisting of a series of workshops with both the incumbent and the potential alternate supplier. During these sessions, they shared information about the company's R&D strategy and key long-term objectives for the category. They also explored the two suppliers' unique capabilities and alternate approaches to meeting the company's needs.

Pursuing this approach initially felt risky to some members of the team. They feared it would signal weakness to both suppliers (particularly the incumbent), by implying too much reliance on external ideas and expertise. They also expressed concern that by sharing more information about the underlying business drivers for the category, and by failing to define highly specified requirements for supplier solutions, they would lose what little leverage they might have. Nonetheless, careful assessment of the strategy's risks and benefits eventually persuaded everyone

One hallmark of "extreme" negotiations is a feeling of danger that creates pressure to act fast.

that this was the best course of action.

During this process, the company discovered that not only could the non-incumbent supplier effectively step in and continue supporting several ongoing strategic projects, they had also invested in new technology and capabilities that would enable them to deliver substantial savings and improved service levels as well. After careful "apples-to-oranges" analysis of two very different proposals from the suppliers, and extensive consultations with internal stakeholders and end-users, the company moved the business to the new supplier.

As a result of slowing down, re-evaluating the marketplace, consulting extensively with internal stakeholders, and engaging in collaborative "what if" discussions with both the incumbent and the alternate supplier, the company realized millions of dollars in immediate savings, identified a number of major opportunities to implement innovative solutions, and captured savings over the life of the contract of over 10 percent of total projected spend (compared to a continued relationship with the incumbent).

Strategy 2: Uncover underlying motivations and invite collaboration.

Uncover (often hidden) motivations and concerns; take responsibility for proposing possible solutions; invite the other side to critique or improve on those ideas.

To do this . . .	
Avoid	Instead, try
Asking: "What do you want?" Making unilateral offers: "I'd be willing to…" Simply agreeing to, or refusing, the supplier's demands	Asking questions: "Why is that important to you?" Proposing possible solutions for critique: "Here's a possibility; what might be wrong with this?

Danger (a high level of proximate risk) not only creates a desire to act fast, but also produces a perceived need to look strong and take control. This, in turn, often leads negotiators to quickly put a stake in the ground, and to negotiate primarily by making demands. Unfortunately, this position almost always triggers or exacerbates resistance from the other side. As a result, such an approach tends to produce contentious and inefficient negotiations, running the risk that no agreement will be reached—even when one was possible.

A couple years ago, the CFO and chief procurement officer of a large technology company confronted a difficult negotiation with a sole-source supplier of critical

Stressful circumstances often produce a temptation to use coercion or threats to achieve objectives—even when reasoned analysis shows that such efforts are unlikely to succeed and may well backfire.

components upon which their business was highly dependent. The supplier was demanding a significant price increase—one which the company could ill afford to pay. However, any disruption in supply of these components would have jeopardized production of a flagship product, with potentially devastating revenue implications.

Feeling considerable pressure, the executives decided they could not let the supplier (which had long been seen as arrogant and aggressive in their negotiations) push them around and attempted to take control by making a counter-demand for a price reduction. The supplier refused to even meet to discuss this. The CPO then dashed off an email offering a small price increase and declared the concession to now be a "take it or leave it" offer. As the risk of losing the supplier increased, the posturing became worse. Ultimately, a deal was struck at a number somewhat lower than the supplier had initially demanded, which was considered to be a victory under the circumstances. Unfortunately, the negotiation had never turned to any discussion of why the supplier demanded the price increase in the first place.

Within six months, shipments from the supplier were late and quality issues began to emerge. The executive team assumed, not without reason, that the supplier was not making full, good-faith efforts to deliver on their contractual obligations because they were unhappy with the outcome of the recent negotiation. Almost immediately, the customer began to consider legal recourse. At this juncture, they also contacted us to ask for advice. We suggested that before taking any further action, they simply ask the supplier to explain why these problems were occurring, and offer to jointly explore how to resolve them. To the company's surprise, the supplier responded by being very forthcoming about the fact that they had been experiencing major problems with their suppliers. The supplier also pointed to costly quality control and yield management issues due to certain recent changes in the customer's specifications. While it took several months to fix the quality and delivery problems, they

were indeed solved. And in the process, the company's relationship with the supplier significantly improved.

Some of the individuals involved at the company remained bothered by the fact that the supplier had not been more forthcoming from the beginning. Others acknowledged a history at their company of quickly terminating contracts when suppliers encountered difficulties, and pointed out the disincentive this created for suppliers to be open and transparent. A few individuals felt that it was inherently unfair that they had to take the lead in collaborating with a supplier perceived to have a long history of arrogant and even opportunistic behavior. (Not surprisingly, it later turned out the supplier felt the customer was arrogant and aggressive, and saw their own actions primarily as a defensive reaction.) Ultimately though, the business benefits of pursuing a strategy of enlightened self-interest—versus responding in kind to the supplier's (perceived) bad behavior—yielded results that were undeniably far superior to what could have been achieved through any other course of action.

Strategy 3: Focus on fairness to persuade and build buy-in.

Use facts and the principles of fairness (not brute force) to persuade others; arm them with ways to defend their decisions to their constituents; focus on creating useful precedents for future negotiations.

To do this . . .	
Avoid	**Instead, try**
Threats: "You better agree, or else!"	Appeals to fairness: "What ought we to do?"
Arbitrary demands: "I want it because I want it"	Appeals to logic and legitimacy: "I think this makes sense, because…"
Being close-minded: "Under no circumstances will I agree to, or even consider, that proposal"	Considering constituent perspectives: "How could we each explain this agreement to our colleagues?"

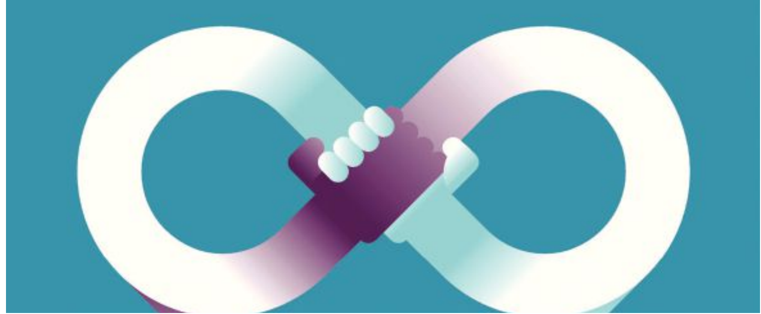
Stressful circumstances often produce a temptation to use coercion or threats to achieve objectives—even when reasoned analysis shows that such efforts are unlikely to succeed and may well backfire. Even if such approaches succeed in the short run, they almost always breed resentment and sow the seeds for future conflict. Moreover, even in the short term, a reliance on pressure tactics often triggers a response in kind from counterparts, thus catalyzing a destructive cycle of threat/counter-threat.

We recently advised a major utility on negotiations with a single-source supplier for a large capital construction project. (The supplier was the only one with the capabilities and available resources to deliver the project in the required timeframe.) The supplier demanded a huge upfront payment, before completion of any key milestones. Paying it would have jeopardized the economics of the entire project, but the utility felt like they had no viable alternatives, hence no leverage, and thus no choice but to pay it.

We recommended a very simple strategy. Rather than agreeing to what the supplier was demanding, or refusing the demands, or trying to haggle over the specific number, do the following: simply ask the supplier why they were asking for such a large up-front payment. The sourcing team did so, and was told the payment was needed so that the supplier could place orders with its own suppliers for expensive, long lead-time items. This was a valid explanation in theory, but in practice, the math did not seem to add up. We then conducted our own quick and dirty analysis, and came up with a rough estimate of about 20 percent of what the supplier was demanding.

So the sourcing team went back to the supplier with this analysis and said: "We fully agree in principle that we should cover your costs to purchase equipment you need to deliver this project. That said, here's our estimate of what those costs should be. What are we missing?" The team was careful not to imply in any way that they thought the supplier was being dishonest or unreasonable; part of our strategy was to make it easy for the supplier to back down, without losing face. The supplier asked for a few days to review the numbers. When they came back, they said that the sourcing team's estimate was in fact somewhat low, but that they (the supplier) had based their initial estimate on some past projects that were in fact quite different. So now that they had an opportunity to conduct more detailed analysis, they would be willing to accept the figure the sourcing team had come up with.

Afterwards, the sourcing team expressed surprise that when asked what was behind the demand for upfront payment, the supplier actually gave a reason, rather than simply saying: "That's what we require if you want to engage us for this project." The team was even more astonished that the supplier then agreed to the figure we had come up with. Of course, things might have turned out differently. Sometimes suppliers do act to capitalize on the leverage they may possess to the fullest extent possible (and when they do, there are no silver bullet solutions). In our experience, however, this is quite rare.



Fairness—not only the desire to feel fairly treated, but the desire to be seen as reasonable and fair-dealing by others—is a fundamental human motivation. It is quite difficult, psychologically speaking, for individuals to simply assert a demand and fail to offer a justification for it—especially when asked in a non-threatening way. Even the most aggressive negotiators, if you listen carefully, typically proffer some sort of justification for their demands. When suppliers seem to have all the power, and seem to be taking unreasonable advantage of it, leveraging the potential of fairness to persuade is one of the few strategies available—and it is often surprisingly effective.

Perhaps the most fundamental lesson is that in the very contexts where we feel the most pressure to act quickly and forcefully, it is best to do neither.

Strategy 4: Actively build relationships based on mutual trust and respect.

Deal with relationship issues head-on; make incremental commitments to build trust and encourage cooperation.

To do this . . .	
Avoid	**Instead, try**
Trying to "buy" a good relationship with a supplier by making offers or concessions that are not justified on the merits. Demanding concessions from suppliers to repair breaches of trust (actual or perceived).	Exploring where and why a breakdown in trust may have occurred, and how to remedy it. Requesting (or making) concessions only if they are a legitimate way to compensate for losses incurred due to non-performance or broken commitments. Always treating suppliers with respect, and always acting in a manner that will command theirs.

Negotiators under extreme pressure are often tempted (consciously, or sub-consciously) to leverage a counterpart's desire for a good relationship to extract concessions. However, holding a relationship hostage to extract a better deal usually carries a high long-term price. Such tactics breed resentment and often leave deeper issues unaddressed, which contributes to future problems that could otherwise have been avoided.

Alternatively, high-stakes, high-risk contexts frequently produce a temptation to try to "buy" cooperation. In order to build a relationship, or rebuild trust, many negotiators choose the quick and easy path of attempting to trade resources or make concessions in order to mollify the other side and reach agreement. After all, that's typically what their counterparts are demanding. Unfortunately, making substantive concessions in an effort to buy a good relationship almost never works. Doing so almost always creates a perverse set of expectations and incentives; it invites future extortion, and breeds disrespect or even outright contempt.

Recently, a large multi-national company was renegotiating a half billion-dollar contract with their main IT outsourcing provider. The negotiation was extremely high-profile within the company. The negotiation team was under great pressure to (1) improve service levels and reliability (from unhappy constituents who had recently experienced major outages, and who had come to suspect that the supplier had deliberately made promises they knew they couldn't keep) and (2) cut the overall IT outsourcing budget by at least 15 percent (from executive leaders who were taking heat from Wall Street to improve the bottom line).

Reacting to this pressure, the team informed the supplier that trust had been broken by the recent outages, and that if the supplier wanted to rebuild trust and prove its desire to be a good partner, they needed to grant a 20 percent price concession. Not surprisingly, the supplier pushed back. Yet confronted with an unhappy customer and an important contract renewal, the supplier eventually granted a price decrease very close to the 20 percent demand. At first glance, the negotiation seemed successful from the customer's perspective.

Within a year, however, both the customer and supplier were in trouble. When new quality and performance problems arose—which were quite clearly caused in large part by the customer—there was no foundation for jointly engaging in effective root cause diagnosis and problem-solving. Mistrust and resentment were rampant on both sides. Consequently, neither customer nor supplier was willing or able to listen objectively to the other's concerns or suggestions, no matter how reasonable. Furthermore, the supplier's margins on this account (one of their largest) had been reduced to the point where many of their top people had been re-deployed to other,

more profitable accounts. Also, the supplier had put off investing in certain key technology upgrades that would likely have improved performance.

As problems continued to get worse, conflict escalated, and ultimately the customer triggered a clause that led to termination of the agreement—forcing them to go through the pain of finding and negotiating with a new IT outsourcing provider, and managing a costly transition process.

During our facilitation of after-action reviews of this outcome, a consensus emerged among procurement and end-users that the situation might have turned out differently had they invested time and effort in exploring how to work more closely with the supplier—rather than only pushing for an immediate cost-reduction. As a result of lessons learned from this experience, the company fundamentally changed their model for governance of major outsourcing relationships, which until than had been focused largely on the escalation and resolution of problems. The new governance has a dual equal focus: (1) cultivating and maintaining a transparent, collaborative relationship with key service providers and (2) ensuring that a focus on holding suppliers accountable for performance is coupled with openness to looking at the company's own contributions to supplier performance and delivery problems.

Strategy 5: Focus on shaping the negotiation process, not just trying to control the outcome.

To do this . . .	
Avoid	**Instead, try**
Reacting, without deliberate consideration of how any action might advance, or impede, progress toward your objectives. Acting without considering how the supplier is likely to perceive your actions, and how they are likely to respond. Ignoring the future consequences of a given action (later in this negotiation, as well as other subsequent negotiations).	Talking not just about the issues, but about the process: "We seem to be at an impasse; perhaps we should spend some more time exploring our respective objectives and constraints." Slowing down the pace of negotiations: "I'm not ready to agree, and I'd prefer not to walk away either. I think the issues warrant further exploration." Issuing warning, without making threats: "Unless you are willing to work with me to search out a mutually acceptable outcome, I cannot afford to spend more time negotiating."

Consciously change the game by not reacting to the other side; deliberately take steps to shape the negotiation process as well as the outcome.

Threatening circumstances produce a strong desire to avoid harm. This, in turn, short-circuits strategic thinking, and often leads negotiators to give in on critical issues to avoid or minimize immediate threats. The result, unfortunately, is often an agreement that creates substantial future risk exposure.

Several years ago, the president of a leading technology company's largest division committed to enter into a new market. His sourcing team led a market scan and evaluation process that identified a supplier with unique, cutting-edge technology to work with on new product offerings. Unfortunately, the potential alliance with this supplier was announced before the agreement was fully negotiated, and expectations within the company and among the analyst community quickly grew. As the negotiation entered into its final phases, the prospective supplier demanded a substantial increase in NRE (non-recurring engineering) payments, revenue-sharing from new, jointly developed products, and a minority investment in their company.

The senior executive and the sourcing team supporting him were caught by surprise, but time was now of the essence. They had not expected to be confronted with such demands, and thus were unprepared to respond. Rather than seeking to slow down the pace of the negotiation, the sourcing team responded by quickly telling the supplier that their demands were unreasonable and would never be accepted. The prospective supplier then threatened to walk away from the deal. Fearful that the potential relationship (and his new growth strategy) were in jeopardy, the executive stepped in and accepted the proposed terms "as is."

Two years later, tens of millions of dollars had been paid to the supplier, new product development was way behind schedule, and the company found itself with little recourse. In retrospect, it may seem obvious that the consequences of a bad deal were more costly than the risk of delay in getting the original agreement signed. But the risk of the supplier walking away (and of needing to start the process over) was also very significant.

A better planned negotiation process, designed to minimize the time pressures that the division president and the sourcing team found themselves under, would have helped (and was eventually adopted). Similarly, more robust preparation would have reduced the risk of not anticipating supplier demands that came late in the negotiation process. Finally, a less reactive and aggressive response to the supplier's demands would have

uncovered that the supplier was motivated not primarily by opportunism (as we later learned). Instead, the supplier's engineering department had completed a last-minute risk assessment. Their negotiation team, not being highly experienced or skillful, thought they had the leverage to simply demand greater protection, rather than jointly and collaboratively negotiate with the customer over how to structure an optimal agreement in light of new concerns.

EXHIBIT 1

Two Perspectives on Negotiations with Suppliers

A Tactical View of Negotiations	A Strategic View of Negotiations
• Negotiation is an event	• Negotiation is a process
• Negotiated results are determined primarily by market dynamics and skillful bargaining "at the negotiation table"	• Negotiated results can be significantly affected by strategic positioning and robust preparation
• Negotiation requires making a choice (or striking a balance) between, a "hard" or a "soft" approach	• It is possible to negotiate assertively without being adversarial, and to be collaborative without being naïve
• The goal of negotiations is to get the deal signed and secure the most favorable contract terms	• The goal of negotiation is to enable maximum value to be realized from interactions with suppliers over time
• Negotiations end once a supplier contract is signed	• Formal contract negotiations are the first of many "negotiations" with a supplier
• Contract negotiations have little impact on the ongoing relationship with a supplier	• Contract negotiations lay the foundation (for better or for worse) for interactions that follow

Source: Vantage Partners LLC

Slow Down, Collaborate

At core, perhaps the most fundamental lessons when negotiating in high-stakes, high-risk ("extreme") situations is that in the very contexts where we feel the most pressure to act quickly and forcefully, it is best to do neither. In the absence of traditional forms of leverage that many procurement professionals are accustomed to relying on, extreme negotiations are best approached by slowing down the pace of the negotiation, diligently seeking an unbiased understanding of one's counterparts (even at the risk you might begin to empathize or even partially agree with their positions!), and actively trying to lead them into a more collaborative negotiation process.

Often, this approach is dismissed as a "soft" or even naïve way to negotiate with suppliers. But successful negotiators know that it is quite possible to be assertive, without being adversarial, and to be collaborative without being taken advantage of. The strategies in this article are about being strategic rather than reactive; thinking several moves ahead about how your actions in a negotiation are likely to be perceived by the other side; and making deliberate choices that elicit constructive responses and help move the negotiation toward achievement of your ultimate objectives. (*Exhibit 1 sums up the perspective needed for this approach, contrasting it with the conventional, more tactical view.*) It is up to sourcing and supply chain executives to create an organizational climate in which their negotiation teams are encouraged and equipped to engage successfully in such inherently challenging negotiations.

What Makes a Winning Procurment Function?

Experts point to certain key traits of procurement excellence, including an overall strategic orientation, alignment with business objectives, a risk management role, and an ability to collaborate both internally and externally. Here are some insights on developing these capabilities.

By William Atkinson

What is procurement excellence? The answer depends on whom you ask. It seems that each expert comes at the concept from a different perspective.

For Robert Rudzki, procurement excellence is about understanding corporate leadership's expectations for the function—regardless of how basic or how advanced these are—and then meeting those expectations. For Philip Carter, procurement excellence is about managing risk. For Robert Monczka, it's about improving competitiveness. For Timothy Fiore, procurement excellence is about aligning with overall business objectives, and then collaborating around those objectives.

As diverse as these definitions seem, however, they are all in a way interconnected. For example, meeting corporate leadership's expectations requires managing competitiveness, collaborating on corporate objectives, and managing risk. Managing competitiveness depends on the ability to meet corporate leadership expectations as well as the ability to collaborate and manage risk. Managing risk requires the ability to manage competitiveness and faster collaboration.

As Robert A. Rudzki sees it, procurement excellence needs to be defined by the perspective of the senior executives running the company, and their expectations for procurement. Rudzki is president of Greybeard Advisors LLC in Pittsburgh and author of three procurement-related books, including *Next Level Supply Management Excellence*.

Senior executive expectations can take three general forms, from the most basic to the most advanced, Rudzki says. Traditional procurement focuses on buying, on price, on a silo and reactive mentality, and on task orientation. In such cases, expectations center on having "the right stuff at the right price at the right time."

"Most companies, until they reach about $500 million in revenue, operate with the traditional procurement form, which is a tactical buying activity," the consultant and author explains. "Senior management just wants them to support the

operation and not allow the plant to stop operating." As such, excellence in procurement is defined tactically, again: Did you get the right stuff at a decent price and delivered to the plant at the right time?

Progressive procurement focuses on purchasing, on cost and quality, on an internal consultative focus with business units, and on skillful commodity management (both direct and indirect). The expectations at this level rise to cost reduction, quality, and continuous improvement. "This tends to occur when companies are approaching $500 million to $1 billion in revenue," says Rudzki. "This is when they begin to realize that there may be more that can be done in procurement." At this level, excellence is determined by how well procurement reduces cost, improves quality, and fosters continuous improvement.

Advanced procurement focuses on supply management as a whole, on total value and ROIC, on cross-functional teams, and on external strategies. And, importantly, it has a market orientation. Expectations include total value enhancement on revenues, costs, working capital, and capital expenditures; contributions to risk identification and risk management; and the creation of a strategic advantage for the company. "This involves a proactive approach, looking ahead and looking into the marketplace to understand it better, and being more strategic," says Rudzki of this top level.

One role procurement executives can play is to help senior management see the value of evolving from one level to the next. This can be a challenge, though. Rudzki is familiar with one extremely large publicly held company that still has a very tactical view of procurement (which the company still calls "purchasing"). "The company actually has no policies to guide the overall strategy of procurement," he says. "They have procedures only. As one might expect, the company is not doing well. It is story of staggering ineptitude at the management level. The procurement people have tried to open their eyes. Unfortunately, however, management continues to maintain a tactical view of everything."

Procurement as Risk Mitigator

When Phillip L. Carter thinks about procurement excellence, he thinks about risk management. Carter is the executive director of CAPS Research and a professor at the W.P. Carey School of Business at Arizona State University. As he sees it, risk management is about two things: (1) preparing for what might happen so as to prevent or mitigate it in the first place and (2) having good people and practices in place to react if problems do occur.

"These days, a lot of companies are building their own supply chain risk management systems, looking at suppliers in the second, third, and fourth tier," Carter says. In many cases, they have a specific focus on natural disasters, but they also work on other activities such as carefully plotting out capacity for the next 12 months and developing procedures to track quality more carefully.

Carter believes that companies are being forced into a focus on risk management as a result of at least four developments:

• A spate of very disruptive natural disasters in recent years such as the earthquake and tsunami in Japan and the massive flooding in Thailand.

• The increasing scrutiny by companies of their global footprints, focusing in particular on rising labor costs in China and the additional risks that long supply chains in these arrangements are causing. "Some companies are even bringing some manufacturing back from overseas," Carter observes. "For example, labor costs in Mexico are competitive with those of the East coast of China."

Procurement must be involved in new product development earlier in the process, specifically in the selection of design, materials, suppliers, and services.

• Companies are becoming increasingly aware of the other risks that need to be managed, such as suppliers going out of business or cutting back on their capacity or product line.

• The SEC (Securities and Exchange Commission) has mandated more emphasis on risk management for companies in general.

Another way procurement can better manage risk is to seek innovation from the supply base, especially by creating collaborative partnerships with smaller suppliers, with a focus on innovation. For this to happen, risk sharing and reward sharing processes need to be in place, Carter believes. In the past, bigger companies tended to want to get control of the technology early on and pay suppliers for it as part of the normal pricing mechanism. "However, they found that suppliers weren't happy with this, so, in order to get the best suppliers, companies now need to rethink these arrangements and create more sharing kinds of relationships with suppliers," Carter says.

Procurement leaders also need to look not only at current risk, but also at future risk around the development of new products and markets, for example. "It is important for companies to involve procurement in the potential risks that are being created," says Carter. For instance, if a company introduces a new product, it may involve new technologies and new suppliers. Procurement,

for its part, needs to understand the potential risks with these technologies and suppliers, such as those associated with relying on a single source for the new technology.

Enabling Competitiveness

When Robert M. Monczka, thinks of procurement excellence, he thinks of the role procurement can play in helping the company improve its competitiveness. "In the past, procurement excellence was defined as how well you cut costs, with a functional orientation, and excellence was based on how well you performed that function," says Monczka, who is director of strategic sourcing and supply chain strategy research for CAPS Research, and professor of supply chain management at Arizona State's W.P. Carey School of Business. "These days, it is how the supply base and business characteristics are able to contribute to the overall competitive strategies of the business," he says. "This goes far beyond cost reduction."

Indeed, procurement still needs to focus on the basics, such as cost management and contract negotiation. At the same time it must pay close attention to the concepts of speed and agility, especially in terms of the following:

- How quickly procurement can respond to changes in customer requirements.
- How quickly it can develop supply bases in regions of the world where their customer base is expanding.
- How quickly suppliers can introduce new technologies if the company itself doesn't maintain technology as a core competency.

This technology component is particularly important, as Monczka explains: "Procurement people need to work closely with their engineering people and technology people. They also need to provide commercial insight and review of the suppliers to identify their capabilities and abilities to deliver on the technologies. Finally, they need to identify the risks from a business and technology standpoint of doing business with these suppliers."

As Monczka sees it, procurement must be involved in new product development earlier in the process, specifically in the selection of design, materials, suppliers, and services. "Procurement executives need to raise red flags if there are errors or omissions," he says. Procurement also needs to work cross functionally to standardize, to the degree possible, the technology and design to simplify the overall supply chain, he adds.

Experts agree that collaboration is a key component of business success today. And if senior management doesn't insist on collaboration both internally and externally, then it is up to procurement itself to initiate it, Monczka asserts. "Procurement needs to begin working with business unit managers on their own, especially if they find they are being asked to respond to continual problems that result from the choice of the wrong technology, the inability of suppliers to deliver what's expected, or other problems."

Collaboration Is Key

Supply chain executive Timothy F. Fiore, senior vice president of supply management and CPO for ThyssenKrupp North America, echoes the point about collaboration as a hallmark of procurement excellence. The starting point for a collaborative effort is having a well-known and not too complicated sourcing process. "It is important to get the team going in the direction…consistent with the company's overall business objectives," Fiore says. "I like to focus on getting management teams and functional experts together with joint objectives, and then 'moving the ball down the court' in a non-threatening manner."

Over many years of procurement experience in a number of different industries, Fiore has learned that achieving procurement excellence on the personal level is not so much about knowing what to do, how to do it, and when to do it as it is about making sure that everyone involved in the process feels as though they are empowered and engaged effectively. In this way, everyone has a sense of accomplishment and ownership when a project is done. "I like to get things started, and then slowly back off as organizations and teams accept more and more responsibility," he explains. "I find that if I have to stay involved on a day-to-day basis, something is wrong. Either I haven't been effective in empowering people, or they're not capable of accepting it."

Being able to do this is part of becoming a good general manager, Fiore believes. You can lay out strategies and force people to follow them, he says. However, in the end this is not sustainable, because they will eventually go back to doing what they were doing.

"A good general manager knows how to empower people around a common objective that makes sense," Fiore concludes. "You want people who are tied in with the business objectives, and then rewarded and recognized when they are successful."

Reflecting on the insights and observations of these experts, a central story line emerges. Procurement excellence means aligning procurement strategies and programs with the overall objectives of the organization, helping everyone to align with those objectives, and managing the risks that are inherent in the procurement processes. The ultimate goal: A more competitive business.

William Atkinson is a freelance writer specializing in procurement and supply chain. He can be reached at w.atkinson@mchsi.com.

10 Trends

What trends will affect the next generation of supply chains? That's a question more and more SCM professionals are asking themselves. The 10 trends offered here are validated with executive input from senior executives across different industries. By understanding, anticipating, and acting upon these trends, the author believes companies can greatly enhance the value of their supply chain operations.

By Sumantra Sengupta

Sumantra Sengupta is a Managing Director with the business and operations strategy firm EVM Partners LLC. He can be reached at sumantra@evmpartners.com.

Recently, I happened to be perusing the aisle of a bookstore (there are still a few of them left) and found a book by Pavan Sukhdev titled *Corporation 2020*. The title was intriguing and the contents were illuminating. Basically, the author argued for a new formula for business success going forward—one that looked at all aspects of doing business and emphasized the corporation's responsibility to society and to sustainability.

The forward-looking nature of Sukhdev's book set the wheels in motion for this article. Quite a bit has been written over the years about the future of supply chains. MIT's SCM 2020 project, for example, brought together leading thinkers and practitioners to address the subject. However, this research and most articles I have read on the topic have focused on supply chain operations and not on the points of "intersection"—that is, the related activities that are outside of the supply chain's direct control such as R&D, information technology, and post-sales service. In my list of the top trends, I have incorporated a number of these intersection points.

As we think about the major trends that will affect the next generation of supply chains, we need to consider certain macroeconomic factors. Prominent among these is the changing global economic demographics. Walk into any multinational consumer goods or manufacturing company today and you're sure to hear a lot of discussion about the BRIC (Brazil, Russia, India, and China) markets. The GDP

for the Next 10 Years

growth in those countries far exceeds the growth in more fully developed economies. Further, the sheer number of consumers in these countries already accounts for about 40 percent of the world's population. And by 2050, their combined economies are expected to eclipse that of the world's richest countries—including the U.S. and European Union.

Another macro-economic reality to consider is the shortage of knowledge workers to satisfy the needs of the expanding markets. Studies show that these shortages are beginning to be felt in the immediate term. Some of this shortage will be offset by the Baby Boomers wanting (or needing) to work longer to overcome lingering effects of the latest recession. In any case, the shortage of skilled workers overall underpins several of the specific trends we present below.

In earlier articles in *SCMR*, I discussed the "Top 10 Supply Chain Mistakes" (July/August 2004) and "10 New Ideas for Generating Value" (May/June 2009). With that same "top 10" approach in mind, I embarked on this article. The 10 trends identified are listed in Exhibit 1 and discussed in turn below. The list was based on my research and on consulting engagements with companies in a range of industries. Importantly, the trends were reviewed by a group of senior executives, both in supply chain and in other corporate functions, representing a cross section of industry. The intent was to capture empirical data around the relevance and ability to execute against each of the trends for their particular company and industry.

The 10 Trends

1. Service chains will become more important than product chains. In many if not most business sectors today, great product is considered to be the table stakes just to play the game. Increasingly, discerning consumers are demanding more from pre- and post-sales service for the goods they buy. Accordingly, companies that effectively couple the pre- and post-sales service supply chain activities (including product knowledge, in-store service, warranties, responsive consumer services, and the like) will emerge as the winners over their solely product-centric competitors. That message was underscored by Apple CEO Tim Cook in his recent apology to consumers in China for the company's perceived failure to listen to feedback about post-sales service. This was a great example of a company with one of the most innovative products in the marketplace forgetting that the consumer is still largely in charge and that service plus product (in this case, repair and warranty practices) trumps product only.

2. Companies will need to fully report supply chain externalities. In *Corporation 2020*, Sukhdev writes in depth about corporate externalities—defined as the impacts of an organization's manufacturing and business processes on other segments of society—and the need to disclose those externalities. While some work has been done

EXHIBIT 1

The 10 Trends

1. Service chains will become more important than product chains.
2. Companies will need to fully report corporate externalities.
3. Supply chains must be designed to serve the "base of the pyramid."
4. Knowledge work and workers will become global in nature.
5. SCM will have a standard certification process similar to that for CPAs.
6. Product clockspeeds will determine the number and nature of the supply chains.
7. Micro segmentation will be key to success.
8. Technology to support SCM will primarily be "on tap."
9. Leaders will leverage social media in a closed loop feedback process.
10. Artificial intelligence will be embedded in mainstream supply chain activities.

around supply chain sustainability and the need to reduce carbon footprint, companies will need to do a much better job of disclosing the end-to-end impacts of their supply chains. This means measuring and reporting on the effect of major supply chain transactions on jobs created, carbon footprint reduction, sustainable procurement processes, types of labor used, and modes of transportation among others. The customer or consumer will begin to demand the transparency into these impacts much as these have now on the labeling of food and beverage products.

3. Supply chains must be designed to serve the "base of the pyramid." The late Professor C.K. Prahlad authored a compelling book entitled *The Fortune at the Bottom of the Pyramid*, which later was modified and widely referred to as the "base" of the pyramid. The book pointed to the market potential of the five billion-plus people in the world whose incomes are less than $2,000 a year. We contend that companies in the consumable and durable sectors, in particular, will need to create products and associated supply chains to support the products that will cater to this market segment. To tap into this enormous potential, our supply chains must go through a total utilitarian design philosophy in order to deliver sustainable bottom-line performance. Current supply chain thinking, which is largely based on a cost plus model, will need to shift to a "not to exceed" cost model.

Increasingly, discerning consumers are demanding more from pre- and post-sales service for the goods they buy.

4. Knowledge work and workers will become global in nature. Knowledge work in supply chains today accounts for approximately 40 percent of the total labor hours spent. Much of this work deals with complex analytics, planning, procurement processing, and provision of services. This nature of the work, the need for multi-language support, and the associated local complexities of the different geographies being served will necessitate the seamless globalization of supply chain knowledge work. As an example, you could see a U.S.-centric company performing supply chain planning in the Philippines, operating procurement centers of excellence in Singapore, and conducting global business analytics in Brazil.

5. SCM will have a standard certification process similar to that for CPAs. Many universities offer undergraduate and graduate degrees in supply chain management. In addition, professional associations such as APICS, CSCMP, and ISM offer a range of certification programs. However, in most cases these programs either focus on the basics of SCM or on a specific activity such as import/export or financial analysis. We believe that a fundamental shift will occur in the normalized delivery, content served, and certifications of supply chain professionals. Many other professions like accounting (Certified Public Accountant) and engineering (Professional Engineers) require national board examinations as well as continuing professional education (measured by a specified number of hours per year). We contend that a similar professional credentials program will be required for supply chain professionals to normalize the knowledge base of the incoming resources.

6. Product clockspeeds will determine the number and nature of the supply chains. I recently worked with a global consumer durables company where over 70 percent of the products had a life span of less than 18 months. Another 20 percent had a life span of three to four years, with the remaining 10 percent exceeding five years. This "fast clockspeed" lifecycle is becoming more the norm than the exception. The days of the steady and static product catalog is past; thinking otherwise, in fact, is a recipe for disaster. However, we continue to find companies using a single supply chain approach to service all segments irrespective of the time constraints. The winners of the future will have the same number of distinct supply chains as there are product clockspeeds. In addition, supply chain organizations will need to be aligned by product segments as well as functional segments in a matrix fashion to serve the distinct supply chain needs.

7. Micro segmentation will be key to success. Do you have a detailed knowledge of your individual consumer or customer segments—your micro segments? The honest answer for most companies would be "no." A micro segment is defined as that exact part of the general buying category that triggers the purchasing decision—not the category itself. To illustrate, in recent work with a provider of smart phone accessories, we discovered that the company had several underserved micro segments—specifically, the design your own/assemble your own accessory segment. However, the ability to identify and service those segments was far beyond the reach of this company's supply chain. Going forward, organizations will need to know their micro segments, and their supply chains must be able to effectively service them based on the business strategy. I always encourage clients to think

of their business in terms of the individual consumer or groups of consumers as opposed to a broad brush view of categories. Put another way, adopt a B2C (business to consumer) mindset even if your operation is predominantly B2B (business to business).

8. Technology to support SCM will primarily be "on tap." SaaS (software as a service) is gaining mainstream attention. We contend that most if not all supply chain technologies by 2020 will be delivered and consumed via this method—or "on tap." The user will pay for the ability to use the capability and will not have to incur the large fixed costs of ongoing maintenance, upgrades, and infrastructure expenditures that can amount to almost 25 to 30 percent of the cost of ownership. The widespread adoption of SaaS constructs will likely be accelerated by the rise of cloud computing and diminishing concerns about the security aspects of SaaS.

9. Leaders will leverage social media in a closed loop feedback process. Social media data is everywhere today. In recent work we did with a durable goods company, we found that they had 2,000 websites/ blogs that were discussing their products and service needs on a fairly regular basis. However, this company—like most—did not have a systematic method to study the data and disseminate the information to the various supply chain constituencies (design, planning, procurement, service, manufacturing, and so forth). This is necessary to provide closed loop feedback processes that allow the company to proactively respond to the feedback. The winning companies will be able to receive, process and act on the data that is being provided to them by their constituents via social media.

10. Artificial intelligence will be embedded in mainstream supply chain activities. Humans learn by doing and processes improve as they get "leaned out." Yet somehow, every time we build a supply chain system we begin the process from the ground up. Planners go through the same calculation steps every time they start; procurement folks repeat approximately 35 percent to 40 percent of the activities they did in the past. The same holds true for people involved in building logistics and execution systems. The problem is that when embarking on a supply chain program or initiative we do not have access to algorithms that learn and retain the knowledge and experience of the past. We contend that supply chain artificial intelligence will need to be embedded in more effectively automating mainstream supply chain activities.

Executive Validation of the Trends

To validate our 10 trends in the "real world," we conducted a short but impactful field survey with a group of senior executives from various industries. Their responsibilities ranged from chief executive officer, chief financial officer, chief operating officer, and chief information officer to heads of supply chain.

The industry mix, as shown in Exhibit 2, was comprised of 55 percent consumer products, 22 percent industrial manufacturing, and 11.5 percent each in high-tech and services. The responses from each segment were weighted equally. Several members of the executive group surveyed also had significant prior experience in pharmaceutical/heath care and were able to bring additional perspective from that experience.

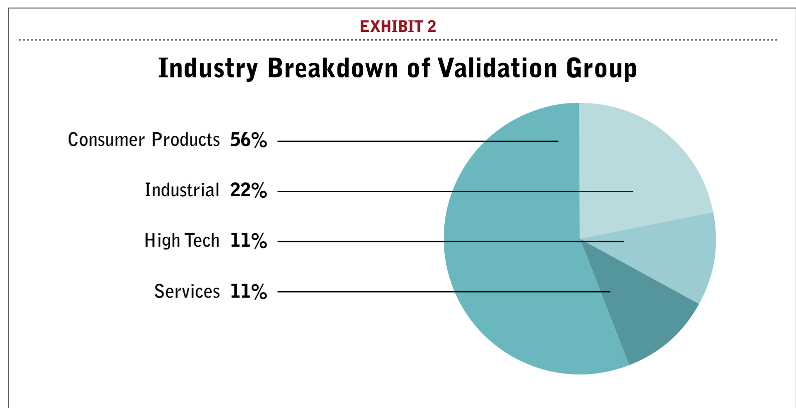
We discussed the trends in person with each of the executives in our validation group. (For a full listing of the companies and participants, see Author's Note at end.) We asked these executives to respond to the 10 trends identified based on four criteria: relevance to the industry; relevance to corporate business performance; ability to execute on the trend; and complexity of execution. Each of the four criterion was graded on a three-point scale with a low being scored as 1, medium a 2, and high a 3.

Relevance to industry was defined as the relevance to the particular executive's industry overall (as opposed to just his specific company). Relevance to business performance focused on the ability to move the needle of balance sheet or P&L performance in a positive direction. Ability to execute was interpreted as the corporation's ability to act on the trend in the immediate near term. The final criterion addresses the overall complexity of the implementation.

While survey result tabulation and computation can often lead to a lot of analysis (just ask a statistician), our objective in field testing the trends was to gauge the level of relevance in the current business setting. This as opposed

EXHIBIT 2

Industry Breakdown of Validation Group



to predicting trends from a pundit perspective—and my apologies to all the pundits. The executives' points of view are presented without any internal bias or analysis added. In the accompanying sidebar on industry applicability, we provide our perspective on the impact of the trends on individual business sectors based on the many client engagements that we have completed in the past few years.

Industry Relevance

The executive group ranked Trends 1, 6, and 7 as the highest in the relevance category. To recap, these trends are:

- Trend 1: Service chains will become more important than product chains.
- Trend 6: Product clockspeeds will determine the number and nature of the supply chains.
- Trend 7: Micro segmentation will be key to success.

All three of these trends received relevance scores higher than 80 percent. The percentage was determined by the sum of all 10 rankings divided by the maximum total score of 30 (that is, the amount if all 10 executives had given the trend a high [3] relevance rating). In essence, the increased importance of pre- and post-sales service, the ability to segment product clockspeeds with a supportive supply chain footprint, and the ability to hone in on the customer/consumer targets were deemed most relevant across the largely manufacturing-centric executive group. The next highest set of rankings were the trends of "on tap" technology and social data closed loop chains.

Business Performance

In terms of impact on business performance, Trends 1 (service vs. product chains), 4 (globalization of knowledge workers), 6 (clockspeeds), and 10 (imbedded artificial intelligence) received the highest rankings from the executive group. The average scores for the three were higher than 75 percent. The next highest-ranked trend, with a score of close to 70 percent, was Trend 7 ("Micro Segmentation will be key to success").

Combining the results of the first two criteria (which essentially is a gauge of the trend's ability to affect financial performance) reveals that Trends 1, 6, and 7 have the greatest potential to advance the supply chain performance curve. All three had combined relevance and performance scores in excess of 75 percent. Trends 4 (globalization of knowledge workers) and 10 (artificial intelligence) were the fast followers with scores that were higher than 70 percent.

Surprisingly, Trends 2 and 3—disclosing SCM externalities and designing supply chains and products for base of pyramid—were ranked as having only low to medium relevance. The low relevance of the pyramid trend was a likely function of the market positioning of majority of the surveyed companies (high end brands or U.S.-centric brands). Examining the externality ranking, most of the executives agreed that it was highly relevant and many already had programs in place. However, the general sense was that the ability to positively monetize on the additional expense associated with this trend was still in the distant future. On both of these trends, however, many of the executives suggested a wait-and-see attitude. In terms of business performance in particular, they pointed to the cost of compliance associated with Trend 2 and the company's ability to flourish in the emerging geographies associated with Trend 3.

Ability to Execute

Trends 2, 6, and 8 received the highest ability to execute rankings. These trends are:

- Trend 2: Disclosing supply chain externalities will be crucial.
- Trend 6: Product clockspeeds will determine the number and nature of the supply chains.
- Trend 8: Technology to support SCM

Applicability of Trends Across Industry Segments

Certain of the trends identified have greater relevance to some industries than others. The table below gives our view of the comparative relevance (high, medium, or low) on six sectors represented by, or relevant to, our executive group. We highlight the high important ones across the sectors to show the cross industry applicability of the trends.

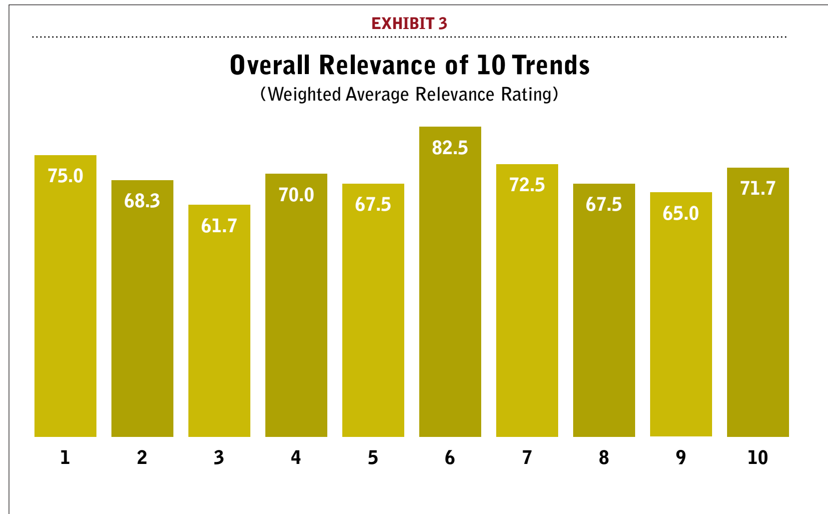
Industry Relevance of Each Trend

Trend	1	2	3	4	5	6	7	8	9	10
CPG	H	M	H	M	H	H	H	H	H	H
High Tech	H	H	M	H	H	H	H	H	H	M
Retail	H	H	NA	M	M	L	H	M	H	H
Industrial/ Manufacturing	H	M	M	M	M	M	M	M	M	M
Pharmaceuticals	H	H	H	H	H	L	L	H	M	L
Food and Beverage	M	M	H	H	H	M	H	H	H	H

H High · M Medium · L Low

will primarily be "on tap."

In general, the executive rankings on ability to execute came in lower (average scores were closer to 55 percent) than the other three criteria measured. Interestingly, the lowest ranked trends (i.e., least ability to implement) with scores of less than 50 percent, related to adopting artificial intelligence learning systems and incorporating social data into the supply chains. Specifically, some executives raised concerns about the data linkage that would be needed for best-of-breed learning system to be effective.



Complexity of Execution

Trends 1, 6, and 10—service chains, product clockspeed, and artificial intelligence—received the highest complexity rankings (average of 86 percent), meaning that the executive group perceived them to be the most difficult to implement. Part of this may be due to the highly cross functional nature of the trends. Standardization of education processes was ranked just below these top three in terms of execution complexity.

Summarizing the Results

When weighted equally across the four dimensions and normalized, the overall relevance rankings by our executive group show a distribution that ranges from 61 percent to 82 percent (see Exhibit 3). Trends 6, 1, and 7 have the largest relevance, reflecting the issues that are top of mind for the executives. Notably, their ability to execute against these trends is relatively high as well. The middle cluster—comprised of Trends 2, 4, and 8—show an overall relevance ranking greater than 68 percent, suggesting that these are only slightly less relevant and tougher to implement than the top-tier trends.

Finally, the trends with the lowest overall ranking are perceived to be of lesser relevance and slightly more difficult to implement than the others. The bottom two in the overall rankings were Trend 3 (serving the "Base of the Pyramid") and Trend 9 (leveraging social media in closed loop process). The ranking of the social media trend, in particular, came as a bit of a surprise—given all the recent hype surrounding Big Data. Yet the result proves the point that while Big Data is a useful tool, the ability to transfer the data to supply chains and the related ability to execute remains a big challenge.

As we step back and decipher the implications for supply chain practitioners, it is abundantly clear that the ability to create differentiated and multiple supply chains and to embrace a service-based culture is of paramount importance. These capabilities, coupled with the need to service smaller, unique segments in a profitable manner, continue to be high on industry and executive agendas. Importantly, all of these highly ranked competencies have the ability to move the economic performance needle.

Finally, we would be remiss if we did not mention some of the ideas that the executives themselves brought up during our discussions. Their insights ranged from the ability to foster open collaboration (across Buy, Make and Move portions of supply chain) with trading partners; to improving enterprise supply chain risk management processes and education; to incorporating in real time local regulatory measures and product postponement for local preferences.

Staying still is not an option for supply chain practitioners. Having the ability to create incremental value is fine, but real progress comes from anticipating and capitalizing on the kinds of mega trends we have discussed here. We believe that these trends we have put forth will be powerful drivers for change going forward, and it is encouraging to see that the senior executive group agreed in large measure. Equally encouraging and enlightening was the deeper understanding gained of the implementation challenges that lie ahead. One has to start somewhere: Enjoy the journey.

Author's Note: The author would like to thank the following companies and senior executives for their personal participation and opinions (in alphabetical order for both). Companies: Ainsworth Pet Nutrition; Clorox; Designer Whey; Filtec; Godiva; Incase; JustFood ERP; Moark; Niagara Bottling; and Pelican Products.

Senior Executives: Ashley Dorna, Kevin Deighton, Marc DiGiorgio, Jeff Fowler, Mark Hersh, Linzell Harris, Jamie Hornstein, Grace Jeon, Chad Keuhn, and Nick Newman.

Improving Large-Format Home Delivery

Amazon and others have raised the bar for fast, economical, and reliable home delivery. Yet home delivery of large-format products—appliances, furniture, and large electronics—has not kept up. Isn't it time to deliver all the goods?

By Jeff Ward and Kumar Venkataraman

Jeff Ward and Kumar Venkataraman both are partners in the Chicago office of A.T. Kearney .They can be reached at jeff.ward@atkearney.com and kumar.venkataraman@atkearney.com.

The market for home delivery of large-format products—appliances, furniture, and electronics—is poised for growth. Yet structural hurdles are blocking retailers and home delivery service (HDS) providers from capturing that growth. The market is fragmented and overly complex. Retailers are generally uncertain about the need to differentiate through home delivery, and because there is no breakthrough supply option available, they hesitate to alter the existing business model. Home-delivery suppliers have neither the size nor density to provide a breakthrough option and are often cash-strapped, unable to make capability-building investments ahead of revenues.

A nationwide HDS integrator could resolve these issues—while also unlocking sizable savings and improving customer service. This "breakthrough option" hinges on retailers, HDS providers, and investors that are willing to work together.

Industry at an Impasse

The market for home delivery of large-format products is poised for growth. Currently estimated at $8 billion in the United States (about 60 percent for the last-mile segment and 40 percent for the line-haul segment), the market could see a 6 percent compound annual growth rate (CAGR) to reach $10 billion by 2015.

Demographic and market trends are fundamentally changing the home delivery market for large-format product retailers and HDS providers. However, such growth can come only by satisfying consumers' rising expectations for better performance at a lower cost. Today's HDS industry is not equipped to meet these expectations. Indeed, in our recent benchmarking of major retailers' home-delivery programs, we found that even today's "best-of-breed" combined performance profile of retailers falls short on crucial performance dimensions, such as cost, customer service, and lead time .

To understand why retailers are deficient in these areas requires first understanding the variety of upstream and last-mile network strategies that large-format product retailers use for home delivery. To appreciate the complexity, let's follow a hypothetical order.

A customer places an online order for a 60-inch plasma television not stocked in a local store. The order is delivered to the closest inventory location, which may be the upstream manufacturer's warehouse, the retailer's national distribution center, or a local distribution center. The television is line hauled to a local delivery hub using a truck managed by the manufacturer, the retailer, or a logistics line-haul provider. From the local hub, a retailer-contracted HDS provider typically manages and coordinates last-mile delivery. This HDS provider may be a national or regional last-mile management partner for the retailer. Although some HDS providers operate that last-mile truck delivery run in house, many subcontract it to a network of local delivery agents. In the end, the truck arriving at the customer's house could be retailer-dedicated (most common today, with all orders on the truck coming from one retailer), HDS-dedicated and

branded (an exception rather than the rule), or comingled (another exception, with the products on the truck comingled across multiple retailers). Category integration adds more complexity: The delivery truck might be configured to carry only televisions and related consumer electronics items (category specific) or be able to deliver other categories, such as furniture (cross-category).

Although retailers and HDS companies see these structural issues and acknowledge the need to change, each side faces unique challenges. The structural headwinds further reinforce and exacerbate each other, creating gridlock that is bringing progress to a halt.

The fragmented HDS industry encompasses scores of national and regional operators and hundreds of local agents and delivery contractors, with the top five players managing less than 30 percent of total delivery volume.

Call for a Nationwide HDS Integrator

A leading HDS integrator could solve today's retailer and home delivery challenges. Similar to UPS and FedEx in parcel delivery, an integrator would be a national service provider that can offer an end-to-end (line haul and last mile) network with leading capabilities and technology to sustain best-in-class performance. Rather than being dedicated to a specific retailer or product category, an integrator serves a pool of clients. This emerging player could unlock value—building scale advantage and reducing coordination complexity—by performing a crucial set of integration activities that are thus far absent or underdeveloped.

For retailers, an integrated HDS network provides strategic flexibility for large-format home deliveries, allowing them to meet their evolving business needs. This provides an ideal outsourcing option with a small commitment of internal capital.

An integrator network unlocks and passes on significant cost savings to retailers. By doubling its scale with a cross-retailer, cross-category network, a midsized retailer could save about 7 percent in last-mile delivery costs. And the savings increase as the network grows—up to about a 20 percent cost savings at volumes nine to 10 times that of today's average retailer.

Further, large HDS integrator networks can unlock breakthrough scale and density while reducing coordination complexity. The resulting platform replaces the fragmented network of captive retailer partner programs, subscale density trucks, and IT systems. As more retailers migrate to a few HDS integrator platforms, fragmentation and complexity is reduced across the ecosystem, further driving retailer migration.

Structural changes will also encourage HDS integrators to invest ahead of the curve. The value created by integrating will increase the pie for both retailers and HDS companies. This win-win rather than zero-sum proposition will, all else being equal, increase the integrator's profit margin.

Collaboration Is a Triple Win

Together, retailers, HDS providers, and investors can create a nationwide, single-branded integrator network. If all three parties take calculated risks and play complementary roles, they can unlock transformative win-win value.

Retailers that actively identify and initiate partnerships with high-potential HDS providers can capture breakthrough home delivery performance. By rationalizing their existing dedicated networks and outsourcing to a more targeted partner base, retailers can contribute essential volume to break today's industry impasse and begin to build the integrator vision. Forward-thinking retailers will get ahead of the curve by securing home delivery performance for competitive advantage.

HDS providers that build national integrator networks will take a linchpin leadership role. The first step is to segment and target appropriate retailers to aggressively build scale. Investing in assets and technologies will enable the essential capacity, service level, last-mile efficiency, and end-to-end visibility. This includes exploring options to selectively acquire underused retailer assets that can be better leveraged in a comingled network. Integrators that define a compelling business case for engaging with investors will secure a much-needed capital infusion.

Together, retailers, home delivery service providers, and investors can create a nationwide, single-branded integrator network.

The institutional investment and private equity community will also play important roles in this transformation. Investors can inject the capital that aspiring HDS providers need to develop infrastructure systems and productivity-enhancing technologies to accelerate retailer adoption of a comingled national integrator network. In return, savvy investors can expect a robust return on investment in the win-win transformation of the growing large-format home delivery sector.

Authors' note: Also contributing to this article were the following from A.T. Kearney: Jeff Sexstone, principal, Atlanta; Arsenio Martinez, principal, New York; and Michael Hu, consultant, Chicago.

A SPECIAL SUPPLEMENT TO:
SUPPLYCHAIN MANAGEMENT REVIEW

Top 50 3PLs

Third-Party Logistics: Seeing into the future

Finding the right 3PL in today's global marketplace involves looking beyond the provider's "vision" statement, say industry experts. Yet, they also acknowledge that there's still an element of prognostication involved once a short list of the Top 50 has been whittled down.

Contents

5 steps to improving your 3PL relationships **72**

10 elements that develop a successful outsourcing agreement **80**

Outsourcing cold storage: Planning for unpredictability **82**

By Patrick Burnson, Executive Editor

One of the key takeaways from this year's list of Top 50 Global third-party logistics providers (3PLs)—compiled by market consultancy Armstrong & Associates—is that business forecasting is becoming increasingly important to shippers when choosing the provider that best fits their needs. This notion becomes even more urgent when one considers that the 3PL market compound annual growth rate (CAGR) from 1996 to 2012 fell 0.3 percent to 10 percent.

Domestic transportation management (DTM) led financial results for 3PL segments again in 2012. Gross revenues were up 9.2%, and at the same time, the cost of purchasing transportation, increased competition, and slackened demand are pressuring DTM gross margins and net revenues. As a result, net revenues increased by only 5.4 percent. Overall gross margins were 14.6 percent—in 2011 they were 15.2 percent. However, overall 3PL earnings before interest, tax, and net income margins remained strong, ringing in at 33.2 percent and 20.3 percent of net revenue respectively.

The key to sustaining that net income trend appears to be in the top provider's ability to anticipate market trends, say analysts.

"Third party logistics providers are good at modeling transportation and distribution networks and identifying overall shifts in demand," notes Evan Armstrong, the consultancy's president. "But they also have the forecasting tools associated with integrated warehousing and transportation management."

According to Armstrong, the leading players in the value-added area of forecasting are Menlo Worldwide, Ryder SCS, APL Logistics, Genco, UTi, and DB Schenker. "Based on our findings," he says, "these companies can be leveraged by shippers to identify key inventory deployment locations and lower-cost transportation lanes."

Continued on page 60S

Armstrong & Associates Top 50 Global 3PLs • April 2013

Rank	Third-Party Logistics Provider	2012 Gross Logistics Revenue (USD Millions)*
1	DHL Supply Chain & Global Forwarding	31,639
2	Kuehne + Nagel	22,141
3	Nippon Express	20,321
4	DB Schenker Logistics	19,789
5	C.H. Robinson Worldwide	11,359
6	Hyundai GLOVIS	9,832
7	CEVA Logistics	9,290
8	UPS Supply Chain Solutions	9,147
9	DSV	7,759
10	Sinotrans	7,523
11	Panalpina	7,060
12	SDV (Bolloré Group)	7,038
13	Toll Holdings	6,760
14	Expeditors International of Washington	5,981
15	Geodis	5,868
16	DACHSER	5,670
17	GEFCO	5,267
18	UTi Worldwide	4,608
19	Agility	4,605
20	IMPERIAL Logistics	3,800
21	Hellmann Worldwide Logistics	3,593
22	Yusen Logistics	3,526
23	Damco	3,272
24	Kintetsu World Express	3,155
25	Hub Group	3,124
26	Burris Logistics	2,933
27	Schneider Logistics & Dedicated	2,700
28	Sankyu	2,689
29	Pantos Logistics	2,601
30	Kerry Logistics	2,490
31	Norbert Dentressangle	2,366
32	Ryder Supply Chain Solutions	2,280
33	FIEGE Group	2,090
34	BDP International	1,895
35	Wincanton	1,747
36	Neovia Logistics Services	1,730
37	Menlo Worldwide Logistics	1,726
38	Logwin	1,703
39	Nissin Corporation/Nissin Group	1,609
40	Americold	1,580
41	APL Logistics	1,555
42	BLG Logistics Group	1,540
43	J.B. Hunt Dedicated Contract Services & Integrated Capacity Solutions	1,536
44	GENCO	1,476
45	Total Quality Logistics	1,387
46	Landstar	1,350
47	Transplace	1,300
48	OHL	1,200
49	Werner Enterprises Dedicated & Logistics	1,090
50	Swift Transportation	1,058

*Revenues are company reported or Armstrong & Associates, Inc. estimates and have been converted to USD using the average exchange rate in order to make non-currency related growth comparisons.

YOU SEE OUR BIG YELLOW TRUCKS. HERE'S WHAT YOU DON'T SEE. Penske Logistics is hard at work behind the scenes, making sure everything is done right. It's nearly impossible to spend a day without encountering hundreds of items that have been through the warehouses we manage or the supply chains we optimize. They're there, right where you need them. Because Penske was there.
PENSKE
penskelogistics.com
PENSKE WAS HERE
BUS LANE
BUSES ONLY
7AM-6PM
MON-FRI
SPEED LIMIT 30
ONLY

At the same time, Armstrong notes that domestic "mega trends" such as near-shoring and re-shoring of manufacturing operations are being supported by the Top 30 Domestic 3PLs. "Many major domestic transportation management 3PLs, such as Con-way Multimodal, Transplace, and BNSF Logistics have developed significant cross border capabilities to handle transportation between Mexico and the U.S. and within the U.S.," says Armstrong.

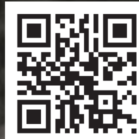
He also observes that surges in oil and gas production in North Dakota around the Bakken Formation are driving increased operational focus from 3PLs and multimodal transportation providers. "Service providers and shippers are working hand-in-hand to manage supply chain shifts," adds Armstrong.

Armstrong & Associates Top 30 U.S. Domestic 3PLs • April 2013

Rank	Third-Party Logistics Provider	2012 Gross Logistics Revenue (USD Millions)*
1	C.H. Robinson Worldwide	11,359
2	UPS Supply Chain Solutions	9,147
3	Expeditors International of Washington	5,981
4	Kuehne + Nagel (The Americas)	4,878
5	UTi Worldwide	4,608
6	Exel (DHL Supply Chain - Americas)	4,500
7	DB Schenker Logistics (The Americas)	4,034
8	Hub Group	3,124
9	Burris Logistics	2,933
10	CEVA Logistics (The Americas)	2,787
11	Schneider Logistics & Dedicated	2,700
12	Ryder Supply Chain Solutions	2,280
13	Panalpina (The Americas)	2,120
14	BDP International	1,895
15	Neovia Logistics Services	1,730
16	Menlo Worldwide Logistics	1,726
17	Americold	1,580
18	J.B. Hunt Dedicated Contract Services & Integrated Capacity Solutions	1,536
19	GENCO	1,476
20	Total Quality Logistics	1,387
21	Landstar	1,350
22	Transplace	1,300
23	OHL	1,200
24	Werner Enterprises Dedicated & Logistics	1,090
25	Swift Transportation	1,058
26	NFI	1,050
27	Greatwide Logistics Services	1,046
28	Universal Truckload Services	1,037
29	FedEx Trade Networks/FedEx Supply Chain Services	1,028
30	APL Logistics (The Americas)	1,025

*Revenues are company reported or Armstrong & Associates, Inc. estimates and have been converted to USD using the average exchange rate in order to make non-currency related growth comparisons.

PICK UP A 21-TON FLATBED LOAD WITH ONE FINGER.



© 2013 C.H. Robinson Worldwide, Inc. All Rights Reserved. **www.chrobinson.com**

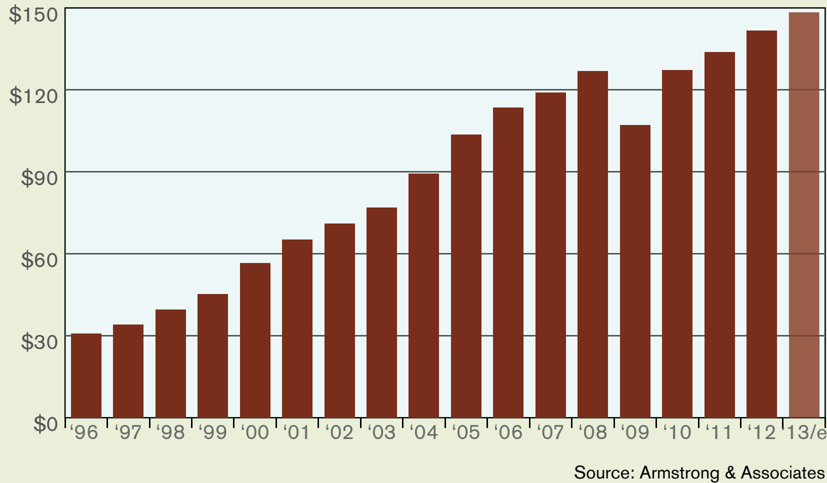
COLLABORATION DRIVES INNOVATION
Download the **FREE Case Study** and discover how General Cable collaborated with C.H.Robinson to enhance their supply chain.

C.H. ROBINSON
» Accelerate Your Advantage®

One call to C.H. Robinson makes flatbed shipping simple.

Step deck or double drop. Loading and unloading. Tie-downs and tarps. Flatbed shipping is complicated. So let C.H. Robinson handle it. We'll line up carriers with the right flatbed equipment, give you the best combination of price and service, and do the paperwork. All through one point of contact.

So make flatbed simple. Contact our flatbed experts today.
solutions@chrobinson.com | 800.323.7587



The 3PL market compound annual growth rate (CAGR) from 1996 to 2012 fell 0.3% to 10%.

invested heavily in expanding international operations to meet the new challenges, he adds.

"Most U.S.-based shippers are very interested in working with top-notch domestic 3PLs internationally," says Armstrong. "All 3PLs should be looking for ways to tap international markets with above average growth rates and meet the logistics needs in those rapidly growing mega cities."

Armstrong has seen significant global expansions by APL Logistics, Dimerco, Jacobson, Kerry, Geodis, Menlo Worldwide, and Toll into high-growth regions. "If a 3PL has positioned itself as a strategic provider for a multinational customers, it should leverage those relationships to help drive international expansion," he says. "Global size and scale are important competitive differentiators in the global 3PL market and need to be part of

Need to go global

Armstrong contends that "mega cities" in developing countries with above average per capita income rates of growth such as Shanghai, Bangkok, Mumbai, Hanoi, Jakarta, and Sao Paulo will drive consumer demand for finished goods globally. Forward-looking U.S. based 3PLs such as Jacobson, Menlo Worldwide, and OHL have

Revenues and profitability by 3PL segment (2012)

3PL Segment	Gross Revenue (Turnover) (US$ Billions)	% Change 2012 vs. 2011	Net Revenue (US$ Billions)	% Change 2012 vs. 2011	Net Income (Profit Margin %)	% Change 2012 vs. 2011
Domestic Transportation Management	45.1	9.2%	6.6	5.4%	20.3	16.7%
International Transportation Management	46.3	0.4%	17.9	1.0%	7.0	-4.1%
Dedicated Contract Carriage	11.6	4.5%	11.4	4.7%	5.2	15.6%
Value-Added Warehousing and Distribution	35.8	5.3%	27.6	3.8%	2.9	-3.3%
Total*	138.8	6.0%	63.5	4.1%	6.5	6.6%

*Total 2012 gross revenue (turnover) for the 3PL market in the U.S. is estimated at $141.8 billion.
$3 billion is included for the contract logistics software segment.

Source: Armstrong & Associates

Domestic transportation management (DTM) led financial results for 3PL segments again in 2012; gross revenues were up 9.2%.

making the impossible, possible

end-to-end supply chain solutions

next flight out transportation • sameday delivery
service parts logistics • warehousing & distribution • freight management

At Network Global Logistics, we pride ourselves on the reliability of our services. We offer a 99.5% on-time arrival rate measured to the minute. For us, 1 minute late is late. We are flexible in providing our customers with solutions to their specific challenges. Our information technology is a competitive advantage by ensuring real-time visibility and control for our customers.

With over 500 Forward Stocking Locations worldwide and more than 5 million square feet of distribution centers at end-of-runway, Network Global Logistics is your answer for third party logistics where and when you need it.

rapid, reliable, flexible, scalable

866-938-1870
www.nglog.com

network
global logistics

every 3PL's strategy."

Analysts at Gartner agree, noting that large multinational and global shippers have started to require that their 3PLs offer more extended services across more regions—and integrate those services across end-to-end business processes.

"The 3PL industry is progressing along a maturity spectrum, in accordance with these new customer requirements, through a combination of acquisition and organic growth strategies," observes Greg Aimi, Gartner's director of supply chain research.

Unlike Armstrong, however, Aimi feels that 3PLs could do a better job of forecasting and pointing shippers in the right direction for future investment.

"Our research shows that most 3PLs only did what their shippers asked them to do," says Aimi. "Original innovation and opportunity was rare from their 3PLs. Most shippers say that their 3PLs were very constructive and even innovative at developing solutions to challenges or opportunities that the customer organization raised, but that they wished the providers could have brought more industry innovation and improvement opportunity to bear on their own."

The Magic Quadrant charts the largest global 3PLs and can help logistics managers better understand their capabilities when evaluating and selecting providers.

Aimi, who is co-author of the recently released report *Magic Quadrant for Global Third-Party Logistics Providers*, emphasizes that the time is now for more 3PL forecasting. "The phenomenon of the 'mega city' will drive the need for intentional sharing of logistics and infrastructure resources," he says. "This so-called 'collaborative logistics' means that companies will work together to reduce additional waste and inefficiencies of supply chains operating in isolation."

In evaluating various global 3PL players, Gartner grouped them into various categories, including challengers, players, niche players, and visionaries. And in order to participate in the *Magic Quadrant*, Gartner considered only 3PLs whose depth and breadth could cover regional and multiple service requirements were considered.

Gartner predicts that the following two emerging trends will drive logistics and supply chain professionals to explore collaborative logistics further within the next five years:

• **Rapid growth causing more urban congestion:** The number of cities with populations of more than eight million is projected to double by 2019. By 2020, Mumbai, Delhi, Mexico City, Sao Paulo, New York, Dhaka, Jakarta, and Lagos will achieve "mega city" status—or more than 20 million people—and there will be many more consumers in smaller, more congested locations.

• **Consumer and corporate sustainability demands:** These concerns will continue to drive CO2 reductions, as well as the sustainable supply of products and services. "3PLs will be in prime position to offer these collaborative services as they can be the arbitrator of resources and costs," says Aimi. "Sustainability might also boost the concept of the distribution parks or campuses whereby co-location of different companies materials and goods facilitate optimization of shared logistics resources and costs."

Narrowing the field

The types of shippers served by the 3PLs in

No matter where your customer is located, Landstar has the transportation solutions to get your freight there.

Integrated transportation management solutions from the team with the skills and resources to power your success.

Landstar's transportation logistics professionals have the knowledge to evaluate your transportation management practices. Our experience enables you to up your game with more efficient and cost-effective operations.

Landstar, mapping the way to safe, reliable transportation logistics services for 25 years.

- Event Management – Truckload, LTL and Intermodal freight
- Freight Optimization – LTL consolidation
- Complete Shipment Visibility
- Single Point of Contact
- Specialized Project Management
- Air and ocean freight forwarding worldwide
- More than 36,000 transportation capacity providers

Visit us at www.landstar.com.
Contact us at 877-696-4507 or solutions@landstar.com

LET THERE

WRANGLER WORKWEAR is a trademark of Wrangler Apparel Corp. and is used under license.

BE WORK.

LET THERE BE BLUE COLLARS AND STEEL TOES. LET SWEAT-SOAKED BROWS AND BACKBREAKING FORTITUDE BE THE FUEL THAT PUTS FOOD ON OUR TABLES, ROOFS OVER OUR HEADS, AND FRESHMEN IN COLLEGE. MAY OUR WORKING DAYS FOREVER END DRAINED, BUT ACCOMPLISHED. AND MAY WE GREET EACH DAY WORTHY FOR THE WORK AHEAD.

WranglerWorkwear.com

Gartner's *Magic Quadrant* are global, multinational, multi-billion dollar corporations, many of whom use dozens of services providers. However, Aimi notes that this too may be changing.

"There will always be room for a strong, local provider with local expertise and widely available local resources," says Aimi. "The largest companies are trending toward wanting a smaller set of global preferred providers. However, most of these global providers will have 'best in class' local representation—especially in the most well developed markets."

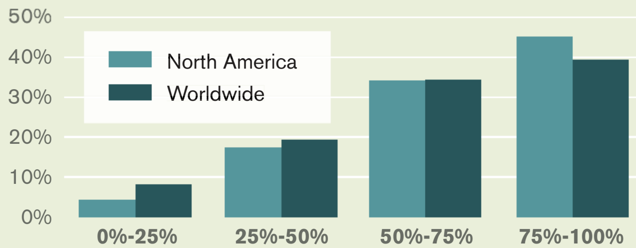
Aimi insists that the major challenge for shippers will be to determine how quickly they will want to extend their reach. They will also have to define their customer base and determine if local service can surpass the benefits of having a global preferred provider taking on more of the business. The goal, he adds, will be ultimately to reduce integration complexity, have more standard global processes, and foster end-to-end process improvement.

"It's also worth noting that the local, large North American providers are wondering when Gartner will do 'localized' versions of our quadrant study so that they can be included," says Aimi.

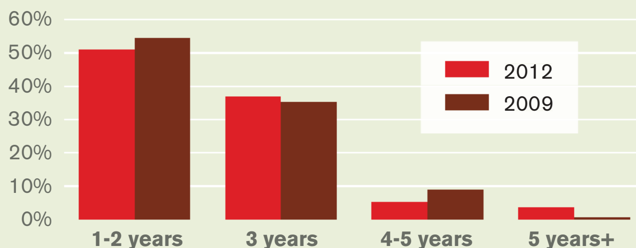
One of the interesting things about this particular quadrant, adds Aimi, is that the "leaders" are not very far into the Leadership quadrant in terms of *Completeness of Vision*. "This is indicative of the fact that even the largest and most diverse 3PLs are still a long way from providing what shippers really want from their providers, keeping them from becoming true strategic global preferred providers across a host of service offerings."

A survey done by the London-based think tank Eyefortransport (EFT) comes to many of the same conclusions, noting that contract renewals are declining as shippers seek to cut down on their reliance on multiple 3PLs. Furthermore, say EFT researchers, shippers are less likely to sign long-term contracts in the future.

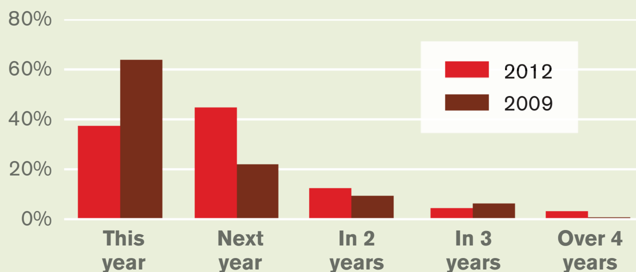
Percentage of 3PL contracts renewed



Average length of renewed 3PL contracts



Time until next 3PL contract negotiation



Source: eyefortransport

The average length of renewed contracts is usually between 1 and 2 years, according to 53% of 3PLs; the average bid process takes less than 9 months, from start to finish; and 81% of 3PLs start the renewal process within 9 months of the end of an existing contract.

EFT research analyst Katharine O'Reilly observes in the report *3PL Selection & Contracts Renewal Report* that the percentage of North American shippers renewing over 50 percent of their 3PL contracts has dropped from 83 percent to 73 percent since the last survey was taken. Four percent of the 3PLs that participated in the study reported less than half of their contracts renewed.

"Four years ago none had a renewal rate under 50 percent," says O'Reilly. "Only 10 percent of the renewals exceed a contract term of three years, whereas 53 percent range from one to two years."

The survey, which solicited responses from global shippers, logistics providers and consultants,

Moving you forward

Saia is always evolving; looking for better ways to move you forward. Introducing Saia LTL Freight, Saia TL Plus and Saia Logistics Services. Three service groups with the spirit, dedication and accountability that have been Saia's trademark since 1924.

Non-asset truckload and expedited solutions provider

Regional and inter-regional LTL service with the industry's most impressive guaranteed product

Logistics resources and experience to reduce costs and increase supply chain efficiency

www.saiacorp.com

Sale of Vitran's 3PL unit to Legacy Supply Chain Solutions is complete

Following a recent announcement that it planned to sell its Supply Chain Operation (SCO) to Portsmouth, N.H.-based third-party logistics (3PL) services provider Legacy Supply Chain Solutions, Toronto-based less-than-truckload (LTL) carrier and transportation services provider Vitran Corporation has reported that the deal is now officially complete.

Vitran officials said that the purchase price for SCO is $97 million in cash, adding that it has used a portion of the cash to fully reduce its debt under its senior revolving credit facility.

Vitran SCO focuses on complex, high-velocity logistics networks that serve North American-based retailers. Legacy said that this acquisition is expected to significantly expand its market share in the U.S. and Canada and also expand its total distribution footprint to 35 facilities, four transportation offices, and more than 6 million square feet of warehousing space in North America.

Rick Dempsey, vice president and marketing director at Legacy, told Logistics Management that prior to this deal Legacy had been looking for the right opportunity to broaden its supply chain services capabilities. "Vitran's SCO culture and values are perfectly aligned with Legacy," he explained. "Plus, the acquisition allows Legacy to expand into the large retailer market—including food and beverage. Overall, the Vitran SCO network is such a great compliment to Legacy's current supply chain network."

In terms of the biggest benefits of this deal for Legacy's customers, Dempsey cited broader supply chain capabilities, specifically expertise of people, enhanced service capabilities, and expanded infrastructure in the form of facilities and technology.

He added that there are no plans for any type of formal business integration, but he did say that the companies will leverage each other's strengths.

—Jeff Berman, Group News Editor

included some multinationals with annual revenues exceeding $25 billion. Sixty-four percent of the respondents had revenues in excess of $50 million. Nearly half of the respondents (48 percent) were based in North America, 34 percent hailed from Europe and 11 percent from the Asia-Pacific region.

Adrian Gonzalez, president of the supply chain consultancy Adelante SCM, says this narrowing of the field is not necessarily a negative. "There's a switching cost associated with outsourcing relationships. It takes time for a 3PL to understand a shipper's business, for both parties to trust each other, and for personal relationships to develop," he says.

Gonzalez notes that if a shipper switches to a new 3PL, they must build the relationship from "scratch" again. Also, there's a cost associated with managing 3PL relationships—the more 3PLs shippers have, the more time and resources are required to manage those relationships.

"Therefore, shippers may try to limit the number of partners they work with," says Gonzalez. "They don't want to put all of their eggs in one basket, but they also don't want to have a basket full of 3PL partners either."

Future shock?

So what can shippers expect of their 3PLs in the future? According to two of the giant players in our global ranking, business forecasting will certainly be a significant piece of their offerings.

"A key value that 3PLs can provide shippers is market knowledge across multiple regions and industries," says Alan Amling, UPS global director of contract logistics marketing. "Another value is to help companies take advantage of the growth opportunities they decide to pursue."

According to Amling, the major providers also have existing infrastructure in global markets; so, after the forecast is made, they can build upon their in-country expertise to help companies navigate trade regulations, get products to end customers, and provide post-sales services.

Jordan Kass, vice president of management services for C.H. Robinson, agrees, noting that the industry leaders have the access to capital to move forward on their predictions. "When we see a trend building—"mega cities," for example—we can invest in the technological resources necessary to help shippers gain a foothold there."

Both Amling and Kass also observe that the convergence of technology and emerging market demand are forces that will shape the 3PL global landscape in 2013 and beyond.

—Patrick Burnson is Executive Editor of Logistics Management

WE ARE THE STRONGEST LINK IN YOUR SUPPLY CHAIN.

Unyson Logistics is an award-winning 3PL that specializes in customizing solutions to fit our clients' needs. We offer multi-modal capabilities that guarantee supply chain savings through our services, technology and expertise.

Simply put, our logistics managers are the best at what they do. Unyson deploys dedicated account management, continuous improvement programs and business intelligence that combines innovative reporting with cutting-edge technology.

1-866-409-9759
UNYSONLOGISTICS.COM

5 STEPS to improving your 3PL relationships

Members of the University of Tennessee's Center for Executive Education share their five steps and a series of tips to improve your outsourcing relationship right from the start.

BY **KATE VITASEK**, **PETE MOORE**, AND **BONNIE KEITH**,
UNIVERSITY OF TENNESSEE CENTER FOR EXECUTIVE EDUCATION FACULTY MEMBERS

Not long ago on the pages of this magazine a story about Armstrong World Industries described how it won the coveted NASSTRAC Shipper of the Year award after bringing outsourced transportation back in-house.

As we read the case study we were disheartened to learn that the reason Armstrong brought the work back in house was due to a failed third-party logistics services provider (3PL) relationship.

Yes, there are some bad service providers out there. But our experience is that there are always two sides to every story. It's pretty certain that the service provider Armstrong parted ways with would have its own story to tell from which we could all learn a lesson or two.

However, this article is not about assigning blame, but rather to point out practical steps, tips, and advice on how to improve a 3PL relationship and prevent one from becoming

Rise To The Challenge.

Step Precisely.

Know The Terrain.

Execution is Everything.

SUPPLY CHAIN • DISTRIBUTION • TRANSPORTATION • CONTROL TOWER

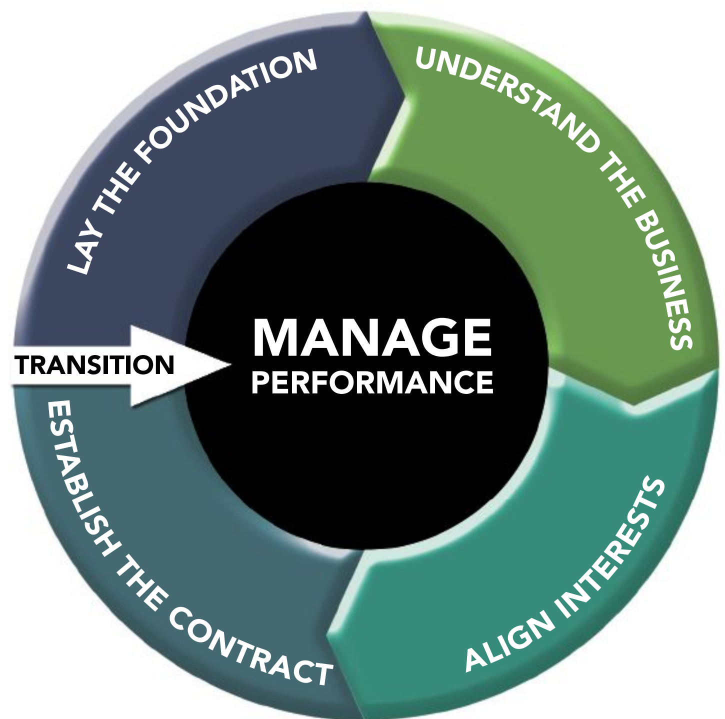
Ryder®
Supply Chain Solutions

©2013 Ryder System, Inc. All rights reserved.

1-888-887-9337 www.ryderscs.com

a failure. As experts and outsourcing coaches, members of the University of Tennessee's Center for Executive Education have created five steps to improve your outsourcing relationship from the start and help maintain that partnership once it gets rolling.

Over the next few pages, we'll explore each of these five steps and provide some of our favorite tips and advice to help you improve your 3PL relationships.



Source: *Vested Outsourcing: FIve Rules that will Transform Outsourcing*

Getting started

Many of the problems companies experience stem from jumping into a contract prematurely without a solid understanding of the business ramifications. With this in mind, our first tip is to slow down and take the steps to get outsourcing right before you start any work.

To do this properly, we recommend a five-step implementation approach that is profiled in *Vested Outsourcing: Five Rules That Will Transform Outsourcing.*

The book goes into detail on each of the five crucial steps companies and service providers can take to create a successful 3PL relationship:

1. Lay the foundation;
2. Understand the business;
3. Align interests;
4. Establish the agreement or contract; and
5. Manage performance.

When taken individually, these steps can offer shippers and service providers valuable insight into current operations. However, they tend to work best when implemented as a process for outsourcing by allowing companies to implement a true collaborative 3PL relationship where the company outsourcing and the service provider are committed to each other's success.

All too often, companies dust off an existing Statement of Work, rush to competitive bid, and give the service provider three months or less to transition the work—we've seen many that only allow for a four-week transition.

The great thing about Vested's five-step framework is that it can be used during a request for proposal (RFP) or with an existing supplier to improve a relationship. Skipping steps usually results in a poorly conceived business outsourcing agreement or worse—a total disconnect in what the service provider is doing versus what the customer actually needs.

1

Step 1: Lay the foundation

The first thing a company should do before ever lifting a finger to outsource is to thoroughly understand whether outsourcing is right for its operations. Management consultant Peter Drucker famously stated: "Do what you do best and outsource the rest." This leads to our second tip: Don't outsource what is core. A company should only outsource when a service provider can do the work better, faster, and/or cheaper.

The problem is that far too many companies jumped on the outsourcing bandwagon without realizing if outsourcing was right for them.

The case study on Armstrong raised a red flag for us when we read the statement: "Managing transportation was once a core competency of Armstrong." If managing transportation was a core competency, why did Armstrong outsource it in the

GLOBAL CAN DO LOGISTICS®

P.O. RECEIVED: 3000 JACKETS NEEDED ON TIME

2. SHANGHAI, CHINA
MANUFACTURED DESIGNER JACKETS CONSOLIDATED FOR RETAIL STORES

3. SEATTLE, WA
SHIPMENTS ARRIVE AT RECEIVING CENTER

4. NEW YORK, NY
JACKETS ARRIVE ON TIME AT REGIONAL DISTRIBUTION CENTER

1. AREQUIPA, PERU
RELIABLE ALPACA WOOL SUPPLIER SECURED

5. WORLDWIDE
JACKETS AVAILABLE AT RETAILERS ACROSS THE GLOBE

WAREHOUSING & DISTRIBUTION • PACKAGING • MANUFACTURING • STAFFING • PO MANAGEMENT
FREIGHT FORWARDING • CUSTOMS BROKERAGE • DECONSOLIDATION • TRANSPORTATION MANAGEMENT

CONSIDER IT DONE

As one of the world's most trusted third party logistics providers, Jacobson Companies can oversee your entire supply chain from end to end. Everything from determining the best and most economical ways to perform each step from managing the purchase order to consolidation at origin to final delivery to store.

Now, with the establishment of Jacobson Global Logistics in Asia, we offer a competitive advantage for a one stop end to end solution. You can do more with Jacobson, the originator of *Can Do Logistics*.

1.800.636.6171 www.JacobsonCo.com/CanDo

first place?

When Armstrong's 3PL relationship began failing early on it decided to move the work back in house. Because the work was brought back in house, we believe that Armstrong did not follow our second tip.

We recommend companies complete a Business Model Mapping exercise to help determine the sourcing business model that is best for your organization—one of which includes keeping work in house. You can learn more by downloading a free whitepaper, "Unpacking Sourcing Business Models- 21st Century Solutions for Sourcing Services," available for download at wwww.vestedway.com/vested-library/

Step 2: Understand the business

Once a company has properly decided that outsourcing is the right choice and has done its homework associated with laying the foundation, it should take the time to establish a baseline that benchmarks the potential cost, service, or other opportunities.

Which leads us to our third tip: Understand your baseline and benchmarks before you outsource. In the Armstrong case study, one of the key decision-makers said: "When we priced it out we were shocked to learn that we were less than half of what everyone else was charging."

The article explains that the Armstrong team discovered this after they realized that their 3PL was failing. If Armstrong had done sound baseline and benchmarked cost and service it would have realized it already had an outstanding team that would not have benefited from outsourcing; in turn, Armstrong would have avoided the pain of transitioning the work only to bring it back in house.

Armstrong also pointed out that "there was a failure by the 3PL to understand Armstrong's customer requirements" and "the biggest flaw was that our 3PL took a one-size-fits-all approach…We have specialized needs, and they did not appreciate the complexity of our business."

So here's our fourth tip: Ensure potential suppliers understand the business. Our research and experience says that many companies are poor at stating their requirements. In fact, we often see service providers forced to "understand the business" based on a poorly written RFP and incomplete and inaccurate data.

One way to overcome this is for companies to embrace transparency by opening their doors and letting service providers look around and explore the details of the business. Let them ask for data—after all they'll need this to run your business effectively.

Once service providers have a chance to thoroughly understand the business, the companies and the service providers should mutually agree on cost and service goals. We call these Desired Outcomes. If the service provider understands the baseline costs and service levels clearly then they can feel more comfortable about signing up to achieve your Desired Outcomes.

And this takes us to our fifth tip: Develop clearly defined and measurable Desired Outcomes. You are outsourcing because you have gaps in where you are today and where you want to go (your Desired Outcomes). It is important to make sure the service providers understand those gaps and knows what real success is: a win-win for everyone.

The Armstrong case study pointed out that the arrangement was not meeting Armstrong's established costs and service goals. As researchers and educators, we love to review RFPs and poke holes in how poorly-stated requirements often are and how few clearly state their Desired Outcomes.

Service providers do not sign up to take on a client's business with the intent to fail! As such, we strongly recommend that all companies take the time to work with service providers to ensure they understand the business, communicate the Desired Outcomes and identify the gaps.

Step 3: Align interests

This step entails designing and documenting how a company and the service provider will work together to achieve their Desired Outcomes.

In basic terms, this is the part of the process where both companies should document—and align—their interests. We suggest starting by creat-

Avoid being unfashionably late. Call the people who know.

Source your apparel supply chain in Central America or the Caribbean, and we'll save you time and money. We offer more weekly fixed-day sailings between this region and the U.S. East and Gulf Coasts with faster transit times than anyone else. Our distribution centers, trucking services and air freight operations help speed your cargo through its supply chain. We also provide U.S. Customs brokerage services for both air and ocean shipments. Take your supply chain to a whole new level of efficiency with Crowley's ***Speed to Market***.

JUST ASK THE PEOPLE WHO KNOW.
1-800-CROWLEY or www.Crowley.com/ontime

Worldwide Logistics / Liner Shipping / Petroleum & Chemical Transportation / Alaska Fuel Sales & Distribution / Energy Support
Project Management / Ship Assist & Escort / Ship Management / Ocean Towing & Transportation / Salvage & Emergency Response

CROWLEY®
People Who Know®

ing a shared vision and mutually drafted Statement of Intent that outlines the desired values and cultural norms that will guide how work together. It also means documenting guardrails to act as trigger points that signal a strategic reset or review of the pricing model when certain factors go beyond the guardrails.

Early alignment is in essence a first pass at the future vision for how the two companies will communicate, collaborate, and innovate together to achieve the best results.

This brings us to our sixth tip: Identify risks before developing the pricing model and transitioning the work. In the case of Armstrong, while it's not clear if the parties took the time to align interests, we have to assume that the parties—at least the service provider—likely did not do a proper risk assessment.

We hypothesize that if interests were aligned and a proper risk assessment was performed in the relationship, Armstrong would not have stated that "it was evident pretty much from the start that it wasn't going to work." Obviously the parties got out of the gate on the wrong foot.

Step 4: Establish the agreement

Vested is based on collaborating to create and share value in an outcome-based model that reduces the total cost of ownership (TCO) versus simply focusing on the price of activities or services performed by the service provider.

This brings us to our seventh tip: Establish a pricing model with incentives that encourage service providers to put "skin in the game" and invest in the business. We recommend that companies move away from a "price per transaction" (e.g. price per pick, per touch, per order) and instead adopt a transparent pricing model that includes incentives that rewards a 3PL when it achieves the Desired Outcomes.

As mentioned before, the Armstrong case study cited that "the arrangement was not meeting Armstrong's established costs and service goals." One approach they could have taken was what we call a "fee at risk" pricing model. This is when a service provider charges below market rates for service—but then is rewarded with incentives for delivering results against mutually defined targets. The more successful both parties are, the more profit the service provider makes, often up to three times the typical profit margins for the market. This is a true win-win because the companies become vested in each other's success. The more successful the company is, the more success the service provider is.

Step 5: Manage performance

This is a most crucial step around which the other steps revolve. Outsourcing is not a "throw it over the fence" business process. But neither should it be an exercise in micromanagement.

Our eighth tip helps to make this clear: Develop a governance structure based on insight versus oversight. A sound governance structure outlines how the business and the relationship will be managed, not just how the company will manage the service provider. The service provider is in essence an extension of the firm with regards to the work provided.

If you have chosen a service provider you trust and have aligned your interests, we find it's often futile to micromanage the service provider. We refer to this as a "junkyard dog" syndrome because the company outsources and then leaves in place employees who watch over and guard the old processes that have been in place for years.

We suggest that this may have been the case in the Armstrong relationship, as the case study notes that they kept four people in place to manage the service provider's 10 employees.

Coming full circle

The line between doing outsourcing effectively and doing it ineffectively can get a bit blurry. Instead of drawing a line in the sand we advise an integrated "full circle" approach that includes the five steps we have outlined above.

We'd have to give both Armstrong and their service provider a failing grade on their ability to outsource effectively. That's because even if the service provider was 100 percent at fault, we have found that an outsourcing failure is really a failure for everyone involved.

DEDICATED SERVICES | EXPEDITED | MALONE | LOGISTICS | SPECIALIZED TRANSPORTATION | TEMPERATURE CONTROLLED TEAM SERVICE

CRSTRUCTURED FOR SUCCESS

"Productive synergy." That's what the six operating companies of CRST International deliver. It's a unique corporate structure our customers appreciate and depend on.

CRST Dedicated Services, CRST Expedited, CRST Malone, CRST Logistics, CRST Specialized Transportation and CRST Temperature Controlled Team Service … all integrated to provide a complete transportation solution for customers with multiple needs. From coast-to-coast runs to irregular routes, seasonal peak needs or "white glove" and temperature sensitive loads, customers know their success starts with just one call to CRST.

John Gallardo
Group President
Asset Light Division

Michael Gannon
Group President
Fixed Asset Division

Dave Rusch
President and Chief Executive Officer
CRST International, Inc.

crst.com • 1-800-736-2778

THE TRANSPORTATION SOLUTION™
CRST® INTERNATIONAL

CRST – THE TRANSPORTATION SOLUTION

10 elements that develop a successful outsourcing agreement

University of Tennessee researchers teamed with the International Association for Contract and Commercial Management to write The Vested Outsourcing Manual: A Guide for Creating Successful Business and Outsourcing Agreements.

The Manual provides a clear path for developing a sound outsourcing agreement around 10 core "elements," which are briefly summarized below:

Element 1: Business Model Map
This first step is to understand and document an outsourcing business model. It is vital to take the time to determine how well the parties are aligned to each other's goals.

Element 2: Shared Vision and Statement of Intent
With the business model understood and mapped, the parties then work together on a joint vision that will guide them for the duration of the Vested relationship. The vision and alignment forms the basis of a Statement of Intent drafted by the outsourcing teams.

Element 3: Statement of Objectives/ Workload Allocation
This element lays the foundation for the parties to do what they do best. Together the parties develop a Statement of Objectives (SOO), which is very different from the standard SOW. A SOO describes intended results, not tasks. Based on the SOO, a service provider will draft a performance work statement that defines in more detail the work to be performed and the results expected from that work.

Element 4: Top-Level Desired Outcomes
The Desired Outcomes are the centerpiece of the agreement because without mutually defined Desired Outcomes in place, a Vested agreement cannot go forward. Outcomes are expressed in terms of a limited set of high-level metrics.

Element 5: Performance Management
A sound agreement defines how they will manage overall performance of the parties in the outsourcing agreement. The metrics and the associated process for managing performance will help align performance to strategy.

Element 6: Pricing Model and Incentives
The approach of many procurement professionals to outsourcing is stuck on one thing: getting the lowest possible service and labor pricing. Under the Vested model, the service provider's profitability is directly tied to meeting the mutually agreed Desired Outcomes. The more successful the service provider, the more money it makes.

Element 7: Relationship Management
A relationship management structure creates joint policies that emphasize the importance of building collaborative working relationships, attitudes and behaviors. The overarching principle is for the parties to manage the business—rather than the buyer managing the supplier.

Element 8: Transformation Management
The agreement will set out how the parties manage change as they jointly strive to accomplish the Desired Outcomes. The focus is on mutual accountability for Desired Outcomes and the creation of a culture that rewards innovation, agility and continuous improvement.

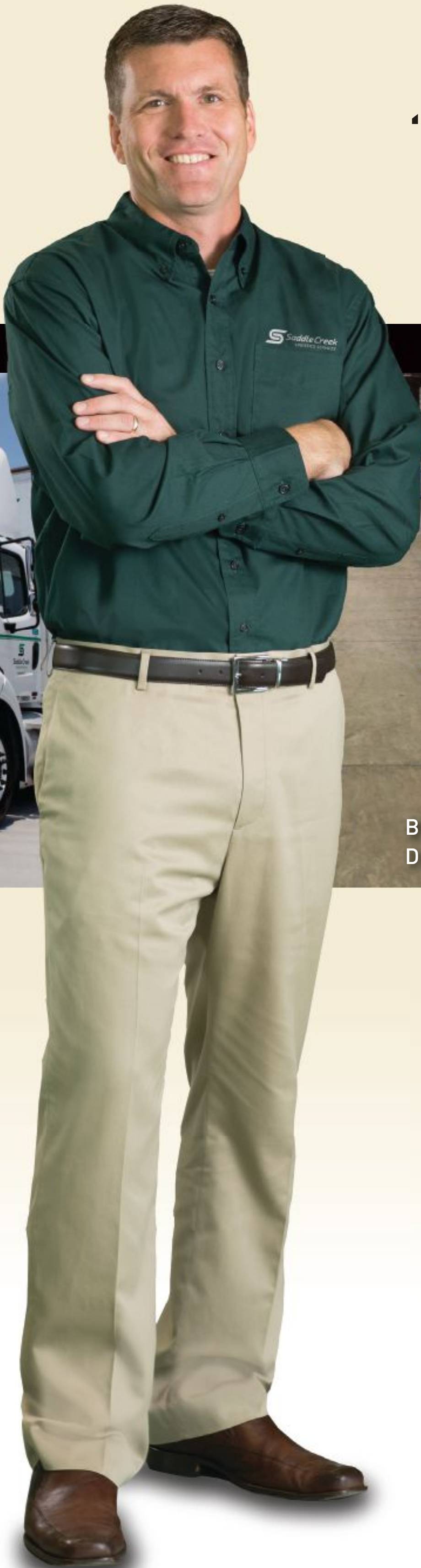
Element 9: Exit Management
Sometimes the best plan simply does not work out or is trumped by unexpected events. Business happens, and companies should have a plan when assumptions change. An exit management strategy can provide a template to handle future unknowns. The goal is to establish a fair plan and to keep the parties whole in the event of a separation when the separation is not a result of poor performance.

Element 10: Special Concerns and External Regulations
The final element recognizes there are often special requirements and regulatory protocols. This element covers how to handle those "special" requirements.

10 elements of a vested agreement

Rule 1: Outcome-Based vs. Transaction-Based Business Model	
Element 1	Business Model Map
Element 2	Shared Vision Statement and Statement of Intent
Rule 2: Focus on the WHAT, not the HOW	
Element 3	Statement of Objectives/Workload Allocation
Rule 3: Clearly Defined and Measurable Desired Outcomes	
Element 4	Clearly Defined and Measurable Desired Outcomes
Element 5	Performance Management
Rule 4: Pricing Model Incentives are Optimized for Cost/Service Tradeoffs	
Element 6	Pricing Model and Incentives
Rule 5: Insight vs. Oversight Governance Structure	
Element 7	Relationship Management
Element 8	Transformation Management
Element 9	Exit Management
Element 10	Special Concerns and External Requirements

"We go beyond the basics to deliver comprehensive logistics solutions."



BILL BERG, SENIOR DIRECTOR - DEDICATED OPERATIONS

At Saddle Creek Logistics Services, warehousing and transportation are just the beginning. We offer a wide array of integrated logistics services — cross-docking, product customization, packaging, e-fulfillment and more. Leverage them to help streamline operations, accommodate business fluctuations, and control supply chain costs. We'll do *Whatever It Takes!* to help meet your specific goals.

See our integrated logistics solutions in action. >

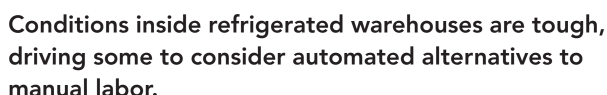
sclogistics.com | 888-878-1177

Whatever It Takes!

Outsourcing cold storage: Planning for UNPREDICTABILITY

By **Josh Bond**, Editor at Large

In recent years, more and more manufacturers have looked to outsource their cold storage to third-party logistics (3PL) providers in an effort to separate themselves from harsh cold storage material handling conditions.



Conditions inside refrigerated warehouses are tough, driving some to consider automated alternatives to manual labor.

The challenges of refrigerated spaces are amplified versions of those faced by dry goods facilities. Associates are exposed to the harshest conditions in the materials handling industry. The cost of operating a refrigerated warehouse makes the hunt for efficiencies even more critical. And, the concept of product traceability is subject to the legal repercussions of an ever-stricter regulatory landscape.

In recent years, more and more manufacturers have looked to outsource their cold storage to third-party logistics (3PL) providers in an effort to separate themselves from these concerns. Similarly, refrigerated 3PLs have seen significant consolidation as

"Our inventory management delivered better news for their bottom line."

Rising newsprint costs and digital competition have put the squeeze on newspaper profits. Realizing that their paper warehousing needed closer attention, a large West Coast publisher asked WSI to take over. We performed a complete overhaul of their paper roll storage and transitioned them to a digital warehouse management system – improving accuracy, virtually eliminating shrinkage and more closely monitoring rolls on receipt for damage.

Every day, WSI solves logistics challenges like these, forging partnerships that help our customers operate more efficiently and cost-effectively.

Get the full story at www.wsinc.com/accuracycounts

Integrated Logistics | Supply Chain Solutions

inquiryLM@wsinc.com | 920.831.3700 | www.wsinc.com

those with successful strategies swallow up those without.

This has been good for 3PLs, but the increased level of competition means customers will gladly take their business elsewhere at the promise of a dollar's savings. While many customers will leave a 3PL on a dime in pursuit of a nickel, price only ranked fifth most important to customers in a recent survey by Gartner Research. Most important was customer service, while innovation ranked third.

For decades, public refrigerated warehouses simply needed to do three things very well, says Joe Couto, senior vice president and general manager for Accellos, which serves 14 of the 25 largest refrigerated warehouses in North America.

"The basic needs were to receive inventory well, manage the inventory well, and ship it accurately and timely, but you didn't have many fancy capabilities beyond lot and cold chain management control," he says.

New challenges

The modern cold storage challenge centers on the transition from simple pallet-in, pallet-out operations to increased case handling, value-added services, and meeting the various demands of customers and their clients.

"There's an increase in outsourcing, but not just in storage and distribution," says Corey Rosenbusch, vice president at the Global Cold Chain Alliance and president of the International Association of Refrigerated Warehouses (IARW). "Our members are also asked to provide value-added services, whether it's repack operations, actual manufacturing, or consolidation."

The combined pressures of labor needs, efficient operations, and unstable customer base have put cold 3PLs in a tough spot. If they innovate, automate, and update, there's no guarantee the customer will stay with them long enough for those investments to prove worthwhile. If they don't, there's an even better chance they will lose business.

The fundamental business models of cold storage are up for grabs. The concept of "one size fits all" facilities is becoming untenable in many cases, as purpose-built, specialized facilities work to target specific customers, products, and service requirements. Again, the challenge to this approach is the permanence of customer tenants.

"There might be a 3PL who says: 'I can do better than that with a customized, modern facility, but I'll need you to sign a 10-year agreement.' That idea is startling to most customers, but if the numbers are there, they'll sign," says Carlos Oliver, president of Frazier Industrial Company.

Cutting costs

Customers (the manufacturers with product to sell) have cold storage 3PLs over the barrel. As customers' clients (the retail entities that sell a manufacturer's frozen goods) demand increased services in terms of pallet building and traceability, the customer increasingly passes the cost for these services to the 3PL.

"For a long time, while people were working to outsource cold storage, the competition was not as high as dry goods storage," says Oliver. "But in the last five years, there's been much more competition, there's less capacity available, and the same people are competing for smarter customers. A lot of 3PLs haven't changed their mode of operation for 30 years because they have not been inclined to design a custom solution in the face of that volatility and the potential for the customer to leave."

For example, 20 or 25 years ago, the customer would tell the 3PL which lot to ship, and then the customers left it to the 3PL to figure out which one was the oldest based on date of production, lot number or first-in, first-out, says Couto. Now, if one retailer asks for a 90-day shelf life and another wants 100-day shelf life, the 3PL needs to be ready for that. If shipping direct to a store, not only do they have to assemble a perfect order, many stores have specific requirements in terms of pallet height or pallet type for a 3PL to ship on.

The 3PL's choices are to provide the service or lose the business. "There's real pressure on rates right now, based on manufacturers' desire to reduce landed cost to the consumer," says Rosenbusch, who says 3PLs are looking for efficiencies with technologies, with many pushing to ensure they have a robust warehouse management system (WMS) in place. In addition to facilitating more product visibility and USDA inspector-friendly facility layouts, a WMS can also address the goal of customer retention.

Don't worry, we know all the shortcuts

If you have customers in Canada, you have a partner in Purolator International. Our clients benefit from nationwide coverage, speed across the border, and flexible pricing. As the only shipping company to focus exclusively on Canada, Purolator can offer your business cost-efficient residential delivery options for your catalog mail, bulk mail, and small packages utilizing two of the most extensive networks in Canada. We deliver your business across the border faster and to more Canadian customers than any other shipping company in the world. The shortest route between the U.S. and Canada is Purolator.

To find out what makes Purolator a smarter, faster, and easier way to ship to Canada, call 1-888-511-4811 or visit http://www.purolatorinternational.com/scmr

Purolator
We deliver Canada

PUROexpress™ | PUROparcel™ | PUROfreight™ · Air | PUROfreight™ · Ground | Supply Chain Services

"We're over the peak where most cold storage companies have a good baseline WMS in place. Now we're trying to get past the challenge of multi-level product handling that the client base is demanding," says Jeff Hedges, president of OPEX Corporation.

"But if you can offer a WMS the client can somehow interface directly to, you can develop a bond with the customer, and it might be harder for them to shop around for alternatives."

A pick tunnel located in the freezer is another alternative, which might be coupled with automated dynamic slotting or static slotting for fast movers. "I see order picking in a 3PL cold storage environment remaining mostly manual, but becoming as ergonomic as possible," says Labell.

Purpose-built

3PL companies are increasingly entertaining the idea of constructing purpose-built buildings around a specific function, such as case handling and picking, then looking at customers to fill it, says Hedges. Or, they will approach a few customers with a proposal for a long-term commitment in something automated or otherwise purpose-built. "Cold storage companies have tried to define themselves by being one-stop shopping for everyone, and that's becoming more difficult," says Hedges.

The model is now changing to one centered around specializations. When a facility needs to only perform one task or a small assortment of tasks very well, it might work to justify automation. With automation, a customer might find efficiencies that save money for all involved. With better rates for a targeted service, that provider might find customers more inclined to stick around for the long term.

"For the longest time, they've all had their select customer niche, but to acquire new customers, they are looking at driving cost out with automation, efficiency and product accessibility," says Frazier's Oliver.

The core concept here is to break out specific products by commonality and consistency and build a materials handling system around them.

expect more.
GEODIS
wilson
2012
GLOBAL FREIGHT AWARDS
Excellence in freight and logistics
GEODIS WILSON IS THE WINNER OF THE INNOVATION AWARD

"Instead of building the facility to suit all products, build it to suit some of them very well," says Hedges, "and bring products to the facility where it makes the most sense to handle them."

With facilities performing specialized roles in the cold chain, the flow of product from factory to consumer is also changing shape. Some 3PLs are consolidating distribution centers to bundle services for multiple 3PL customers, says Labell. He sees things heading toward more 4PL consolidation, as "mega-centers" leverage their size for efficiencies.

"This massive center receives truckloads of products from other 3PLs. This would reverse the trend of adding order selection and picking to the 3PL world because these facilities would handle it in the mega-center," explains Labell. "That's a model that is going to gain traction in the next 20 years."

From the front lines

Larry Rauch, president of Los Angeles Cold Storage, an IARW member that helps customers distribute across 48 states, says the transformation in cold storage means 3PLs are not just warehouse companies, they are logistics providers.

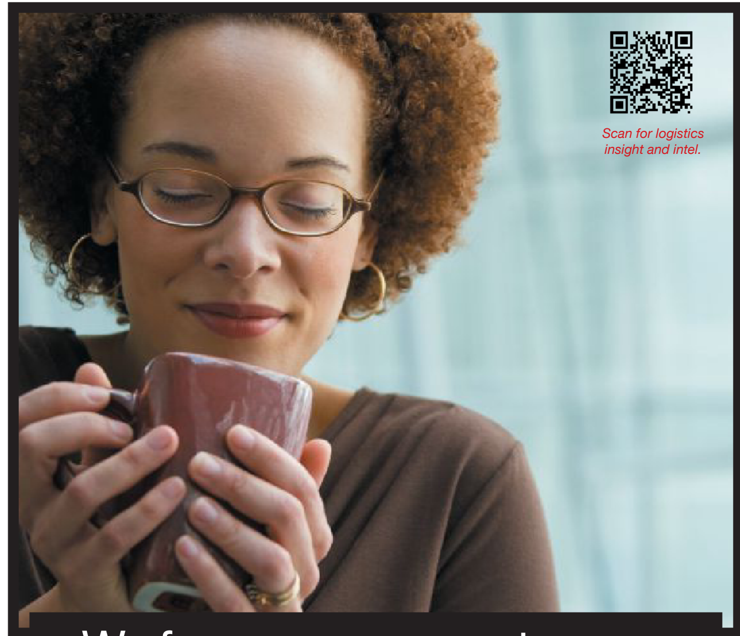
He echoes the issue of long-term customer retention, saying information technology has played a role in combating that trend.

"We're giving the customer access and the ability to run reports themselves and track inventory closely in real time," says Rauch. "There's been a significant movement in the last few years toward that. You hope that by offering your customers a variety of services, including the technology, they will be more inclined to stay."

Inspection and traceability, grouped together, is a trend that is increasingly costly, says Rauch. "It's being asked of us by both governments and customers," he says.

"It's something we'll be increasingly struggling with, and costs will be transferred to customers. You can make the case that some of those requirements will create better companies, but some will not translate into more efficient companies."

Dematic's Hunter agrees, and says advancement among cold storage 3PLs happens on a relative basis. "If someone develops some cost-saving strategies, everyone else is compelled to follow," says Hunter. "The cold storage industry has been content, but they are being forced by competitors to innovate." □



DISTRIBUTION & FULFILLMENT • TRANSPORTATION MANAGEMENT
MATERIAL HANDLING SOLUTIONS • REAL ESTATE MANAGEMENT

Kenco's supply chain solutions go beyond the shipping dock to satisfy your customers—during their coffee break or any time. How? We combine common sense customer service with unparalleled execution, driving continuous value to you—and your customers.

1-855-877-5910 | solutions@kencogroup.com | kencogroup.com

Sustainability Initiatives Can Lead to Closer Relationships

Sustainability initiatives with suppliers and service providers in areas like energy emissions and carbon management can have mixed effects on supply chain performance. But they do have one overarching benefit: the potential to create closer relationships with these key partners.

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

CONSUMERS AND governmental agencies have been pushing organizations to pay closer attention to the environmental impact of their practices. In response, many organizations now are adopting sustainability strategies in their supply chains.

One primary area of focus for these environmental initiatives is carbon management. As part of its Open Standards Benchmarking in supply chain planning, APQC asks responding organizations to indicate whether their supplier selection criteria and contracting take into account the carbon management capabilities of suppliers. Almost half (46 percent) have not adopted a strategy for making their supply chains more environmentally friendly through their selection criteria and contracting (see Exhibit 1). And those organizations that have adopted this strategy have done so to varying degrees, with few reporting "to a very great extent."

APQC asks respondents to its Open Standards Benchmarking in logistics to indicate whether they evaluate transportation companies for carbon emissions, energy consumption, and strategy for carbon management. Many of these organizations do evaluate how their transportation providers manage carbon emissions and energy use. However, the majority of respondents are doing so to either a little or moderate extent. Only 17 percent are evaluating these environmental factors to a very great extent. (See Exhibit 2.)

Organizations are well aware of the potential benefits of being perceived by customers as a good steward of the environment—whether the sustainability initiatives are self-generated or imposed on them by government regulations. But what effects do practices such as those described above have on supply chain performance and the bottom line? To answer this question, APQC compared performance on selected supply chain measures between organizations that have adopted these practices and those that have not. The results indicate that organizations adopting sustainability strategies see both benefits and disadvantages in their supply chains. The disadvantages, however, may be at least partially offset by the potential for closer relationships with their suppliers and transportation providers.

Suppliers' Carbon Management Capabilities

APQC's data indicate that organizations that consider suppliers' carbon management capabilities when establishing supplier selection criteria

EXHIBIT 1

Carbon Management Capabilities Reflected in Supplier Selection/Contracting

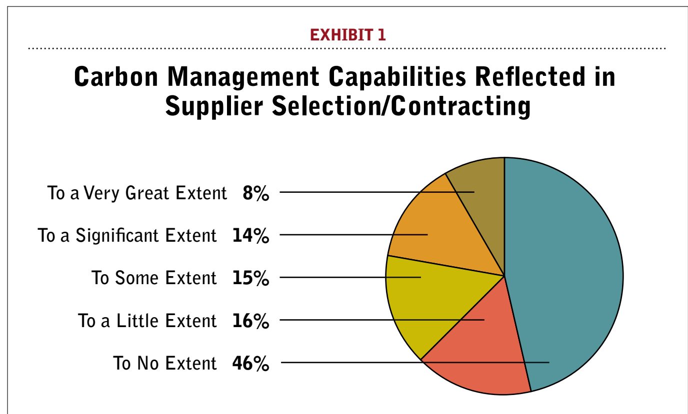
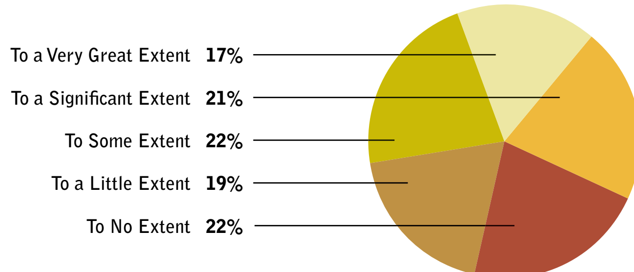


EXHIBIT 2

Evaluation of Transportation Providers' Carbon Emissions, Energy Consumption Approach



and contracts need relatively more full-time equivalent employees (FTEs) for supply chain planning and strategy development per $1 billion in revenue (see Exhibit 3). These results could be related to extra resources that may be required when establishing criteria and setting targets for suppliers to meet.

When evaluating suppliers' carbon capabilities, companies need to determine which specific capabilities are most desirable. This requires research and an understanding of any customer or regulatory influences. The companies must also determine how to handle suppliers that have less-than-optimal carbon management capabilities, especially when those suppliers provide materials of strategic importance to the organization. All of these additional tasks could create the need for more FTEs involved in supply chain planning.

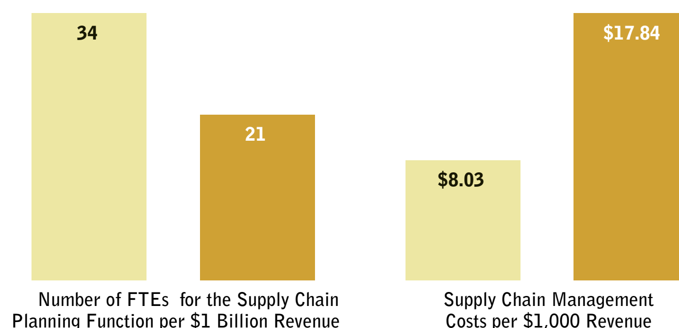
However, as Exhibit 3 also shows, organizations that consider the carbon management capabilities of suppliers spend less on supply chain management overall than those that have not adopted this strategy—despite the need for the former to dedicate more FTEs to supply chain planning tasks. At the median, organizations engaging in this practice spend $9.81 less per $1,000 in revenue on supply chain management activities than the non-adopters of this practice. For an organization with $5 billion in annual revenue, this translates to a difference of $49.5 million in supply chain management costs.

The lower costs could be related to a stronger focus on supplier capabilities. In addition to supplier criteria related to carbon management capabilities, organizations considering the carbon management factor may set criteria for reliability and performance that ultimately reduce the cost of running the supply chain. It may also be that the suppliers meeting criteria on carbon management capabilities have streamlined their processes, which allows them to operate with less oversight from purchasing organizations. This independence would reduce the amount contracting organizations spend on managing their supply chains.

EXHIBIT 3

Comparison of FTE and SCM Costs

(Median)



Supplier selection criteria and contracting reflects suppliers' carbon capabilities

Supplier selection criteria and contracting does not reflect suppliers' carbon capabilities

Energy Use and Carbon Emissions of Transportation Providers

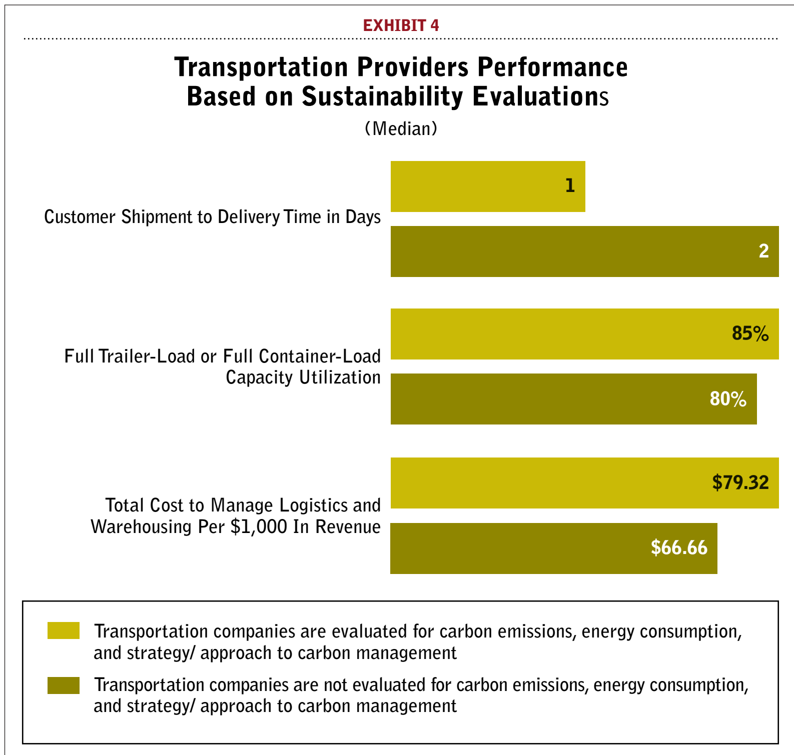
APQC also looked at the logistics performance of organizations that evaluate the carbon emissions, energy consumption, and approach to carbon management of their transportation provider companies. The data reveal that organizations that have adopted this sustainability strategy to any degree obtain better logistics performance from their transportation providers than the non-adopters. However, they also spend more to manage logistics and warehousing.

Organizations that evaluate their transportation companies' carbon emissions, carbon strategies, and energy consumption enjoy superior customer shipment delivery time in days. At the median, they need one day less to deliver orders to customers than organizations that have not adopted this sustainability strategy. The adopters also have a higher rate of full trailer-load or full container-load capacity utilization; their rate is 5 percent higher at the median than the other group.

The superior logistics performance may result from closer relationships developed between the organizations and their service providers. Being able to obtain information on a transportation company's sustainability practices requires a level of trust between both parties. Closer relationships such as these also enable an organization to work

closely with its transportation providers to optimize services, which could lead to shorter delivery times and increased full trailer-load shipments. Contracting organizations may also grant transportation companies greater visibility into their inventory and sales information, which can enable the service providers to better plan shipments so as to minimize delivery time and increase the rate of full-trailer shipments.

As Exhibit 4 illustrates, despite their superior performance in customer deliveries, organizations that evaluate their transportation providers' sustainability efforts spend more to manage logistics and warehousing than those that have not adopted this strategy. At the median, adopters spend $12.66 more per $1,000 in revenue to manage logistics and warehousing than the non-adopters of this strategy. For an organization with $5 billion in annual revenue, this would mean a difference of $63.3 million in logistics costs associated with evaluating the carbon emissions initiatives and energy consumption of transportation providers.



Organizations that are interested in the sustainability practices of their transportation companies may spend more to manage logistics because of additional staff or systems needed to monitor and evaluate the providers. Supply chain staff may need additional time to communicate and work with providers to obtain information on emissions, energy use, and carbon strategies. Finally, these organizations may also spend more on managing logistics because transportation providers willing to provide information on their sustainability efforts may charge more for their services.

The Benefit of Visibility

With customers and government regulators focusing on the industry's impact on the environment, organizations must consider how adopting sustainability initiatives can affect supply chain performance. For initiatives regarding carbon emissions, there is the potential to develop closer relationships with both suppliers and transportation providers that can benefit all involved. Organizations can create close relationships during the contracting process by identifying carbon management capabilities of suppliers. Gaining visibility into suppliers' efforts from the start can lead to greater visibility in other areas of performance, which can lead to service improvements and lower supply chain management costs.

Similarly, organizations that seek to monitor the carbon emissions, energy use, and carbon-reduction strategies of transportation providers create close relationships by establishing visibility. This can result in improvements to the transportation services provided, which can lead to more efficient use of full-load shipments and improved delivery times to customers. However, monitoring transportation companies involves more time and resources than would usually be the case in the outsourcing process. And this can increase logistics costs.

Sustainability initiatives offer an opportunity for organizations to differentiate themselves from the competition—particularly among customers that are keenly interested in conducting business with companies that care about their environmental impact.

Organizations influenced by governmental regulations may not have an option to choose which sustainability initiatives to adopt, but they can be aware of the potential effects of these initiatives on the bottom line and on supply chain performance. Although the adoption of focused sustainability practices may lead to increased costs and more supply chain staff, this may balance out with the possibility of improved relationships with suppliers and transportation providers as well as the benefit of being seen by customers as a good environmental steward.

About 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.

Grow your business by leveraging market intelligence.

Transportation Management Systems
Meeting the Challenges and Obtaining Results
January 2011

The Adoption and Usage of Picking Solutions in Materials Handling Operations

Does Voice Technology Live Up to Its Promise?

Conducted by: PRG
On behalf of: MODERN MATERIALS HANDLING

Global Supply Chain Survey: Key Challenges and Opportunities in the High Technology Sector

ORACLE
Infosys

Click here to watch a video

SUPPLYCHAIN MANAGEMENT REVIEW

Peerless Research Group offers a wide range of custom and proprietary research solutions to businesses, consultants and advertising agencies specializing in supply chain, logistics and materials handling products and services.

We offer a complete set of quantitative and qualitative services and techniques covering Internet and telephone methodologies as well as focus groups, one-to-one interviewing.

Custom or proprietary studies include brand awareness, product and services usage and buying intentions, brand equity, corporate image and perception, advertising concept testing, product feasibility studies, market surveys, customer satisfaction research as well as corporate management studies.

PRG®
PEERLESS RESEARCH GROUP

A Peerless Media Company
111 Speen Street, Framingham, MA 01701
Phone: (508) 663-1500
www.PeerlessResearchGroup.com

Transforming the business of surplus capital assets

We can help you increase revenue by managing and monetizing your excess inventory, surplus equipment and scrap. Our "revenue recovery" teams assist you with inventory and asset identification along with marketing and online sales events in 500 product categories.

- *500 million items sold – annually*
- *Over $1 billion annualized sales revenue*
- *Access to 2.3 million registered qualified buyers*
- *Market your surplus assets to online buyers – globally*
- *Reduce your supply chain costs*
- *Help you accelerate sustainability initiatives*
- *Provide transaction security and buyer vetting*
- *Consultative review of your surplus business assets*

Increasing revenue through channel optimization

Liquidity Services Inc. has category teams with areas of expertise that provide you with specialized support tailored to your needs: Industrial Assets, Energy Assets, Transportation Assets.

Let us customize a program for you.

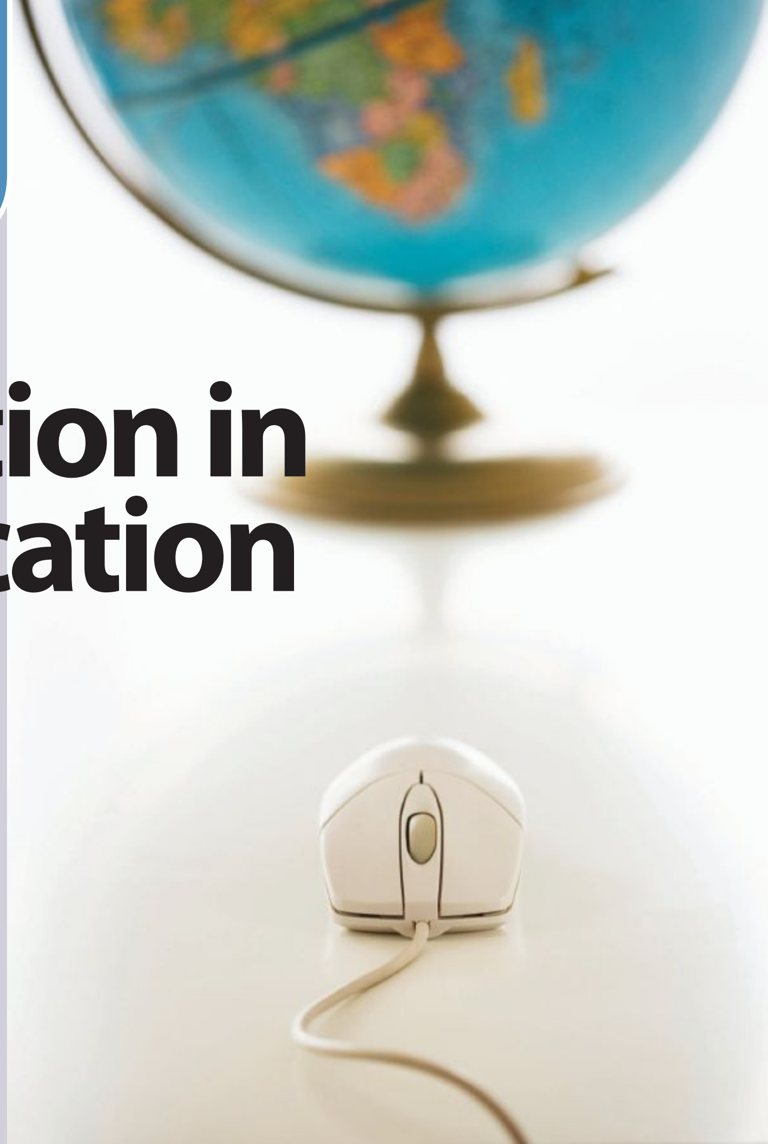
Call **888-832-7384** or email **sell@liquidityservicesinc.com**.

Liquidity Services Inc.

Industrial Assets: GoIndustry DoveBid / Government Liquidation | Energy Assets: Network International | Transportation Assets: TruckCenter.com

www.sellyoursurplus.net

A SPECIAL EDUCATION SUPPLEMENT TO:
SUPPLYCHAIN MANAGEMENT REVIEW



The Revolution in Online Education

Online education, distance learning, remote instruction… the concept goes by multiple names, but it all basically comes down to learning on the Internet in a flexible, non-traditional environment. In the supply chain space, the options for this versatile approach to learning are growing at a breakneck pace.

By Bridget McCrea

Asked just 10 years ago what he thought about online learning's potential in higher education, Nick Little admits that he probably would have written off the idea as inappropriate for his institution. "The answer would have been, 'We're a traditional university and we don't feel that we want to operate in the distance learning [arena]," says Little, assistant director of executive development programs for the Eli Broad Graduate School of Management at Michigan State University.

Fast forward to 2013 and Little—like many other higher education professors and administrators—has changed his tune. In some cases the movement is being driven by corporations that want well-educated, up-to-date supply chain professionals on their teams, but that don't necessarily want to send them offsite to complete executive education seminars or post-graduate studies. "Companies want employees to be able to handle the coursework on their own schedules, and in small doses," says Little, who is also a member of the APICS Education & Research Foundation.

Coupled with an overall explosion in the use of distance learning across most disciplines, these and other user demands have pushed schools like Michigan State to join the online education revolution. "Our view of distance education has changed 180 degrees over the last 10 years," says Little. "We now see that—when done properly—online is a good way to connect both with students and with companies."

Responding to these trends, the school has started developing online supply chain programs that are customized for individual companies. Sometimes the offerings include a "hybrid" approach that finds students studying independently online and spending a day in the classroom for reinforcement and to garner feedback from a "live" instructor. Michigan State University also offers a Master of Science in Supply Chain Management, roughly one-third of which is administered online (and the remainder in residential periods). In addition, the university has a series of five supply chain certificate programs that are taught by the same faculty that teaches the master's program.

Reflecting on his own 180-degree distance learning turnaround, Little says the proposition became harder to ignore as workforce mobility and transportability gained popularity over the last few years. "Distance learning programs can be completed while a student is traveling, working, or just staying up all night," says Little. "This is a good thing from both the student's and employer's perspective."

6.7 Million Students Can't Be Wrong

Little's change of heart on the distance learning front certainly isn't unique. Whereas online education was once thought of as a cumbersome, untested alternative to "real classroom learn-

Keep learning.
It's the Washington Way.

Gain *a* Strategic Advantage

The **Master of Supply Chain Transportation & Logistics** online program prepares you to tackle today's challenges of complex supply chain transportation.

Learn more at www.supply-chain-transportation.uw.edu.

UNIVERSITY *of*
WASHINGTON

ing," the delivery method has since gained respect and prowess—to the point where it has attracted over 6.7 million students to sign up for online courses.

A study by the Babson University Survey Research Group titled "Changing Course: 10 Years of Tracking Online Education," reported on distance learning's continuing, robust growth across a wide range of institutions. During the fall of 2011, for example, 6.7 million students took at least one online course, an increase of 570,000 students over 2010. Thirty-two percent of higher education students now take at least one course online, Babson reports, and 77 percent of academic leaders rate the learning outcomes in online education as the "same or superior" to those in face-to-face classes.

Advancements in technology have also helped buoy distance education's reputation and accelerated its usage. Videoconferencing equipment, collaborative software, and Internet bandwidth itself has improved to the point where technological glitches and other distractions can be kept to a minimum. "We're at the point where you can gather people from remote locations and/or different countries in an online meeting space where communication and sharing can take place," says Rick Blasgen, president and CEO of the Council of Supply Chain Management Professionals (CSCMP). "Everything is much faster and smoother thanks to increased bandwidth and improved technology tools."

Karen Collins, senior executive, onsite education, for the Institute for Supply Management (ISM), says that 100 percent online executive certificates from Arizona State University and Michigan State, as well as the University of San Diego's blended option (combining both online and traditional coursework), stand out as three examples of how far supply chain distance education has come over the last few years.

Within the corporate training environment, Collins says the web's versatility allows institutions to think outside of the box and use online education as prerequisites to deliver live, onsite courses; provide quick refresher courses; and to connect geographically dispersed students and instructors. ISM, for its part, offers over 130 supply chain-related online courses for both corporations and individuals

"The fact that you can use online education as a method to provide education to smaller groups that are geographically dispersed makes the delivery method especially attractive," says Collins, who sees foundational courses in procurement, legal issues, inventory management, demand planning, and supplier financial analysis as five areas that are particularly conducive to online training. "These are areas of the supply chain profession where 'practice' is not necessarily required to learn the skill," says Collins.

Adding Legitimacy and Validity Online

As online education has expanded, the number of distance education options offered by groups like CSCMP, ISM, and APICS has grown exponentially. "We basically just keep expanding our offerings as new topics come up in an effort to build out our distance learning platform," says Blasgen. Along with the SCPro certification option, for example, CSCMP also offers a 12-episode Supply Chain Management Essentials platform and a series of 45- to 60-minute interactive online learning segments on topics like supply and demand planning. "We continue to add to those as the industry demands and as we come up with hot topics," Blasgen says.

At Rutgers Business School in New Brunswick, N.J., Don Klock, professor of supply chain management, reports that the institution is going to launch an online master of supply chain management in 2013. And while Klock says online education "still isn't as good as being in the classroom," he notes that distance options are improving and they aren't going away anytime soon. "Online is a good alternative for those students who don't want to go into a classroom," Klock points out. "I don't see [distance education] going through the roof, but there is a niche out there for these types of students."

The full-time supply chain professional who wants to earn his or her masters degree in supply chain without having to visit a classroom, for example, can leverage online education options in ways that weren't previously available. And as the online revolution continues, the concerns over validity and rigor of such coursework have waned. In fact, Klock says employers have started looking closely at accreditation versus the educational delivery method. "We polled our Rutgers advisory board recently and found that as long as the school and program is accredited, then they support it," he says.

Supply chain certificates have not always been as embraced, according to Klock. "Some companies didn't support certificates at all because the programs weren't accredited—basically saying that if the education didn't end in a degree, they weren't supporting it." Other members of Rutgers' advisory board took a different stance and said that if a student wanted to enhance his or her knowledge via a certification, by all means "go for it."

The Road Ahead

Even if certain supply chain programs don't take the "100 percent online" route, expect to see most of them incorporating at least some level of distance learning into their curricula. Blended solutions that combine some in-person coursework and some online offerings, for example, will likely gather steam as the nation's larger universities continue moving into the digital education space. "It just doesn't make sense to set up a classroom training event for three

people," says ISM's Collins. "That's where online supplementation comes in and helps to fill in the gaps."

Going forward, Little sees online supply chain education branching out to include skills and knowledge that one wouldn't necessarily associate with traditional supply chain coursework. For example, he says instructors in his department are looking at how existing, online strategic leadership and management programs might go hand-in-hand with Michigan State University's supply chain offerings. Creating those types of crossovers is much easier in the online world versus the traditional, classroom-based educational setting, says Little.

"When it comes to management skills like negotiation, individual classes can be used from one certificate to the next, for example, to give students a faster track to a broader knowledge base," says Little. "And because strategy and leadership are also very important in supply chain, it just makes sense to blend the two. Those are the types of crossovers that we're seeing today and they're already proving themselves to be very effective."

Bridget McCrea is a freelance author s
pecializing in supply chain management.
She can be reached at bridgetmc@earthlink.net.

Supply Chain Education Programs

UNIVERSITIES AND EDUCATIONAL INSTITUTIONS

Arizona State University

W.P. Carey School of Business
480-965-7579
www.wpcarey.asu.edu/exec

Professional Certificate in Supply Chain Management begins September 2, 2013.

Auburn University

334-844-4000
www.auburn.edu

Auburn's School of Business offers an undergraduate major in supply chain management. Focus includes transportation, logistics, and operations management.

Brigham Young University

Marriott School
marriottschool.byu.edu

University offers a BS in Global Supply Chain Management. Coursework is designed to prepare students for managerial positions in manufacturing and service industries in the areas of purchasing, operations, logistics, customer service, and supply chain management.

Cranfield University

School of Management
44-011-1234-758102
www.cranfieldmsc.biz/log

Established over 26 years ago, the University offers one-year full-time Master's in Logistics and Supply Chain Management. It is widely recognized as one of the top logistics courses in the world. Whether you are already a professional in this field or are looking to move into this area, this course provides you with the specialist knowledge and skills to further your career in supply chain management.

Full-time Master's in Logistics and Supply Chain Management begins September 30, 2013

Georgia Institute of Technology

Executive Master's in International Logistics (EMIL)

404-385-7306
www.emil.gatech.edu

The Executive Master's in International Logistics & Supply Chain Strategy program prepares executives to face key global logistics and supply chain issues by teaching them to design creative logistics solutions while expanding their network of international government, industry and academic contacts. This 18-month program keeps employees on the job while teaching them practical techniques for decreasing logistics costs and improving supply chain efficiencies. Participants experience real-world results by learning best practices from world-leading experts in EMIL's five two-week residences (both in-person and distance learning) at key locations around the globe.

Georgia Institute of Technology

Supply Chain and Logistics Institute (SCL)
404-894-2343
www.pe.gatech.edu/scl-scmr

The Georgia Tech Supply Chain & Logistics Institute has been the premier institution for supply chain

PENNSTATE

SMEAL College of Business

Increase Your Value

Built on a foundation of educational excellence, leading-edge research, and deep industry partnerships, the Penn State Smeal College of Business offers a portfolio of supply chain programs designed to prepare you for peak performance.

Registration now open for Fall offerings

- Enhance your capabilities through our executive education programs and certificate opportunities.
- Advance with our online Master of Professional Studies in Supply Chain Management or Graduate Certificate in Supply Chain Management.
- Energize your organization's entire supply chain workforce via award-winning custom partnerships with Penn State Executive Programs.

Penn State ranks No. 1 in supply chain programs for undergraduate- and graduate-level students.

— Gartner, Inc.

Developing Leaders. Delivering Results.

1-800-311-6364 • psep@psu.edu • www.smeal.psu.edu/sc

and logistics professional education, innovation, and leadership for more than 20 years. Today, the Georgia Tech Supply Chain & Logistics Institute offers an extensive curriculum globally for professionals in supply chain, trade, and logistics. Courses are listed on the school's website.

Golden Gate University

Edward S. Ageno School of Business
415-442-6500
www.ggu.edu

Golden Gate University offers undergraduate and graduate certifications in operations and supply chain management.

Indiana University

Kelley School of Business
877-785-4713
www.kd.iu.edu

If your work involves purchasing, manufacturing, transportation, or consulting—take your career further with a Master of Science in Global Supply Chain Management. Complete your degree in one to five years. With the ultimate flexibility of Kelley Direct you can advance your education around your schedule.

• Fall Matriculation- Application Deadline- July 1, 2013

Massachusetts Institute of Technology (MIT)

Center for Transportation and Logistics
617-258-7267
ctl.mit.edu

The Massachusetts Institute of Technology offers a nine-month MIT Master's Degree Program in Supply Chain Management and Logistics. It is a full-time weekday
program offered on campus.

Michigan State University

Broad College of Business
517-353-6381
supplychain.broad.msu.edu

The Master of Science in Supply Chain Management (MSSCM) degree is a unique graduate program providing specific deeper knowledge of supply chain practices and technologies in a structure that it allows it to be completed while students are working full time.

The curriculum is specifically designed to prepare students for advancement in supply chain related careers in supply management, manufacturing and service operation management, logistics consulting, procurement, service-supplier business development and operations, and SCM software support.

The university also offers executive education programs covering key supply chain topics in courses that range from breakfast sessions to intensive week-long programs.

North Carolina State University

College of Management
919-515-5560
www.mgt.ncsu.edu

The Supply Chain Management Curricula offers the following: working in multidisciplinary teams, students develop in-depth knowledge of the entire flow of the end-to-end supply chain, from raw materials to finished products, with a special emphasis on information and supply flow throughout the process. Students develop the skills needed to write effective management reports, manage teams of workers, and make persuasive management presentations. Courses listed on the school's website.

Northeastern University

D'Amore-McKim School of Business
866-890-0347 x3510
www.cba.neu.edu

If you are interested in elevating your knowledge of supply chain management Northeastern offers the Graduate Certificate in Supply Chain Management. Whether you are just pursuing the field or are a working professional seeking to update your knowledge base, our focused curriculum and outstanding faculty with strengths in research and practice add up to an education that leads to success. Courses and course descriptions can be found on the school's website.

Northwestern University

Kellogg School of Management
847-467-7020
www.kellogg.northwestern.edu/execed

Northwestern offers the Supply Chain Management—Strategy and Planning for Effective Operations program.

The Ohio State University

Fisher College of Business
614-292-0331
fisher.osu.edu/centers/scm

Fisher College of Business offers undergraduate,

Master's, and Ph.D. programs in Logistics. Fisher College also offers a weeklong executive education program in supply chain management. The program is based on the eight essential business processes that comprise the Global Supply Chain Forum (GSCF) Supply Chain Management framework. It also includes a session on the GSCF partnership model that is being used by major corporations to structure relationships with key customers and suppliers.

Upcoming events are a seminar designed specifically for executives who are developing and implementing supply chain strategies with a focus on the core processes that must be linked throughout the supply chain. Seminar dates are:

- Sept 17- 0, 2013 Columbus, Ohio
- November 11-13, 2013 Cranfield, England

Penn State University

Smeal College of Business
814-865-3435
www.smeal.psu.edu/psep

The executive education unit of the Penn State Smeal College of Business will offer seven programs featuring faculty from the college ranked No. 1 in supply chain education by professionals and academics. Multiple supply chain programs can be combined to earn certificates in Supply Chain Management, Leadership, or Operational Excellence

Upcoming supply chain executive education programs include:

- Supply Chain Leaders Forum: Supply Chain Strategy, Development, and Execution September 5-6, 2013- The Penn Stater Conference Center and Hotel, University Park, Pennsylvania

Rutgers University

Rutgers Business School
973-353-5226
www.business.rutgers.edu/scmms

The Department of Supply Chain Management and Marketing Sciences (SCMMS) at Rutgers Business School offers a range of academic programs including a PhD in SCMMS, an MBA Concentration in Supply Chain Management and an undergraduate major in SCMMS. Rutgers also offers executive education programs based on current topics and trends. Also offered is a Supply Chain Management Certification Program for business professionals.

Stanford University

Graduate School of Business
650-724-6301
www.gsb.stanford.edu/exed

Strategies and Leadership in Supply Chains is taught by world-renowned thought leaders in the field, this program gives you the tools you need to create and manage market-leading global supply chains.

Program Dates: August 18 - 23, 2013
Application Deadline: July 15, 2013

Syracuse University

Whitman School of Management
315-443-3751
www.whitman.syr.edu/scm

The Whitman School offers B.S., MBA, and PhD programs in Supply Chain Management. Focus areas: demand management, inventory control, risk sharing, supply chain planning, information flows, transportation, production management, and global b-to-b marketing. Six Sigma training also offered.

Texas A&M University

Mays Business School
979-845-1616
www.business.tamu.edu

The Mays Business School offers a Supply Chain Management major as part of its BBA in Information & Operations Management.

The World Academy

908-354-7746
www.theworldacademy.com

The Academy provides training programs and seminars in all phases of export/import logistics, hazardous materials (HAZMAT), letters of credit, communications, harmonized tariff schedules, and INCO terms. A full list of webinars can be found on the Academy's website.

University of Arkansas

Sam M. Walton College of Business
479-575-6142
www.waltoncollege.uark.edu

The Marketing and Logistics Department at Walton College offers a B.S. in Business Administration (Transportation and Logistics Major) and a B.S. in International Business (Logistics Concentration). Also operates the SCM Research Center and RFID Research Center.

University of Denver

303-871-4702
www.du.edu/transportation

The ITI (International Transportation Management) Executive Master's Program from the University of Denver is is a fully accredited Master of Science in Intermodal Transportation Management from the University of Denver for experienced managers in the freight and passenger transportation sectors as well as the supply-chain and logistics management industries. Admission information and courses are listed on the University's website.

University of Maryland

R.H. Smith College of Business
301-405-2189
www.rhsmith.umd.edu

The R.H. Smith College of Business offers executive education programs through the Supply Chain Management Center.

University of Michigan

Ross School of Business
734-763-7804
execed.bus.umich.edu/

The Ross School offers a one-year Master in Supply Chain Management degree. Also offers an executive education course in Supply Chain Design and Execution for Global Markets.

University of San Diego

Supply Chain Management Institute
619-260-4600
www.sandiego.edu/scmi

USD's MS-SCM is one of the leading programs in the world, possessing both Institute of Supply Management (ISM) approval and Chartered Institute of Purchasing and Supply (CIPS) accreditation. USD's MBA concentration in supply chain management equips students with the skills and capabilities to be highly effective decision makers and USD's BBA minor in supply chain management has grown in popularity because it delivers a highly relevant education and business exposure for students embarking upon their professional careers.

University of San Francisco

800-609-4196
www.usanfranonline.com/ism

USF offers video-based e-learning in three 8-week courses for the Master Certificate program for Supply Chain Management.

University of Tennessee

College of Business Administration
865-974-5001
supplychain.utk.edu

The Global Supply Chain Executive MBA at the University of Tennessee is a 12-month program designed for global executives and supply chain management leaders working in organizations whose supply chain performance is fundamental to business success.

University of Washington

Department of Civil & Environmental Engineering
206-685-0853
wkeough@uw.edu
www.supply-chain-transportation.uw.edu

The UW Master of Supply Chain Transportation and Logistics online program prepares you to take a leadership role in the end-to-end design and management of transportation in a global supply chain. Taught by UW professors and senior supply chain professionals, this unique program helps you gain a comprehensive understanding of transportation systems and how these systems function in the larger context of a complex supply chain ecosystem.

The program begins each fall and is offered completely online, with the exception of a one-week residency course at the UW in Seattle. You can earn your master's degree in two years of part-time study.

University of Wisconsin-Madison

Executive Education Center
608-441-7357
exed.wisc.edu/supplychain

The Grainger Center for Supply Chain Management is one of the only endowed, university-based centers specializing in lifelong education in supply chain management in the United States.

Its unique curriculum is cross-functional and takes an integrated business process view of supply chains, including marketing, sourcing, logistics, operations, and customer service. It is a personalized, industry-focused program supported by companies known for supply chain excellence. Students connect with and learn from real-world supply chain leaders and are part of a strong, close-knit community.

SupplyChain247

supplychain247.com

Everything you need, every way you need it.

Supply Chain 24/7 is the ultimate online business resource for transportation, distribution, logistics and supply chain professionals. Find everything you need when researching companies, trends, and industries.

Your *best* business resource for:

- News
- Best practices
- Trends
- Case studies
- White papers
- Webcasts
- Research
- Special reports
- Blogs

and *much much* more!

Visit **supplychain247.com.**
Begin your experience today.

Walden University
866-492-5336
www.waldenu.edu

The University offers online management programs including a PhD in Applied Management and Decision Science, an MBA, M.S., and B.S. in Information Systems and a B.S. in Business Administration.

Washington University in St. Louis
Olin Business School
888-622-5115
www.olin.wustl.edu

The Olin Business School at Washington University in St. Louis offers master's degrees and certificates in Supply Chain Management designed to improve the student's ability to drive organizational effectiveness. These programs bring together faculty renowned for their work in risk management and supply chain research, leading-edge curricula, and industry collaboration to create highly sought-after supply chain management training.

PROFESSIONAL ASSOCIATIONS

APICS
800-444-2742
www.apics.org

APICS is pleased to announce a new, one-day course for professionals in functions that support the supply chain (for example, sales and marketing, accounting, information technology, and senior executives).The class, Customer-Focused Supply Chain Management, will provide an insider's view of supply chain management. It offers fundamental knowledge of the functions of SCM and is designed to quickly and effectively educate team members who interact with or support supply chain activities, helping to increase efficiency and generate ideas for improvements.

CSCMP (Council of Supply Chain Management Professionals)
630-574-0985
cscmp.org

CSCMP's global conference brings together thousands of supply chain professionals from all over the world to exchange ideas and share knowledge. Also conducts local roundtables across the country and the globe and offers a variety of supply chain Webinars. CSCMP's Online University offers members and potential members easy access to the latest in logistics and supply chain management. Upcoming events include:

- CSCMP Annual Global Conference 2013 October 20- 23, 2013- Denver, Colorado
- Fundamentals of Supply Chain Management November 13, 2013 CSCMP Headquarters- Lombard, Illinois

ISM (Institute for Supply Management)
480-752-6276
www.ism.ws

ISM offers certification programs, seminars, professional development services, and online courses for the supply management professional. It also features an annual Conference and Educational Exhibit and provides in-depth research on supply management topics through affiliation with CAPS Research. Conference event:

- ISM's 2nd Annual Risk Management Conference, Leverage the Unexpected. July 25-26, 2013- Chicago, Illinois

NITL (National Industrial Transportation League)
703-524-5011
www.nitl.org

The League represents shippers in their dealings with various regulatory bodies. Provides educational forums, annual conferences, and industry exhibitions through an annual TransComp event.

- 106th Annual Meeting & TransComp Exhibition November 16-20, 2013- Houston, Texas

SIG (Sourcing Interests Group)
530- 582-8600
www.sourcinginterests.org

SIG provides summits, global regional conferences, and web-based learning to enable members to network and build relationships.

Supply Chain Council
202-962-0440
sig.org

Through the Supply Chain World conference, the Council provides a forum for supply chain and busi-

ness executives to identify opportunities to improve financial and supply chain performance. Presents a benchmarking database by which companies can compare their supply chain performance to others; also offers training in the SCOR model.

TRB (Transportation Research Board)

202-334-2000

www.trb.org

TRB is one of six major divisions of the National Research Council. This agency offers conferences, workshops, research, and e-sessions for the transportation community.

VICS

(609) 620-4590

www.vics.org

Organization provides online education, workshops and a 3-day certification program. Collaborative Planning, Forecasting, and Replenishment (CPFR®) is an initiative that highlights the importance of collaboration and the benefits of a demand driven supply chain. An Introduction to CPFR e-Education is designed to introduce students to CPFR concepts and demonstrate the benefits and synergy of CPFR with other company initiatives such as category management and sales and operations planning.

WERC (Warehousing Education & Research Council)

630-990-0001

www.werc.org

WERC is a professional organization focused on warehouse management and its role in the supply chain. WERC offers seminar, conference sessions, e-learning opportunities and webcasts.

PRIVATE FIRMS

Accenture

Supply Chain Academy

www.supplychainacademy.com

The Accenture Academy supply chain curriculum offers hundreds of courses covering supply chain fundamentals, product innovation and lifecycle management, supply chain planning, sourcing and procurement, manufacturing, logistics, and customer and service management.

The Academy offers these supply chain-specific courses with the specialty skills and broader business management capabilities needed to help the supply chain workforce become more versatile business professionals.

SUPPLYCHAIN MANAGEMENT REVIEW

FEATURES

8 The Supply Chain Top 25: Leadership in Action
The 2011 rankings of the Top 25 supply chains from Gartner Inc. are in. They include repeat winners and some new entrants. Perhaps even more important than the actual rankings, says Gartner Research Director Debra Hofman, are the lessons that can be learned from analyzing the leaders. This year, six specific qualities stand out.

16 The Greening of Walmart's Supply Chain...Revisited
In 2007, *SCMR* ran an article on Walmart's sustainability program, focusing on eight specific initiatives being pursued. Four years later, the author of that original article, Erica Plambeck of Stanford, and colleague Lyn Denend revisit those initiatives to assess just how Walmart is doing on the sustainability front.

24 Achieving Flexibility in a Volatile World
A new global survey from PRTM confirms the importance of operational flexibility in supply chain success and identifies five levers that leaders employ to make it happen. The consultants report that the financial and performance advantages of improved flexibility can be profound. They outline five basic steps that companies can take to start realizing those benefits.

32 What's Your Mobility Index?
Mobile devices are everywhere these days. But what's the real potential of mobility in the key supply chain processes. And what's the best way to identify and tap into that potential? Sumantra Sengupta of EVM Partners says the first step in answering these questions is to carefully determine your "Mobility Index." This article tells how it's done.

40 The Case for Infrastructure Investment: Lessons from Medco and Staples
Smart investment in supply chain infrastructure—and in particular automated materials handling and distribution systems—can pay big dividends. Medco and Staples have proven that convincingly, as these case studies demonstrate. Their stories point to seven key takeaways that supply chains professionals in any business sector can learn from.

SPECIAL SUPPLEMENT
S50 EU Logistics: Meeting the New Challenges

COMMENTARY

4 Insights
Bowersox and Goldratt Leave Two Great Legacies
By Larry Lapide

6 Talent Strategies
Asia: The New Talent Management Model?
By Mahender Singh

48 Spotlight on Supply Management
The Evolution of Supply Management
By Carrie Ericson and Simon Rycraft

62 Benchmarks
Global Sourcing Calls for Due Diligence
By Becky Partida

EDITORIAL ADVISORY BOARD
Jack T. Ampuja, Niagara University
Joseph C. Andraski, VICS Association
James R. Bryon, IBM Consulting
John A. Caltagirone, The Revere Group
Brian Cargille, Hewlett Packard
Robert B. Handfield, North Carolina State University
Nicholas J. LaHowchic, Tompkins Associates
Hau L. Lee, Stanford University
Robert C. Lieb, Northeastern University
Clifford F. Lynch, C.F. Lynch & Associates
Eric Peltz, RAND Supply Chain Policy Center
James B. Rice, Jr., Massachusetts Institute of Technology
Larry Smith, West Marine

The missing link in your supply chain.

Keep your supply chain strong with a subscription to *Supply Chain Management Review.*

Get the full story behind each of these headlines and all the other issues in our digital archives
—included FREE with your new subscription.

Subscribe and save up to 40% off basic rates at www.scmr.com/subscribe.

Drive Operational Excellence

Your organization's supply chain function has a direct impact on efficiency, cost, customer service, and competitive advantage. Improve your ability to drive operational effectiveness with one of Washington University's Supply Chain programs: Master of Science in Supply Chain Management and the Supply Chain Certificate for Managers.

Master of Science in Supply Chain Management

This 36-credit hour program is open to full-time students as well as working professionals in the St. Louis area studying on a part-time basis. Tuition paid for a completed Supply Chain Certificate can be applied toward the tuition for a Master of Science in Supply Chain Management degree.
Accepting applications now for fall 2013.

www.olin.wustl.edu/MSSCM
msscminfo@wustl.edu 314-935-3390

Supply Chain Certificate for Managers

This program takes place over the course of three 2-day modules

Module One: Managing the Supply Chain as a System *October 8-9*

Module Two: Managing Supply and Demand *November 19-20*

Module Three: Supply Chain Analytics *December 17-18*

www.olin.wustl.edu/Certificates or ExecEd@wustl.edu 314-935-9494

Apply now to improve your organization's competitive advantage.

Washington University in St. Louis
OLIN BUSINESS SCHOOL