



# Center for Value Chain Research Newsletter

Winter 2007

Volume 2, Number 1

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## Questions? Comments? Ideas for Future Articles? Contact Us

[www.lehigh.edu/~inchain](http://www.lehigh.edu/~inchain)

Michael Santoro  
[michael.santoro@lehigh.edu](mailto:michael.santoro@lehigh.edu)  
610-758-6414

Lawrence Snyder  
[larry.snyder@lehigh.edu](mailto:larry.snyder@lehigh.edu)  
610-758-6696

Joel Sutherland  
[joel.sutherland@lehigh.edu](mailto:joel.sutherland@lehigh.edu)  
610-758-6428

## Directors' Column

### Trust and Communication, Keys for Successful Industry-University Research Center Relationships

Mutual trust and effective communication are essential elements for building and sustaining successful relationships. It is not uncommon though, for trust and communication (or lack thereof) to at first appear as barriers when embarking on a partnership or other close relationship. However, once those barriers are overcome, trust and communication become positive assets and enablers rather than obstacles.

Industry-university partnerships are no exception. In the richest relationships the CVCR has with its member companies, corporate managers and Lehigh researchers work closely together in ways that are not possible without trust and communication. Corporate managers trust us to treat sensitive company information with discretion and to use it effectively to help find innovative solutions to challenging problems. We, in turn, trust our corporate partners to give us opportunities to study new and interesting problems, thereby enhancing our understanding of how value can be created and added to the supply chain. We are also hopeful that these new discoveries will lead to publishable academic research.

Recent research in the areas of trust, communication, and inter-organizational collaboration indicate that trust and communication facilitate partner activities by fostering greater understanding and cooperation. Trust and communication also provide a stable foundation for the various social interactions that occur when members of different organizations work closely together.

We are keenly aware that a firm's overriding mission usually centers on improving its overall competitive position and increasing shareholder value. Consequently, we know that university research centers are valuable to industrial firms if they can help firms achieve these goals. As industry-university research center relationships evolve, both organizations learn about the abilities and intentions of their partners by working closely with each other. As an informal social

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process, trust is especially germane in industry-university research center relationships due to the complementary (rather than competitive) and non-equity (rather than equity or joint venture) nature of these relationships compared to industry-industry relationships. Trust also facilitates mutual understanding between industry and university partners where sometimes cultural and philosophical differences exist as it relates to different needs, different time horizons, and different reward systems.

Communication and information sharing play an important and central role in building trust and subsequently improving the likelihood of success of industry-university research center relationships. Effective communication between the industrial firm and its university research center partner serve several purposes, including providing timely and needed information, encouraging an understanding of partner capabilities and resource needs, promoting sensitivities toward the cultural and philosophical differences, and initiating and enabling new ways of doing things.

Recent research shows that industrial firms are relying more heavily on relationships with university research centers as an increasingly effective way for firms to advance new knowledge and new technologies. Industry-university research center relationships have been shown to be beneficial for this purpose but maximum utility from these collaborative ventures does not necessarily spill over from one organization to another. Rather, both parties in these alliances must actively engage and effectively communicate with one another in order to build a trusting and mutually successful relationship.

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***Inbound Logistics* magazine asked several industry experts** to answer "burning questions" that are on the minds of supply chain professionals. One of those experts, CVCR Managing Director Joel Sutherland, answered the question: *Does true supply chain collaboration exist?* You can find Joel's answer in the January 2007 edition of the magazine at [www.inboundlogistics.com/articles/features/0107\\_feature02.shtml](http://www.inboundlogistics.com/articles/features/0107_feature02.shtml)

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The Center for Value Chain Research thanks you for your active participation. Our richest relationships with our corporate partners have emerged from months or even years of growing levels of trust and communication. We look forward to building upon these foundations with you too.

Mike and Larry

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## The Perfect Order – A Customer Focused Measure

By: Kate Vitasek, Managing Partner, and Steve Symmes, Managing Consultant - Supply Chain Visions, a Bellevue, WA based consulting practice specializing in supply chain strategy and education.

A successful business, by definition, continually strives to add value for their customers and strives to meet their needs, adding value to each step in the supply chain. This has led many companies to try to increase customer satisfaction to retain and attract customers. As companies drill down into their customer satisfaction metrics, they are discovering that they lack sound operational measures with a true connection to hard, quantifiable measures that accurately reflect customer satisfaction.

Many suppliers have relied solely on fill rates as a measure of delivery performance and have worked hard to get their fill rates up—often into the high 90th percentile—only to find that customers are still not happy. How can this be? The answer is simple: Just because a supplier shipped product on time does not mean that it got to the customer when they wanted it, that the customer received what they wanted, or that the order was delivered how they wanted. In essence, fill rate is just one part of the overall customer satisfaction equation. Companies now have a new, superior option to understanding customer satisfaction from a customer-centric point of view. This is the "Perfect Order" philosophy.

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Why the focus on the Perfect Order? While companies often track a variety of delivery performance attributes with suppliers; almost all would agree that orders must be on time, complete, and damage free and must have accurate documentation. That is the perfect order. These four attributes are the most critical for suppliers to deliver on.

What makes the perfect order concept unique is not just the focus on the top four key performance indicators, but rather the fact that it encapsulates the total impact of an incorrect order in a single metric. The approach is similar to the traditional approach manufacturers have used for years to measure First Pass Yield in a production factory, where each production process is measured and total "yield" or fallout of the entire process is calculated as an index. The *Perfect Order Index* (POI) is established by multiplying each component of the perfect order to one another.

<b>The Perfect Order Index (POI)</b>
$\% \text{ On Time} \times \% \text{ Complete} \times \% \text{ Damage Free} \times \% \text{ Accurate Documentation} = \text{POI}$
<i>A Perfect Order is characterized as being on time, complete, damage free, and having accurate documentation. The Perfect Order Index (POI) is a measure of these four performance attributes. The POI strives to capture the needs of the customer from their perspective and is a better measure of customer satisfaction than order fill rate alone.</i>

For example, if a firm is experiencing a measure of 95% across all 4 metrics of the perfect order (on time, complete, damage free and accurate documentation), the resulting perfect order index would be 81.4%, clearly below the 95% for each metric alone. The traditional approach of looking at each KPI separately often lulls organizations into a false sense of good performance. To expand on the example: If the measure had fallen to 90% for each component, the perfect order index would have dropped significantly to 65.6% from 81.4%. The focus on all of the attributes of the perfect order more accurately assesses the end-customer satisfaction. By focusing on a more holistic approach, the total effect of a supplier's logistics can be measured.

But what sets apart a supplier as perfect? Do they do things differently? Have they invested huge sums of money in their infrastructure? Below are some trade secrets that researchers have observed through working with suppliers. Top performing suppliers:

- Understand performance from the customer's perspective.
- Work with transportation providers that provide Proof of Delivery. If you don't know that your carrier is not delivering on time, then how can you work with them to improve their performance?
- Are zealous about performance management, aligning metrics within their organizations to the attributes of the perfect order.
- Communicate the importance of the perfect order strategy throughout the organization, consistently and frequently.

It is also important to note that top-performing suppliers form a collaborative relationship with their customers to emphasize the importance of working together to achieve a perfect order index objective.

How can companies apply a perfect order philosophy to their suppliers? The good news is that many companies are already collecting data for many of the components involved in a perfect order. To start the process, here are six recommended steps:

- Find out what metrics are currently being employed within your organization.
- Determine the definition of the metrics and communicate across the organization.
- Determine how often the metric will be calculated (by week, month, customer, etc).
- Put someone in charge who will be responsible for the measure.
- Develop a collaborative relationship between the company and the supplier.
- Set a realistic goal.

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Many companies, whether supplier or customer, are embracing the perfect order philosophy and are committed to incorporating each attribute within their business processes to arrive at a more complete measure of supplier performance and customer satisfaction.

## Summary

The satisfaction of the customer is the paramount goal of any successful business. Traditional metrics for gauging this satisfaction often prove inadequate and misleading. Many operational metrics such as traditional fill rate simply are not aimed at linking customer requirements to quantifiable operational measures. Suppliers have fallen into the fill rate trap and often believe they are achieving high service levels when, in fact, they are not. Many leading companies are starting to look at their suppliers from the Perfect Order point of view. It helps them focus on the big picture of their entire supply chain and to better understand the impact of poor performance.

What really matters in today's customer-driven economy is "Did the customer get what they wanted, when they wanted it, how they wanted it?" and not how well a supplier ships. Achieving the Perfect Order is not out of reach!

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## Featured Research Report

The featured research report for this issue of the CVCR Newsletter is the white paper "**Collaborative Transportation Management: A Solution to the Current Transportation Crisis**" by Joel L. Sutherland. This paper reviews the challenges currently facing the U.S. transportation industry and explores solutions to those problems by applying demonstrated collaboration techniques with supply chain partners.

For the full text of this white paper, please visit

[http://www.lehigh.edu/~inchain/content/publications/pub\\_whitepapers.htm](http://www.lehigh.edu/~inchain/content/publications/pub_whitepapers.htm)

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## The CVCR Fall Roundtable

### Participants Discuss Managing the Global Value Chain

On November 15, 2006, Lehigh University's Center for Value Chain Research held their annual Fall Roundtable meeting. The meeting featured formal presentations addressing issues such as *Global Alliances; Global Sourcing; Global Planning Processes; The Impact of the Toyota Production System on Local Communities; and Global Supply Chain Security*. Each session included intense audience participation delving deeper into each issue.

Executive Summaries and PowerPoint presentations for each of these presentations can be found on the CVCR website ([www.lehigh.edu/~inchain](http://www.lehigh.edu/~inchain)). The following is a brief overview of each presentation.

### **Impact of Global Sourcing**

Robert Belshaw, SVP Business Development, GE Commercial Finance

Global Sourcing is growing rapidly and the impacts are far reaching within many organizations. Supply chains are dealing with increased supplier lead times, additional supply chain participants, decisions made in silos, ever changing global regulations and new competitive pressures. Sourcing globally may reduce the product cost, but increases business complexity. To support the changing roles and metrics needed to administer and manage longer more complex supply chains the physical, informational and financial supply chains need to converge.

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Third Party Inventory ownership is a relatively new and innovative financial instrument that has been created to support global sourcing. Third party ownership frees the capital trapped in the supply chain by accelerating the sale of the inventory. The major third party owners of inventory typically have lower cost of capital that allows the cost of capital in the supply chain to drop. This frees the money trapped and in many cases the costs of goods can also be reduced.

### ***The Benefits of Investing in Global Supply Chain Security***

Michael Crutch, Program Director, Import Compliance & Supply Chain Security, IBM

In 2002, IBM combined its 30 individual supply chains and formed one massive Integrated Supply Chain (ISC) division with 19,000 employees across 61 countries. IBM's Corporate Import Compliance and Supply Chain Security function has the responsibility for assuring customs compliance and end-to-end security of this complex integrated supply chain that extends to more than 160 countries. On a daily basis, IBM imports more than 5.5 million pounds of hardware valued at \$68 million USD via 2,500 customs declarations. Given the magnitude of its global supply chain, IBM takes supply chain security very seriously.

This paper will explain some of the initiatives IBM has undertaken to strengthen its supply chain and those of its suppliers and customers. It will also focus on the work IBM is doing with governments and customs organizations worldwide to develop and implement new security measures.

### ***Improving the Global Planning Process to Ensure Customer & Vendor Value***

Douglas Timmel, Global Sales Process Manager, Air Products and Chemicals

A Supply Chain planning process which involves the customer can be improved to ensure maximum value to the customer and the supplier. Forecast value added analysis (FVA) can help improve financial performance, and reduce supplier costs. Having suppliers successfully manage customers replenishment strategy which result in mutual benefits, is a benefit to those parties involved.

Market Intelligence, which is live and ongoing feedback from the customer touching organization, can be vital to accurate forecasting and supply chain planning. Market Intelligence can be used to modify and adjust historical and/or statistical forecasts, to obtain more accurate forecasts. The value of the modified forecast (post market intelligence) can be analyzed, and has been shown to produce consistently more accurate forecasts. This adjusted number is Forecast Value Added (FVA). FVA is measured by comparing the final forecast accuracy to the statistical forecast accuracy.

The paper concludes that close knowledge and involvement with the customer by those that are closest to the customer, can have significant quantifiable benefits for the supplier and the customer.

### ***Global Alliances in the Auto Industry***

Mike Santoro, Associate Professor of Management, Co-Director CVCR, Lehigh University

In this study, we address this issue by examining a firm's global alliance activities from a firm alliance portfolio perspective. We explore whether and how a firm's global alliance portfolio diversity in terms of its alliance partners, functions, and alliance governance structures influence the firm's performance.

We focused on parent firms from the global automobile industry (including both assemblers such as General Motors and suppliers such as Johnson Controls) and identified each of the firm's respective alliance portfolios. Results from this study show that twenty-five percent of the global auto industry alliances are with competitors while sixty percent of the alliances are with firms in unrelated industries.

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A key implication from this study emerges; alliance portfolio management is a key corporate strategic management responsibility since multinational firms can benefit by actively managing a portfolio of diverse alliances.

### ***The High Cost of Low Prices: The Global Impact of the Toyota production System on Local Communities***

Tom Swarr, Manager, Environmental Programs, United Technologies

The free market economy has delivered a greater amount of material wealth to more people than has ever been achieved in history. Yet there is a growing dissatisfaction with globalization. People are worried about their jobs, about immigration, and about terrorism. Growth has been uneven: those benefiting from market innovations are pulling away at an ever increasing pace. Income disparity is creating social pressures. The world's richest 225 individuals accumulated a combined wealth of more than \$1 trillion, equal to the annual income of the world's poorest 2.5 billion people.

It is suggested that combining industrial ecology and competition theory can yield new insights that extend lean thinking. Industrial ecology analyzes traditionally separate industries in a collective approach to achieve competitive advantage through the interchange of materials, energy, and by-products. It also suggests that a more effective approach to managing global supply chains might be based on a bottom up process of localized collaboration. More competitive clusters could better serve the long term viability of the community, while also yielding better suppliers for global OEMs.

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## News and Upcoming Events

Our annual CVCR Spring Symposium covering *New Perspectives on Global Value Chain Alignment* will be held May 1-2. The event will start with a networking dinner on the May 1, followed by a full day of presentations and discussions on May 2. Details will be sent out shortly.

On March 13, 2007, Joel Sutherland will be presenting at the Lehigh Valley Council of Supply Chain Management Professionals dinner meeting in Bethlehem, PA. For more information Contact: [tom.fiorini@westgate-global-logistics.com](mailto:tom.fiorini@westgate-global-logistics.com)

On March 20, 2007, Joel Sutherland will be presenting at the Supply-Chain World 2007, North American Conference & Exhibition in Philadelphia, PA. For more information Contact: [www.supply-chain.org](http://www.supply-chain.org)

On May 10, 2007, Joel Sutherland will be presenting at the Delaware Valley Council of Supply Chain Management Professionals 8<sup>th</sup> Annual Supply Chain Symposium in Malvern, PA. For more information contact: [www.clm-dvrt.org](http://www.clm-dvrt.org).

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## Questions? Comments? Feedback?

If you have questions about the CVCR or would like to discuss the content of this newsletter, please contact Joel Sutherland at 610-758-6428 or at [joel.sutherland@lehigh.edu](mailto:joel.sutherland@lehigh.edu). We look forward to hearing from you!