

# supply chain SOURCE

## The Global Supply Chain and its Impact

**Ananth Iyer** *GSCMI Director*

A couple of months ago, I ordered an iPod shuffle for our daughter, with a customized engraved message. The website provided free customization and express delivery. The next day, I used my order tracking number to check the order status. The order had been shipped from a plant in Suzhou, China for delivery to our door via Federal Express. It arrived at our home two days later.

It is clear that the "global supply chain" worked for our iPod shuffle and got the product to our door. The national boundaries the product traveled, the distances its components traveled, the time and distance that the ideas traveled, the company (Apple) that orchestrated the process – the entire set of events were seamless. If you are intrigued by what it takes to get all this to happen, then you just started down the path of wondering what it means to manage the "global supply chain."

The Global Supply Chain Management Initiative (GSCMI) at the Krannert School of Management at Purdue University is one effort to understand these issues. One major event that happened this semester, on February 16 evening through February 17, was a conference focused on "Coordinating the Global Supply Chain". We had eight speakers from firms such as Air Products, Philip Morris, Cummins and Delphi to talk about issues involved in "coordinating the global supply chain". We also had four speakers who discussed the issue of "managing Intellectual Property in the global supply chain." These speakers included lawyers from Bose McKinney, a senior manager from Rolls Royce who is managing technology development for the Joint Strike Fighter and former senior executives from Proctor & Gamble and Reflect.com.

What can we do to understand what it means manage the global supply chain

effectively? We have developed partnerships with universities in Korea, India and China to "research" such management issues. For the past year, our faculty have traveled to these universities to try to start collaborative research projects. We have held research conferences and focused on analyzing datasets regarding industry productivity changes in these countries. We are working with our alumni to orchestrate "short student trips" such as the week long Spring Break trip to operations of US companies in China. We are working to develop a three week "global internship" during the December break, for our MBA students.

Some of our research efforts have focused on understanding the productivity of auto component manufacturers in India. Our results show that many of the companies have gained productivity improvements primarily from substituting machine intensive for labor intensive manufacturing. But the greatest improvements are observed at firms, several of which are headed by Krannert alumni in India, which are winners of externally determined quality awards (such as the Deming prize awarded in Japan). In other words, it is not just machines and cheap labor, but management approaches that can offer a significant productivity advantage. Note that we have just begun in our quest for a systematic understanding of management issues. All I know is that a focused effort to understand these issues will develop a lot of interesting insights that may well change our perceptions of management.

What will our students and faculty learn from such efforts? It is clear that in many developing nations there are opportunities to source as well as to sell. However, effective management of both the buying and selling to remain competitive requires understanding both the manufacturing details as well as the associated logistics issues and the legal environment. It is also the case that a "total cost" perspective will have to consider not just "cheap labor" or "large market potential,"

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but the entire associated coordination cost to deliver or distribute the product. Furthermore, only detailed data analysis and understanding will enable us to truly understand what specific capabilities are available to both make products and assist in innovation. Finally leveraging our "global alumni network" will make it easier for our students and our partner companies to be able to access local faculty and student talent to manage their global efforts.

It is our goal to offer such a capability. It is an exciting time to be a student and to be able to access all of the talents and markets around the world. It is also a challenging time to be a manager whose performance is determined not just by the local environment but by the global markets and opportunities.

If you are intrigued by the comments above, I urge you to provide feedback to us as well as use our website to get access to a lot of information collected by our faculty and students. The faculty and staff at GSCMI are ready to assist in this quest.



Ananth Iyer

## INDUSTRY PERSPECTIVE: Analysis of I-69 and The Value It Brings To Indiana

By **Wayne Chan**, MBA 2007

The Indiana Department of Transportations (INDOT) mission statement is "INDOT will plan, build, maintain, and operate a superior transportation system enhancing safety, mobility and economic growth."

When choosing among major projects, INDOT considers a variety of factors, including congestion, traffic flows and safety, as well as the project's economic impact in terms of employment that a new road can bring to the State of Indiana. Being more difficult to evaluate, economic impact currently plays a lesser role than the aforementioned factors. Professors Ananth Iyer and Svenja Sommer and a first-year MBA student, Justina Mikals, are among several Krannert faculty and graduate students analyzing the impact of INDOT's projects on economic growth at the example of the furniture industry in southern Indiana.

The study is examining how a cluster of high-end furniture makers in southern Indiana could benefit from Major Moves, a multi-billion dollar transportation plan for the state. One proposal is for I-69 from Evansville to Indianapolis. This project would allow easier access to Indianapolis for the companies who presently have to mobilize their trucks on indirect freeways or smaller roads to reach or receive shipments from Indianapolis (and other locations towards the north). The study analyses how this project could help the supply chain to become more competitive, by cutting costs and improving delivery speeds and on-time delivery.

An emerging trend in the furniture industry is that Chinese furniture companies are selling their furniture in the US at such a low price point that they are squeezing out some of the domestic furniture companies. However, the southern Indiana furniture makers feel they have a strategic niche that is not in direct competition with the Chinese manufacturers. Hence, they increasingly focus on high-end products and customized products.

In short, the INDOT project revolves around the issue of how road construction can improve the supply chain of an industry and at the same time enhance the economic outlook and employment opportunities of Indiana.

## STUDENT PROFILE

### Henry Alers

By **Brent Horrocks**, MBA 2006



This month's student profile will highlight Heinrich (Henry) Alers. Henry is the new president of the Krannert Operations Club (KOC), and will be leading the KOC during next year's plant tours and Global Supply Chain conference.

Born in Lippstadt, Germany, his family moved to the United States when he was 13 years old, and they have lived here ever since. Henry learned to speak English while attending middle school in Illinois.

He earned his undergraduate degree in mechanical engineering from the University of Illinois at Champaign-Urbana. After graduation he took a job at Treemen Industries in Youngstown, Ohio. Treemen is a small automotive supplier

with about 50 employees. It makes lights and lighting components for automobile manufacturers such as Toyota and Nissan. While there, Henry was the process engineer and general manager over the assembly department. He learned about Just-In-Time (JIT) and Lean Manufacturing during his tenure at Treemen.

Henry left Treemen after a year and took a job with FreeMarkets in Pittsburgh, working there for two years as an engineering market maker. His duties included providing technical engineering support, and later the overall management of e-procurement projects. While working there, FreeMarkets merged with the well-known firm Ariba.

Henry decided that he would like to

have more business know-how to compliment his technical expertise in operations and supply chain, and decided that a Master of Business Administration degree would fit his goals. Henry chose Krannert for his MBA for three reasons. First, Krannert has a strong reputation in operations and supply chain management. Second, Purdue is close to his friends and family. Finally, Krannert has great financial aid and scholarships available to its Masters students.

This summer Henry will intern with Emerson in their Process Management division. His projects will include working with suppliers to implement Lean manufacturing and JIT in the supply chain.

## Executive Profile

By Ghazi Saleem, MBA 2007

# Cathie Kozik



**Cathie Kozik** graduated from Purdue University in 1982 with a bachelor of science degree in electrical engineering. She also holds an MBA from the University of Chicago (1987).

During her undergraduate internship with Motorola, Kozik had the distinction of working on the very first cell phone, which was in development at that time. After graduation, she went to work with AT&T. Before joining Motorola in 2003, Kozik was CIO at Tellabs.

In 2001, Kozik was named Computerworld's "Premier 100 IT Leaders." In 2002, she was honored as an "Outstanding Electrical and Computer Engineer" by Purdue University.

Ms. Kozik is presently serving as corporate vice president of Motorola's Integrated Supply Chain organization.

Ms Kozik has had a distinguished career and is poised for even great success at Motorola. **Why did she decide to join Motorola?** "I feel that the telecom industry is at a sweet-spot. I joined Motorola because it has the position and presence to make an impact."

**What skills were most useful in advancing her career?** "I think the most important skill I acquired at school is the ability to pull together the threads that create the whole picture. Companies are looking for people who can see the big picture and are able to put things in perspective."

**What attributes are companies looking for in their employees?** "A business is comprised of people, processes and technology. Some people tend to forget the customer focus and rely on technology too much. Creativity, humility and respect for customers are traits that will always be appreciated."

**What are some of the challenges facing multinational corporations?** "In a diversified company, the challenge is to instill corporate values that transcend geographic boundaries. Furthermore, multinational companies, (MNCs) are on 24/7 but businesses cannot expect employees to be available all the time. Good companies allow employees to balance family and work."

**What advice would she give to new MBAs?** "Challenge yourself, learn from your mistakes and never be afraid to speak up. And remember that, in general, companies are eager to hire new talent because they want fresh ideas!"

# Partners in the News

## Motorola Corporation

By Rasheeda A. Washington, MBA 2006

Motorola has made headlines in business journals over the last few months for a variety of reasons ranging from its culture, to divestitures, to its supply chain. In respect to its culture, Motorola was ranked #3 on *Fortune's* America's Most Admired Companies 2006 list for the 'Network Communications' industry. Companies are ranked on eight key attributes; and within its industry Motorola was ranked #1 for social responsibility and long-term investment; and #2 for innovation and use of corporate assets.

It is no surprise that Motorola was ranked high within its industry when you consider its timely decision to divest its automotive electronics division this month. It sold this division to German auto-parts supplier and tire maker Continental AG for \$1 billion. Motorola's overall sales totaled \$38.6 billion last year. And though this was a small division of Motorola, the decision to divest may have been best since the automotive industry has taken a sharp plummet to the bottom. The financial market also viewed this as a wise decision in that its shares rose 1.8% on the New York Stock Exchange when the deal was announced.

Finally, Motorola's supply chain allowed it to quickly address a quality issue with its top selling Razr phone last month. Its supply-chain capabilities allowed the company to trace the glitch back to a component that had been recently sourced from a new secondary supplier. Most of the affected product was still in the warehouse; and its logistics system allowed it to pinpoint which customers were affected and implement a reverse logistics process to recall and replace the affected phones. When asked about customer relations, Ed Zander, Motorola's CEO, commented "The impact to the consumer was very minimal because we caught it in time, and that's a credit to our improved supply chain and our improved commitment to quality."

SOURCES:  
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'America's Most Admired Companies 2006'

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'Motorola Fixes Razr Glitch, Resumes Shipments'  
by Jason Dean March 16, 2006: Page B4



# Global Focus:

## The Hybrid Car Myth By Charlie Kuo, MBA Class of 2007

A survey by *Wall Street Journal* suggests that although gasoline-fueled cars continue to dominate car sales, many consumers are considering buying a hybrid (e.g., vehicle that uses a combination of both a gas engine and electric motor) car as their next purchases. Around half of those consumers cited environmental benefits as the reason for the choice and around the same percentage favor hybrids because of lower fuel costs associated with the ownership of the car. Moreover, the average extra dollar a consumer is willing to pay for a hybrid car over a traditional gasoline powered car is \$8,555, suggesting consumers are willing to pay a premium for the aforementioned benefits.

On the other hand, however, overall, the U.S. auto industry is getting more competitive, and we are seeing vendors facing declining demand in some of the hybrid models and incentive programs such as 0% financing for up to five years, like that on the Ford Escape hybrid model, which are used to boost sales. The discount points out one problem: as the auto makers invests so much money in the gas-electric hybrid technologies, the market feedback is that hybrid cars, which do not actually deliver significant fuel saving benefits, have little interests to the consumers.

The *Hybrid Calculator Conundrum*, which is the result of smart consumers, armed with calculators, start to realize that hybrid cars do not have significant economic benefits, is catching up with Ford, Toyota and Honda. According to a comparison generated by the [www.fueleconomy.gov](http://www.fueleconomy.gov) web site, the four-cylinder Toyota RAV 4's annual fuel cost is \$319 more than that of the hybrid Ford. And as the base price of the hybrid Ford is \$6,600 more than RAV 4, it will take more than 20 years to realize the economic benefits.

Rising oil prices and tax breaks will benefit hybrid car owners, but advantage is not yet significant. Unlike Toyota Prius and other ultra-economic hybrid cars, the models being introduced by U.S. auto makers are very expensive and worst of all, fuel-efficiency improved little. Facing the rising gas prices hybrid cars sales still have potential to grow but for some of the auto makers, it may now be a good time to think about what real benefits their cars bring to the consumers before producing anymore cars with "Hybrid" logos.

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 [www.mgmt.purdue.edu/centers/gscmi](http://www.mgmt.purdue.edu/centers/gscmi)

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