

MANUFACTURING Matters

Zara's Quick Response Global Supply Chain

By Dr. Ananth Iyer



Greetings and welcome to the new 2008 academic year at Krannert. This summer was a busy time for all of us at the Center—interacting with sponsor companies, identifying potential projects and planning an exciting year of engagement with companies and students. But I wanted to spend a few minutes describing my summer visit to Zara – an apparel company based in La Coruna, Spain. My visit was part of a supply chain conference in Madrid.

Zara goes against the mould by insisting on being a vertically integrated apparel company that owns manufacturing, distribution and retail stores. Zara starts by focusing on the customer as the driver for the supply chain. Thus, customer feedback at the store is transmitted, on a daily basis, back to Zara's designers. The designers, who sit in a large warehouse office with merchandisers, make appropriate adjustments based on customer feedback. These changed designs are then immediately incorporated into production and shipped to stores.

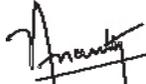
Zara has over 4,000 stores worldwide and has a reputation for fast response delivery of retail apparel. The two week design to delivery lead time at Zara is a revolution in the industry. Retail store managers request replenishment quantities but the shipping decision is a push decision – merchandisers ship to stores based on the planned assortments that are then displayed at stores according to prescribed layouts. Customers who come into stores are aware that designs will change every couple of weeks so that they should purchase things that are available immediately.

The new designs, generated in response to customer feedback, are cut at Zara and sent out to sewing shops to complete and return. The finishing of garments is also done at Zara. Finally all the assortment planning, packing and shipping to stores is also handled by Zara. The same set of designs are shipped to all stores worldwide. The outbound apparel is grouped by store and shipped by air to stores. Zara sources a large fraction of proximity suppliers (60 %) who are located in Spain, Portugal or Morocco and provide the fast turnaround desired. Standard products are sourced in China,.

A key role played by the store managers involves gathering customer feedback regarding products e.g., color preferences, style preferences, fastener choices etc. This feedback is summarized to provide specific product improvement suggestions based on an informal process. The development of such capability is referred to as the "Zara way". This is often a missing link in retailing – very rarely is the data a customer provides fed back to a designer to create a closed loop design and feedback system.

But does Zara need to own most of the steps in the supply chain to be able to decrease lead times to be so responsive? The answer, if existing business is any indication, is that Zara is unique in their capability. Zara's fast response capability has given them a significant competitive advantage in the apparel retailing. But an open question is if such fast response can be achieved without the corresponding risk associated with a vertically integrated manufacturing enterprise. I look forward to your comments and feedback.

Please join us this year for an exciting set of events – the Fall Operations conference is just around the corner, on October 23. We look forward to your feedback as we continue to nurture a fresh group of Krannert students focused on manufacturing and global supply chain management careers.

 September/October 2008



Meet the Center Graduate Assistants

STUDENT PROFILES



Rho Cauley
MBA Class of 2009
Center Graduate Assistant
August 2007 - May 2009

Rho Cauley is concentrating her studies at Krannert in the areas of Operations and Finance. Rho graduated from Purdue University in 2002 with a Bachelor of Science in Electrical Engineering. After graduation Rho went to work for Northrop Grumman's

Unmanned Systems Division in San Diego, California where she was a part of the Global Hawk Program. This past summer Rho worked again with Northrop Grumman in their Advanced Prototype Development group. Outside of the classroom Rho participates in the National Association of Women MBA's as Vice President of Communications.



Ryan McCombs
MBA Class of 2010
Center Graduate Assistant
August 2008 - May 2010

Ryan graduated from Purdue University in 2006, with a Bachelor of Science in Aviation Technology. Since graduating, Ryan has flown as First officer for Piedmont Airlines (a wholly-owned subsidiary of Us Airways) and the Embraer 145 family for Chautauqua Airlines (a subsidiary of Republic Airways Holdings.) Ryan will be concentrating in Operations and Global Supply Chain Management while attending Krannert. He is actively searching for a full-time summer internship beginning in May 2009, in one of these fields.



Roman Kita
MBA Class of 2009
Center Graduate Assistant
August 2007 - May 2009

Roman Kita is concentrating his studies at Krannert in the areas of Supply Chain, Operations and Information Technology. Roman received his Bachelor of Science degree in Business Administration from the

University of Illinois at Urbana-Champaign. After completing the program in 2000, Roman worked as a Business Analyst at Vesuvius Group, a manufacturer of refractory ceramics, in Brussels, Belgium. Over the summer, Roman worked as Materials Intern at Boston Scientific Corporation. Outside of professional experience and academics, Roman has served in Chicago's Polish community helping recent immigrants during their acclimation process.



Alan Siu
MBA Class of 2010
Center Graduate Assistant
August 2008 - May 2010

Alan graduated from UC Berkeley (University of California at Berkeley) in 2000 with a Bachelor of Arts in Interdisciplinary Studies Field. Since graduation, he has worked in operations and supply chain management in a variety of industries such as IT, E-Commerce, 3PL, Software (Gaming), and Biotech. Before arriving at Purdue, Alan worked at 23andMe, a web based Personal Genome Service located in Mountain View, CA. Currently, Alan is pursuing his MBA with concentrations in operations/supply chain and management information systems.



Lukas Morawski
MBA Class of 2009
Center Graduate Assistant
August 2007 - May 2009

Lukas Morawski is concentrating his studies at Krannert in the functional areas of Operations and Strategy while working towards a Manufacturing and Technology Management (MTM) Option.

Lukas Received a Bachelor of Science in Mechanical Engineering from Villanova University in Villanova, Pennsylvania. After graduation Lukas went on to work for American Axle and Manufacturing (AAM) in Michigan. This past summer Lukas was a production operations intern for Sikorsky Aircraft Corp. a subsidiary of United Technologies Company. Lukas is also the 2008-2009 Krannert Operations Club President.



Mark Wolfred
MBA Class of 2010
Center Graduate Assistant
August 2008 - May 2010

Mark graduated from Purdue in 2006 with a Bachelor of Science in Industrial Engineering. After graduation, he worked in the material handling industry where he designed, was project manager, and supervised the installation of large conveyor systems. As an undergrad intern, Mark also worked in the defense industry. Presently, Mark is pursuing his MBA with a concentration in Operations Management.



Come Join Us

DCMME - GSCMI Fall Operations Conference
October 23, 2008
"Manufacturing in Transition"

7:30 a.m. – 8:30 a.m.

Rawls Hall 3011

Check-in and Continental Breakfast

8:30 a.m. – 9:30 a.m.

Rawls Hall 3082

Welcome and Center Activity Overview (2007-2008)

9:30 – 10:30 a.m.

Rawls Hall 3082

Center Sponsored Research Update

DEVOS Award Winners-Research Overviews

Dr. Arnab Bisi "Global Supply Chain Management with Unknown Demand Distribution"

Dr. Yu Hu "Website Features and Online Shopping: How Technology Usage Impacts Consumer Demand"

10:30 – 10:45 a.m.

Partner Group Photo & Break

10:45 a.m. - 12:00 p.m.

Rawls Hall – Third Floor Commons

Student Internship Experience Poster Competition

MBA and undergraduate management students will present prepared posters based on their summer internship work experience. All Partners & industry attendees are invited to participate as event judges.

12:00 – 1:00 p.m.

Rawls Hall – Third Floor Commons

Networking Lunch & Poster Competition Award Announcement

1:00 – 3:45 p.m.

Rawls Room 3082

Industry Panel Session-*Manufacturing in Transition*

1:00-1:30 p.m. **INDIANA**

Indiana Economic Development Corporation, Don Foley
Director of Advanced Manufacturing and Logistics

1:30-2:00 p.m. **TEREX**

Terex Corporation, Tim Fiore

Senior Vice President Supply Management

2:00-2:15 p.m.

Group Discussion

2:15-2:30 p.m.

Break

2:30-3:00 p.m.

3rd Speaker

3:00-3:30 p.m.

4th Speaker

3:30-3:45 p.m.

Group Discussion

3:45 - 4:00 p.m.

Rawls Room 3082

Closing Remarks - Dr. Ananth Iyer

Event Sponsors:



On behalf of the DCMME & GSCMI Director Dr. Ananth Iyer, the managing director-Mary Pilotte and the students, we welcome these **New** partners to our Centers.



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Thank you for your generous support!

Internship Profile

Aviation Logistics in the US Coast Guard –
No small mission for a summer intern

by Gerald Sims

BSM 2009

The United States Coast Guard relies on the Aircraft Repair and Supply Center as the one-stop shop for all aviation logistics support.

By providing depot level maintenance, engineering, supply, and information services, ARSC keeps aircraft flying by providing "the right stuff, at the right place, at the right time, at the right cost...every time."



The current USCG expectation is for an aircraft to be operationally available at 71% system wide. Krannert's MiDAP-A (Mission Driven Availability Planning-Aircraft) study will analyze the validity of the outdated 71% metric and determine a more accurate and restructured aircraft availability target. Through site visits to several USCG facilities, the GSCMI research team familiarized themselves with the flight scheduling process and analyzed data kept internally at many Air Stations. This has allowed for a true understanding of mission demand at each facility and the capabilities at each specific location.

The measurable results will be an immediate improvement in the Coast Guard supply chain. However, more valuable will be the enhanced responsiveness of our fleet, which not only increases return to our tax payers but also the probability of saving lives. As an undergraduate student working on a summer assignment with the DCMME/GSCMI Centers, the opportunity to work on such a meaningful project is more than I could have imagined.



In the News:

Purdue Alum strengthens relationship between TVS and the DCMME & GSCMI Centers

by Roman Kita Alan Siu
MBA 2009 MBA 2010

Each year, the Dauch Center for the Management of Manufacturing Enterprises (DCMME) and the Global Supply Chain Management Initiative (GSCMI) offers students a Global Supply Chain Management Internship at TVS Motors in Bangalore, India (www.tvsmotor.in). TVS Motors is the third largest two-wheel manufacturer in India offering a wide range of two-wheelers products from mopeds to racing inspired motorcycles. With production plants in India and Indonesia, TVS Motors supplies to and supports over 12 million customers worldwide.

On September 4, 2008 we had a unique and inspiring opportunity to sit down with Venu Srinivasan, Chairman and Managing Director of TVS Motors, to get his insights on the automotive industry and the Global Supply Chain Management Internship.

Venu Srinivasan received his Masters in Management Science

(known as the MBA at that time) from Purdue in 1977. During his tenure at TVS Motors, he has transformed the organization into one of India's leading producer of two-wheeled vehicles. The successful implementation of the Total Quality Management (TQM) system has revolutionized TVS Motors under Mr. Srinivasan's leadership. TQM is a set of management principles executed through the organization, geared to ensure the organization consistently meets or exceeds customer expectations. TQM places a strong emphasis on process metrics and controls as a means of continuous improvement. Under Srinivasan's guidance, TVS Motors won the coveted Deming International award for Quality Management in 2002 for its successful implementation of Total Quality Management (TQM) practices.

To give back to Purdue, his alma mater, Venu Srinivasan and TVS Motors, have sponsored a select

number of students each year for a Global India Internship experience. He hopes students find the experience to be challenging while getting exposed to the new and improved manufacturing practices in Asia. The experience also helps TVS get feedback on their operational processes and understand the international perspective if and when TVS decides to expand to other countries.

When asked about the future of the automotive industry, Srinivasan said there will be a high demand for smaller, fuel-efficient, economy vehicles-- especially with the ever growing Asian economy, population, and space and resource constraints.

TVS Motors has their eye on improvement, and with the new perspectives and ideas generated from throughout the company we see TVS Motors achieving continued success in the automotive industry for a long time to come.

www.dcmme.org

www.gscmi.org

Thank you 2008-9 Center Partners!



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