

MANUFACTURING Matters

Plant Trips in Japan

takeaways for managing operations & strategy

By Dr. Ananth Iyer



I happened to spend two weeks in Japan this summer, attending a conference sponsored by Kobe University's Center for Operational Excellence. The conference included plant trips, each of which had at least one unique operational innovation that provides an opportunity for

introspection.

We visited the Toughbook plant owned by Panasonic – a few hours from Kobe. The plant produces 95 % of the world's demand for Toughbooks – laptops that can operate in rugged environments and can survive falls, vibration, dirt etc. The plant produces the entire Toughbook on one floor, handles worldwide repairs on another floor and has testing and design facilities on yet another floor. It also produces an extremely light and high battery life laptop – both ends of the spectrum. Panasonic is a division of Matsushita, which is a component supplier to the PC industry.

An interesting question is whether the vertically integrated Toughbook manufacturing was a competitive choice for Panasonic. Managers at Panasonic believe that succeeding in making the Toughbook – a niche product with high margins – provides an opportunity for Panasonic to understand all of the tradeoffs involved in making a light yet rugged product. In the process, Panasonic gets to understand and innovate potential designs for all of its components. Finally, the repairs of broken Toughbooks in the same manufacturing location enables quick redesign by detecting opportunities for design changes.

Executives felt that several Japanese manufacturers are contemplating vertically integrating a slice of their business in order to deliver significant product innovation as well as challenge themselves to develop cutting-edge components. So here is a question to ponder: how much consideration

of vertical integration, feedback through repair monitoring and targeted manufacturing of high margin niche products should be part of development a long term manufacturing strategy?

A second visit was to a retail store owned by the Kansai supermarket chain. A few unique aspects of this store – the store carried about two days of inventory for most products and a few hours (around two hours at most) of inventory of fresh product. A glass separated the manufacturing – frying, baking etc from the display. As inventory depleted, fresh product was made to replenish. The system was very much like a Kanban operation and guaranteed fresh product throughout the day. In addition, individual SKUs had an LED that was used to display price per unit. This display could be wirelessly programmed to respond to competitors, to higher than normal levels of inventory etc. The store seemed to carry a large number of SKUs but in small quantities. Managers were very aware of SKU level inventory and controlled it to closely reflect demand. In short, managing operations was a central part of this retailer's strategy. So how should the ability to adjust price be managed to stabilize supply costs in a retailer? Could careful price adjustments simplify the management of operations by stabilizing demand fluctuations?

All in all, managers at these operations were very concerned about stability of supply flows, about high levels of service, about fresh product, about competitiveness of their operation and about innovation. I came away with several ideas, which we will continue to explore in the future. The extent of focus on detail and the potentially interesting strategic choices of these managers were refreshing.

I welcome you to join us this year in another journey of discovery and education. The Fall Operations Conference promises to provide ample time for discussion and exchange of ideas. Please contact Mary or me with suggestions for improvement. See you on October 5th at Rawls Hall.

Meet the Center Graduate Assistants

STUDENT PROFILES



Daniel Brown
MBA Class of 2008

Center Graduate Assistant
August 2006 - May 2008

Daniel Brown graduated from the University of Waterloo in Canada with a degree in Mechanical Engineering in 2003. As an undergraduate he interned in the automotive and aerospace industries. After graduation, he worked as a corrosion engineer at Ontario Power Generation's Darlington Nuclear Generating Station. Brown pursuing a concentration in operations and strategic management while at Krannert and had a summer internship with GE Financial.



Mark Vymyslicky
MBA Class of 2008

Center Graduate Assistant
August 2006 - May 2008

Mark graduated from the University of Illinois at Urbana-Champaign in 2004 with a Bachelor of Science in Electrical Engineering. Before arriving at Purdue, he worked for John Deere's construction and forestry division located in Dubuque, Iowa. Currently, Mark is pursuing his MBA with concentrations in finance and operations and completed a summer internship with Kohl's.



Bin (Odien) Xu
MBA Class of 2008

Center Graduate Assistant
August 2006 - May 2008

Bin (Odien) Xu graduated from Shanghai University, China in 2002 with a Bachelor of Science in Polymer Engineering and Sciences. After graduating he accepted a position with Techfields Biochem. Xu began his preparation for an American MBA by moving to Canada in 2005. At Krannert he is pursuing a focus on operations and marketing and completed a summer internship with Fairfield Manufacturing.



Rho Cauley
MBA Class of 2009

Center Graduate Assistant
August 2007 - May 2009

Rho Cauley graduated from Purdue University in 2002 with a Bachelor of Science in Electrical Engineering. She is an active member of the Society of Women Engineers and prior to coming to Krannert worked as an engineer for Northrop Grumman. Currently, Cauley is pursuing her MBA with a concentration in operations.



Roman Kita
MBA Class of 2009

Center Graduate Assistant
August 2007 - May 2009

Roman Kita graduated from University of Illinois Urbana-Champaign in 2000 with a Bachelor of Science in Logistics. Since graduation, he has worked for Vesuvius both in Belgium and in the United States as a systems design analyst. Currently, Kita is pursuing his MBA with a concentration in operations.



Lukas Morawski
MBA Class of 2009

Center Graduate Assistant
August 2007 - May 2009

Lukas Morawski graduated from Villanova in 2004 with a Bachelor of Science in Mechanical Engineering. He is Habitat for Humanity volunteer and prior to coming to Krannert worked as a production supervisor for American Axle & Manufacturing. Currently, Morawski is pursuing his MBA with a concentration in operations.

Engaging Suppliers to Ensure Manufacturing Competitiveness

Krannert's Dauch Center for the Management of Manufacturing Enterprises and the Global Supply Chain Management Initiative will be hosting a **day-long operations conference on Friday, October 5, 2007 from 10:30 a.m. – 4:15 p.m. in Rawls Hall.**

Center Director and the Susan Bulkeley Butler Chair in Operations Management, Professor Ananth Iyer will lead the conference, which is one of two major events sponsored by the Centers. The theme will be **Engaging Suppliers to Ensure Manufacturing Competitiveness** and will feature speakers from UTC, Purdue University, and India's TVS Motor Company.

Other conference highlights include the Student Internship Experience Poster Competition which is open to MBA and undergraduate management students. Students prepare posters describing their summer internship work experience and present them to industry executives attending the conference. Cash prizes will be awarded for the top three presentations.

The conference is open to the public however, pre-registration is required. For registration and further event details visit www.dcmme.org/events and click on 2007 Fall Operations Conference.

We look forward to great industry participation again this year. All industry attendees will be asked to participate as judges for the poster competition.

In the News:

Martha Stewart and Gallo Set Wine-Marketing Pact

Summary By: Mark Vymyslicky, MBA Class of '08

Everyone knows that if you want to learn a thing or two about cooking and entertaining, you turn to Martha Stewart. But does the Martha Stewart name mean anything when it comes to wine? Not yet, but that will change soon enough, when the Martha Stewart Vintage label hits store shelves. The wine, which will be produced and distributed by E&J Gallo Winery, should run about \$15 a bottle.

Grapes from Sonoma County in California will be the primary ingredient, with production runs on the new wine expected to be pretty restricted at about 15,000 cases for the first year. Availability will also be limited to a select group of cities such as Boston, Phoenix, and Charlotte, where Martha Stewart already has an established fan base.

The new wine partnership will not be the first time that Stewart has done business with E&J Gallo. In fact, Gallo has already been a big advertiser with Martha Stewart Living Omnimedia Inc., the business entity that publishes the Martha Stewart magazines and produces her television show. The venture is not expected to have a big impact on profits, but will help Martha Stewart to continue her expansion into other product lines. Also, wine is a pretty safe bet at this point, as both wine volumes and values are expected to grow over the next few years.

"Martha Stewart and Gallo Set Wine-Marketing Pact." *The Wall Street Journal* September 15-16, 2007: A10.

Fall Operations Conference Event Agenda Friday, October 5, 2007



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 – 2:30 p.m.

Industry Panel Session



United Technologies Corporation

Scott Singer

*Director of Supply Chain UTC Global Supply
Management*

TVS Motor Company

Venugopalan Kovaichelvan

Sr. VP for HRD & TQC

Purdue University

Doug Sabel

*Director of Procurement Operations
& University Contracting*



2:30 - 2:45 p.m.

Networking Break



2:45 - 4:00 p.m.

Center Sponsored Research Update



DEVOS Award Winner Research

Dr. David Hummels

Professor of Economics

Valuing Timeliness in Global Supply Chains

Dr. Karthik Kannan

Ass't Professor of Management

*Impact of Information Revelation Policies in
Electronic Procurement-Auctions*

Other Center Research Overviews

Dr. Emmanuel Kodzi

Indiana Manufacturing Competitiveness

4:00 - 4:15 p.m.

Closing Remarks - Dr. Ananth Iyer



Key Center Dates

October

5 - Fall Operations Conference

February

14-15 - Spring Supply Chain Conference

May

TVS Motor Company Internship Experience

Monthly

Executive Speaker Series
Opportunities for graduate and undergraduate student organizations.

If interested in participating, contact us at gscmi@purdue.edu to help coordinate your visit.

In the News:

U.S. Steel Agrees to Buy Canada's Stelco

Summary By: Roman Kita, MBA Class of '09

U.S. Steel Corp., headquartered in Pittsburgh, Penn., agreed to acquire Canada's Stelco Inc. for \$1.1 billion. This move marks an effort to increase the market share of higher-valued steel products. These products, ranging from automobile fenders to parts for appliances, carry higher profit margins and less competition than lower-end products. U.S. Steel plans to use low-end steel made by Stelco and further process that steel at one of U.S. Steel's mills and turn it into auto- or appliance-ready steel.

The deal also furthers U.S. Steel's effort to reduce its reliance on the U.S. domestic market. While the North American market has considerable overlap, currencies, trade policies and other issues give Canada its own environment.

The limited pool of steelmaking assets, as well as strong cash reserves due to high prices and demand, have added an element of urgency to industry dealmaking, especially in a rapidly consolidating industry. John P. Surma, the company's chairman and CEO, said that U.S. Steel is still looking for more acquisitions.

According to analysts, the North American steel market is very healthy and is not expected to decline in the near future. The continued consolidation of the industry allows steelmakers to exert more pricing power over its customers. In Addition, Mr. Surma doesn't expect that the U.S. will experience an increase of steel imports that could affect the domestic industry and cause prices and profits to drop.

Matthews, Robert Guy. "U.S. Steel Agrees to Buy Canada's Stelco." The Wall Street Journal 28 August 2007: A2.

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