

MANUFACTURING Matters

Understanding Global Competitiveness of Indiana Manufacturers

By Dr. Ananth Iyer



A recently completed study at the center focused on “**Global Competitiveness of Indiana Manufacturers**” and was co-authored by Dr Emmanuel Kodzi, Mary Pilotte and myself. The study was funded by Katz, Sapper and Miller and provided a unique opportunity for DCMME to understand Indiana manufacturing firms and drivers for success. A detailed report of this study will be available soon (please contact Mary Pilotte for details) – I will provide a quick summary of the study and its results.

We developed a detailed survey consisting of over 50 questions related to management of the supply chain and firm financial performance. We targeted firms that were representative of Indiana manufacturing both in terms of size, industry type and supply chain role. Thus, the survey attracted 50% of responses from suppliers, 33% from OEM manufacturers and 17% from distributors. In addition many of the respondents were in the \$11 to \$50 million in sales category, similar to the distribution of Indiana manufacturing firms.

Firms companies reported net income in excess of 10% of sales in 2006, but were not as optimistic about margins in 2007. Most respondents had between 21 and 100 employees, with employment expected to increase slightly in the next 5 years. Data collected suggested that 44 % had completed quality certification of some type (ISO, QS, TS, AS etc). Training expenditures were expected to rise in 2007, with 13% of companies expecting to send 2.6 to 5% of sales (compared to 6 % of companies spending at this level). 41% of the companies had more than 25% of their suppliers running JIT systems.

Our analysis enabled us to understand how specific initiatives by firms correlated with their financial performance. Results suggest that performance with respect to net income is significantly correlated with the ability to **synchronize distinct operations and units** across the supply chain and **coordinate responsiveness** to customer requirements.

A summary of results suggests that:

1. **Increasing a company’s ability to respond in a timely fashion to changes in order volume/specification by major customers can significantly increase profitability.**
2. **The frequency of meetings between production and engineering department is associated with improved profitability.**
3. **Most firms with high proportions of customized production appear not to have been successful at converting the level of variety into profits.**
4. **Profitability increases as companies improve their technological connection with suppliers.**

Thus manufacturing competitiveness **correlated with both “execution” of the supply chain and synchronizing and responding to downstream and upstream changes**. Thus, “competitive performance” of manufacturing firms required leveraging both technological *and* managerial abilities.

We plan to continue to position the center to play a role in making Indiana manufacturing globally competitive. A first step in this endeavor is to understand current choices and use that information to project the benefit of making changes to the supply chain. We welcome center partners and other interested companies to contact us for more information as we continue to work towards our role of nurturing research and education focused on manufacturing management at DCMME.

JANUARY/FEBRUARY



Spring 2008

Global Supply Chain Management Conference & Case Competition

Purdue Memorial Union, Purdue University



Amidst recent news of intellectual property risks, tainted pet food and hazardous toys, corporate executives and Krannert experts will discuss a broad range of issues surrounding managing operational risk in the global supply chain at this year's annual conference. Held at Purdue Memorial Union, Friday, February 15th, 2008 the event is hosted by the **Global Supply Chain Management Initiative (GSCMI)**, an operations and supply chain education, research and outreach Center within the Krannert School of Management, and co-hosted through support from Purdue's **Center for International Business Education and Research (CIBER)**.



This conference is ideal for those who are interested in discussing how choices made while getting the right products, to the right places, at the right time - all over the world, impact a firm's exposure to risk.



Speakers for the event include:

Krannert alumnus and event keynote speaker, William Kassling, Chairman of Wabtec Corporation.

Additional speakers from world wide heavy equipment manufacturer - Cummins, global distribution experts - CAT Logistics and innovative Indiana furniture manufacturer - OFS Brands, will round out two panel sessions which will be followed by audience question and answer sessions.

In addition to the dynamic industry panel sessions, we are proud to host our 3rd Annual MBA Student Case Competition. Over 20 teams from across the nation have entered this year's event, representing the following schools:

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|-------------------------------|--|-------------------------------------|
| Dartmouth | Georgia Institute of Technology | Indiana University |
| University of Michigan | Michigan State University | University of Minnesota |
| Northwestern | Purdue University | UCLA |
| University of Akron | University of Maryland | University of North Carolina |
| Vanderbilt University | University of Wisconsin-Madison | |

Student teams are competing in a two phase case evaluation on the theme of Global Supply Chain Risk Management, in a case entitled "Operational Risk in the Spiceness Inc. Supply Chain." The case, written by Center Director Dr. Ananth Iyer, tells of a small "home spun" spice company from the Midwest that grows into a multi-plant, multi-product operation focused on maintaining high product quality through control of both raw materials and product processing. MBA students are challenged to present a compelling recommendation for Spiceness Inc., as they balance the operational risk and reward of outsourced supply.

The top six teams (note bolded teams) advance from Phase 1 to compete for first, second and third place honors, taking home a total of \$8,000 in prizes! Thank You Event Sponsors for your generous support!

- 1st Prize: \$5,000**
- 2nd Prize: \$2,000**
- 3rd Prize: \$1,000**



Managing Operational Risk in the Global Supply Chain

Thursday, February 14th, 2008

3:00 - 5:00 p.m. Student Case Competition Check In
Rawls Hall - Second floor commons

5:00 - 11:00 p.m. Team Hospitality Suite & Student
Case Competition Preparation

Rawls Hall - Break out rooms



Friday, February 15th, 2008

Entire Event: Purdue University, Purdue Memorial Union

7:30 - 8:30 a.m. Check in & Continental Breakfast

Opening comments, Agenda & Welcome
MBA Student Case Competition - 6 team
Finalist Presentations

Panel 1 Speaker Series

Ryan W. Menke, OFS Brands
SVP Supply Chain

Dan Spellman, CAT Logistics
VP of Logistics Development & SC Services

Roger Stewart, Krannert School of Mgmt.

Lunch Break
Industry/Student Engagement



Keynote Speaker

William E. Kassling, Wabtec Corporation
Chairman of the Board

Panel 2 Speaker Series

Doug Sunkel, Cummins
Director - Americas Parts Distribution

Professor Ananth Iyer
DCMME/GSCMI Center Director

Alex Zelikovsky, MyThings, Inc.
COO

Case Competition Awards & Event Closing Remarks

For more event details, or to find out how *your firm* can become involved in future events, log onto: www.gscmi.org or www.dcmme.org and click on the "conference" tab.

The Krannert Connection in Raytheon's Supply Chain Leadership Development Program

By Roman Kita, MBA 2009

Dauch Center for Management of Manufacturing Enterprises (DCMME) and the Global Supply Chain Management Initiative (GSCMI) organized an information session hosted by Raytheon at Krannert School of Management on Wednesday, October 17, 2007. The session was geared toward students interested in Supply Chain management solutions that are being implemented at Raytheon. The event included an overview of the company, information about Supply Chain Leadership Development Program, and a Q&A session.

Raytheon started as an American Appliance Company in 1922. Throughout the years it developed into a leader in development of technologies used in defense as well as in the commercial markets. Headquartered in Waltham, MA, Raytheon currently employs 72,000 individuals and generated \$20.3 billion in sales in 2006.

Rasheeda Washington has been a part of Supply Chain Leadership Development Program (LDS) since the summer of 2006. Rasheeda received her MBA degree from Krannert School of Management the same year with the concentration in operations management and manufacturing technology management. Rasheeda was also a DCMME/GSCMI Center graduate assistant during her time at Krannert. When asked why Raytheon chooses to recruit Krannert students for its Supply Chain Leadership Development Program, Washington stated that Krannert is one of few schools nationally that offers Supply Chain Management concentration and Krannert students are well prepared to meet the challenges of today's business.

Supply Chain LDP is a two-year program consisting of three eight-month rotations. It exposes the participants to different functions of Raytheon as well as different locations. The program prepares each member to become a future leader in the Supply Chain area at Raytheon.

When asked what characteristics Raytheon is looking for in their candidates, Washington stated that they are seeking students who are humble, but at the same time not afraid of challenges and adaptable to change. Since, according to Rasheeda, Supply Chain management has a lot of room for improvement, each employee can make a lasting contribution in improving Raytheon's position in the market.



Save the date now for upcoming events!

February

15 - Spring Global Supply Chain Management Conference

April

TBD - GSCM and MTM Option Recognition Ceremony

May

3-24 - 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:

Global Manufacturers Staying Put in China

Summary By: Mark Vymyslicky, MBA Class of '08

With the scandal surrounding toxic toys coming from China, one would think that any and all American companies with manufacturing operations in China would immediately seek to reevaluate their supply chains. Not so, says a recent survey from The Smart Cube. The Smart Cube is a global professional services firm that recently surveyed supply chain executives at several major companies about how the Mattel toy crisis might alter their own supply chain practices.

78% of the respondents indicated that they would not take any additional measures to improve their supply chains. Are these companies being foolish? No, they are just being realistic. The reality is that many of these firms are comfortable with their supply chain processes. Just because a few isolated problems have surfaced in recent months does not mean that all manufacturing in China is in jeopardy. Unfortunately, this issue has been somewhat sensationalized in the media, and so the general public is probably a little wary now of products that are made in China.

One must be careful though of what to take away from the survey findings. The results are not meant to imply that 78% of companies do not care. In fact, individual discussions with the surveyed companies indicated that they were more cautious about their supply chains. The Smart Cube managed to summarize the results in a few simple points. First, firms that manufacture goods in China are not in the business of manufacturing substandard goods. Any good company is fully aware of the financial and reputational damages that low quality can bring about. They further know that it is their responsibility to insure that the goods sourced from China, or anywhere else for that matter, meet certain standards. Second, the practice of manufacturing overseas will never abate. Goods are just too easy to produce at a lower cost in another country. Finally, the quality problems of late are not just a Chinese problem. Without careful supply chain management and vendor selection, these problems could happen anywhere. Indeed, the recent issues have raised awareness of what it takes to have an effective supply chain, but there should be no cause for panic.

<http://www.thesmartcube.com/blog/>

www.dcmme.org

www.gscmi.org



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