supply chain SOURCE

GLOBAL SUPPLY CHAIN MANAGEMENT INITIATIVE

Managing Operations with Outsourced Suppliers

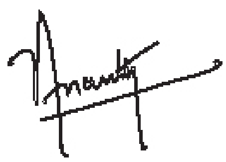
Ananth Iyer GSCMI Director

Two weeks ago, as part of the operations management course in Krannert's international executive MBA program participants in Budapest, Hungary, we visited Coca Cola HBC (CCHBC). CCHBC is an independent bottling company that produces Coke products and distributes the products. Coke is responsible for product design and marketing. In other words Coke manages demand while CCHBC manages supply. During our visit to the plant, we had an opportunity to discuss issues associated with this arrangement with managers from Coke. I believe that the capability to manage such "outsourced operations" will be a key component of successful global supply chain management.

As we toured the plant, the first thing we realized was that all of the facilities we were seeing and were using really belonged to the supplier - Coke was merely renting the space that was used for our meetings. The next point concerned all the equipment, their operation, quality control etc. was the supplier's responsibility. The supplier was responsible for all decisions that impacted productivity, costs etc. However, Coke retained the right to certify the quality of the output. Whenever new products were introduced or product specifications modified, the supplier retained the right to choose the equipment and its design and level of automation, Coke had to approve the design and verify that it delivered the required output that satisfied product specifications. Finally the supplier was restricted to use the facility to produce Coke products only. Since Coke has such relationships with many different suppliers, Coke could see what constitutes "best practice" but had to seek supplier permission to share such practices across its supply base.

Since Coke was responsible for product demand stimulation, and as we heard, the population of Hungary is shrinking, the youth segment decreasing and the growth rate low, new products were important. Some of these products, like a fruit juice blend called Cappy and a successful joint venture with Nestle called Nestea, were efforts to regain demand from a segment more interested in nonaerated products. Others, competing with products that were focused on the energy drinks market, required new packaging such as aluminum bottles with high packaging costs. Developing such unique packaging solutions requires high capital investments - these were coordinated by Coke across its bottlers in various countries. This process of nurturing innovation and balancing risks by sharing capital costs, manufacturing volumes and product distribution is a key role as Coke attempts to keep itself and its suppliers profitable.

The plant trip and the description of the associated managerial challenges provided a fascinating glimpse into the role of today's supply chain manager. It is often more difficult to manage at the interface, but business realities have made such roles inevitable. We will continue to explore such issues at the February 15th 2008 GSCMI conference when we focus on the topic of "Managing Operational Risk in the Global Supply Chain". As always, I welcome your perspectives and comments as we work to spread the enthusiasm for research and education in the field of global supply chain management. Please contact Mary Pilotte or myself if we can assist you in your endeavors.



PURDUE
UNIVERSITY

DECEMBER 2007

Venu Kovaichelvan, TVS Motor Co.

Engaging Suppliers to Ensure Manufacturing Competitiveness

Summary by Pete Mast, MBA 2008

The Krannert School of Management has always emphasized direct relationships with corporations in industry, working to create direct ties between students and the management of successfully run businesses. However, the architects of this ideal may never have dreamed that the ties could be as far-reaching as the ever-growing relationship with TVS Motor Company, hailing from Hosur, India.

Before presenting at the Fall Operations Conference on October 5, 2007, Venugopalan Kovaichelvan (also known as Kovai), Sr. VP for HR and TQC spoke to student members of the Society of Human Resource Managers. As with his later presentation, Kovai spoke of the opportunities and challenges present when entering both Indian and global markets.

Talent recruitment in Indian manufacturing has been among those challenges. In a market largely dominated by the service sector, consulting, and new economy businesses, manufacturing is often bypassed by the top talent. Even when universities provide programs focused on manufacturing-based industries, each Indian manufacturer has substantial competition in attracting that important talent.

Difficulties start long before the recruiting process. According to Kovai, " the education system is ill-equipped – both in number and in skills." Speaking of quality business programs, there is still a lack of integration of qualitative and statistical techniques into the program, he regrets. Kovai feels an increase in synergy between industrial engineering and business programs may be one way to address some of these faults.

With this environment of short supply and high demand for talented employees, Kovai indicates that Indian companies will need to start employing innovative human resource practices to attract and retain talent. Current human resource practices are Indian in nature, but are heavily influenced by the United States and other Western countries, particularly as the Indian educational system reflects these influences. As more and more Indian companies continue to fight for the same pool of talent, it is likely that innovative practices may be the deciding point in staffing each company. As Professor CK Prahalad commented, "the next best practices for people practices will emerge from India."

Scott Singer, United Technologies Corporation

Summary by Lukas Morawski MBA 2009

Mr. Scott Singer, the Director of Global Supply Management for United Technologies Corporation (UTC), discussed some of the successes that UTC has had, as well as some of their challenges they have faced, at the recent Fall Operations Conference. Mr. Singer identified that one reason UTC has been so successful is that they were an early mover in China. Originally UTC entered China to more cost effectively produce and export products to satisfy the needs of the rest of the world. However, in keeping with the idea that "souring follows markets" UTC is now in "China for China".

Approximately half of the products UTC produces in China are used to satisfy the demand from China. For example, UTC's Otis Elevator has captured a third of the market share in elevators in China where the demand is expected to double by 2012. That being said, increasing capacity to meet the growing demand of China is a huge challenge. Meeting this challenge is not only going to strain Otis Elevator but its supply chain network as well. Additionally, UTC's Carrier division is sourcing $200M in finished air conditioners in China. The suppliers have huge facilities where they can take advantage of economies of scale, and their cost structure and quality systems meet UTC's standards.

Currently UTC sources 75% of their cost of goods sold (COGS) and only produce 25% of their COGS. As the Director of UTC Global Supply Management, Mr. Singer oversees the sourcing of $24B every year. These figures alone illustrate the importance of supply chain management at UTC. UTC has over 100,000 suppliers which can create challenges in terms of developing and maintaining these relationships. Most companies spend a lot of time trying to eliminate suppliers; however UTC takes a different approach. UTC is very selective in terms of adding new suppliers; instead they focus on identifying and growing preferred suppliers. The company believes that over time "Darwinian Theory" will take its course and the non-preferred suppliers will be phased out. Mr. Singer believes that by collaborating with the suppliers and trying to be a better customer UTC's supply chain will ultimately benefit.

Doug Sabel, Purdue University

Engaging Suppliers to Ensure Spending Efficiency

Summary by Mark Vymyslicky, MBA 2008

Is Purdue University really any different from the hundreds of manufacturing firms out there? At first, it might seem reckless to try and draw some kind of comparison between academia and industry. Doug Sabel, Director of Procurement Operations and University Contracting Group at Purdue University, was bold enough to make that connection during his presentation at the Fall Operations Conference on October 5, 2007.

Universities take inputs such as impressionable students, books, pens and pencils, computers, light bulbs, and professors, and churn out the ultimate product in the form of well-educated adults. Though Sabel's group is not really responsible for bringing in students and professors, they do purchase just about everything else, including dogs. There was a humorous moment during the presentation when Sabel related the experience of acquiring Heather. Heather is none other than a specially trained, $6000 canine, with only one purpose in life-- keep geese from dumping waste on the Purdue Golf Course.

Though Sabel's department can be responsible for some interesting purchases, procurement is no trivial matter at the university. Each year, more than $200 million are spent on the things necessary to keep Purdue running. In a manufacturing environment, most of those purchases would be considered indirect costs. But just like in industry, procurement at Purdue has a lot of different tools at their disposal to keep costs down. In his presentation, Sabel outlined some of the success stories at Purdue including the process of forming a partnership with Office Max to obtain office supplies.

If there had to be a lesson learned, it is that successful procurement at any university is all about getting the most out of tax dollars, or as Sabel put it, "engaging suppliers to spend efficiently."

Engaging Suppliers to Ensure Manufacturing Competitiveness

Panel Session II
Faculty Perspectives

Dr. Emmanuel Kodzi, Purdue University

Summary by Odien Xu, MBA 2008

GSCMI Center researcher, Dr. Emmanuel Kodzi, shared recent research results with our industry partners during the annual fall operations conference. His presentation covered projects being worked on in support of the Dauch Center for the Management of Manufacturing Enterprises, as well as the Global Supply Chain Management Initiative.

One significant project included evaluating Indiana's manufacturing competitiveness. This project sought to determine how Indiana based companies perform and what are the critical drivers of profit. First, Dr. Kodzi created benchmarks through use of an E-survey and continuous team-based monitoring. He then followed by analyzing the interaction between different variables such as revenue and company size. Based on his research, the performance of respondent companies was driven by 9 identified variables, explaining (73%) of the variation in their predictive ability to determine a company's net Income.

According to his research, the primary drivers are better response capability, fewer customized products, and stronger technological connection with suppliers. Dr. Kodzi also shared his suggestions to improve performance of manufacturing companies. These approaches included reducing response time to changing market conditions, increasing the convenience of communication between suppliers and buyers, and leveraging joint contributions of innovative manufacturing practices and inter-connectedness both within the organization and with its value chain partners.

Dr. Kodzi's presentation and insights added to a day full of interesting comments and conversation with our industry partners at the fall conference. His research provided everyone with a new concept and approach to work on improving supply chain effectiveness and manufacturing competitiveness.

Professor David Hummels, Purdue University

Valuing Timeliness in Global Supply Chains

Summary by Pete Mast, MBA 2008

We have all heard the expression "time is money". Professor David Hummels has as well but continues the conversation by asking, "How much money is time really worth?"

As an economics professor specializing in international trade barriers, Hummels has been researching the affect on time at various points in the supply chain and how it changes the decision making of manufacturing companies. Of greatest interest is the delay in product shipping, that every manufacturer deals with.

Comparing shipping time to an economic friction, Hummels seeks to quantify the value of reducing shipping times between international operations. For most companies this means choosing between ocean freight (slow and cheap) and air freight (fast and expensive). When products sit on ocean liners for long periods of time, companies have slower responses to supply/demand shocks, slower service in replacing faulty parts, and hold larger levels of inventory in the form of buffer stocks and pipeline inventory. According to Hummels, the initial results suggest that firms will pay one percent of a products value for every day that is saved by utilizing faster shipping methods.

This has implications at the international trade level, since companies look for ways to avoid delays. Perhaps companies will reconsider supplier locations which require long ocean freight transportation times, or are not easily accessible to a strong port, or whose countries create long customs delays. These are factors which become trade barriers for a country – even if all other qualities favor international trade.

Hummels' research has implications around the world to both manufacturing companies and governments. As his work continues, companies would be wise to watch closely for additional tools and details that could be crucial to making smart decisions when it comes to international shipping.

Professor Karthik Kannan

The Impact of Bid Revelations in Procurement Settings

Summary By Roman Kita, MBA 2009

The topic of Professor Karthik Kannan's presentation was on the impact of bid revelations in the procurement setting. Automatic bidding, a process by which, potential suppliers are submitting their bids using information technology, has become increasingly popular and led to numerous cost savings in different industries. Home Depot was able to save 7% of their transportation costs due to automatic bidding. Sears was even more successful by saving 13%.

Dr. Kannan's research concentrates on the bid revelation policy and its impact on the behavior of the bidders. There are three distinctive policies used by the companies – no information, complete information, and incomplete information. A no information policy is one in which none of the bids are revealed. On the other end of the spectrum is a complete information policy where the data on every single bid is revealed. The compromise of these two is the incomplete information policy whereby only the winning bids are announced.

Research shows that the more information is revealed, the more aggressive price wars become. Specifically, two effects emerge from bid revelation policies – extraction effect and deception effect.

In the extraction effect, bidders are purposely placing low bids simply to learn the bids of their competitors. This behavior is observed only in the incomplete information process. The deception effect, which occurs in complete information bidding, takes place when vendors are not bidding with numbers accurate enough to prevent the competition from learning about their business. These effects cause the difference between the prices paid to be very significant. As an example, the average difference in prices paid between incomplete and no information policies is approximately ten percent due to the extraction policy. However, this mainly depends on similarity of the potential sellers. Therefore, the procurers should be careful when selecting their bidding policy to avoid paying higher prices.

In order to solidify his findings, Dr. Kannan is looking at future studies that could be performed. These include talking to industry procurement managers performing some real-life experiments and analyzing other revelation policies.

Fall Operations Conference

Poster Competition Winners

FIRST PLACE MBA
Sheena Reigle, MBA 2008

SECOND PLACE MBA
Colby Smith, MBA 2008

THIRD PLACE MBA
Renaldo Trancoso, MBA 2008

UNDERGRADUATE WINNER
Nate Knestrick, BSIM 2008

SPONSORS' CHOICE
Sheena Reigle, MBA 2008

IBM EATON

Executive Profile

By Colby Smith, MBA 2008

Amy Lund
E. & J. Gallo Winery

Gallo FAMILY VINEYARDS

The Krannert School of Management, through the Dauch Center for Management of Manufacturing Enterprises (DCMME) and the Global Supply Chain Management Initiative (GSCMI), supported an industry callout for students interested in finding out more about E& J Gallo Winery, the world's largest family-owned winery. The event took place Friday, September 21, 2007 and included a presentation overview of the company, along with an informal dinner and Q&A session with recruiting executives.

Headquartered in Modesto, California, Gallo has been in the wine business since 1933, when brothers Ernest & Julio put up a total of $5,923 to take operation of two vineyards. Seventy-four years later, Gallo leads the world in wine production, distribution, and marketing.

Project Manager, Amy Lund, made the trek from Modesto to West Lafayette specifically for the event. Lund reports that during her seven years with the company, she has moved across job functions twice and has held four positions. Lund told the group, "Gallo is very interested in developing your career, but you have to work for yourself as well. A true partnership exists and a great career planning program is there to help you along the way. Every year a review is conducted to gage your progress and direction, and to see if the relationship is working out for everybody involved."

Purdue is among the elite group of universities from which Gallo recruits. Leading the third year of recruiting at Purdue, Lund states, "the quality of the students and professors has really impressed us when seeking operations managers for Gallo. The student's work experience is really a plus and that is why we continue to come to Purdue."

True to its family roots, Gallo looks at the long term when creating and nurturing new relationships with students. "A long term strategic relationship is the goal. The right fit, both for the company to the student and the student to the company, are key to a successful relationship," Amy says. Clearly, Gallo believes that high quality, happy employees are essential to producing high quality products; products that have the distinction of being a part of Gallo's customers most memorable and joyous events. What other company can say that?

GSCMI
GLOBAL SUPPLY CHAIN MANAGEMENT INITIATIVE
403 W. State Street
West Lafayette, IN 47907
765-494-2860
www.gscmi.org