## **OID 673 Global Supply Chain Management**

Tuesday/Thursday 10:30am-11:50am and 1:30pm-2:50pm

## **Course Outline and Assignments**

#### **Course Instructor**

Professor Marshall Fisher OID Department 542 Jon M. Huntsman Hall

Tel: 215-898-7721

E-mail: fisher@wharton.upenn.edu Office Hours: By appointment

#### **Course TAs**

Canberk Ucel

Office: 527.5 Jon M. Huntsman Hall Email: ucel@wharton.upenn.edu
Office Hours: By appointment

Ozge Yapar

Office: 532.2 Jon M. Huntsman Hall Email: yapar@wharton.upenn.edu Office Hours: By appointment

Access to labor in previously closed countries (China being the biggest example) and new information technology that dramatically reduces the cost of communication has accelerated the outsourcing and offshoring of manufacturing that has been going on for some time. This leaves companies pondering what to do in house, what to outsource, where to produce and how to manage a supply chain that usually involves production in multiple countries that are often halfway around the world from the market.

Nowadays, it is not uncommon for a company to create different business processes – retail channels, marketing plans, localized product and service offerings, and manufacturing and logistics operations – for different markets. On the other hand, as different outsourced providers that specialize in specific operational functions are developed, companies can also leverage these providers, which are often geographically dispersed, to support global markets. Hence, the company itself may develop a new product in the U.S., use an ODM (Original-Design Manufacturer) in Asia to work out the design specifics, enlist a contract manufacturer based in China for assembly and test, make use of a global third-party logistics service provider to take care of customs clearance, freight forwarding and transportation of the product to all over the world, and finally, employ a local distributor to get the product through the local channel and to customers.

Many questions arise in the management of such global supply chains, including

- Which design and production activities to do in house and which to outsource?
- Where to locate various activities around the world?
- How to forecast the many factors that influence these decisions, including inflation in cost factors such as labor and freight and the likelihood of future government regulation or political instability?
- How to keep the supply chain flexible so as to adapt to the factors listed above?
- How to manage a geographically disbursed supply chain, including what relationships to have with vendors to insure not only low cost but high quality, flexibility, safety, humane labor practices and respect for sustainability of the environment?
- How do these decisions intertwine with country political and economic considerations?

This course will study the design and management of global supply chains, with a particular focus on the issues listed above. The industries covered include auto, chemicals, footwear and apparel, furniture, pharmaceuticals, and toys.

#### **CASES AND GUEST SPEAKERS**

The course will be highly interactive, using case discussions in more than half of the classes. We will have senior supply chain executives in a number of the class sessions. Sometimes the guests are protagonists in the case being discussed that day and will serve as a resource during our class discussion and make remarks and answer questions for about 20-25 minutes at the end of class. Other times, the entire class will be devoted to a discussion lead by the guest about their company.

Industry guests will be available between the morning and afternoon classes for an informal lunch with a group of us. We can accommodate up to 24 students at each lunch. Bios of visiting executives and a lunch sign up sheet are available on the course web site. Lunch will be provided and we will meet in rooms to be announced.

#### **COURSE MATERIALS**

Cases and course readings are contained in the course pack available from Study.Net, or in a few cases, as noted in the course outline, in the Cases and Readings folder on the course website. In addition, copies of key overheads, readings and other notes of interest will be distributed in class during the course and available for download on the course website. The website has a folder dedicated to each class that contains materials relevant to that class.

#### **GRADING**

Grades are based one-third each on (1) class participation (2) individual write-ups of the discussion questions for 3 of the class sessions and (3) a course paper.

### **Class Participation**

Most managers spend little time reading and even less time writing reports. This is especially true for managers in operations-intensive settings. For this reason, the development of speaking and listening skills is given a high priority in this course. The classroom should be considered a laboratory in which you can test your ability to present your analyses and recommendations clearly, to convince your peers of the correctness of your approach to complex problems, and to illustrate your ability to achieve the desired results through the implementation of that approach. Some of the criteria that we will use to judge effective class participation include:

- Is there a willingness to participate? We especially encourage you to ask questions if an idea or technique is not clear.
- Do the comments show clear evidence of appropriate and insightful analysis of the case data?
- Are the points made relevant to the current discussion? Are they linked to the comments of others? Do comments clarify and highlight the important aspects of earlier ideas and lead to a clearer statement of the relevant concepts and issues?

I grade class participation immediately after each class based on the extent to which comments reflect preparation, analysis, and thoughtfulness. Although this process is subjective, it is highly reliable, as your grade is based on lots of data (13 observations).

We will also take attendance in many classes. Obviously, step one in class participation is to show up; step two is to speak up.

#### Individual write-ups of class discussion questions

You should submit a 2-3 page (single spaced, and font of 10 points or greater) write up of the discussion questions for 3 of the class sessions in which a case is discussed and which are identified on the schedule below with an asterisk. Classes 1, 2, 3, 5, 7, 9, 10, 11, 12, and 13 are eligible for an individual hand in write-up.

Write-ups should be submitted via the "Assignments" section of Canvas by 10:30am (even if you are in the 1:30 class session, you need to submit your write-up by 10:30) on the day of the class in which the case is discussed (no late submissions accepted).

There is no way to "catch up" if you miss the opportunity to complete three assignments on time. If you wish to submit more than 3 write-ups, we'll count your best three towards your grade.

Individual assignments are given grades of 1, 2 or 3. You will not receive detailed and specific feedback on these individual assignments. However, you will receive a general memo outlining common strengths and weaknesses and generally how the write-ups were graded. You can discuss the cases with classmates as much as you would like, but the write up should be your own work.

Here are some considerations when you are preparing your write-ups:

- Base your analysis on information from the case (text and exhibits), but don't simply regurgitate case facts.
- In some of the cases there may have been recent developments that can give hints about whether certain decisions were sound or not. It's ok to reference those, but you cannot build your analysis exclusively on a future that, at the time of the case, was still unwritten.
- It is fine to complement your analysis with your own experience, but that should not be at the expense of key ideas of the case.

#### Course paper

A paper of about **3,000 words of text** and some exhibits is due at the end of the course. Please include word count when you submit your paper. Papers can be done in teams of 2 or 3 students, although the length guidelines would be proportionately greater for team papers, **4,500 and 6,000 words of text** respectively for 2 and 3 person teams. Teams can span the 10:30 and 1:30 sections of the course.

The paper can deal with a specific company and how they have designed and managed their supply chain, compare two or more companies in their approach to supply chain management, or delve more deeply into any issue within the realm of the course. The research on the paper should include scanning the business press, information sources on particular companies and annual reports.

Please submit a paper proposal, no more than one page long, by 5pm November 7. The proposal should list the topic you plan to study and the research you'll conduct for the paper. I'll then provide comments on your proposal. The final paper is due 9am December 16. The paper proposal and paper should be submitted over the course website, in the "Assignments" section.

In writing your paper, be sure to respect the Wharton and Penn rules on plagiarism; see the Wharton MBA Code of Ethics on page 5 and 6 of the MBA Resource Guide <a href="http://spike.wharton.upenn.edu/mbaprogram/publications/mba\_resource\_13-14.pdf">http://spike.wharton.upenn.edu/mbaprogram/publications/mba\_resource\_13-14.pdf</a> and Penn's Code of Academic Integrity (<a href="http://www.upenn.edu/academicintegrity/index.html">http://www.upenn.edu/academicintegrity/index.html</a>).

Date	Class	Topic or case	Guest(s)
19 Oct	1*	Introduction to the course. Crocs - Creating and Levering a Flexible Supply Chain	
24 Oct	2*	New Balance	Duncan Scott, Vice President for External Products, New Balance
26 Oct	3*	Nissan and supply chain risk management	Dana Martin, Product Manager, Elementum SCM
31 Oct	4	Supply Chain Flexibility	
2 Nov	5*	VF Brands	
7 Nov	6*	Ford Asia-Pacific & Africa: The E- coating Decision in Gujarat, India (A) PAPER PROPOSAL DUE BY 5PM	
9 Nov	7*	Unsafe for Children: Mattel's Toy Recalls and Supply Chain Management	
14 Nov	8	Patagonia	Doug Freeman, COO, Patagonia
16 Nov	9*	Roche & Tamiflu	Stephen J. Gluckman, MD, Medical Director, Penn Global Medicine, Professor of Medicine at the Hospital of the University of Pennsylvania
21 Nov	10*	Luen Thai Holdings, Inc.	Sunny Tan, Executive Vice President, Accessories Division, Luen Thai International Group
28 Nov	11*	IKEA's Global Sourcing Challenge: Indian Rugs and Child Labor (A)	Pernille Spiers Lopez, former President and CEO, IKEA North America
30 Nov	12	Noi Solutions global sourcing	Saima Chowdhury, CEO and Founder, Noi Solutions
5 Dec	13*	Chicago Chemicals, Inc.	
7 Dec	14	Supply Chains at an Inflection Point: the Search for Low Cost Production. Review of Course.	
16 Dec		FINAL PAPER DUE BY 9am	

<sup>\*</sup> Candidate for individual write-up

#### DETAILED DESCRIPTION OF COURSE SESSIONS

# **Class 1** 19 Oct

#### Introduction to the course. Creating and Leveraging a Flexible Supply Chain

This class will review current issues in global supply chain management, provide an overview of the course and discuss our first case. The case will let us understand how flexibility can be created in a global supply chain, and the value it provides.

Case: Crocs: Revolutionizing an Industry's Supply Chain Model for Competitive Advantage

## Questions:

- 1) How does Crocs match supply with demand? What's different in the approach for an existing vs. a new product?
- 2) What are the strengths and weaknesses of their supply chain?
- 3) Given a finite number of feet in the world, the high growth rate Crocs is experiencing must inevitably slow. How should their operations change if they were growing at only 5% per year?

# **Class 2 24 Oct**

#### **Deciding Which Countries to Source From**

As many companies consider 'reshoring' their manufacturing operations to the U.S., New Balance is famous for never having left the U.S. Indeed, it was only recently that they began to source from China, Vietnam and Indonesia. Now they are considering what other countries they might add to their sourcing mix. Gabriella Wortmann has just conducted an extensive study to evaluate the capabilities of many different countries and must determine how to interpret this data. New Balance is also thinking about how to best leverage its U.S. factory.

Case: New Balance (available in the Case and Readings folder on the course website)

Guest: Duncan Scott, Vice President for External Products, New Balance

#### Questions:

- 1) What qualities would make a country an attractive sourcing location? Are there any attributes you would add to Exhibits 15 and 16 that are relevant in a production location decision?
- 2) This question asks you to conduct a mini version of Gabriella Wortmann's study, so as to understand better where the information in Exhibit's 15 and 16 comes from. Visit the following three web sites.

http://www.ilo.org/ilostat/faces

http://databank.worldbank.org/Data/Home.aspx

http://lpi.worldbank.org/international/global

In addition to getting a general impression about the types of information they provide, use these sites as well as you can to compare and rank order China, Mexico, and Turkey (typical sourcing countries on three different continents) on average monthly earnings in U.S. dollars, GDP per capita (current US\$), and LPI (Logistics Performance Index) Score. If New Balance were considering sourcing in one of these countries, based on the data you gathered, which would you choose and why? Browse the World Bank site and suggest other data they provide that might be useful in deciding where to produce.

- 3) Suppose New Balance wants to choose one of the 12 countries listed in Exhibit 16 to enter next. Based on the data in Exhibit 16, which country would you recommend and why?
- 4) Which types of shoes would you recommend New Balance make in their U.S. factory?

# **Class 3 26 Oct**

## **Supply Chain Risk Management**

Diverse events such as earthquakes, fires, epidemics, and financial crises can disrupt a supply chain. In this class we will examine how to cope with these challenges, using Nissan and the Tōhoku earthquake in Japan as one of our examples.

Our guest for this discussion, Dana Martin, took this course in 2012 as a first year MBA at Wharton, did a summer internship at Flextronics focused on supply chain risk management, and decided to take a leave of absence from Wharton to play a leading role at Flextronics in establishing Elementum Supply Chain Management, a company that among other things, helps companies mitigate supply chain risk. Dana will present Elementum's activities with some of their clients.

Case: Nissan: Recovering Supply Chain Operations

Readings:

Dana Martin and Dean Ocampo, "Crossing the Chasm in Supply Chain Security," *Supply and Demand Chain Executive*, May, 2014. Available in the Cases and Readings folder on the course website.

Yossi Sheffi, "The Tears in the Deep Tiers," *The European Business Review*, November-December 2015. Available at http://sheffi.mit.edu/sites/default/files/TEBR NovDec15-The Tears in the Deep Tiers.pdf

Guest: Dana Martin, Product Manager, Risk Management Solutions, Elementum Supply Chain Management

#### Questions:

- 1) The high priority companies are giving to supply chain risk management is a relatively recent phenomenon. Why do you think SCRM has become such a hot topic?
- 2) What should an ideal SCRM system do? Would you have different approaches for different types of risks e.g. an earthquake vs. bankruptcy of a key supplier or for different types of parts e.g. commodity vs. sole sourced proprietary part? How would you evaluate the riskiness of a geographic supply point? What metrics would you use?
- 3) How well does Nissan's SCRM system measure up to your ideal? What are the strengths? What should they be doing differently?

## Class 4 31 Oct

#### **Supply Chain Flexibility**

Many products, especially new products, have highly unpredictable demand. Thus, having a supply chain that can respond quickly to actual sales can be extremely valuable in reducing lost sales due to stock-outs and reduced margin from end of season closeouts. Yet the pursuit of low labor costs has lead to supply chains that stretch half way around the globe, making rapid response to sales more challenging. This class will be a lecture that describes how leading companies are achieving flexibility and uses these examples to formulate principles for achieving supply chain flexibility.

#### Readings:

Fisher, Marshall "What is the Right Supply Chain for Your Product?" *Harvard Business Review*, March/April 1997

Hau Lee, "Aligning Supply Chain Strategies with Product Uncertainties", *California Management Review*, Vol. 44, Number 3, Spring 2002

Chapter 4 Supply Chain Flexibility, M. L. Fisher and A. Raman, *The New Science of Retailing*, HBS Press, 2010 (available in the Case and Readings folder on the course

website).

## Class 5

2 Nov

## Partnering with suppliers

This class will focus on VF Brands, an apparel firm that was a maverick in that it was a fully integrated manufacturer doing most of its production in North America. Now they are transitioning to more our sourced production, but would like to try to retain the benefits of in house production by having close, partnership relations with their vendors. This case will let us look more at how companies decide 1) where to produce, 2) what to out source and what to so themselves and 3) what kind of relationship do they have with suppliers.

Case: VF Brands: Global Supply Chain Strategy

#### Questions:

- 1) What is your evaluation of the "Third Way" sourcing strategy proposed in the case? What are its similarities and differences with the VF Owned and Operated and Packaged Sourced models.
- 2) In Exhibit 4, what do you think explains the differences in lead time and various costs between the Third Way, VF Owned and Operated and Packed Sourced models? What are the implications of these differences for the attractiveness of the Third Way?
- 3) What is the relative importance for heritage and life style brands of low cost and short lead time? How well does the capability of the factories currently making each product match those needs?
- 4) How should VF use the Third Way way going forward?

#### Class 6

7 Nov

Please submit your paper proposal today. If you are working with others. Please submit a single proposal for your group.

#### **Geographic Industrial Clusters**

Geographic clusters help firms create value by facilitating access to skilled workers, specialized providers, and knowledge that is geographically bounded. However, firms in clusters compete for these inputs, which can undermine a firm's ability to capture value. Therefore, whether to join a cluster needs to be carefully evaluated.

Case: Ford Asia Pacific & Africa: The E-coating Facility Decision in Gujarat, India (A)

*Reading:* Porter, M., "Clusters and the New Economics of Competition", Harvard Business Review, November–December 1998

#### Questions

- 1) Why do industrial clusters form, what are their benefits and negatives, and how should a firm decide whether or not to join a cluster?
- 2) Among the potential options Ford faces (outsourcing e-coating to a third party in Sanand, outsourcing e-coating to a third party in Chennai and transporting the parts to Sanand, or building a stand-alone facility in Sanand), which one would you recommend? Why?

## Class 7

9 Nov

## Insuring product safety in an outsourced supply chain

In August and September 2007, Mattel made a series of product recalls, totaling more than 20 million toys. The recalls were for excessive lead and for magnets that could become loose. All of the recalled toys had been made in China. The Mattel recalls followed on the heels of a number of high profile safety problems with Chinese imports, including contaminated pet food and toothpaste, defective tires, and lead-painted toys. The recalls sparked intense criticism of Mattel and its Chinese supply chain.

This case will provide a basis for discussion of outsourcing and the appropriate use of inspection and testing. It also provides the opportunity to examine response to a crisis situation, and the relationship between a company and government.

Case: Mattel

#### Reading:

Thomas Y. Choi and Tom Linton, "Don't Let Your Supply Chain Control Your Business," *Harvard Business Review*, December 2011

#### Questions:

- 1) What were the primary causes of Mattel's recall problems?
- 2) Consider the various players involved: Mattel, 1<sup>st</sup> tier suppliers, higher tier suppliers, retailers, Chinese government, the US government and state governments. How would you rate each of these players as to a) their responsibility for insuring product safety and b) how well they discharged that responsibility, both before and after the recall?

- 3) Assume you are VP of Product Safety at Mattel. Describe the program you would put in place to prevent lead paint in toys in the future. Would you use any of the ideas in "Don't Let Your Supply Chain Control Your Business"?
- 4) Before class, search the web for current instances of lead paint in toys and bring examples you find to class. Do you think the lead paint in toys problem described in this case has been solved?

## Class 8

**14 Nov** 

#### Patagonia

Patagonia was founded in 1973 by Yvon Chouinard and is regarded as a leader in sustainability. In preparation for this class session, please browse their website https://www.patagonia.com/home/ and compared with good questions for our industry guest.

Guest: Doug Freeman, COO, Patagonia

## Class 9

**16 Nov** 

## **Health Care Supply Chains**

The class focuses on the challenges of Roche maintaining a supply network for a global influenza pandemic response initiative based on its antiviral drug Tamiflu. The Roche group is a 40 billion CHF company consisting of a pharmaceutical division and a diagnostic division. The company's antiviral drug Tamiflu dominates the market for prevention and treatment of seasonal influenza (flu). Tamiflu, however, could also play an important role in responding to the first wave of a pandemic caused by a particularly harmful strain of the influenza virus A. Tamiflu was designed to be effective against any strain of Type A or B influenza. Thus, there was the potential to establish a preparedness plan based on creating a stockpile of the drug in conjunction with an appropriate plan for distribution to the affected population. The use of Tamiflu had been endorsed by the WHO as a first line of defense in such a crisis and would allow the world to respond immediately, rather than having to wait for development of a vaccine that had limitations in its effectiveness.

Managing supply is particularly challenging for three reasons. First, demand for stockpile quantities is spiky and uncertain, and governments placing orders expect lead times to be short. Second, lead times for increasing capacity are long, as are lead times for drug production and encapsulation. Last, media coverage and press releases made by governments and other stakeholders increase the stakes, as negative media coverage may damage Roche's reputation with consumers, leading to lower sales levels for its products.

Case: When Supply is of Public Interest: Roche & Tamiflu

Guest: Stephen J. Gluckman, MD, Medical Director, Penn Global Medicine, Professor of

### Medicine at the Hospital of the University of Pennsylvania

*Reading:* "Five-Hundred Life-Saving Interventions and Their Cost Effectiveness," (available in the Case and Readings folder on the course website. Apologizes for the mediocre quality of the copy. It was the best I could find in an extensive search that included the authors personal websites).

#### Questions:

- 1) Imagine you head the U.S. Department of Health and Human Services and an episode of pandemic flu occurs. Construct a time line that shows the actions you would take during a one year pandemic flu, including the role of vaccines, additional production of Tamiflu, and how you would allocate scarce supplies of Tamiflu.
- 2) How big a stockpile of Tamiflu would you recommend the U.S. Department of Health and Human Services establish? Can you compare the cost of your recommended stock pile to other interventions described in "Five-Hundred Life-Saving Interventions and Their Cost Effectiveness"?
- 3) Considering all of the negative publicity, is Tamiflu a good business for Roche? In answering this question, please consider the profitability for Roche of the 200 million treatment dose that page 6 of the case mentions the U.S. is considering. You'll find footnote 14 and the Roche financials given in the case useful in answering this question.
- 4) How should Roche manage its capacity and inventory going forward?

## <u>Class 10</u>

#### **21 Nov**

#### Supply chain design: global sourcing issues

Luen Thai is based in China and is the largest supplier of private label apparel in the world. Since 1975, U.S. law had limited the amount of apparel that can be imported from a given country and apparel category. But as of January 1, 2005, all quotas have been relaxed and it is believed this will engender sweeping change in apparel industry supply chain practices. Luen Thai is endeavoring to exploit the opportunities this creates through some highly publicized initiatives such as their supply chain city and design-to-store concepts. This class will look in depth at these initiatives and the opportunities they create for apparel retailers.

The reading assigned as a companion to this case discussion describes how four companies thought about decisions on where to source from, and is relevant to how Luen Thai might think about its options with rising wages.

Cases: Luen Thai Holdings, Inc. (A) Strategy for a Post Quota World Luen Thai Holdings, Inc. (B) Coping with Rising Wages

Reading: Chapter 3: Shanghai or Charlotte? by David Pyke; from Building Supply Chain Excellence in Emerging Economies, Springer Science, edited by H.L. Lee and C.Y. Lee, New York, 2007.

Guests: Sunny Tan, Executive Vice President, Accessories Division, Luen Thai International Group

## Questions:

- 1) What are your general impressions of Luen Thai's design-to-store and supply chain city concepts. What impresses you? What risks do you see?
- 2) What advice do you have for Luen Thai on the following options for coping with rising wage rates in Southern China?
  - a. Improve productivity
  - b. Raise prices
  - c. Move inland
  - d. Move to other countries

What factors would you consider in evaluating these options, what information would you gather and how would you analyze it?

## **Class 11 28 Nov**

## **Global Supply Chains and Child Labor Risks**

This case traces the history of IKEA's response to a TV report that its Indian carpet suppliers were using child labor. IKEA's growth strategy depended on close relationships with suppliers in developing countries and IKEA's strong culture and values included a commitment "to create a better everyday life for many people." In response to regulatory and public pressure, IKEA developed a set of environmental policies that grew to encompass a relationship with Greenpeace and WWF on forest management and conservation. Then, in 1994, Marianne Barner, a newly appointed IKEA product manager, is surprised by a Swedish television documentary on the use of child labor by Indian carpet suppliers, including some that supply IKEA's rugs. She immediately implements a strict policy that provides for contract cancellation if any IKEA supplier uses child labor. Then Barner is confronted by a German TV producer who advises her that he is about to broadcast an investigative program documenting the use of child labor in one of the company's major suppliers. How should she react to the crisis? How should the company deal with the ongoing issue of child labor in the supply chain?

Case: IKEA's Global Sourcing Challenge: Indian Rugs and Child Labor (A)

Guest: Pernille Spiers Lopez, former President and CEO, IKEA North America

Questions:

- 1) On the first floor of Huntsman Hall there is a wall display giving the history of Wharton. What do you see related to child labor?
- 2) How would you define child labor? What regulations do you think countries should have with respect to child labor? What does doing what is "in the best interest of the child" imply?
- 3) Why does IKEA care about eliminating child labor?
- 4) How should Marianne Barner respond to the invitation for IKEA to have a representative appear on the upcoming broadcast of the German video program?
- 5) What actions should she take regarding the IKEA supply contract with Rangan Exports?
- 6) What long-term strategy would you suggest she take regarding IKEA's continued operation in India? Should the company stay or should it exit? (Be prepared to describe the impact of such a decision and how you would manage it.)
- 7) For those recommending that IKEA continue to source carpets in India, would you suggest that she:
  - a. Continue IKEA's own monitoring and control processes or sign-up to Rugmark?
  - b. Continue to focus only on eliminating the use of child labor in IKEA's supply chain or engage in broader action to address the root causes of child labor as Save the Children is urging?

## Class 12 30 Nov

## Noi Solutions and global sourcing

In this class session we will hear from Saima Chowdhury, founder and CEO of Noi Solutions and also a graduate of the Wharton MBA program. Noi Solutions links product brands with production suppliers and this class will let us understand how that process works. In preparation for class, please visit http://www.noisolutionsllc.com. Think about if you were developing a new product, how would you find a supplier to make your product. Would Noi Solutions provide the capabilities you would need?

Guest: Saima Chowdhury, CEO and Founder, Noi Solutions

## <u>Class 13</u>

5 Dec

The case for this class is a disguized decription of a real chemical company. One of their products is produced in plants they own in the U.S., Germany, China and Mexico. Over the years a number of factors affecting cost of production have changed, and they are now considering what actions they should take with respect to their supply network.

Case: Chicago Chemicals, Inc.

#### Questions:

- 1) How do you explain the large differences in the performance of the four plants making Release-ease? Why do some plants appear to be much better than others? To what extent can these differences be attributed to differences in scale, utilization rates, and other factors beyond the control of management? How much appears to be due simply to better management?
- 2) As Joe Spadaro, what would you do given the current over capacity situation and information provided by the recent productivity study? In particular, what would you do about the Gary facility and how might you reallocate the production of Release-ease?

## Class 14

7 Dec

# Supply Chains at an Inflection Point: the Search for Low Cost Production. Review of Course to Date

China normalized relations with the west in 1979, ushering in three decades of vigorous export based on labor cost arbitrage and leading to China becoming the "workshop of the world." During this period, wages have risen steadily and the RMB appreciated, to the point where China is no longer the cheapest source for many products, causing companies to shift production to other countries, in search of the 'next China.'

As wages have risen, so has income, leading to an emerging middle class in China. Chinese manufacturing companies with diminished export opportunity are looking to the internal Chinese market as a source of demand, and most Western retailers are already in China or have near term plans to enter.

Chinese companies that have relied on low cost labor in the past can also try to move up the value chain by focusing on R&D, innovation and branded products. Indeed, this is what the Chinese government is asking them to do in their 2005-2020 Science and Technology Plan We get some insight into where China is headed from their most recent five year plan, which calls for growing the domestic economy so Chinese companies are less reliant on exports, creating a highly skilled workforce to transition from being labor-rich to talent-intensive, emphasizing innovation, including spending 2.2% of GDP on R&D, and seeking to turn coastal regions from "the world's factory" to hubs of R&D & high-end manufacturing.

I will discuss research I have conducted with Edwin Keh to assess how companies are reacting to these changes. We have interviewed and administered written surveys to several dozen senior executives, both from Western companies that source from China and suppliers operating factories in China. We have also conducted visits to numerous retailers in China, both Western and Chinese, so as to identify and assess alternative China market strategies.

These changes in China have created a kind of "inflection point" in supply chain management, forcing companies to rethink where they source from and how they manage their supply chains.

Many Western commentators are skeptical that the Chinese government and companies will be able to create a culture of innovation. We offer a counter balance to these arguments by describing a few highly innovative Chinese companies with whom we have had extensive interactions.

## Readings:

Both readings are available in the Cases and Readings folder on the course website.

Chris Davis, "Bright Future of China's Supply Chain," China Daily, 7 August 2013

Note on Trade Terms and Policies