

OPIM 698X/398X Retail Supply Chains: Design and Management
Monday/Wednesday 10:30-11:50

Course Outline and Assignments

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This course will examine how retailers understand their customers' preferences and respond with appropriate products through effective supply chain management. Supply chain management is vitally important for retailers and has been noted as the source of success for many retailers such as Wal-mart and Dell, and as an inhibitor of success for e-tailers as they struggle with delivery reliability.

The course is highly recommended for students interested in careers in

- Retailing and retail supply chains
- Businesses like banking, consulting and information technology that provide services to retail firms
- Manufacturing companies that sell their products through retail firms

Retailing is a huge industry (40% of the U.S. economy and the largest employer) that has consistently been an incubator for new business concepts. In the 80's and early 90's Wal-mart pioneered new approaches to supply chain management and human resource management, and also influenced major established firms like P & G to change their approach to supply chain management. More recently, Dell has revolutionized the supply chain for PCs and prompted many firms to consider the direct model. Finally, Amazon.com, more than any other firm, has been credited with transforming the Internet from an academic toy to the primary technology influencing business today.

Even if you don't expect to work for a retailer, this course can be useful to you in two ways. First, because retailers are such dominant players in many supply chains today, it is important that the processes they follow be understood by manufacturers and distributors, or by the consultants and bankers that service retailers and their suppliers.

Second, the problems retailers face (e.g., making data accessible, interpreting large amounts of data, reducing lead-times, eliciting the best efforts from employees, and so forth), are shared by firms in many other industries. It's easier to understand these issues through case studies in retailing because we all experience the industry as consumers and can readily relate to chronic problems such as stock outs and markdowns.

The course class sessions will deal with the following major themes: 1) linking finance and operations in retailing, 2) what assortment of products should a retailer carry in each store, 3) optimizing the inventory carried of each SKU in each store, 4) markdown pricing, 5) store execution and 6) supply chain design. In addition, we will consider a broad range of issues facing two retailers, Mothers Work and Best Buy, when we are visited by current and past senior executives from these firms.

A number of the sessions will be based on recent research of the instructor with Professor Ananth Raman of Harvard Business School. For a partial description see M. L. Fisher, A. Raman and A. McClelland, "Rocket Science Retailing is Almost Here – Are You Ready," *Harvard Business Review*, July/August 2000.

CASES AND GUEST SPEAKERS

The course will be highly interactive, using case discussions in more than half of the classes. All retail formats will be considered – bricks and mortar, e-tailing and bricks and clicks. A variety of product segments will be considered, including food, apparel, books and music, and consumer electronics. We will have senior executives from the retail industry in a number of the class sessions. In some cases, 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. In other cases, the entire class will be devoted to a discussion lead by the guest about their company.

COURSE MATERIALS

Cases and course readings are contained in the course bulk pack available from Wharton Reprographics. We will also use five chapters from Retailing Management by Michael Levy and Barton Weitz, 6th Edition, Irwin-McGraw Hill. Although this book is designed as a text for undergraduates intending to pursue careers in retailing, I have found it to be an excellent reference for practical details on how retailers operate. A special custom version of this book with the five chapters we use will be made available for purchase at the Penn Bookstore on the corner of 36th and Walnut Streets. A limited number of copies of the full text are also available should you wish to purchase this. 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). To defray the cost of copying class handouts, Wharton Reprographics will charge students an additional fee for these materials at the end of each course.

GRADING

Grades are based on

30% Class participation

20% Individual write-ups of the discussion questions for 5 of the class sessions

15% Three individual problem sets and

35% A report on a project done in teams of 3-5 to compare two retailers that compete head to head for the same customers in a given segment.

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 “dumb 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?
- 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 each day after 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).

Individual write-ups of class discussion questions

You should submit a 2-3 page write up of the discussion questions for 5 of the class sessions identified in the class schedule below. Classes 2, 3, 5, 6, 9, 10, 12, 15 and 17-23 are eligible for an individual hand in write-up. Write-ups should be submitted prior to class (**no late submissions accepted**). You may hand in a paper copy at the start of class or e-mail a copy to the course TA RamnathVaidyanathan at ramnathv@wharton.upenn.edu prior to the start of class. **There is no way to “catch up” if you miss the opportunity to complete four assignments.**

Where appropriate, you are encouraged to visit a store of the company being discussed in class and one of their competitors and to include observations from these visits in your write up and in class discussion.

Individual assignments are given grades of one, two, or three stars. In retailer parlance, you may think of this scale as “good, better, best”. You will not receive detailed and specific feedback on these individual assignments. However, you will receive a general memo outlining common strengths and weaknesses. You can discuss the cases with classmates as much as you would like, but the write up should be your own work.

Problem sets

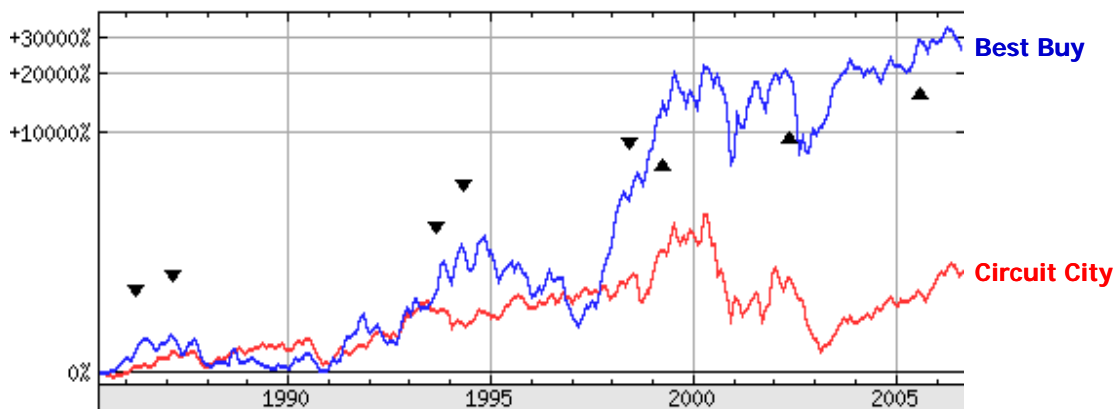
Three individual problem sets will be used to test your understanding of key quantitative concepts in the course. Problems sets are listed in the classes in which they are due.

Retailer Head to Head Competition Project

Frequently two or more retailers will compete head to head for the same customers in a given product segment. Examples include Linens n' Things vs Bed, Bath & Beyond; Lowes vs Home Depot, Trader Joes vs xyz super market; Best Buy vs Circuit City, Borders vs Barnes & Noble, CVS vs Rite Aid vs Walgreen, etc. This is a wonderful opportunity to learn about retail supply chain management by examining the different choices made by two competing firms facing similar challenges. In this project, you'll form a team of 3 to 5 people and learn about retail supply chain management by studying in depth two retailers that compete head to head, following the steps listed below.

PLEASE SUBMIT A LIST OF YOUR TEAM MEMBERS AND THE RETAILERS YOU PLAN TO STUDY BY CLASS 6. I ALLOW UP TO TWO TEAMS FOR ANY RETAILER – FIRST COME FIRST SERVE ON CHOICE OF RETAILERS.

1. Choose two competing retailers with stores accessible to you for a visit. Ideally they should be publicly traded or else it will be harder to get information.
2. Compare their stock performance over the last few years. Here's an example generated with Yahoo for Best Buy and Circuit City.



3. Scan their financial reports and gather information on as many of the metrics discussed in class as you can. Here are the most important ones.
 - Sales growth = % increase in sales year to year
 - Comp store sales increase = % increase in sales at stores open at least one year
 - New store openings
 - Acquisitions
 - Return on Assets (ROA) = Operating profit/total assets
 - Gross margin % = Gross profit/sales as a percent

- Inventory turns = Sales/Inventory valued at retail
- Gross margin return on inventory (GMROI) =
gross profit/inventory valued at retail
- Sales per square foot = total store sales/total store square footage
- SG&A %
- Asset turns = Sales/total assets

Identify major differences between the two retailers in these metrics and try to explain these differences based on your observations of the retailers operating practices. You may not be able to get information on all of these, but compare the two retailers on as many as you can.

4. Browse each company's web site, read articles about them and scan their annual reports.
5. Visit one or more stores of each retailer. One of the great advantages of studying retail supply chains is that many aspects of a retailer's supply chain are on public display in their stores. Here are some suggested issues on which to compare the two retailers.
 - a. Product: Number of SKUs and average amount of inventory in each SKU. (You will only be able to approximate the number of SKUs in the store e.g. do an exact count for a small section of the store and extrapolate from there or compare two departments of the two stores.) Which retailer has the broader selection in each category? Which has the deeper inventory? How do prices compare?
 - b. People: Talk to the store people (your call on whether to play 'mystery shopper' or to identify yourselves as Wharton students doing a project – each has advantages) and gauge their level of motivation, knowledge and friendliness. Learn what you can about incentives. Ask the store people what they do to drive sales.
 - c. Execution: How frequently can you not find what you are looking for? Do you see evidence of the phantom stock outs described in the Frontier Books case? Ask store people how frequently they stock out of hot products and what they do about it. Conversely, how frequently do they worry about excess inventory and what do they do about that. How frequently do they receive deliveries? What responsibility do they have for ordering?
 - d. Store itself: Square footage, is there a back room, signage, etc. Pictures and diagrams are a useful way to convey this information in your final report.
 - e. Please view these as suggestions and feel free to explore whatever issues you think interesting. I find asking broad questions like 'What are you struggling with' to be more fruitful initially than narrow questions.
6. Conclusions. Which of the two retailers do you believe is more successful and what explains their success i.e. what are they doing differently than the other retailer? Could this be copied? What advice would you give to the laggard?

7. Final presentation. Your **only deliverable** on this project is a crisp 6 minute presentation to be given at the end of the term, and the associated slide deck, to be handed in at or before the time of your presentation.

COURSE SCHEDULE

Date	Class	Topic or case	Guest(s)
4 Sept	1	Linking finance and operations in retailing	
9 Sept	2*	David Berman	
11 Sept	3*	Nine West Problem set 1 due	Marc Fisher , former President, Product Development and Sourcing, Nine West Group, Inc. Founder and CEO, Fisher Footwear, Inc.
16 Sept	4	Assortment planning	
18 Sept	5*	Wawa Inc.	David Johnston , EVP and COO, Wawa, Inc.
23 Sept	6*	Frontier Books Retailer Head to Head Competition Project teams and retailers due	Bob DiRomualdo , Former CEO & Chairman, Borders Group, Inc.; Chairman & CEO, Naples Ventures, LLC
25 Sept	7	Store execution	
30 Sept	8	RFID and its potential for retail supply chain management	
2 Oct	9*	RFID at the METRO Group	
7 Oct	10*	Luen Thai	Rick Helfenbein , President, USA Operations, Luen Thai International Group.
9 Oct	11	Mothers Work	Rebecca Matthias , Founder and President, Rick Adelman , Senior VP of Imports and Manufacturing, Mothers Work, Inc.
16 Oct	12*	Best Buy	Kevin Freeland , former Senior VP, Inventory Management & former President, Musicland Division, Best Buy, CEO & Founder, Optimal Advantage
21 Oct	13	Forecasting & inventory optimization for new products	
23 Oct	14	Replenishment inventory optimization	
28 Oct	15*	Paper & More	

30 Oct	16	Markdown pricing Problem set 2 due	
4 Nov	17*	Comp USA	Jim Halpin , Former CEO, CompUSA Inc. Owner, River Bend Inc.
6 Nov	18*	World Company Problem set 3 due	
11 Nov	19*	Zara	
13 Nov	20*	Ito Yokado	
18 Nov	21*	Supplier/retailer coordination: Hamptonshire Express	
20 Nov	22*	Liz Claiborne	
25 Nov	23*	Amazon.com's European Distribution Strategy	
2 Dec	24	Review & summary of key course concepts	
4 Dec	25	Presentation of Retailer Head to Head Competition Project reports	

* **Candidate for individual write-up**

DETAILED DESCRIPTION OF COURSE SESSIONS

Class 1

4 Sept

Linking finance and operations in retailing

Retailers exhibit much greater variation in share price appreciation than most firms. Some become giant companies quickly, and their founders highly wealthy as a result, but many go bankrupt. We'll examine the links between operational excellence and market cap appreciation for a retailer? What are the drivers of bankruptcy and how can a retailer avoid them?

We'll also consider the difference between the "profit path" and "turnover path." Whereas retailers that follow the "profit path" (e.g., Tiffany & Co.) earn a substantial margin each time they sell a product to a customer, "turnover path" retailers (e.g., Wal-Mart), although they earn substantially lower margins on each sale, turn their assets over at a much faster rate.

Readings:

Chapter 6. Financial Strategy of Retailing Management by Michael Levy and Barton Weitz. 6th Edition, Irwin-McGraw Hill.

Marshall Fisher, Vishal Gaur & Ananth Raman, "Linking Finance and Operations in Retailing," Working Paper, February, 2001.

Questions:

- (1) What differentiates the management practices of high performance retailers from low performance retailers?
- (2) How do inventory turns, gross margin percent, return on assets and SG&A expense differ across retail segments and what would explain these differences?
- (3) If Kroger, a grocery chain, had average inventory turns of 14 during the last 15 years, while Gap had inventory turns of 7, does that imply Kroger managed its inventory better than Gap? More generally, how do we compare two retailers in different industry segments?
- (4) If Best Buy had inventory turns of 4 and Tandy Corp had inventory turns of 1.8, does that imply Best Buy managed its inventory better than Tandy? More generally, how do we compare two retailers in the same industry segment?

Class 2
9 Sept

Linking finance and operations in retailing: the impact of inventory on valuation

In this class we will focus on the relationship between inventory and capital market valuation of a retailer, a topic related to the issues we discussed in class 1.

Case: David Berman

Questions:

- (1) What is David Berman's business model? What are its strengths and weaknesses?
- (2) What is the relationship between a retailer's inventory and their firm valuation?
- (3) Examine the impact of a \$20 Million inventory write-off in the spreadsheet David Berman Simplified Model.xls on Jos. A. Bank's market capitalization. (You can change the amount of inventory write-off in the worksheet "Key Assumptions"). Similarly, examine the impact of a \$30 Million write off.
- (4) How much inventory should Berman expect to write off at Joseph A. Bank? What data or analysis could he use to refine his estimate?

Class 3
11 Sept

Merchandising

This class describes the merchandising decision process (organization, structure, and incentives) at Nine West retail stores, a large U.S. footwear retailer. We will use this case to understand the buying and planning function in retailing through the eyes of a buyer, called a Retail Director at Nine West.

Case: Merchandising at Nine West Retail Stores

Guest: Marc Fisher
former President, Product Development and Sourcing
Nine West Group, Inc.
Founder and CEO
Fisher Footwear, Inc.

Questions:

- (1) What functions does a retail director perform?
- (2) What makes a great Retail Director?
- (3) Consider exhibit 9, which shows a report Retail Directors use in doing their jobs. Note that Total Posn. Equals On Hand plus On order inventory and LW refers to Last Week. Thus, for Farrah, sales this week are 2,586 and last week 2,465.
 - a. What patterns do you see in this data?
 - b. Which styles are in short supply?
 - a. Which are in excess supply?
 - b. What actions would you take based on this data and observations?
 - c. As a Retail Director, what other data would you like to see.
- (4) Critique the merchandising, supply chain and incentive processes at Nine West. What does Nine West do well? What would you change?

Class 4
16 Sept

Assortment planning,

In this class, we'll consider tools and techniques retailers use for deciding what assortment of products to carry in each store at each point in time.

Readings:

Chapter 3 Assortment Planning, draft, M. L. Fisher and A. Raman, Rocket Science Retailing

Chapter 12 Managing Merchandise Assortments of Retailing Management by Michael Levy and Barton Weitz, 6th Edition, Irwin-McGraw Hill).

M. L. Fisher, A. Raman and A. McClelland, "Rocket Science Retailing is Almost Here – Are You Ready?" *Harvard Business Review*, July/August 2000.

Class 5
18 Sept

Store execution: The role of the store manager

Excellent supply chain plans are often blunted by mediocre execution at the store level. This case will let us see what goes on in a retail store, what are the execution challenges and how to overcome them, and how can a retailer best harness the brain power in their stores.

Case: Store Level Execution at Wawa

Guest: David Johnson
EVP and COO
Wawa Inc.

Reading:

Marshall Fisher, "To you it's a store; to me it's a factory," *ECR Journal International Commerce Review*, Vol. 4, No. 2, Winter 2004

Questions:

- (1) Imagine you are a Wawa store manager. What are your goals and how would you achieve them?
- (2) Compare and contrast the styles of the three store managers described in the case. Which do you like best?
- (3) What harm is done by the store execution failures described in the case? What would you do to reduce these problems?
- (4) Now imagine you are VP of Store Operations for Wawa. What steps can you take to improve store performance?

Class 6
23 Sept

Store execution: data accuracy; e-tailing

We first consider some challenges in insuring the accuracy of store-level inventory records, which is a major issue for book retailers because of the SKU intensity of the business. Then we examine the advantages of a bricks and clicks format for a product segment that has been a 'sweet spot' for e-tailing.

Case: Frontier Books

Guest: Bob DiRomualdo
Former Chairman & CEO
Borders Group, Inc.
Chairman & CEO
Naples Ventures, LLC

Reading:

Ananth Raman, Nicole DeHoratius & Zeynep Ton, "Execution: The Missing Link in Retail Operations," *California Management Review* 2001

Questions:

- (1) Identify examples of data quality and phantom stockouts that you have observed. What should Frontier do to reduce phantom stockouts?
- (2) What are the advantages to the consumer and to the retailer of the store and internet channels for books? How can Frontier integrate the capabilities of the Internet and the retail store?
- (3) How should Conacher deal with the technological changes impacting book retailing? Specifically, how should he deal with Internet retailing? You might want to compare the web sites for Amazon.com, BarnesandNoble.com and Borders.com.

Please submit a list of team members and the two retailers you plan to compare by this class.

Class 7
25 Sept

Store execution: data analysis to discover drivers of sales and customer satisfaction

In this class I'll present results from a research project I have been conducting with Serguei Netessine and Jayanth Krishnan of the Wharton School and Nicole DeHoratius of the University of Chicago to discover store level operating policies that drive outstanding store execution, customer satisfaction and financial performance. Five leading retailers in the following segments are participating in this project: home furnishings, department store chain, office products, fast food and grocery. We have been meeting with these retailers and other experts to learn current leading-edge practice on techniques for effective store execution and processes for measuring and improving customer satisfaction. We have also been receiving store-month data on sales, customer satisfaction and potential drivers of sales and satisfaction and analyzing it to answer questions such as the following.

- Do more satisfied customers buy more?
- What can a retailer do to improve sales & satisfaction?
- What would be the impact of these actions?
- How to allocate an additional \$1 of store expense for the highest return?
- How to allocate decision rights between corporate and stores?
- A store is a blend of a factory and a sales office; what is the relative importance of these two functions?

Reading:

Chapter 7 Store Execution, draft, M. L. Fisher and A. Raman, Rocket Science Retailing

Class 8
30 Sept

Store execution: the role of technology

Radio frequency identification (RFID) technology offers the ability to track materials through the supply chain and has been marketed as the ultimate tool for managing physical

and information flow in retail supply chains. We'll describe the technology and review progress to date in utilizing it.

Readings:

Hau L. Lee, "Peering through a Glass Darkly," *International Commerce Review*, Vol. 7, No. 1, Spring 2007.

Bill C. Hardgrave, Matthew Waller and Robert Miller, "RFID's Impact on Out of Stocks: A Sales Velocity Analysis," Sam M. Walton College of Business, University of Arkansas, June 2006.

Class 9
2 Oct

Store execution: the role of technology

After a thorough analysis of potential benefits, METRO Group (Metro), the world's third largest retailer, made a strategic decision to be a leader in implementing RFID to track pallets and cases in its supply chain.

In early 2004, Metro announced that by November 2004, 100 suppliers would be using RFID tags on pallets delivered to 10 Metro DCs and approximately 250 Metro stores. The implementation of the technology, however, was more challenging than the retailer had anticipated. There were problems with both the technology and the processes that were required to use the technology. As of August 2005, 33 suppliers were sending RFID tagged pallets to 9 Metro DCs, and 13 Metro stores. Now in November 2005, Zygmunt Mierdorf, the company's Chief Information Officer, and Dr. Gerd Wolfram, Managing Director of Metro's internal IT service group are wondering how to proceed with the implementation given the results of the initial roll out.

This case will allow us to understand what RFID is, how it works, and its potential benefits in improving labor productivity, shrink, and stockouts when used at the pallet level and at the case level. We'll also gain an appreciation of the challenges associated with technology adoption in supply chains.

Case: RFID at the METRO Group

Questions:

- (1) What is your assessment of Metro's approach to implementing RFID? Has the project been a success so far?
- (2) Evaluate the costs and benefits, both financial and other, of implementing RFID at the pallet level and at the case level, for Metro and for its suppliers. Exactly where will the benefits come from?

- (3) Which of the three options do you recommend that Mierdorf and Wolfram propose to the RFID steering committee on December 13th?
- a. Expand the scope of the current pallet-level RFID roll out.
 - b. Move to case-level RFID with the manufacturers currently engaged in the pallet-level roll out.
 - c. Stop expansion of RFID efforts and focus on traditional process improvement opportunities.

Class 10

7 Oct

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.

Case: Luen Thai

Guest: Rick Helfenbein, President, USA Operations, Luen Thai International Group.

Reading:

Chapter 10. Information Systems and Supply Chain Management of Retailing Management by Michael Levy and Barton Weitz. 6th Edition, Irwin-McGraw Hill.

Questions:

- (1) What is Luen Thai trying to accomplish and does it make sense?
- (2) What challenges and risks do they face and how will they overcome them as they pursue their vision of design-to-store and supply chain cities?
- (3) If you were a retailer, how would you think about Luen Thai's capabilities?

Class 11

9 Oct

Live case study 1: soft goods forecasting and planning; retail entrepreneurship

Mothers Work, Inc. was founded in 1982 by Philadelphia native Rebecca Matthias. The company has grown to be the largest maternity apparel retailer in the US with a 50% market share. Prior to Mothers Work, Rebecca worked as a civil engineer, and she has taken very much an engineering approach to supply chain planning at Mothers Work. Rebecca will join us to discuss forecasting and planning at Mothers Work. This is also an excellent opportunity to better understand the entrepreneurial dimension of retailing.

Case: Mothers Work, Inc.

There is no written case for this class, but data on a real example will be presented in class and you'll have the chance to comment on what you would have done in this situation.

Guests: Rebecca C. Matthias, President and Chief Operating Officer

Rick Adelman, Senior VP of Imports and Manufacturing
Mothers Work Inc

Questions:

Prior to class, visit <http://www.motherswork.com> and review About MWI and Financials. Under About MWI, be sure to visit Real Time Retailing which describes their supply chain planning process.

- (1) What are the distinctive features of Mothers Work's supply chain planning process?
- (2) What challenges do you think they face in the future?
- (3) Detailed data on several products will be distributed in class, with related live questions.

Class 12

16 Oct

Live case study 2: consumer electronics forecasting and planning; supply chain strategy

During a 5 year period from 1996 to 2000, Best Buy was the best performing stock in the S&P 500. This stellar performance was due primarily to an operations turnaround lead by Kevin Freeland, initially Senior VP of Inventory Management for Best Buy, and later President of their MusicLand affiliate. Kevin will describe all aspects of this effort, from the math tools used to how he got all the key players within Best Buy and their suppliers to go along with the required changes.

Guest: Kevin Freeland
Former Senior VP, Inventory Management & former President, Musicland Division, Best Buy
CEO & Founder, Optimal Advantage

Reading:

Excerpts from the Best Buy Fiscal 1997 10K

The readings will give you an idea of the nature of Best Buy's business and what they were struggling with at the start of 1997. Please consider the following discussion questions.

- (1) After growing significantly from 1993-1996, Best Buy announced at the end of 1996 that they were suspending store openings. They had run out of cash. Their stock was extremely depressed, and they were in near default on their debt. What did they need to do to stave off bankruptcy?
- (2) Best Buy went from one store in 1983, to hundreds of stores in 1995 by filling virtually all top level jobs internally. Then the company shifted at the end of 1995 to

primarily hiring from the outside. The newcomers brought in the consulting firm Accenture for assistance. The crisis in 1996 required extraordinary teamwork to succeed. How can these two distinct cultures quickly pull together to save the company?

- (3) Circuit City was much larger than Best Buy, and very profitable. What should Circuit have done to take advantage of Best Buy's difficulties?
- (4) In 1997 Best Buy began pushing the sales of PSPs (warrantees) and reducing shrink (shoplifting). Both of these activities are disliked by consumers. What were the long term costs of these activities compared to their short term benefits.

Class 13 **21 Oct**

Forecasting & inventory optimization for new products

In the next three classes, we'll consider tools and techniques retailers use for deciding what assortment of products to carry in each store at each point in time and the quantity of inventory to hold of each of those products. Retail products have a life cycle that can be divided into three stages: new product launch, mid life replenishment and end of life, dominated by price markdowns to clear remaining inventory. In this class we focus on the 1st of the three stages of life: new product launch.

Readings:

Chapter 2 Product life cycle planning: Forecasting, Inventory Optimization and Exit Optimization, draft, M. L. Fisher and A. Raman, Rocket Science Retailing

Chapter 13 Merchandise Planning Systems of Retailing Management by Michael Levy and Barton Weitz, 6th Edition, Irwin-McGraw Hill).

Gerry Schleiffer, "Testing Overview," March 19, 1999.

M. L. Fisher and Kumar Rajaram "Accurate Testing of Retail Merchandise: Methodology and Application," *Marketing Science*, July 2000.

Marshall Fisher, Kumar Rajaram and Ananth Raman, "Optimizing Inventory Replenishment of Retail Fashion Products," *Manufacturing & Service Operations Management*, 2001
Read sections 1, 3 and 6 to understand the problem addressed and results achieved.

Class 14 **23 Oct**

Replenishment inventory optimization

This class continues our discussion of inventory and price optimization, focusing on the 2nd stage of life: midlife replenishment.

Reading:

Class 15
28 Oct

Replenishment Inventory Planning

This class introduces a concept called an order point system for dealing with the important special case of replenishment of basic items. We consider how to use sales history to forecast future demand and set inventory levels.

Case: Paper and More

Questions: Answer the questions given in the case.

Class 16
30 Oct

Markdown pricing

This class concludes our discussion of inventory and price optimization, focusing on the 3rd stage of life: markdown pricing at the end of life. The most successful recent application of scientific retailing is using sales history to estimate price elasticity to guide setting markdown prices so as to maximize the revenue earned from end of season inventory. This session will describe recent research and implementations of scientific markdown pricing.

Reading:

Chapter 15 Retail Pricing of Retailing Management by Michael Levy and Barton Weitz, 6th Edition, Irwin-McGraw Hill.

Kosin Huang, "Price management and profit optimization: from planning to execution," Yankee Group Report, 2002

Amy Merrick, "Retailers attempt to get a leg up on markdowns with new software," WSJ, August 7, 2001

Stephen Smith and Dale Achabal, "Clearance pricing and inventory policies for retail chains," *Management Science* 1998 (**read pp 285-287 and section 5 to get an idea of what they did and how it worked.**)

Garrett Van Ryzin, "The brave new world of pricing," *Financial Times*, Oct 16, 2000

Class 17

4 Nov

Retail Organization Design

This class describes the organization of computer retailer CompUSA, with particular attention to operations and company culture. We first examine the economics of the PC product category and the resulting importance of a responsive supply chain. The description of company culture emphasizes the role of people-management and incentives in achieving responsiveness. Jim Halpin, who was CEO of CompUSA at the time of the case and is the protagonist in the case, will be joining us for this class session and will make remarks at the end of class.

Case: CompUSA—The Computer Superstore

Guest: Jim Halpin
Former CEO
CompUSA Inc.
Owner
River Bend Inc.

Reading:

Human Resource Management, Chapter 9 of Retailing Management by Michael Levy and Barton Weitz, 5th Edition, Irwin-McGraw Hill. Distributed in class.

Questions:

- (1) Who are CompUSA's competitors? What are the challenges CompUSA faces in computer retailing?
- (2) What steps is CompUSA taking to cope with these challenges? Do they make sense to you?
- (3) What do you think of the corporate culture and HR policies at CompUSA? Is it appropriate for their business model? Would it work at another retailer?

Class 18

6 Nov

Supply chain design: achieving speed and flexibility

Most apparel retailers have a 6 to 11 month supply lead time. By contrast, World can replenish existing products in two weeks and design and supply new products in six weeks. World has also adopted a number of novel techniques in their planning process, based on the Sport Obermeyer case taught in OPIM 632. We will use this case to understand the factors affecting lead time and the inner connections between lead time management and forecasting/inventory planning.

Case: World Company

Questions:

- (1) Identify key aspects of World's supply chain focusing on the processes for manufacturing, new product design, demand forecasting, and inventory planning.
- (2) What does World do that you find impressive?
- (3) Which aspects explain the company's remarkably short lead times (relative to U.S. apparel supply chains)?
- (4) Consider Exhibit 6 which describes a SKU for which the demand forecast for the season is 2,200. Suppose the season is 11 weeks long, you are 3 weeks into the season and sales in the first 3 weeks has been 600 units. What actions would you take? How about if sales in the first 3 weeks are 300 units? 900 units?
- (5) Could World's supply chain processes be replicated at other apparel companies? Identify potential barriers.

Class 19

11 Nov

Supply chain design: achieving speed and flexibility

We'll examine the operations of Zara, global retailer based in Spain that has become famous for its speed and flexibility. Zara has much in common with World, but also some differences.

Case: Zara

Questions:

- 1) What are the most important elements of the Zara business model?
- 2) How well is this business model working? What do you like and not like about their model?
- 3) What information is required to make the Zara business model work?
- 4) Compare and contrast Zara and World.
- 5) What benefits does Inditex/Zara get from its IT infrastructure? How difficult would it be for a competitor to acquire these same benefits?

- 6) What current or potential weaknesses (if any) do you see in Zara's IT infrastructure and IT strategy?
- 7) What would you recommend to Salgado with regard to store IT. Specifically,
 - a. Should he upgrade the POS terminals to a modern operating system?
 - b. Should Zara build in-store networks?
 - c. Should the POS application be re-written to include the ability to look up in-store inventory balances?
 - d. Should the POS application be re-written to include the ability to look up other stores' inventory balances?

Class 20
13 Nov

Creating a Fast and Responsive Supply Chain

In this class we'll examine the system developed by Ito Yokado for managing the supply chain for fresh tuna which is capable of catching tuna in the morning and having it on store shelves by afternoon.

Case: Ito Yokado

Questions:

- 1) Is Ito Yokado good at supply chain management? You might want to compare their performance numbers with industry averages or other retailers we have seen in class.
- 2) What are the key features of Ito Yokado's corporate culture and HR policies?
- 3) What impressed you about their approach to managing the supply chain for tuna? How do you think the approach taken by other food retailers compares?
- 4) Compare and contrast their approach to apparel to what we saw at World.
- 5) What are the next steps you think Ito Yokado should take to continue to grow their business?

Class 21
18 Nov

Supplier/Retailer Incentives & Contracts

This case will take you through a sequence of numerical simulations using Excel spreadsheets (to be provided) in a simple supply chain comprised of a single manufacturer and retailer. The first few simulations demonstrate that a "differentiated supply chain" (i.e., one comprising a manufacturer and a retailer) will perform worse than one that is vertically integrated. This simulation shows that sub-optimal inventory levels and fill rates can result even if both retailer and manufacturer make decisions that maximize their respective profits. Subsequent simulations show performance, relative to the vertically integrated (or "first best") case, deteriorates as retailers add private-label brands that compete with the

manufacturer's brand. The exercise ends by proposing a number of approaches for aligning incentives better in a supply chain.

Case: Hamptonshire Express

Questions: Answer the questions given in the case.

Class 22

20 Nov

Supply chain partnerships

Many retailers are looking to their suppliers for competitive advantage. What can a retailer and supplier contribute to such a partnership and what benefits can they derive from it?

Case: Liz Claiborne

Questions:

- 1) What explained Liz Claiborne's early success, and what were causes of performance decline?
- 2) Will Paul Charron's choice of LizRim as an early, important initiative address these problems? Will it enable him to achieve his mandate to re-institute volume and profit growth to Liz Claiborne?
- 3) As explained in the case, the open to buy system is a budget system in which a buyer is given a fixed budget for buying merchandise each month. A buyer's monthly budget will change up and down depending on the retailer's liquidity or on special circumstances. For example, most retailers try to draw down their inventories at the end of their fiscal year so as to improve the quality of their financials, and hence order less in the last month or two of their fiscal year. Do you think the open to buy system makes sense? What problems does it create for LizRim and how would you recommend overcoming them?
- 4) Imagine you were a senior executive at Federated Department Stores approached by Charron and his team to adopt LizRim. What would be your reactions and how would you respond?
- 5) The list of 'Outstanding Issues' in the last section of the case represents a daunting set of hurdles that LizRim must overcome if it is to gain acceptance. How can Paul Charron achieve his goal 'to convince his biggest customers to come on board' with LizRim? Do you think this concept can be extended to fashion products, and if so, how?

Class 23
25 Nov

Network design: configuring the network of distribution centers

This case will allow us to understand in depth the supply chain operations of the world's most famous e-tailer. After reviewing how their supply chain has evolved over time, we'll consider an issue they are currently facing of how to configure the network of distribution centers through which they serve the European market.

Case: Amazon.com's European Distribution Strategy

Questions:

- 1) Review the changes Amazon made in its U.S. operations in the last 5 years. What were the main drivers of change at each phase? Did Amazon respond effectively?
- 2) What is your evaluation of the current distribution network Amazon uses in the United States?
- 3) Identify the different order fulfillment models Amazon uses to fill customer orders in the United States. When should each be used? Why?
- 4) How has free shipping affected Amazon profitability?
- 5) Evaluate the roll-out of Amazon's operations in Europe. What were the strengths and weaknesses of the process?
- 6) What should be Amazon's key priorities going forward in Europe? What distribution network strategy would you recommend to Tom Taylor? What implementation challenges do you foresee?

Class 24
2 Dec

Review and summary of key course concepts

Since many concepts were introduced via cases, it's helpful to review what we've learned and organize our thinking into a cohesive framework.

Class 25
4 Dec

Presentation of Retailer Head to Head Competition Project reports

This will be an opportunity to learn from each other by presenting your findings from the retailer comparison project.