

The University of Pennsylvania
The Wharton School
Operations, Information and Decisions Department

OIDD 615: Operations Strategy

Fall 2018 Q2 Course Syllabus

Professor	Hummy Song 560 Jon M. Huntsman Hall hummy@wharton.upenn.edu Office Hours: By appointment
Canvas	TBD
Lectures	Sec 012, Tuesdays & Thursdays, 9:00am-10:30am, SHDH 107 Sec 008, Tuesdays & Thursdays, 10:30am-12:00pm, SHDH 107 Sec 010, Tuesdays & Thursdays, 1:30pm-3:00pm, JMHH 260
Final Exam	Thursday, December 20, 6:00pm-8:00pm
TAs	TBD Office Hours: See Canvas

Course Description

Operations strategy is about organizing people and resources to gain a competitive advantage in the delivery of products (both goods and services) to customers. This course approaches this challenge primarily from two perspectives: (1) how should a firm design their products so that they can be profitably offered; (2) how can a firm best organize and acquire resources to deliver its portfolio of products to customers. To be able to make intelligent decisions regarding these high-level choices, this course also provides a foundation of analytical methods. These methods give students a conceptual framework for understanding the linkage between how a firm manages its supply and how well that supply matches the firm's resulting demand.

This course is a mixture of both theory and class discussions. Both factors are important for a complete learning experience.

Pre-requisites: An interest in operations and a quantitative understanding of business decisions. Some exposure to statistics (what is covered in the first year Q1 is sufficient).

Classroom Expectations

For transparency and clarity, here are the classroom expectations. I realize the expectations codified in this design are high. Nevertheless, I have been *amazed* at the extraordinary folks who have met and continue to meet these expectations by managing their professional and academic responsibilities. The expectations have been designed with respect towards everyone's pursuit of progressing our learning goals when we share class time together.

- We will use seating charts. Please be seated in assigned seats and use your name tent in each class. Given the brevity of quarter classes, this structure is principally to help me get to know you better.
- Please be ready to participate at the start of each class session.
- Please do not use electronic devices unless specifically asked by me. This includes phones, laptops, and tablets.
- Please remain in the classroom during the *entire* session.
- Please bring up your questions to the entire class (i.e., no parallel discussions).

Electronic Device Policy

- No electronic devices in class, unless specifically pre-announced and requested by me.
- While I understand that everyone's personal learning needs/preferences vary, I have found the implementation of this policy is beneficial for (i) maximal collective learning through focus and extended deliberation, (ii) my teaching design, and (iii) setting norms when individual learning styles clearly vary. Recent academic research also supports this approach. In fact, student feedback and some initial data have largely been quite supportive.
- Curious about how such a policy may help? Here are two articles:
 - <https://www.brookings.edu/research/for-better-learning-in-college-lectures-lay-down-the-laptop-and-pick-up-a-pen/>
 - <http://mediashift.org/2014/09/why-clay-shirky-banned-laptops-tablets-and-phones-from-his-classroom/>
- I am actually fairly interested in Technology Operations. Nevertheless, I do not see the electronic device policy and our interests in technology to be in conflict. In fact, we will use some of the latest classroom learning technologies (e.g., ForClass).

Course Grading

Your final numerical score for the course is based on the following items and weights.

- Class Attendance, Case Preparation, and Participation (30%)
- Three Individual Homework Assignments (30%)
- Final Exam (40%)

Your grade is based on your ranking across sections of the class, subject to MBA grading requirements. This is expected to be roughly according to the following distribution: 12% A and A+, 21% A-, 33% B+, 21% B, 10% B-, 3% C+ or lower. This distribution may vary. A failing grade is received when performance on a component is particularly poor (e.g., 35% or less correct answers on the final exam).

Class Attendance, Case Preparation, and Participation (30%)

Each of the following three components is weighed equally.

Class Attendance:

- To allow for exploration of classes and for scheduled / unanticipated personal events, missing (or being late to) up to 2 classes does not result in any penalty.
- My expectation is that you will be at your seat when the class session begins and stay throughout the class. Hence, late arrivals will be registered as absences (though you may still earn credit for participation).
- For fairness to all students, I will only excuse absences for which I receive an email from the MBA Program Office.

Case Preparation:

- Case preparation consists of your responses to the case prep questions, which are collected via the ForClass tool on Canvas before class. You may submit them as late as 5am on the day of the class session.
- These questions are simple multiple-choice or short answer questions. FYI, to enhance your learning, the syllabus lists more questions than you will be asked to respond to on ForClass.
- I will use your answers to guide our in-class discussions, so well-reasoned but incorrect answers are not penalized.
- By submitting your responses, you affirm that you are prepared to discuss the case.
- You should submit case prep responses for at least 5 out of the 7 cases we will be discussing. Thus, you can miss up to 2 case preps without penalty. (Note, the course intro prep due the first session does not count towards this; it is merely intended to familiarize you with the ForClass tool that we will use for case preps.)

Participation:

- At a minimum, **classroom expectations** should be met (see page 2).
- Class participation is scored based on the consistency of participation, your continued engagement in discussions, and finally the degree to which your comments / questions contribute to learning in case discussions and lectures.
- Be a good listener to others' comments, too: More Airtime ≠ High Participation.
- To improve participation opportunities, I will call on students. Therefore, class preparation is necessary to do well in this class.

Three Individual Homework Assignments (30%)

- There are three graded homework assignments. Each assignment is weighed equally.
- Assignments are due at 11:59pm ET on the due date. Late assignments are not accepted; i.e., late assignments will receive zero credit.
- Submissions must be submitted electronically through Canvas.
- Each student must complete his or her own assignment. However, to promote learning, students are allowed to discuss questions with other students. Use collaboration *judiciously*, and only for learning purposes.
- No partial credit will be given.

Final Exam (40%)

- The final exam is based on the complete contents of the course: analytical tools, lectures, in-class case discussions, etc.
- The final exam is an open book - open notes exam with some quantitative and qualitative questions.
- The administration (and your instructor) is very strict about ensuring that all students take the exam on the assigned date. Please mark your calendars!

Course Materials

Handouts

- Handouts will be distributed in class and also posted on Canvas.

Cases

- Cases should be read *before* class as preparation. Cases define the *minimum* information necessary for class discussion.
- Cases are available via Study.net.

Text chapters

- Text chapters are recommended and can be read before or after the class session.
- Selected chapters from Cachon, G. P. & Terwiesch, C. *Matching supply with demand: An introduction to operations management*. Third Edition. 2012. Boston, MA: McGraw Hill. These chapters are also available as a Custom Coursebook at the Penn Bookstore.
- Note, the text readings listed in the syllabus follow the third edition. If you are using the first or the second editions of the textbook, please note that there are many differences, including the chapter numbers.

Course Ethics / Code of Conduct Summary

	Materials							People				
OPIM 615: Operations Strategy	Approved calculator	Laptop / other electronics	Summary sheet	Book / class notes/ Canvas materials	Past notes / summaries	Past exams / assignments	Outside materials	Learning team / approved work team	Other student(s) in same section	Student(s) in other sections (same term)	Wharton student not taking the class this term	Person outside of Wharton
Readings & Cases	A	A	A	A	A	A	A	W	W	W		
Assignments	A	A	A	A	A	A	A	W	W	W		
Final Exam Prep	A	A	A	A	A	A	A	W	W	W		
Final Exam	A		A	A	A	A	A					
In-Class	A		A	A	NA	NA	A					
	A = Allowed material Shaded Cell = Not allowed NA = Not Applicable							W = Allowed to work together D = Discussion of general concepts and procedures is allowed but no sharing of specific answers. Shaded Cell = Not allowed				
The information above covers many common situations but will not cover every circumstance. Remember: The Wharton MBA Code of Ethics that you accepted requires, among other things, that you represent yourself and your work honestly, don't try to gain unfair advantage over other students, follow the instructor's guidelines and respect confidentiality of your work and the work of others. Should you have questions, please contact your ethics liaison or professor.												

OIDD 615: Class Sessions and Schedule

#	Date	Topic	Reading and Assignments Due
1	Tue 10/23	What is Operations Strategy? Thinking about Uncertainty	Text: Appendix A, Chapter 12 (sections 0-3) Due : Mini course prep by 5am
2	Thu 10/25	Betting on the Unknown: Newsvendor Model	Text: Chapter 12 (sections 4-8)
3	Tue 10/30	Newsvendor Applications: Managing Biases in Operational Decisions	Case: Forecasting and Procurement at Le Club Français du Vin Due : Case prep by 5am
4	Thu 11/01	Second Chances: Speculative and Reactive Strategies	Case: Sport Obermeyer, Ltd. Text: Chapter 13 (sections 0-4) Due: Case prep by 5am Due: Assignment # 1 by 11:59pm
<p>***NOTE: No class on Tue 11/06*** ***Class meets on Tue 11/20 instead***</p>			
5	Thu 11/08	More of Less or Less of More: Make to Stock v. Make to Order Strategies	Text: Chapter 14
6	Tue 11/13	Sourcing Strategies: Off-shoring and In-sourcing	Case: Where in the World Is Timbuk2? Due: Case prep by 5am
7	Thu 11/15	Operational Risk Management Strategies	Text: Chapter 15
8	Tue 11/20	Technology: Product Design and Clockspeed	Case: Hewlett-Packard Company DeskJet Printer Supply Chain Due: Case prep by 5am
9	Tue 11/27	Operations on the Internet	Case: Online Book Retailing: Operational Strategies (Amazon) Due: Case prep by 5am Due: Assignment # 2 by 11:59pm
10	Thu 11/29	Revenue Management: Pricing Strategies	Case Article: Uber Text: Chapter 16 Due: Case prep by 5am
11	Tue 12/04	Coordination and Information Sharing Strategies	Case: Supply Chain Management at W'Up Bottlery (A) and (B) Text: Chapter 17 Due: Case prep by 5am
12	Thu 12/06	Course Review	Text: Chapter 19 Due: Assignment # 3 by 11:59pm
	Thu 12/20 6-8pm	Final Exam (Location TBA) Exam date and time <u>NOT</u> subject to change. Please Mark Your Calendars!	

OIDD 615: Session Descriptions

Session 615.1. What is Operations Strategy? Thinking about Uncertainty

This session motivates the course and introduces students to some of the perspectives we will take on operations strategy. We then cover course expectations and the syllabus. We conclude with a framework for quantifying uncertainty for new and innovative products.

Text: Appendix A, Chapter 12 (sections 0-3)

Session 615.2. Betting on the Unknown: Newsvendor Model

This session introduces a framework to quantify operational risk. Specifically, we discuss the newsvendor model, which we use in situations in which there is one ordering opportunity while facing uncertain demand. We discuss how it can be used to calibrate operational performance.

Text: Chapter 12 (sections 4-8)

Session 615.3. Newsvendor Applications: Managing Biases in Operational Decisions

This session explores applications of the newsvendor framework. We first explore the challenges of procurement for a wine catalog retailer. We then explore decision-making biases and discuss how managers can use optimal decisions to correct for biases.

Case: Forecasting and Procurement at Le Club Français du Vin

- What is the underage cost incurred to Le Club by ordering one fewer bottle of a €10 wine? What is the overage cost incurred to Le Club by ordering one more bottle of a €10 wine?
- How should Le Club forecast demand for each wine? Would you use a forecast process different from Le Club?
- How would you choose an order quantity for each wine? Would it differ from the profit maximizing quantity recommended by the newsvendor model? If so, how would it differ and why?

Session 615.4. Second Chances: Speculative and Reactive Strategies

This session studies how early sales information can be used to increase supply flexibility.

Case: Sport Obermeyer, Ltd.

- Contrast Sport Obermeyer's forecasting process with Le Club's forecasting process. Does their approach make sense for their market? Why or why not?
- What is the value of having two opportunities to make a production decision?
- Look at Exhibit 10. Which styles should be produced in the first production run? (Choose up to 5.) Why did you choose these styles to produce first? In addition, where should they produce the first production run (Hong Kong or China), and why?

Text: Chapter 13 (sections 0-4)

Assignment #1 Due on Canvas by November 1, 11:59pm ET
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Session 615.5. More of Less or Less of More: Make to Stock v. Make to Order Strategies

In this session we discuss two operational approaches: make to stock and make to order. We introduce a framework to understand which operational approach to choose based on how operational parameters align with market demand.

Text: Chapter 14

Session 615.6. Sourcing Strategies: Off-shoring and In-sourcing

This session explores the pros and cons of different sourcing strategies as they relate to mass customization. We discuss issues involved in the outsourcing of manufacturing operations to low-cost countries.

Case: Where in the World is Timbuk2?

- What channels does Timbuk2 sell through and which one is the most profitable?
- How should Timbuk2 go about deciding which mass customization options to offer customers? Brennan talks about a very vague process based on management intuition. Let's get specific. For example, would you offer changing the dimension of panels as a choice to customers? Explain your choice of why or why not.
- What are the costs and benefits of moving production to China? Would you move production to China? Why or why not? Also, think about the need for the San Francisco factory and its utilization, based on outsourcing decisions and inventory needs.

Session 615.7. Operational Risk Management Strategies

This session explores several operations strategies for reducing and hedging uncertainty.

Text: Chapter 15

Session 615.8. Technology: Product Design and Clockspeed

We discuss how operational strategies interact with product design and industry clockspeed. We focus on the challenges of adopting new strategies in evolving markets, particularly for technology firms, using HP and Dell as examples.

Case: Hewlett-Packard Company DeskJet Printer Supply Chain (A) and (B)

- What should HP's operational strategy be? Should HP consider air shipments to Europe instead of ocean shipping? Should HP consider a "localize remotely" strategy as discussed in the (B) case?
- Discuss the operational implementation issues that you see for your suggested strategy. What could change the final decision?
 - *Note:* You can make the following assumptions: HP seeks a 99% in-stock probability, orders weekly, and their lead times are 5 weeks by sea and 1 week by air from Vancouver to Europe. The marginal cost of the product is \$250 and their inventory holding cost is 25% per year. Shipping via sea costs \$5 per printer, whereas air freight costs \$15 per printer.

Assignment # 2 Due on Canvas by November 27, 11:59pm ET
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Session 615.9. Operations on the Internet

Internet retailing requires less inventory and retail space than brick-and-mortar retailing. However, internet retailing introduces additional costs. We compare these two models from an operations perspective.

Case: Online Book Retailing: Operational Strategies (Amazon)

Use the case facts as background reading and think about the following questions, focusing on the exhibits and the Excel sheet on Canvas.

- For historical reasons, the Excel sheet starts off comparing Barnes and Nobles with Amazon. List some companies that you would compare Amazon to now.
- Discuss the complexity associated with Amazon's fulfillment process. Specifically, how does Amazon tackle product variety?
- What are Amazon's prospects going forward? Specifically, in 50 words or less,
 - Why is Amazon exploring opening physical stores?
 - What are the advantages (and challenges) for Amazon in buying Whole Foods?
 - What are some of Amazon's challenges in the digital space?
- What are the key global growth challenges for Amazon? To compare, explore www.alibaba.com, www.flipkart.com, and www.redmart.com.

Session 615.10. Revenue Management: Pricing Strategies

We discuss operational strategies in markets with expensive fixed capacities and volatile demand. We cover revenue management concepts and implementation challenges, and consider operational strategies using (dynamic) pricing. In particular, we focus on how to integrate consumer behavior into operational decisions, so that pricing products and planning capacities can be done optimally.

Text: Chapter 16

Case Article: Uber (<https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html>)

- Case prep questions are TBD.

Session 615.11. Coordination and Information Sharing Strategies

In this session, we discuss operational coordination issues in developing economies focusing on a bottling plant in India. To conclude, will discuss the bullwhip problem and solutions to coordination issues.

Text: Chapter 17

Case: Supply Chain Management at W'Up Bottlery (A) and (B)

- Why does Rajat Mehra want to implement a VMI system in the W'Up supply chain?
- What are the biggest obstacles to implementing a VMI system?
- What should Mehra's team do next? What suggestions do you have for an implementation of VMI throughout Coca Cola's Indian supply chain?

Session 615.12. Course Review

We will review the course material in preparation for the final exam.

Text: Chapter 19

Assignment #3 Due on Canvas by December 6, 11:59pm ET

Final Exam on December 20, 6-8pm ET (Location TBA)