

MKTG 754
Pricing Policy
Fall 2017

Professor Aviv Nevo
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Office Hours: Monday 3:00-5:00 (subject to me being in town) or by appointment via email. Please email me if you think you might come to OH, just to make sure I am in town.

Class time and place: TuTh 10:30-11:50; Classroom SHDH211

Teaching Assistant: Takeaki Sunada (takeaki@sas.upenn.edu)

The course will draw on a mixture of economic theory and analytic techniques to describe approaches that are useful for pricing decisions. Some examples of questions we will address in the course: How does a firm determine the price for a new product? How does a firm assess whether the current price is appropriate? How to optimally price to different segments? How to price in a competitive environment and within the legal framework?

This course prepares students to address strategic and tactical pricing issues and to identify profit-boosting changes in pricing practices across a range of professional contexts – as management consultants, product managers, entrepreneurs, business unit managers, and M&A advisors.

We will cover the fundamental economic analytical tools, theories and conceptual frameworks needed for formulating pricing strategies. The course will use a mix of lectures and case discussions. Mini-cases and problems will also be employed to make students apply their learning. We will also discuss empirical methods that allow you to use data to inform and guide pricing decisions. We will discuss practical examples of commonly-used pricing tactics that will help you gain insights into successful pricing strategies in various industries and discuss how to improve a firm's pricing through a sophisticated pricing structure.

The course will be rigorous and fairly technical, so come prepared. I will assume that you have covered the required economic, computational, computer and statistical tools in other classes. Our focus will be on *applying* these methods. Feel free to contact me if you are unsure about the level of comfort you should have with the background material.

Reading Materials

The course has a mixture of reading assignments in the form of articles and cases. I will assume that students have done the required reading for each class, have analyzed assigned case materials, and are prepared to discuss them.

None of the current textbooks cover the quantitative material as I will cover it in class. Therefore, class participation and note taking during class is essential.

There are several textbooks that can complement the lectures, but they are not necessary for the course. For example,

The Strategy and Tactics of Pricing by Thomas T. Nagle et al (NJ: Prentice Hall, 5th ed.). Available [here](#). Very practical but somewhat less quantitative.

Principles of Pricing: An Analytical Approach, by Rakesh V. Vohra and Lakshman Krishnamurthi. Available [here](#). More analytic in its approach.

Course Materials and Website

Course materials will be available on the course Canvas site. The Canvas site will also act as the course website. Please bookmark this website and check it as often as necessary. This site will contain copies of class handouts, and other general information about the course.

Classroom Policies

Class Participation. Class participation is an important part of this class and will be part of your evaluation (see below).

Assigned Seating. Starting from the 3rd class you should choose a seat and sit in it for the remaining lectures. This will facilitate grading class participation

Class Attendance and Participation. Attendance in class is expected. We will spend a great deal of time engaged in class discussion, which means that by missing class you will miss an important part of the learning experience. Attendance will not be recorded, but you will be graded on class participation, which is hard to do if you are not in class.

You are invited to actively participate in class by asking questions and contributing to the discussion. Particularly helpful would be to highlight insightful linkages between class material and your past experience as a professional and a consumer, to raise challenging questions and issues related to the pricing topics being reviewed, and to participate actively in discussion of problems and cases. It will be assumed that students have read and analyzed the case materials and problems assigned to each class and are prepared to discuss them.

Students find in-class discussions a valuable part of the course, and effective discussions are only possible if everyone is prepared. You should come to class prepared to defend your analysis. To create incentives to do this, I may randomly select (i.e. cold call) students to answer questions. You should view class participation both as an opportunity to ask questions to enhance your understanding as well as an opportunity to demonstrate your critical analysis of the material. *Your task is to enhance my memory of you as an intellectual and relevant contributor.*

Conflicts. If you have documentable special circumstances such as time conflicts between multiple exams, illness, or grave personal difficulties such as a death in the family, you should petition the MBA Program Office, which will work with me in appropriate cases to find a resolution. The MBA Program Office will require documentation of your conflict.

If you find yourself with a conflict due to your career search or recruiting activity, you should work with the MBA Career Management Office to find a resolution. Employers cannot require a student, as a condition of his or her employment candidacy, to participate in recruiting-related activities at a time that conflicts with his or her academic schedule. An employer's inflexibility on this issue is considered a violation of Wharton's recruiting policies. A time conflict due to a job interview, a career pursuit or travel is not an appropriate reason to request accommodation on an academic commitment.

Policy on Laptops, Cell phones, and Other Devices. We will follow the general Wharton policy on the use of electronics in the classroom (see <https://mba-inside.wharton.upenn.edu/wharton-mba-academic-policies/>). Specifically, laptop computers or other electronic devices (phones, tablets, etc.) may not be used during class unless specifically permitted by the instructor. Laptops and tablets should be closed and are not permitted on your desks. Phones should be turned off or silenced and put away. A violation of this policy will result in a reduction in the participation grade (see below).

Student Teams Students are asked to form **teams of 3 - 4 students** to work on the final project. You should form a group as quickly as possible. If you need help in forming a team, let me know in a timely manner so I can facilitate communication with others. Groups with more than four students are not permitted (no exceptions).

Note that team members will have the opportunity to evaluate all team members' contributions (for the course project) using peer evaluation forms at the end of the term.

Grading and Course Assignments

Grades will be based on three areas:

1. Class participation:		20%
2. Five assignments:	10% each, total	= 50%
3. Course Project (team):		30%
TOTAL		100%

Each of these components is described in detail below. Each student's contribution to his/her team's course project is going to be weighted using peer evaluation forms (see below).

Grading Class Participation. During, and following, each class I will take notes on your participation. These notes will be the base for my grading, which will be based on the totality of your contribution during the term. Grading class participation is necessarily subjective. But here are pointers into my thinking. First, points on participation are gained, not lost. Each time you make a positive contribution, you gain points. So if you do not get full credit for participation don't ask what you did to lose points, rather you should ask what you did to deserve the credit. Second, here are some of my criteria for evaluating effective class participation. Do your comments add to our understanding of the situation? Does the participant go beyond simple repetition of case facts, adding analysis and

conclusions? Do comments show an understanding of theories, concepts, and analytical tools presented in class lectures or reading materials? Are the comments linked to comments from others? Is the participant an effective communicator, with comments presented in a concise and convincing fashion?

Note that your participation grade is not a direct function of the amount of “air time” you take up. In general, I will evaluate you on how well you respond to my questions and on how effectively you take into account the comments and analyses of your classmates. In situations where multiple students have raised their hands to speak, I will try to call on the student with the least cumulative airtime to that date. This procedure, carried out over the course of the term, should help to ensure that everyone who is well prepared and wants to contribute will have the opportunity to do so.

Finally, one way in which participation points are lost is by violation of the policy on electronic devices in the classroom, as described above.

Assignments/Problem Sets. There are five assignments in the course. All are to be done individually. These assignments will be made available later in the course on the course website. The assignments are due at the beginning of class on the dates listed in the Class Schedule below.

The assignments will include case write-ups, analytic problems related to the material we cover and at least one assignment including regression analysis. Case write-ups will proceed the class discussion of the case. Analytic and empirical questions might also be given ahead of class discussion and used to facilitate a discussion. For assignments involving case write-ups you should either make a copy or take notes of your main points, as needed to participate in the discussion.

For the assignments involving full case write-ups, your write-up must not exceed *three pages* (12-point Times New Roman, single-spaced, one-inch margins). This limit does not include exhibits such as tables or graphs, which if you include should be in an appendix. If you use more than three pages, then you are probably including too much information in your solution. Assume the reader is familiar with the case; do not summarize or restate more of the case than necessary. Do not omit the obvious, but omit needless words.

The questions for each case will be provided as part of the written assignment. You only need to answer these questions in the case write-up. In addressing the questions, please restrict your focus to information in the case. There are often multiple ways to answer a question. Do not be concerned with getting the “right” answer, but whichever answer you choose should be adequately supported by the facts of the case and any further assumptions you make (which should be made clear to the reader).

Course Project. Your team (i.e. you may *not* work alone) will complete a course project. The goal of the project is to apply the concepts from the course to a real pricing problem by applying the ideas covered in class. Each team should select an interesting problem and analyze the pricing decision faced by a firm. The pricing problem could be one currently or previously faced at work.

Do not simply present case analysis profiling an industry and its players. I want you to either use data to analyze a pricing problem or to provide an analysis of an original pricing problem. I will be primarily interested in your analysis. As you apply your results to analyze the pricing problem, you need to indicate how your recommendations are justified by the analysis (i.e. data etc.).

More details on the evaluation of the project are provided below.

The timelines for the project are as follows. A one-page proposal (12-point Times New Roman, double-spaced, 1-inch margins) describing the topic, specific goals, and proposed project plan is due on **November 2, 2017**. The goal of the proposal is to help ensure that you choose an appropriate problem for the project. The outline should specifically address why this is an interesting problem (see below). The outline is completely for your benefit. I will provide feedback to projects.

The final deliverables are due at the beginning of one of **the last two classes** depending on when you are scheduled to present. I will randomly assign the order of presentation, after the proposals are submitted.

The final deliverables are in the form of PowerPoint slides and an in-class presentation. There is no formal project write-up. That is, all your motivation, analysis, and recommendations must be contained within the presentation. The presentation should be approximately 10-15 minutes long and we will try to allocate an additional few minutes for questions and comments from the class. The exact time for the presentation will vary depending on the number of groups. I *strongly* encourage you to include additional supporting charts, data, or analysis in an Appendix. The Appendix may contain details that are unnecessary to discuss in the presentation but which are important for me to consider in evaluating the project.

Team Evaluations. At the end of the term, each student will be asked to submit a peer evaluation form. This is your opportunity to provide me with confidential feedback on your team. I am particularly interested in how your team experience either lent to or detracted from the success of your course project. This is an opportunity for you to identify free-riding by other group members as well as to recognize particular individuals in your group for exemplary performance. Each group member is asked to submit an “effort” rating (0-100%) for all members of his/her group. The average rating across all members will be taken as the final “effort” rating for a group member. A 90% rating implies that the group member will get 90% of the group grade. If no “effort” rating is turned in, a default rating of 100% will be used. These ratings are due back no later than 7:00 PM ET on **December 7, 2017**. You can hand them to me in person or email them by the deadline.

Schedule Overview

Lecture	Topic	Cases Discussed	Due
1 – Oct 19	Course Introduction		
2 – Oct 24	Economic Value and Pricing	<i>Curled Metals</i>	Problem Set 1
3 – Oct 26	Pricing to Maximize Profits		
4 – Oct 31	The Role of Costs	<i>Colonial Homes</i>	Problem Set 2
5 – Nov 2	Measuring Willingness to Pay	<i>Ziprecruiter mini-case</i>	Project proposal
6 – Nov 7	Pricing a New Product	<i>Airbnb mini-case</i>	Problem Set 3
7 – Nov 9	Multi product pricing		
8 – Nov 14	Segmentation & Product Line Pricing	<i>Cambridge Software</i>	Problem Set 4
9 – Nov 16	Segmentation in Practice		
10 – Nov 21	Pricing over Time	<i>Culinarian Cookware</i>	Problem Set 5
Nov 23	Thanksgiving: no class		
11 – Nov 28	Competition and Pricing	<i>Tweeter</i>	
12 – Nov 30	Pricing and the Law		
13 – Dec 5	Project Presentations		Project Presentations
14 – Dec 7	Project Presentations and Course Wrap-up		Project Presentations Team Evaluations

Detailed Class Schedule

1 – Oct 19	<p>Course Introduction Overview</p> <ul style="list-style-type: none"> • Why pricing is important? • The role of pricing in value creation • Conventional approaches – and their limitations • Course overview and administrative issues • Break-even analysis <p>Optional Reading</p> <ul style="list-style-type: none"> • NHZ, Chapter 1 • “Principles of Pricing,” Dolan & Gourville [HBS 9-506-021] • “Executives Zero in on Price,” WSJ, Sept. 27, 2010.
2 – Oct 24	<p>Economic Value and Pricing Overview</p> <ul style="list-style-type: none"> • Economic value to the consumer, willingness-to-pay • Practice pricing a product using EVC in the context of a case <p>Required Reading</p> <ul style="list-style-type: none"> • Case: <i>Curled Metals</i> [HBS 9-709-434] <p>Optional Reading</p> <ul style="list-style-type: none"> • “Pricing, Profits, and Customer Value,” Cespedes, Shapiro, & Ross, 2011 (HBS 9-811-016). • NHZ, Ch. 2. • “Business Marketing: Understand What Customers Value,” Anderson & Narus, HBR, Nov-Dec 1998. <p>Due: Problem Set 1</p>
3 – Oct 26	<p>Pricing to Maximize Profits Overview</p> <ul style="list-style-type: none"> • Primarily review topics from the core with an emphasis on their relationship to pricing • Demand curves, price sensitivity • Pricing for profit-maximization • Non-linear pricing <p>Optional Reading</p> <ul style="list-style-type: none"> • NHZ, Ch. 3.
4 – Oct 31	<p>The Role of Costs Overview</p> <ul style="list-style-type: none"> • Identifying relevant costs for making pricing decisions • Pass through • Practice through a case

	<p>Require Reading</p> <ul style="list-style-type: none"> • Case: <i>Colonial Homes</i> [HBS 9-190-008] <p>Optional Reading</p> <ul style="list-style-type: none"> • NHZ, Ch. 2. <p>Due: Problem Set 2</p>
5 – Nov 2	<p>Measuring Willingness to Pay</p> <p>Overview</p> <ul style="list-style-type: none"> • Ziprecruiter.com Mini-Case • Measuring price sensitivity using surveys • Brief discussion of designing surveys for pricing research • Methods to elicit willingness-to-pay • Review of Conjoint Analysis • Using conjoint analysis to estimate elasticity <p>Optional Reading</p> <ul style="list-style-type: none"> • “Conjoint Analysis: A Manager’s Guide,” Dolan [HBS 9-590-059]. • NHZ, Ch. 12. <p>Due: Project proposal</p>
6 – Nov 7	<p>Pricing a new product</p> <p>Overview</p> <ul style="list-style-type: none"> • Airbnb Mini-Case • Brief review of regression • Using regression to estimate elasticity • Regression and price optimization <p>Required Reading</p> <ul style="list-style-type: none"> • Mini-Case: Airbnb <p>Optional Reading</p> <ul style="list-style-type: none"> • NHZ, Ch 7. • “Pricing New Products,” Marn, Roegner, & Zawada, McKinsey Quarterly, 2003. <p>Due: Problem Set 3</p>
7 – Nov 9	<p>Multi Product pricing</p> <p>Overview</p> <ul style="list-style-type: none"> • Pricing multiple products • Complements and substitutes • Cross-price elasticity • Examples: Merger policy, loss leaders, two-sided markets <p>Optional Reading</p>

	<ul style="list-style-type: none"> • “Uber Starts Charging What It Thinks You’re Willing to Pay”, May 19, 2017. • “Turkey Economics, Annotated” NYT Nov 2013 • “Strategies for Two-Sided Markets” HBR, Oct 2006
8 – Nov 14	<p>Segmentation & Product Line Pricing Overview</p> <ul style="list-style-type: none"> • Case: Cambridge Software • Benefits of segmented pricing • Techniques for segmented pricing <p>Required Reading</p> <ul style="list-style-type: none"> • Case: <i>Cambridge Software</i> [HBS 9-191-072] <p>Optional Reading</p> <ul style="list-style-type: none"> • “Versioning: The Smart Way to Sell Information,” Shapiro & Varian, HBR On Point, Sept 2001. • NHZ, Ch. 3. <p>Due: Problem Set 4</p>
9 – Nov 16	<p>Segmentation in Practice Overview</p> <ul style="list-style-type: none"> • Big data, machine learning and segmentation • An example using Ziprecruiter.com data • eBay Motors: Mini-Case <p>Optional Reading</p> <ul style="list-style-type: none"> • “Amazon Pays a Price for Marketing Test,” LA Times, Oct 2, 2000. • “The Dynamics of Pricing Tickets for Broadway Shows,” NYT, Jan 13, 2005.
10 – Nov 21	<p>Pricing over Time Overview</p> <ul style="list-style-type: none"> • Case: Culinarian Cookware • Role of promotions to achieve price objectives • Hi-Lo vs. EDLP pricing strategy • Skimming and penetration pricing • Experimentation and mark-downs <p>Required Reading</p> <ul style="list-style-type: none"> • Case: <i>Culinarian Cookware</i> [HBS 4057] <p>Optional Reading</p> <ul style="list-style-type: none"> • “Is Groupon Ruining Retail?,” NYT Mar. 16, 2011. • NHZ, Ch. 5. <p>Due: Problem Set 5</p>
11 – Nov 28	<p>Competition and Pricing</p>

	<p>Overview</p> <ul style="list-style-type: none"> • Incorporating competition into pricing strategy • Effective responses to competitive pricing moves • Managing price wars <p>Required Reading</p> <ul style="list-style-type: none"> • Case: <i>Tweeter</i> [HBS 9-597-028] <p>Optional Reading</p> <ul style="list-style-type: none"> • “Priced to Go: The Amazon/Wal-Mart Price War,” Surowiecki, <i>The New Yorker</i>, Nov. 9, 2009. • “How to Fight a Price War,” Rao, Bergen and Davis, <i>HBR On Point</i>, Sept 2000. • NHZ, Ch. 11. • “Should You Launch a Fighter Brand?” <i>HBR</i>, 2009. • “The Right Game: Use Game Theory to Shape Strategy,” Brandenburger and Nalebuff, <i>HBR</i> July-Aug 1995. • “Saks Upends Luxury Market with Strategy to Slash Prices,” <i>WSJ</i>, Feb. 9, 2009.
12 – Nov 30	<p>Pricing and the Law</p> <p>Overview</p> <ul style="list-style-type: none"> • Legal constraints on pricing • Antitrust laws • Discussion of recent merger and antitrust cases <p>Optional Reading</p> <ul style="list-style-type: none"> • NHZ, Ch. 13
13 – Dec 5	<p>Project Presentations</p> <p>Overview</p> <ul style="list-style-type: none"> • Groups will present their final projects to the class. • All groups are required to submit to me complete hardcopies of their slides, including any relevant appendices, for grading purposes. <p>Be mindful of the time limit and plan your slides accordingly.</p>
14 – Dec 7	<p>Project Presentations and Course Wrap-up</p> <p>Overview</p> <ul style="list-style-type: none"> • Presentations continued • Course wrap up

More Detail on Project Evaluation

The project will be evaluated on the following criteria:

1. Is the project addressing an interesting question?

In evaluating the interestingness of the project, I will consider the following general criteria:

Is this problem of interest to a manager in this particular field?

Your target audience for the project is a manager in the relevant area and your analysis should help inform this person's decision. Timeliness of the problem will be one relevant criterion.

Why is this pricing problem non-trivial?

The answer to the pricing problem should not be obvious based on some existing pricing policy. Among the alternative strategies a firm could use, there should be some level of support for at least two strategies. If there is only one strategy that makes reasonable sense, then the question may be too simple for the project. For example, in the auto industry some firms use no-haggle pricing, some firms negotiate, and others use a mix of both strategies. An existing car dealership may want to examine their current pricing policy relative to these options. Each policy has its own set of pros and cons, and the best strategy is likely to depend on a number of dealership- and market-specific factors.

What information (e.g., data, articles, etc.) is available to support the analysis?

Actual pricing and sales data are not required, but one can clearly make a stronger case with such data. Public sources of data (e.g., newspapers, magazines, financial disclosures, marketing research reports, etc.) are sufficient, provided they contain some detailed information about specific firms and the industry.

You may also consider using a survey or interviews to collect additional data. You can easily survey students in class or on campus. I understand the student population is unlikely to be representative of your target population, but this is OK. In many situations, students have also conducted interviews with managers to collect data. A good source of interesting pricing problems is projects from your own work experience. If the corresponding pricing data are confidential, it can easily be disguised in some fashion.

2. Analysis

In general, your analysis should involve taking concepts covered in the course, applying them to the problem at hand, and developing a sensible pricing strategy. You are free to use additional tools (e.g., regression, break-even analysis, conjoint, etc.) as part of your analysis. Your analysis should cover, but not be limited to, the following points:

Customers and demand

- Who are the customers? Potential customers? Who are the competitor's customers?
- Segmentation
- Price sensitivity

Competition

- Who are the competitors?
- What are our relative strengths and weaknesses?

Costs (if you can get these)

- What is this firm's cost structure (variable vs. fixed)?
- What are other firms' costs?

Resources

- What resources does this firm bring to the table?
- Opportunities for price customization
- Integration of pricing policy with other elements of the marketing mix
- Implementation – logistics, organizational issues, sales force

Overall, I am looking for a clear and compelling analysis of the problem with conclusions that are well supported by facts and logical reasoning. As a manager in your field, I am looking for analysis that sheds light on a specific pricing problem. You should advocate for a specific policy and provide evidence to support your position. A thorough analysis would also clearly indicate why alternative policies are dominated by the recommended policy.

The evaluation will be based on the totality of the analysis. For example, if you are able to obtain data to conduct rigorous statistical analysis you can probably get away with a simpler less innovative question. On the other hand, if you have a very interesting/new/innovative setting it is OK to have less in terms of quantitative analysis.

Project Outlines. To minimize the chance of working on a poor problem, you are asked to submit a one-page outline (due date listed above). The outline should specifically address why this is an interesting problem. This is completely for your benefit. No grade will be assigned. I will provide feedback to teams, as I see needed. The sooner that you inform me about your project, the more time you will have to either finish the project or select a new one. As always, it is your responsibility to meet the due dates in a timely fashion. I caution you that a sign off from me that your project seems acceptable is not a guarantee. Rather, it is an indication that you are likely to have chosen an interesting project. In your final presentation, you will again need to convince me that your pricing problem satisfies the above criteria.

The quality of learning that team presentations generate depends in large part on the richness of data – qualitative and quantitative – they acquire and the rigor with which they support their conclusions with facts. Teams are encouraged to be creative in identifying and tapping data sources, such as press articles, analyst reports, market research studies, customer interviews, and interviews with industry participants (including channels).

General Guidelines for Presentation

1. Motivate your presentation

You need to convince me that you have indeed analyzed an interesting problem.

Caution:

Many of you may work on New Product Pricing issues. In general, these projects are too large in scope to be fully analyzed in this class. You can still work on New Product Pricing issues, but you may need to narrow down the scope of your analysis to a few key issues. Recognize that the problem is large. Summarize the big picture. Then focus in on a subset of issues that you will analyze. Be extremely careful to keep the project manageable. I am looking for you to make a meaningful contribution to a piece of the pricing problem.

2. Explain the “tension” in the presentation

Stating that “Microsoft should keep a constant pricing policy because they are a large firm” is not interesting.

The following is interesting: “Microsoft faces a clear trade-off. Responding to new entrants with lower prices may protect market share, but this is also costly since Microsoft incurs an opportunity cost on its existing customer base. This presentation considers two creative pricing policies which address Microsoft’s two concerns: a) how to minimize loss of customers to an entrant; b) how to maintain current price levels to existing customers.” Follow this with some explanation of the alternative policies you will analyze.

3. Analyze

Be careful not to present a general case study. You do not want your presentation simply to be a history of the industry and a profile of the players. You want to use data to analyze a specific aspect of pricing. Offer your insights and analysis on the problem. Be sure to describe the data you have collected. Relate why these data sheds insight on the problem. And describe what additional (realistic) data set you would collect if you had more time and resources.

4. Recommend

Recommend a specific course of action:

- You can state a suggested pricing policy, e.g. “Our analysis supports that Microsoft should price at \$99.99.”
- You can suggest further areas to investigate, e.g. “our analysis indicates that the key uncertainties in this decision are A and B. Without further information, we recommend that Microsoft adopts policy 1. However, given our level of uncertainty, it is worth investigating issue A in more detail. If additional market research reveals XYZ, this would support our current recommendation.”
- You can also argue that certain information is not valuable, e.g. “One may believe that additional information on ABC is valuable. However, our analysis suggests that there are greater returns on our investment if we gather information on XYZ.”

In sum, tie your analysis together with some specific recommendations on what to do next and why this is justified. Make sure your recommendations are directly linked to your analysis (i.e. make sure you can back them up).