

MKTG 754
Spring 2010
Professor Raju

Preparation Guidelines for Week 1

DAY 1: March 16

1. Problem Set 1 is due on the first day of class. The problem set is in the BulkPack. The problem set is designed to help you revise some of the relevant concepts you learnt in other courses and show how they might be useful in this course. All Problem Sets are at the end of this document and also on the webCafé.
2. You should also try to skim the appropriate chapters from the Nagle book

DAY 2: March 18

1. Please prepare the Curled Metals case for class discussion. The main problem in this case is to decide the appropriate price for the Curled Metals Pad. We shall use this case to highlight what factors one ought to keep in mind while making pricing decisions. As the course progresses, we shall go deeper into each of these aspects.
2. For each, case you are expected to submit a one page write-up focusing on a specific question. The question for the Curled Metals case is:
 - a. **What price should Curled Metals charge for the new pad.**

I look forward to meeting you.

**The Wharton School
University of Pennsylvania**

MKTG 754

Spring 2010

Tentative – Subject to some change

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Course Objectives

This course provides an opportunity for the participants to develop a systematic framework for assessing and formulating pricing strategies. Pricing decisions are affected by economic, marketing, organizational, and psychological factors, and must be made within a prescribed legal framework. Each of these presents an interesting aspect of the pricing problem. The course revolves around understanding how one may go about making effective pricing decisions while keeping in mind these factors. To achieve this objective, we will learn appropriate concepts, methods, and explore new approaches for formulating a pricing strategy. This course is less about the mechanics of setting a price – it is more about understanding the process of making pricing decisions.

The course will use a combination of lectures, case discussions, and exercises. Assignments will be in the form of readings from the text, case preparation for class discussion, problem sets, and case write-ups.

Required Materials

1. The Strategy and Tactics of Pricing by Thomas T. Nagle and John E. Hogan (NJ: Prentice Hall, 2005, 4th ed.) (hereafter referred to as **Nagle**). [If you can find an older edition of this book, it will suffice. It is not too hard to map the chapters.]
2. Bulkpack (hereafter referred to as **BP**)

In addition, a number of problem sets and handouts will be distributed in class.

Process

Case Discussions

For all case discussions, it will be assumed that each participant has read and is fully prepared to discuss the case in class. The objective is to play the role of the decision maker in the case and use only the data and information available in the case to do the relevant analyses and make recommendations.

Lecture/Discussions

These sessions will allow us to examine principles, models, theories, and their application to pricing decisions. I urge you to share with the class your previous experiences with the application of these principles (both successful and unsuccessful experiences) whenever possible.

GRADING

Class Participation	10%
Problem Sets	30%
Case Write-Ups	35%
Final Exam/Project	25%

Class Participation: Effective class participation requires good preparation and sharing your thoughts in class with others in a manner that enhances the overall learning experience.

Case Write-ups: The one page case write-ups will require you to focus on a particular aspect of the case. The question to focus on in the write-up is described in the Course Schedule.

Problem Sets: Problem sets give you an opportunity to apply some of the concepts and methodologies that will be developed in class lectures and case discussions. I shall hand out solutions to some of the problem sets in class. There are five problem sets. The purpose of these problem sets is to illustrate various pricing techniques and challenges. The students are expected to attempt these problems sets often before the techniques are discussed in class. The purpose of this is to stimulate thinking and learning, and gain a greater appreciation for pricing methods.

The evaluation of the problem sets will keep in mind this objective.

Final Exam/Project: Students can select between a project or a final exam. The final exam will consist of problems that will test your ability to apply the concepts covered in the course. As an alternative to the exam, you may pursue any pricing related project that you deem most beneficial to you. Guidelines for the project are outlined later in this document. Each participant must complete the project without the help of others.

Honor Code: Students taking the course are required to accept the following rules.

- I shall not share the materials distributed in MKTG754 class with anyone else.
- I shall not use materials obtained from others who have taken this course in the past.
- I agree with the rules set forth regarding case write-ups, problem sets, and the take home final exam.

MKTG754 – Project Guidelines

In general, you are free to pursue any pricing related project that you deem most beneficial to you. In the past, students have worked on four types of projects. A brief description for each is provided below to help you to make up your mind.

1. To apply what you learn in class and to sharpen up your marketing/consulting skills, your group can pick a product or service in an industry of interest to you and examine the pricing issues related to the product or service. A good project of this type typically includes the following three components:
 1. Analyzing the pricing environment for the product or service you have chosen.
 2. Critiquing the current pricing practice in the industry for the product or service.
 3. Proposing changes to improve its pricing decisions and backing them up with your analysis, estimations, and any other supporting evidence.
2. Some students use the opportunity to develop a pricing plan for a product or service they intend to market. To make a good pricing decision, you may also consider including all three components above.
3. There are many puzzling or apparently irrational pricing tactics in many different industries. However, upon reflection, this apparently irrational pricing mechanism may have some deeper economic and/or psychological rationales that help a firm to improve their bottom line. You may identify one such pricing tactic from any industry anywhere in the world, and discuss the rationale behind the tactic. If you choose to pursue this type of project and your objectives are to learn as much as possible from and to do as good a job as possible for the project, you might want to do the following, in addition to anything else you are thinking of doing that can enhance the quality of your project:
 1. Identify a pricing tactic that is truly puzzling or apparently irrational.
 2. Document in what industries, and for what kinds of products one observes such a pricing tactic (a brief history is desirable if available).
 3. Analyze the rationale for the pricing tactic from all possible angles you deem relevant in terms of the profitability for the practicing firms.
 4. Use any means you deem appropriate to validate your analysis. Any relevant empirical support for your conclusions is always a big plus!
 5. Discuss the potential of using the tactic beyond those practicing industries or firms.
4. You can simply pick a pricing practice of interest to you (it does not have to be apparently irrational), say all-you-can-eat pricing, quantity discounts, dollar store, etc., and discuss the rationale and practical implications of the pricing mechanism.

The project report should be no more than 10 pages long (double spaced) excluding any tables and exhibits. If you choose to do a project instead of the final exam, you should notify me of your intent by April 1, 2010 by handing in a one page description of what you intend to study and brief description of why it is of interest to you. The final report is due May 4, 2010 by 5PM.

Course Schedule

[TENTATIVE – SUBJECT TO CHANGE]

- March 16: Introduction and Overview**
Role of Costs in Pricing Decisions
Skim: Nagle Chapters 1, 8 and 9
DUE: **Problem Set 1 [in BP and on webCafe]**
- March 18: Pricing a New Product**
CASE: **Curled Metals**
Case Write-up Question [10 points]
 - What price would you charge for the Curled Metals Pad and why?
- March 23: Measuring Price Elasticity and Willingness to Pay**
Read: Nagle Chapters 3, 13
Raju/Sajeesh: “Estimation of Consumer Reservation Price...”[webCafe]
Supplementary Readings: A Survey Technique to Measure[webcafe]
Lab Experiments[webcafe]
DUE: **Problem Set 2 [in BP and on webCafe]**
- March 25: Product Line Pricing**
CASE: **Cambridge Software Corporation**
Case Write-up Questions [20 points]
 - If Cambridge Software Corporation were to offer only one version of Modeler, which version should it offer? At what price?
 - How many different versions of the Modeler should CSC offer? At what price?

March 30: Principles of Price Engineering

Read: Nagle: Chapter 4

DUE: Problem Set 3 [in BP and on webCafe]

April 1: Global Pricing

CASE: Medi-Cult

Case Write-up Questions [10 points]

- What price would you recommend for IVM in Denmark, France, UK and US?
- Examine the process used by Medi-Cult to arrive at the demand functions. Please list two main strengths and two main weaknesses of this approach?

April 6: Temporal Pricing Strategies/Temporary Price Discounts

Read: Nagle Chapter 11, 12

DUE: Problem Set 4 [in BP and on webCafe]

Supplementary Readings: “The Effect of Package Coupons ... [webCafe]
“The Effect of Price-Promotions [webCafe]
“EDLP vs. Hi-Lo [webCafe]

April 8: Negotiated Pricing, Bidding, and Auctions

CASE: Computron

Case Write-up Question [10 points]

- What bid would you recommend for the Konig order and why?

Read: Nagle Chapters 6 and 10

April 13: Targeted Pricing and Price Matching Guarantees [Professor Zhang]

April 15: Competitive Pricing

CASE: Tweeter etc

Case Write-up Question [10 points]

- Should Tweeter continue to offer the price matching guarantee? Please justify your recommendation.

April 20: Psychological Aspects of Pricing

DUE: Problem Set 5

READ: Nagle Chapter 5

Supplementary Reading: “Mental Accounting ... [webCafe]

April 22: **Legal Aspects of Pricing**
Read: Nagle Chapter 14

April 27: **Ethical Aspects of Pricing/Course Summary**
CASE: **Burroughs Wellcome and AZT (A)**
Case Write-up Questions [10 points]

- Take on the role of Mr. Shepperd and prepare a one page (200-250 words) opening statement for a press conference outlining Burroughs Wellcome’s response to ACT UP’s most recent demonstrations.
- Please be prepared to present your opening statements to the class. This presentation should be no more than 3-4 minutes. At the end of the presentation, the presenter will take questions from the audience who will take on the roles of shareholders, the press, AIDS activists and others.

PROBLEM SET 1 [10 points]

As a pricing analyst for the VALUE SUPREME grocery chain, you are asked to prepare an analysis of a proposal to price frying chickens low in order to attract shoppers to VALUE SUPREME stores. The current price for whole fryers is 89¢ per pound. The proposal is to set a promotional price of 59¢ per pound. The wholesale cost of the fryers, prepackaged and ready for sale, is 55¢ per pound.

By tracking past changes in sales of chicken with changes in sales of other grocery products, you discover that each one pound change in the sales of whole fryers is associated with the following changes in the sales of other products:

Product	Dollar Change	% Margin
Fruits and Vegetables	+ \$0.154	50%
Packaged Groceries	+ \$0.692	20%
Frozen Foods	+ \$0.114	33%
Other meat including Chicken parts	– \$0.250	40%

[Explanation of the table: A one pound increase in sales of whole fryers results in an increase in sales of Fruits and Vegetables of 15.4 cents and the store makes a 50% margin on Fruits and Vegetables]

1. If this past relationship between sales of the whole fryers and increased sales of other goods holds, by how much must chicken sales increase in order to make this price promotion profitable?
2. Can you think of any reason why the historical relationship between changes in the sales of chicken and other products might not hold?
3. Could this store have profitably promoted whole fryers at 49¢ per pound? Remember, 49¢ is below wholesale cost!

PROBLEM SET 2 [20 points]

Q1. Preference ranking data were obtained from 20 respondents for three brands of dishwashers: X, Y, and Z. Y and Z are existing brands selling for \$225 and \$175 respectively, while X is a proposed new brand. Table 1 provides the preference ranking data for 3 of the 20 respondents, (i.e., all 3 provided the identical preference ranking indicated in Table 1), Table 2 gives the data for 5 respondents, Table 3 for 4 respondents, and Tables 4 and 5 for 6 and 2 respondents respectively. A rank of 1 indicates the most- preferred product, while 15 indicates the least-preferred product.

1. Compute the proportion of first-place votes for brand X as a function of price when brands Y and Z are at their current prices.
2. What proportion of first place votes will X receive if its price is \$200 while brands Y and Z lower their prices to \$200 and \$150 respectively?
3. Which brand (Y or Z) suffers the greatest loss in first-place votes with the entry of brand X at \$200? Assume for part (c) that brands Y and Z are selling at their regular price, i.e., \$225 and \$175 respectively.

	Table 1			Table 2			Table 3			Table 4			Table 5		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
\$150	2	1	5	4	1	6	4	2	1	1	3	6	2	1	3
\$175	4	3	8	5	2	9	6	5	3	2	4	9	5	6	4
\$200	7	6	11	8	3	12	9	8	7	5	7	10	9	8	7
\$225	10	9	14	11	7	14	12	11	10	8	12	13	10	11	12
\$250	13	12	15	13	10	15	15	14	13	11	14	15	15	13	14

- Q2. Sales and prices of a new package delivery service offered by a logistics company for the first 29 weeks are given in Appendix 2. Estimate the appropriate demand function for sales using regression analysis to obtain an estimate of price elasticity. The data file (ProblemSet2-Data.xls – Package delivery sheet) can be downloaded from the WebCafe. What recommendation would you make to the company based on your estimation?

Package Delivery Service

Week	Sales	Price
1	140	5.00
2	195	5.00
3	268	5.00
4	481	5.00
5	411	5.00
6	481	5.00
7	525	8.50
8	527	8.50
9	547	8.50
10	502	8.50
11	511	8.50
12	534	8.50
13	559	10.00
14	575	10.00
15	592	10.00
16	661	10.00
17	764	10.00
18	794	10.00
19	805	11.50
20	745	11.50
21	859	11.50
22	982	11.50
23	987	11.50
24	1034	11.50
25	1090	11.50
26	1156	11.50
27	1194	12.50
28	1370	12.50
29	1304	12.50

PROBLEM SET 3 [10 points]

In the early 1960s, the Xeroks Corporation (a hypothetical company) faced the following pricing problem for its copying machines (there was hardly any competition then). There were two segments of potential users: large users - whose copying needs were 20,000 copies per year - and small user - whose copying needs were 2,000 copies per year. Xeroks found that a large user would be willing to pay as much as \$25,800 for a machine, whereas a small user would be willing to pay only \$6,700 maximum. These reservation prices accounted for the expected life of a machine (5 years), its resale value at the end of that period (\$0), and the cost of supplies (mainly copying paper from Xeroks - only Xeroks copying paper could be used on its machines in the early 60s). In other words, a large user would be willing to pay \$25,800 to buy a Xeroks machine provided supplies from Xeroks were free of charge over the life of the machine. Similarly, a small user would be willing to buy a Xeroks machine for \$6,700 as long as Xeroks provides free supplies.

There were equal numbers of large and small users. Xeroks' marginal cost of producing each of these machines was estimated to be \$1,900. Its marginal cost of paper was \$0.03 per sheet. Xeroks used a 10% discount rate, i.e., if it generates an income of \$1 each year for five years, then its present value of that income stream is $(1/1.10 + 1/1.10^2 + \dots + 1/1.10^5) = \3.79 .

1. What should be the selling price of these machines (bundled with paper)? (Only one price can be charged, i.e., everyone who buys must pay the same price, and the buyer must pay immediately.)
2. Xeroks wonders if it can make more money leasing the machines instead of selling them. The leasing policy will involve a yearly rental charge (payable at the end of each year) and a charge per copy made (monitored via the copy meter on the machines) cumulated over each year and payable at the end of the year. Only one leasing plan - i.e., a single rental charge and a single per copy charge - is being contemplated. What should be Xeroks' leasing policy? (Assume that each user also uses a 10% discount rate.)
3. Explain why the leasing plan does better than the selling option.
4. Would the advantage of leasing over selling increase or decrease if the relative proportion of small to large users increased from 1:1 to 2:1? Why?

PROBLEM SET 4 [10 points]

Suppose you are a *manufacturer* facing a market which has changed in its composition since the last time you set prices. There are two market segments: H and L, with reservations prices \$20 and \$10, respectively, for a unit of your product. The purchase frequency is 1 unit every quarter. Your variable costs are \$2/unit. You sell through a large *retailer* whose fixed costs of doing business with you are \$25/quarter.

Until last month your market consisted of 50 people with the \$20 reservation price and 50 people with the \$10 reservation price, and your price to the retailer was \$19.50. But now you realize that there are only 20 potential consumers with the \$20 reservation price, the other 80 having a reservation price of \$10.

There are three possible options you can pursue at this point: (a) offer a trade discount to the retailer (with the amount of the discount to be determined); (b) don't change the wholesale price from its original value, but offer a coupon to consumers as a free-standing insert in the local newspaper (the coupon value is to be determined; the coupon will have a limited expiry date and it will cost segment H – and only segment H – \$4 to redeem); (c) offer a coupon to consumers and offer a trade promotion to the retailer (both the coupon value and the trade deal will have to be determined). Which option should the manufacturer pursue? Please explain why and show your analysis.

PROBLEM SET 5 [10 points]

RET faces the following pricing problem in its international long-distance market. Essentially it has two products for calls: day calls (8 a.m. to 5 p.m.) and night calls (5 p.m. to 8 a.m.). All customers prefer day calls to night calls, i.e., everyone is willing to pay more for day calls than night calls. But people differ in their relative valuations of day and night calls. RET has found that there are two major segments: business calls (i.e., calls made for business reasons) and personal calls (i.e., calls made for personal reasons). Business callers would much prefer to make day calls over night calls – because 8 a.m. to 5 p.m. is when business is conducted – but they can make night calls if they wish to (by getting to work a little early or working late). 40% of all international phone calls are made for personal reasons. RET's marginal cost of a phone call is zero regardless of when the call is made.

Assume (1) that RET faces no competition in the international long-distance market, (2) that it has enough capacity to handle any reasonable demands at any time, (3) that both business and personal callers are maximizing their consumer surplus when choosing a time to call, and (4) that the length of a phone call is unaffected by when the call is placed or for what purpose the call is placed.

1. Suppose RET finds that business callers are willing to pay up to \$1 a minute for day calls, but only 50 cents a minute for night calls and personal callers are willing to pay 85 cents a minute for day calls, but only 60 cents a minute for night calls. Develop a profit-maximizing pricing policy for RET. (Assume that quantity discounts are not being considered.)
2. Consider the following change to part (1). Business callers are now willing to pay up to \$1.20 a minute for day calls. (Everything else remains the same.) What is the profit maximizing policy now?
3. Consider the problem as in part (2), but now assume that business callers are willing to pay up to 65 cents for night calls. (Everything else remains the same). What is the profit-maximizing policy now?