Game-Theoretic Marketing Models & Marketing Models Shan-Yu Chou Spring, 2015

Course Description: The purpose of this course is to familiarize students with both introductory game theory and its applications in marketing. To achieve this goal, the first part of this course will be an introduction of game theory and the second part of it will be the applications of game theory (including cases) to various marketing issues. Students will need to spend some time in problem solving (for homework assignments), in cases and in marketing readings in order to maximize the benefit obtained from this course. The course will employ a mix of lectures and selected Harvard Business cases (2 cases) and readings of marketing papers. The topics covered in this course are as follows (though more focus will be given on the issues of online marketing, channel design, product line design, and price promotion strategies):

- On-line Marketing strategies
- Optimal Channel Design
- Individual Marketing
- Multi-product Pricing
- Optimal Product Line Design in a Distribution Channel
- Pull and Push Promotions in a Distribution Channel
- Competitive Price Promotion Strategy

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Prerequisites Students are expected to have taken marketing courses and have some background (or be interested) in microeconomic theory. Mathematics is kept at a minimum level in this course; however, students are expected to feel comfortable with basic calculus and elementary probability.

Grading

Midterm and Homework 50% Case discussion and paper Presentation 50%

Reference Book

■ Tirole, Jean. 1988. *The Theory of Industrial Organization*. Cambridge, Mass: MIT Press.

Cases (Subject to Change)

1. Bundling, Harvard Business School, 9-191-177.

2. Southwest Airlines (A), Harvard Business School, 9-575-060 (Subject to Change).

Week No. (Da	te) Topics	Papers		
Module 1: Introduction to Game-Theoretic Models				
1 (2/26)	Introduction			
2 (3/5)	Games with Complete Information			

¹ Each group of students will be responsible for presenting one of assigned papers chosen from the list of papers.

3 (3/12) Games with Incomplete Information		Dynamic Games with Complete Information			
4 (3/19) Screening Game Bundling papers 5 (3/26) Applications 6 (4/2) No Class Module 2: Interactions among 4P's 7 7 (4/9) Case 1: Bundling Optimal Channel Design 8 (4/16) Product Line Design 9 (4/23) Midterm 10 (4/30) Sales Promotion Design Module 3: Online Marketing Lal and Sarvary (1999) 11 (5/7) Online Marketing Iyer et al. (2005) 13 (5/21) Case 2: Southwest Airlines (A) Varian (1980) Competitive Promotion Strategies Iyer et al. (2003) Narasimhan (1988) Module 4: Retailing Iyer, Ganesh, and Dmitri Kuksov (2012) Iyer, G., D. Soberman, and J. M. Villas-Boas (2005) 15 (6/4) Advance Selling Paper 1 presentation Iyer, G., D. Soberman, and J. M. Villas-Boas (2005) 15 (6/4) Advance Selling Seues Shugan (2001) Module 5: Modern Marketing Issues Shin and Sudhir (2010) 16 Behavior-based discrimination Paper 3	3 (3/12)	<u> </u>			
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17 (6/18) No class (to be made up)	17 (6/18)	No class (to be made up)			
18 (6/25) Name your own price; Scott Fay (2008);	18 (6/25)		Scott Fay (2008);		
Information Sharing in a Distribution Guo (2009)	, ,				
Channel					
Paper 4 and Paper 5 Presentations		Paper 4 and Paper 5 Presentations			

Reading list (Subject to Change)

- Adams, W. J., and J. L. Yellen (1976), "Commodity Bundling and the Burden of Monopoly," Quarterly Journal of Economics, 90, 3, 475-498.
- Fay, S. (2008), "Selling an Opaque Product through an Intermediary: The Case of Disguising One's Product," *Journal of Retailing*, 84(1): 59-75.
- Fudenberg, D., and J. Tirole (2000)," Customer Poaching and Brand Switching, Rand Journal of Economics, 31, 4, 634-657.

- Gerstner, E. and J. Hess (1991), "A Theory of Channel Price Promotions," *American Economic Review*, 81(4): 872-886.
- Guo, Liang (2009),"The Benefits of Downstream Information Acquisition," Marketing Science, 28 (3), 457-471.
- Iyer, G. and A. Pazgal (2003), "Internet Shopping Agents: Virtual Co-Location and Competition," *Management Science*, 22(1): 85-106.
- Iyer, G., D. Soberman, and J. M. Villas-Boas (2005), "The Targeting of Advertising," *Marketing Science*, 24(3): 461-477.
- Lal, R. and M. Sarvary (1999), "When and How is the Internet Likely to Decrease Price Competition," *Marketing Science*, 18(4): 485-503.
- Lal, R. and C. Matutes (1989), "Price Competition in Multimarket Duopolies," *Rand Journal of Economics*, 20(4): 516-537.
- Lal, Rajiv and Carmen Matutes (1994), "Retail Pricing and Advertising Strategies," Journal of Business, 67, 3, 345-370.
- McAfee, R. P., J. McMillan, and M. Whinston (1989), "Multiproduct Monopoly, Commodity Bundling, and Correlation of Values," Quarter Journal of Economics, 104, 371-383.
- Narasimhan, C. (1988), "Competitive Promotional Strategies," *Journal of Business*, 61(4): 427-429.
- Varian, H. R. (1980), "A Model of Sales," *The American Economic Review*, 70(4): 651-659.
- Villas-Boas, Miguel(1998),"Product Design for a distribution channel, "Marketing Science, Vol.17, No.2, 156-169.

List of Papers Assigned for Presentation (Subject to Change)

- 1. Moorthy, K. S. and I.P. Png (1992),"Market Segmentation, Cannibaliation, and the Timing of Product Introductions," Management Science, 38, 3, 345-359.
- 2. Xie, Jinhong, and Steven M. Shugan (2001), "Electronic Tickets, Smart Cards, and Online Prepayments: When and How to Advance Sell," 20, 3, 219-243.
- 3. Guo, Liang and J. Zhang (2012), "Consumer Deliberation and Product Line Design," Marketing Science, 31, 6, 995-1007.
- 4. Yalcin, T., E. Ofek, O. Koenigsberg, and E. Biyalogorsky (2013)," Complementary Goods: Creating, Capturing, and Competing for Value," Marketing Science, 32, 4, 554-569.
- 5. Kim, Byung-Do, M. Shi and K. Srinivasan (2001), "Reward Programs and Tacit Collustion," Marketing Science, 20, 2, 99-120.
- 6. Iyer, Ganesh, and Dmitri Kuksov (2012),"Competition in Consumer Shopping Experience," Marketing Science, 31, 6, 913-933.
- 7. Ofek, Elie, Z. Katona, and M. Sarvary (2011), "Bricks and Clicks": The Impact of Product Returns on the Strategies of Multichannel Retailers," Marketing Science, 30, 1, 42-60.

- 8. Fay, S. (2008), "Selling an Opaque Product through an Intermediary: The Case of Disguising One's Product," *Journal of Retailing*, 84(1): 59-75.
- 9. Shin, Jiwoong, and K. Sudhir (2010)," A Customer Management Dilemma: When Is it Profitable to Reward One's Own Customers?" Marketing Science, 29, 4, 671-689.