B9651: MS MARKETING ANALYTICS
Fall 2021

Marketing provides tools and frameworks for delivering value to customers, by understanding customers, and designing and delivering products, services, and experiences for these customers. The course is organized around two modules. The first module focuses on customer analytics and discusses quantitative tools that allow firms to understand their customers. Key topics include segmentation, targeting, positioning, and customer base analysis. The second module focuses on 4P (Product, Price, Place and Promotion) analytics and discusses quantitative tools for optimizing marketing decisions and programs.

Instructor
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Teaching Assistant
TBA
Office Hours: By email

Grading
Final exam (open book, online) 50%
Four assignments (two individual and two group) 40%
Class Preparedness / Concept Checks: 10%

Assignments
There are two individual assignment and two group assignments. The two individual assignments are to be completed individually without discussing the assignment or the solutions with other students. Failure to do so will result in a loss of all points allocated to the assignment for everyone who does not adhere to this guideline. The group assignment will be done in groups of 4-5 students that are randomly formed. See Canvas for group assignments.

Class Participation
You are invited to highlight insightful linkages between class material and your past-experience as a professional and as a consumer, and to participate actively in class discussions. Class attendance will be required and will be monitored via Zoom and Poll Everywhere in class surveys. Consistent with Columbia Business School policy, make sure to turn your video on when attending class via Zoom. Class preparedness will be assessed based on your responses to some short online pre-class surveys to be filled out before some of the sessions. You should fill out each survey before the start of the corresponding class. Note that the questions in these surveys typically do not have a unique correct answer. You will receive full credit for each survey if you fill it out and give some reasonable justification for your answers.

Asynchronous students need to respond to Poll Everywhere questions and email a summary to the TA about their learnings in each class session before the end of the week.

Honor Code
You are expected to conform to the norms of behavior outlined in the Columbia Business School Integrity Code given below.
"As a lifelong member of the Columbia Business School Community, I adhere to the principles of TRUTH, INTEGRITY and RESPECT. I will not lie, cheat, steal or tolerate those who do."

Any allegation of academic dishonesty will be forwarded to the Dean's office for investigation. Any case of proven academic dishonesty will result in failure in the course. Simple things such as arriving on time to class, turning cell phones off during class time and not being tempted by the many distractions that the Internet offers can make the experience more enjoyable and rewarding.

Schedule and Course Content:

<u>MODULE 1: CUSTOMER ANALYTICS</u>

Session 1: *What is Marketing? What data can I collect and how?*

Topics: Course Introduction + Marketing Datasets

Due:

1. Pre-class survey responses (individual) due on Friday

Session 2: *How can we segment customers and which customers should we target?*

Important: this class will exceptionally be held on Friday

Topics: Market Segmentation and Targeting

Required readings: Market Segmentation and Targeting (HBS note)

Optional readings:

1. Cluster Analysis, Chapter 20, Marketing Research: An Applied Orientation. Naresh K. Malhotra and Satyabhusan Dash. Prentice Hall. Seventh Edition. 2017.

Session 3: *How should we position our products/services?*

Topics: Market Segmentation and Brand Positioning

Case: All Nutrition (A) discussion

Required readings: Brand Positioning (HBS note)

Optional readings:

1. Factor Analysis, Chapter 19, Marketing Research: An Applied Orientation. Naresh K. Malhotra and Satyabhusan Dash. Prentice Hall. Seventh Edition. 2017.

Due:

1. Respond to All Nutrition (A) case discussion questions (individual)
2. Market segmentation concept check (individual)

Session 4: *What is our brand's value?*

Topics: Brand Positioning and Valuation

Required readings: Brands and Brand Equity (HBS note)

Optional readings: MasterCard Roundtable: The" Priceless" Campaign

Due:

1. Group Assignment #1: All Nutrition (B) case write-up
2. Positioning concept check (individual)

Session 5: *How much are our customers worth?*

Topics: Customer Lifetime Value (CLV), CRM, Recommendations

Required readings:

1. Zero Defections: Quality Comes to Services
2. Y. Koren, R. Bell and C. Volinsky, "Matrix Factorization Techniques for Recommender systems," in *Computer*, vol. 42, no. 8, pp. 30-37, Aug. 2009, doi: 10.1109/MC.2009.263. https://ieeexplore-ieee-org.ezproxy.cul.columbia.edu/document/5197422

Session 6: *How can we predict our customer's choices?*

Topics: Customer Base Analysis – Modeling Customer Purchasing

Required readings

1. https://www.caee.utexas.edu/prof/bhat/COURSES/LM_Draft_060131Final-060630.pdf (chapters 2, 3 and 4 (up to and including section 4.3)

Due:

1. CLV Concept Check (individual)

Session 7: *Are my customers leaving?*

Topics: Customer Base Analysis – Modeling Customer Churn

Due:

1. Modeling Churn Concept Check (individual)

MODULE 2: 4P ANALYTICS

Session 8: *How do I build a new product?*

Topics: Product - Conjoint Analysis & Diffusion of Innovation

Required readings:

1. Online Conjoint Tutorial
2. Note on Diffusion Models

Optional readings:

1. Toubia, Olivier, Duncan I. Simester, John R. Hauser, and Ely Dahan (2003), "Fast Polyhedral Adaptive Conjoint Estimation," Marketing Science, 22(3)
2. Toubia, Olivier, Jacob Goldenberg, and Rosanna Garcia (2014), "Improving Penetration Forecasts Using Social Interactions Data," Management Science, 60(12), 3049-3066.

Due:

1. Individual Assignment #1 (covers Module 1)

Session 9: *How should we price our products and services? How do we distribute them?*

Topics: Price + Place - Measuring Willingness to Pay, Price Optimization, Channels of Distribution, Double Marginalization

Required readings:

1. Montclair video (case)
2. Glaubinger Tree Farm (case)

 Optional readings:

1. Jeuland, Abel P., and Steven M. Shugan. "Managing channel profits." *Marketing science,* 2.3 (1983): 239-272.
2. Yang, Cathy L., Olivier Toubia, and Martijn G. de Jong (2018), "Attention, Information Processing and Choice in Incentive-Aligned Choice Experiments," *Journal of Marketing Research*, 55(6), 783-800

Due:

1. Conjoint Analysis Concept Check (individual)

Session 10: *How do we quantify the impact of our promotions?*

Topics: Promotion - Measuring the Effectiveness of Promotions

Required readings:

1. Rocket Fuel: Measuring the Effectiveness of Online Advertising (case)

Optional readings:

1. Johnson, Garrett A., Randall A. Lewis, and Elmar I. Nubbemeyer. "Ghost ads: Improving the economics of measuring online ad effectiveness." Journal of Marketing Research 54.6 (2017): 867-884.
2. Liu, Jia, and Olivier Toubia (2018), "A Semantic Approach for Estimating Consumer Content Preferences from Online Search Queries," Marketing Science, 37(6), 930-952.

Due:

1. Pricing Concept Check (individual)
2. Rocket Fuel Case questions (individual)
3. Group Assignment #2: New Product Design

Session 11: *How do I advertise my products? How to leverage social media?*

Topics: Advertising & Social Media, Introduction to Social Networks

Required readings:

1. BBVA Compass (case)
2. Graphs, Chapter 2 in Easley and Kleinberg.

Optional readings:

1. Using Social Media Data to Track the Effectiveness of a Communications Campaign

Due:

1. Promotion Concept Check (individual)

Session 12: *How to design a marketplace?*

Topics: Market Design & Auctions - Market design principles. Types of auctions. Equivalence principle.

Required readings:

1. Marketplaces, Markets, and Market Design.

2. Auctions, Chapter 9 in Easley and Kleinberg.

Optional readings:

1. Operations Research Enables Auction to Repurpose Television Spectrum for Next Generation Wireless Technologies.

Due:

1. Advertising Concept Check (individual)
2. Individual Assignment #2 (covers Module 2)

<u>Inclusion, Accommodations, and Support for Students</u>

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Services online at www.health.columbia.edu/docs/services/ods/index.html or by contacting (212) 854-2388.

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