Introduction to Marketing Analytics

Module 5, AY 2021-2022

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Course information

Course Website:

Instructor's Office Hours: By appointment

Class Time:

Room Number:

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Course description

Marketing as a business discipline is highly misunderstood. People often think of marketing in terms of highly visible, specialized, tactical activities, such as advertising, promotions and sales. That is wrong. Marketing is much more than specialized tactics. Marketing is the science of managing value, a process that entails analytical, strategic and tactical activities. This course will provide you with a sound framework to understand marketing as a value management process, as well as introduce several fundamental data analytics approaches for marketing applications. . The course involves a mix of lectures and case-based discussions that will teach you an analytical approach to understanding, identifying and creating value. To this end, you will learn how to (1) analyze the environment in which a company operates, (2) develop a marketing strategy, and (3) design actionable marketing tactics.

In this course you will: - Acquire an understanding of the basic marketing concepts - Apply statistical methods to analyze different aspects of the environment - Identify and address the key decisions facing marketing managers - Practice the process of analyzing a marketing situation or opportunity, formulating market strategy, and developing and implementing a marketing plan - Learn about "cutting edge" directions in modern marketing academic research.

Course requirements, grading, and attendance policies

IMPORTANT: You may not take this course if you already took the "Introduction to Data Analytics in Marketing" course hosted by the MAF program!!!!

You are expected to have working knowledge of R or Python and have taken Econometrics 1. Econometrics 2 and Machine learning 1 are recommended but not required. We will meet 7 times. Your grade will consist of the following:

Mini-Assigments	10%
Homeworks (data assignments and cases)	50%
Class attendance and participation	15%
Final project	25%

Mini-Assignments. For some of the classes, we will use data sets. Before these classes, you are required to complete a mini assignment, which involves: (1) loading the data set, (2) running some summary statistics (can be a table or a plot), and (3) prepare one or two questions you would like to answer from the data. You should be ready to explain in class what you have done.

Data analysis homeworks. In class, we will discuss an analysis plan for the data set. In the seminars, you will carry out the analysis together with the Teaching Assistant. Whatever you don't have time to complete in the seminar, will be your homework. These assignments should all be submitted through my.nes by the assigned deadline (typically Thursday evening). They will involve a combination of analysis, as well as interpretation of results. You will need to submit your code, output, and interpretations, which may be in either English or Russian.

Case write up homeworks.
Cases describe interesting marketing problems encountered by firms and give you an opportunity to develop analytical skills, apply concepts we discuss in class to make marketing decisions and learn how to communicate clearly and professionally. The amount you learn from a case depends on how carefully you read and analyze it. You are expected to read each case thoroughly and come to class ready to contribute to case discussions.

In a typical case, you will be asked to analyze the marketing problem and apply marketing concepts and frameworks to identify recommend a course of action for the firm. There is no "right" answer to a case, but usually some answers are better than others. The strength of your reasoning and analysis is as important as your recommendations. In many cases some of the material is, by design, not particularly relevant to the problem at hand, while the case omits other data you would like to have, and would try to obtain using market research, if you were the decision-maker. This makes the case analysis more difficult, but it does reflect the real world of business.

Calyx Flowers and *Sony AIBO* give you an opportunity to analyze a complex business problem and apply what you are learning during the course. It will take you several hours to read the case, and I suggest you read the case multiple times. It will then take you a few more hours to write your group analysis. Come to class prepared to offer your opinions or be called on even if you don't volunteer.

You will work on these two case write ups in groups of 3-4 people. I will assign groups randomly. Your team is responsible for allocating responsibilities and making sure that everyone contributes in a timely manner.

When working on your case write-up please follow these guidelines:
- All assignments should be written in English.
- Guidelines on length and formatting will be provided at a later date.
- It is important in business to write clearly, directly, and concisely. While I will evaluate your writing quality, in addition to content, I do not expect to see complex language – you can save these for your creative writing assignments! Please err on the side of simplicity. Headings to organize your thinking and help orient the reader. The overall impression is also very important. Spelling errors, sloppy formats, poor grammar, etc., give the impression of sloppy thinking, carelessness, and lack of regard for your ideas and the assignment. If you know writing is not your strength, get some help.
- The case write-up should provide a recommendation, not a restatement of the situation. Your recommendation should be based on solid quantitative and qualitative analysis. This means that you should support your recommendation by demonstrating why your chosen course of action is the best alternative (e.g., lowest risk, least expensive, best strategic fit, etc.) and why it is good to discount other options. Do not feel that you must use one of the recommendations presented in the case. You can be creative as long as you are also realistic and tempered by your analysis.

Class attendance and participation. Lecture attendance is required!! The class relies on both lecture and discussion. During the class discussion, we will figure out a plan of analysis for the data assignments (to be completed for homework) and discuss cases. I expect everyone to come to class having read the case or loaded and run summary statistics on the data, and to be engaged in these discussions.

Final Project. In the last week of the class, each of you will be assigned one of the 3 data sets we have analyzed in class for deeper study in the final project. The project should extend the analysis. You may choose the direction of the extension: either estimate a more complex model on the data, test a new hypothesis with the data, or derive a prescriptive recommendation for the firm based on the data. For example, you may propose an optimal design of a product, or a line of products, propose the next experiment the firm should run, design a new promotion, identify customer segments,... the direction is really up to you. You may even carry out a similar analysis on a related data set and compare results. The projects will be graded based on the ambitiousness of the analysis carried out and rigor of the recommendation made.

Course contents

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	Topic	Homework
	Course Introduction & Framework of marketing Product design and customer preferences	
	Conjoint analysis continued Segmentation, Targeting and Positioning	Conjoint data set analysis
	Calyx Flowers Recommendation systems	Calyx Flowers case writeup

	Promotion: design of experiments Text mining	Recommender system data set analysis
	Text mining 2 - Brand management Product development and management	Branding text dataset analysis
	Sony AIBO case Customer lifetime value Dryclean express case	Sony AIBO case writeup
	Research topics. Project Presentations	Final Projects

Description of course methodology.
The class will use a combination of resources, surrounding the data-based case studies. We will use the content of my lecture slides, various online software modules, and academic papers to guide our analyses.

Course materials

Required textbooks and materials
We will not use a textbook, and rely on separate sources: articles as well as case studies.

Additional materials
Gordon, B. R., Zettelmeyer, F., Bhargava, N., & Chapsky, D. (2019). A comparison of approaches to advertising measurement: Evidence from big field experiments at Facebook. *Marketing Science*, *38*(2), 193-225.

Raluca Ursu and Daria Dzyabura (2019), "Retailers' product location problem with consumer search," *Quantitative Marketing and Economics*

Daria Dzyabura, Srikanth Jagabathula and Eitan Muller (2019), "Accounting for Discrepancies Between Online and Offline Shopping Behavior", *Marketing Science* 38(1): 88-106

Academic integrity policy

Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated.