MKTG 3597 Marketing Analytics

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Instructions on Team Projects

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For this class, you are required to work in a group to finish a marketing analytics project. Each team should identify a project, obtain access to the relevant data, define a research question, analyze the data, and present the project to the class.

Instructions on the project

The project aims at working on real marketing data, and going through the challenges faced in marketing analytics. It involves three steps:

1. *Define the problem and get the data*

In many cases, this step is much more difficult than it sounds. Getting the relevant and workable marketing data might take some effort.

Key factors in the data

a. Some marketing information and consequences of those marketing actions. Marketing information include, price, promotion (advertising, email communications, events and any other promotional activities, such as PR events), new products on the market, etc. The consequences includes the sales, revenue, cost, etc. as a result of these marketing activities.
b. It could also be some unforeseeable events that resulted in big changes in the performance of your products or services, such as severe weather, terrorist attack, presidential elections, etc.
c. Some information about the customers would be ideal but might not be necessary in every case.

Possible data types:

a. It would be ideal if you could get permission from your own or some other company to access some customer level data and conduct marketing analysis. Such data include, but not limited to, customer activity tracking data on the website, customer purchase activities, customers' conversations/reviews/discussions (user generated content).
b. Product level data would work as well, with some marketing variables included in the data, such as pricing, sales (or revenue), advertising expenditures, etc.
c. Some companies constantly conduct controlled experiment to understand effect of marketing. Those data could be interesting, if the experiment is designed well.
d. Key words performance data at different outlets, such as Google, Facebook, Yahoo, etc.

e. Email marketing campaign tracking data, or other marketing campaign tracking data.
f. Sales support data, with information about prospect customer data, existing customers purchase histories.
g. Presidential election data from various sources.
h. Sports data accessible through different leagues.

The data set does not have to be very large. In fact, if it is really large, you are recommended to take a sample of it. In that, you need to be careful about how you sample from that data depends on which question you would be addressing.

Once you've got the access to the data set, the difficult task is to define the research problem. For that you need to grasp two things:

a. What's of interest to the company in improving their business. A marketing analytics project with no help to the company's business and marketing decision, will be meaningless. To be able to select a relevant and feasible research question, you would need to talk to the company or conduct online search to understand the business.
b. Have a good understanding of the data. Sometimes, although the business question defined is critical, if the data are not relevant, you will only get the wrong results to the important business question. To avoid that, you need to have a very good understanding of the Data Generating Process (DGP), that is the details of how exactly the data were collected. This part will help you to understand the values and limitations of the data, and to be able to choose the right model and interpret the results. In other words, this is the foundation step before you could finish the project successfully.

2. *Conduct the data analysis*

Over the quarter, we will learn about data analytics tools. Due to time limitations, we'll limit the classes to Excel use. The Excel add-in you purchased have built in modeling for all the topics we'll cover in the class. You could use those functions to finish your team project. If you choose to do so, you will have to make sure your data is prepared in the exact data format as required by the Excel Add-in. Those formats are represented by the sample data that came together with the Excel Add-in. Some of you have experiences in various types of programming languages, and you are free to use any one you feel comfortable with.

When conducting the data analysis,

a. You need to apply at least one of the techniques learned in the class to the project
b. You need to be very cautious about what variables to be included in the analysis, and **why** did you do that. What variables you would rather have, and what implications given that you don't have all the data you would like.

3. *Present the results*

After the analysis, it is important to translate those modeling and statistical languages into business decisions, and find the best way to present the results and decisions. Be prepared that

the managers at the company might ask your reasoning and intuition (in addition to the statistical models) that you reach such a result and decision.

Deliverables/Time Lines for the project

1. *Get access to the data*

Do this *as soon as possible*. It could be either private data (such as company data) or public data.

2. *Write the proposal*

After obtaining the data, talk with managers, understand the data generating process, then come up with a relevant business question that could be solved using the data on hand.

Submit the proposal on *Saturday, Oct. 14*. The proposal should be no more than 5 pages, including

a. The business questions you are trying to address and why this question is important.
b. Basic information about the data, including the source and the DGP of these data. Some basic summary statistics and some plots.
c. Why these data are suitable to solve the business question?
d. Which tool is planned to solve the problem in data analysis.

3. *Present the results and submit the power-points.*

The presentation will happen in the last class (unless otherwise notified) on Saturday, December 2. If the data is obtained from a company, the company's manager is welcome to sit in the presentations.

The presentation is pretended to the company executives whose focus is on the business insights; as well as the technical team whose focus is to ensure the analysis is methodologically sound. It is important to strike the balance between these two types of audiences.

Grading of the projects

Each student's grade from the project will involve two components:

a. The team grade, that is common to everyone in the team. The grading is defined below.
b. The individual adjustment, which is based on the peer-evaluation submitted by each member in the team.

The team grade is based on:

a. Quality of the presentation
b. Defined a relevant question with the good understanding of the data
c. Solid analysis
d. Insights obtained from the analysis and translation into business decisions.