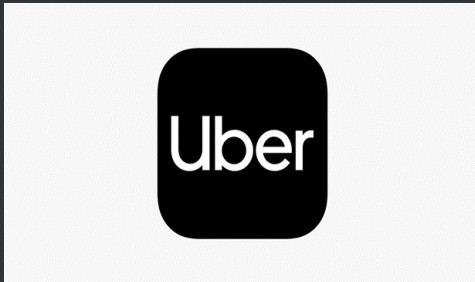# Introduction to Digital Marketing

What are the wealthiest firms in the world?

What are the wealthiest firms in the world in 2010?

HSBC is the largest bank in Hong Kong.

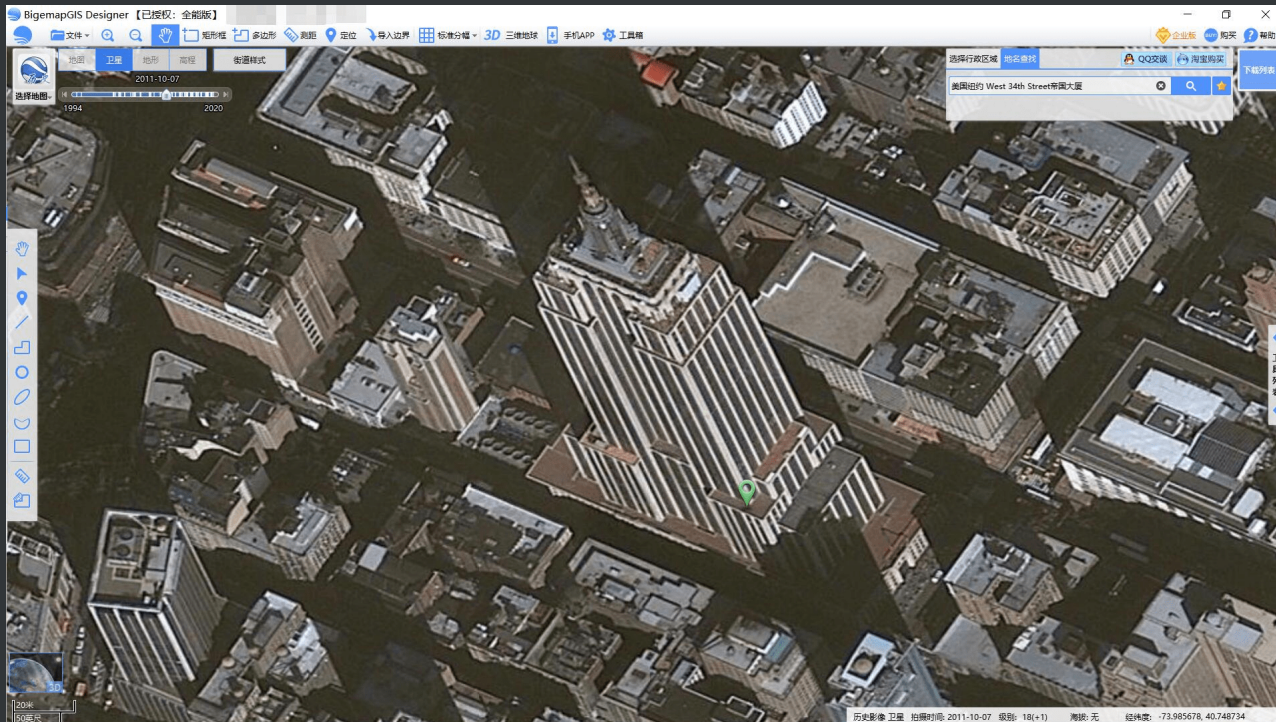Let's see HSBC's stock performance.

Uber, the leading ride-hailing APP, collects data on your smartphone's battery level. But why?

Lenddo, a Singaporean based start-up, helps financial institutions collect your social network data, but why?

US retailers Target and Kroger both purchase real-time satellite images from RS Metrics. But why?

What is this?

BBC

Netflix: How did it know I was bi before I did?

After BBC reporter Ellie House came out as bisexual, she realised that Netflix already seemed to know. How did that happen?

Why do offline sellers offer free Wi-Fi to users?

What percentage of couples meet online?

Eye-tracking is a new technology which allows you to observe the eye fixations of your consumers. Let us take a look at the following example.

Question:

How does the Internet affect our purchase decisions?

What is digital marketing?

What is the course about?

Overview of digital technology + Underlying Business/Marketing concepts

Aim is not mastery of all the topics, but to give an overview of most important topics

The list of topics covered in this course can be found in the syllabus.

Who should take this course?

Undergraduate students

- Learn the basics of digital marketing
- Learn the basics of data analytics
- Already have a background in basic marketing /advertising

Our class adopts methodologies from...

- Computer Science
- Statistics, and
- Economics

Leveraging your competitive advantage!

- Compared to traditional marketers, you know how to program and how to analyze data.
- Compared to statisticians and computer scientists, you understand consumers better, and know how to apply results to business settings.
- Compared to economists, you not only know the theory, but also know how to apply the theory to solve real-world marketing problems, and test the theory using real-world data.

The loop
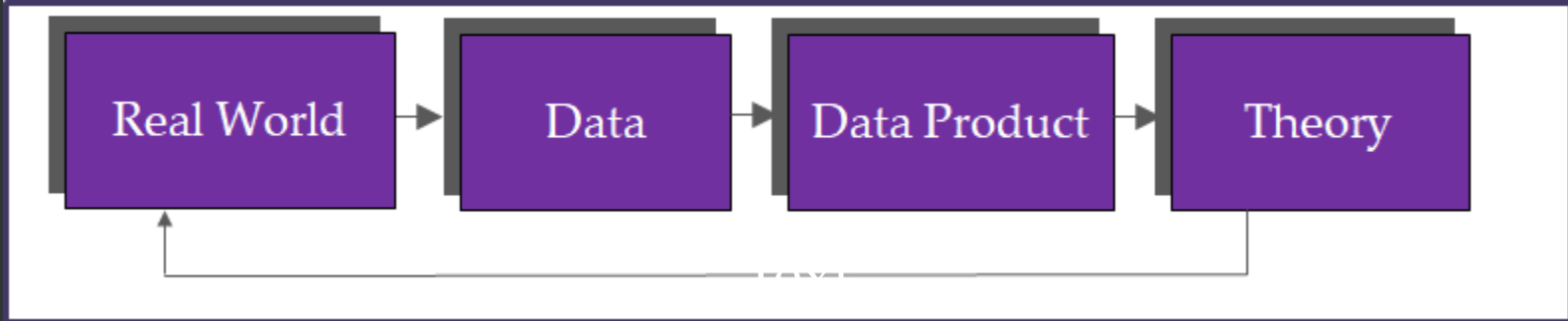
Talk is cheap, show me the data!

About me

Xi Li, Professor of Marketing. KKL 836

- PhD in Management, University of Toronto.
- M.Phil. in Operations Research, HKUST.
- B.E. in Computer Science, Tsinghua University.

Director, Asia Case Research Centre
Associate Director, Institute of Digital Economy and Innovation

Research interests: Algorithms, big data and online marketplaces.

My FT (Financial Times) Chinese Column

专栏 **明德商论** （＋ 关注）

自愿数据共享，真的可以保护消费者?

李曦: 笔者的研究发现，基于自愿的数据分享更可能会推高产品的价格，进一步损害消费者的权益。

李曦 （＋ 关注）

HKU BUSINESS SCHOOL
港大經管學院

更新于2024年8月22日 10:45 李曦

Course Website

https://ximarketing.github.io/_pages/teaching/

Choose class "Digital Marketing"

Password: 24DM

Grading

Your grades will be determined by the following components:

- Group-level data-analysis task: 15% (No presentation; report needed)
- Group-level research project: 25% (Both in-class presentation and report required)
- In class participation: 10%
- Final examination: 50% (open book open notes, MC questions only)

Data Analysis

In this course, we are introducing a practice class on data analysis. This is one unique feature of our course.

You have already learned about R and Tableau. Perhaps you can also use many other tools such as SPSS, Excel, Python etc.

I will give you some real digital marketing data, and your goal is to study the data using the tools you know --- It's entirely up to you how you want to play with the data!

Data Analysis

You are going to work with your teammates on the data project. Then, each group will submit a report illustrating the findings from the data. It will be graded, and it affects your final grade.

We will start with the data analysis in the class, and you will finish all the analysis after the class.

The purpose of the data project is to help you understand the data analysis methodologies and gain a sense of real data that data scientists are analyzing everyday.

Research Project

Good news: Because we already have the data analysis task, you do not need to collect or analyze data in your research project.

What you need to do: Choose a company and analyze the company's digital marketing strategy.

You are free to choose your own company, but make sure that the company is active in digital marketing (at least it should have social media accounts and its own website).

Things to focus on

Company website: Any issues? What can the company do to improve its website?

Social media (e.g., Facebook, Instagram, Twitter): Is the company managing its social media accounts? Any issues? What would you suggest the company?

Online sentiment: How people are discussing the company or its brands in online review platforms (e.g., TripAdvisor, Amazon)? What's wrong?

Estimated Workload

Group level:

- Data Analysis Task: 6 hours (+ 3 hours in class exercise)
- Research Project: 12 hours (No data analysis required).

Individual preparation for final: 6 hours

In sum: around 24 hours

TODO List

If you decide to take this course, here is what you should do after today's class (Important)!

- **Form groups with your classmates**. Think about the project you are going to work on.
- Individual task: Install R on your laptop. We will be using it in the next class.

TODO List

Each group consists of at most 6 students (and at least 1).

You need to choose a name for your group, e.g., "Marketers", "Fantastic", "A Plus"…

Submit your group form on Moodle before Sep 12 (Class 1A) or Sep 16 (Class 1B).

Let the TA Yana Lo, (yanalo@hku.hk) know if you cannot find a group.

Class Schedule

There are no classes on the following dates:

Class 1A (Monday):

- Sep 30 (cancalled to make the schedule consistent with class 1B).
- Oct 14 (Reading week)

Class 1B (Friday):

- Oct 11 (Chung Yeung Festival)
- Oct 18 (Reading week)

Class Schedule

In summary, we have the following classes:

- 1 introduction (today's class)
- 1 data workshop
- 7 regular lectures, and
- 1 class for final presentation of course project

Overview of Course Content

Data Analytics with R

You can use Excel or SPSS, but they are too simple and cannot handle complex data analysis projects.

R is a free software that is commonly used for statistical analysis.

It is not only useful for digital marketing, but also useful for other purposes such as machine learning and optimization. It helps you find a job in the future.
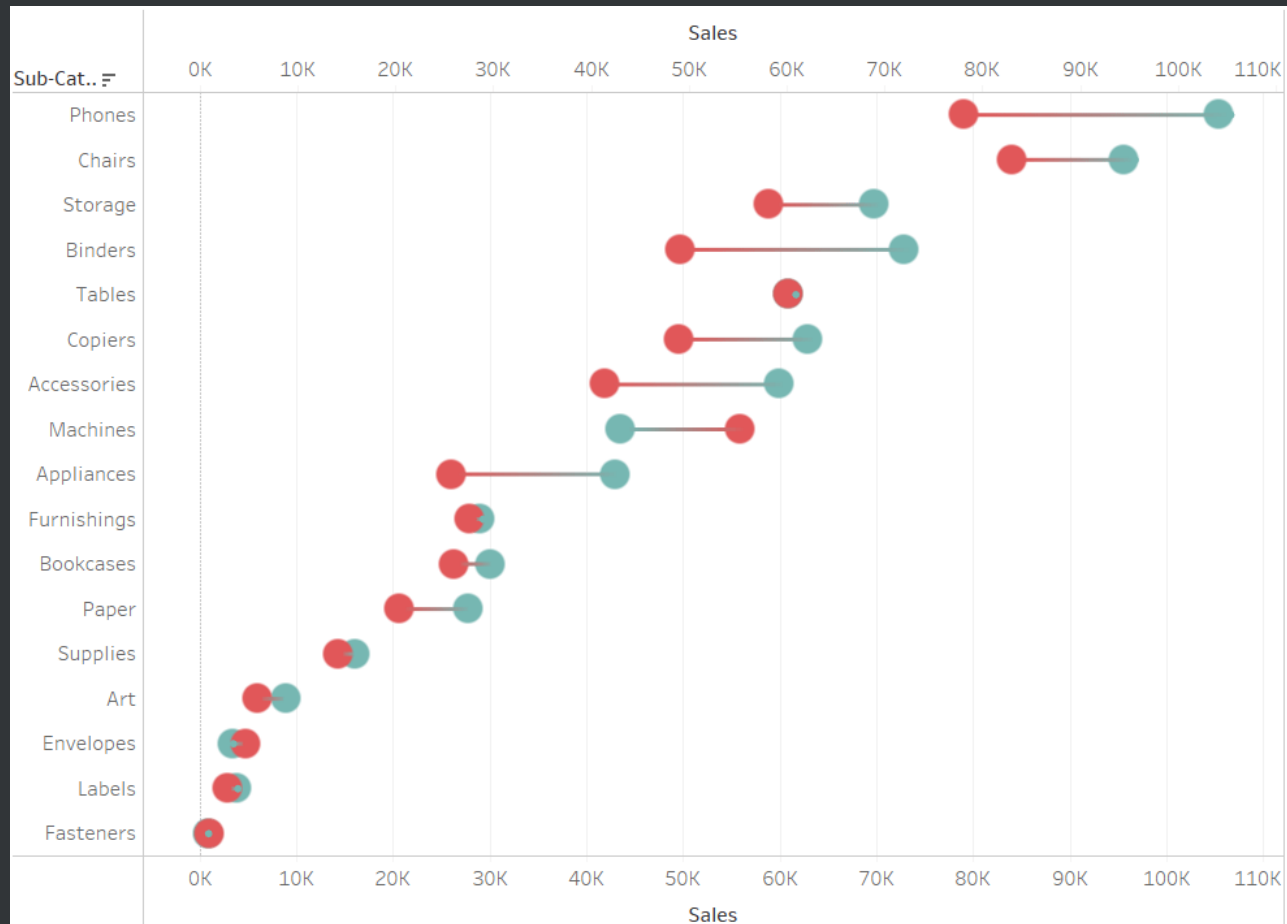
Data Visualization with Tableau
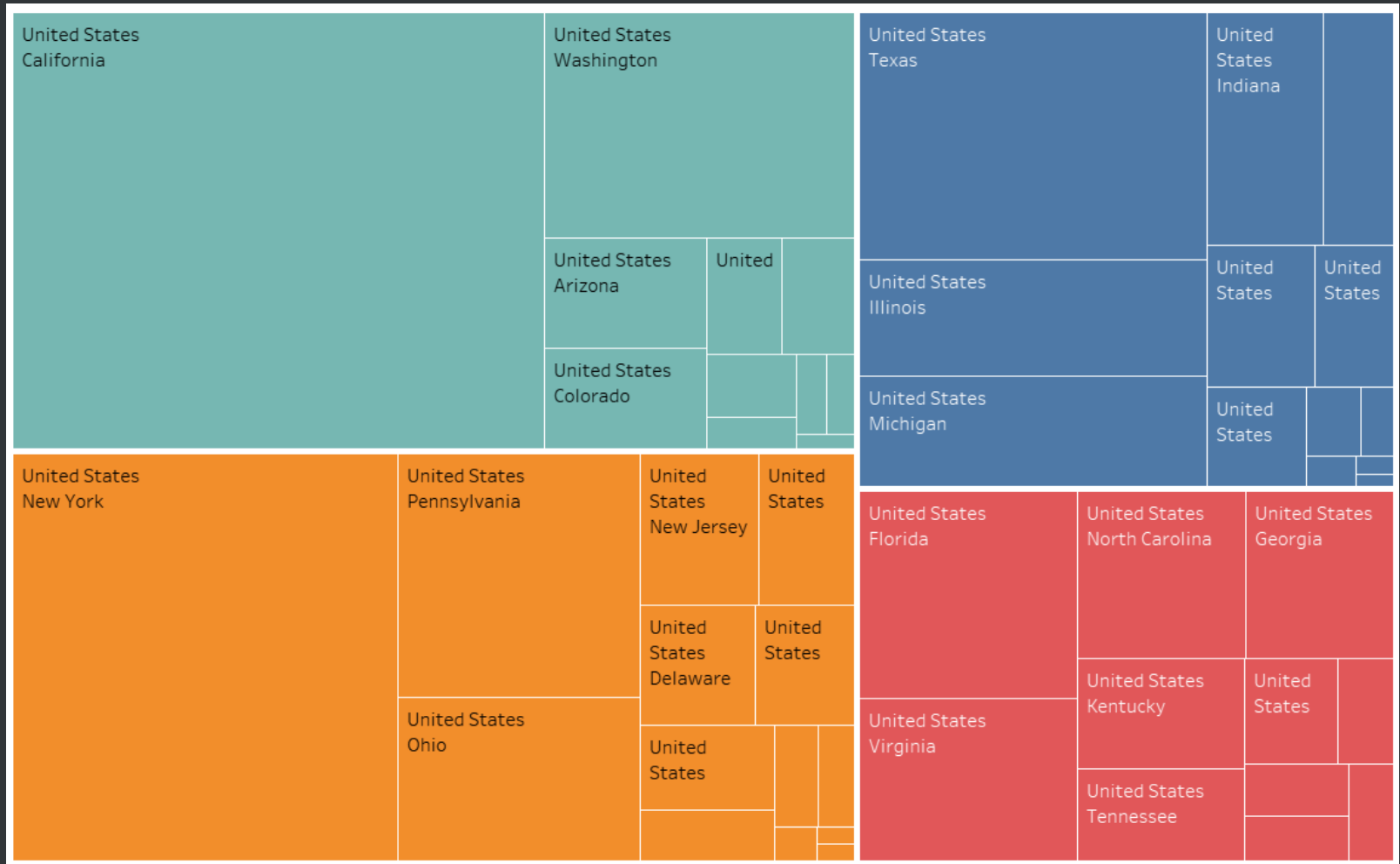
Data Visualization with Tableau

Data Visualization with Tableau

Webscraping with R

Data scraping allow you to scrawl information from websites, e.g., online marketplaces. For example, you can collect product information from HKTV Mall, weather information from Hong Kong observatory, and tweets from Twitter.

Warning: Do not expect that you can become an expert in data scraping within one class. This is simply an introduction, and you need more practice yourself.

Webscraping with R

This may be the only web scraping class in a business school (I don't know the answer, though).

We will see how to gather information from HKU faculty webpage:

Dr. Jingcun CAO   Dr. Chu (Ivy) DANG   Dr. Jinzhao DU

Search Engine Optimization

We all know that Google is the most popular search engine (and even the website) over the world.

We are going to address the following questions: (1) How does Google (and other search engines) work? (2) How to improve your page rank on Google, so that consumers can more easily find your website through searching?

Paid Search

While SEO allows you to improve your page rank for free, you can also spend money to get more attentions from consumers.

We are going to address the following questions: (1) What is online advertising? (2) How does Google sell its search results through auctions? (3) How to buy paid ads? (4) How to develop you keywords list?

Display Advertising

How to offer targeted ads based on user behavior?
How are displayed ads bought and sold?
What is click fraud?

Social Network and Mobile Ads

We will discuss ways to take advantage of the social network to engage your users and amplify the influence of your brand.

We will introduce some measures of social networks and use R to process social network data.

We will also discuss some characteristics of mobile marketing.

Social Media

Setting guidelines and policies for your social media: make sure that you are using social media platforms in a correct way.

Ways to engage your users through social media.

AB testing for social media optimization.

Recommendation Systems

	Movie 1	Movie 2	Movie 3	Movie 4
Alice	4	4	**???**	1
Bob		2	2	3
Carol	1	5	3	
Dennis	3		4	1
Emma	5	2	1	4
Flora	3	1		5

Software

Please download and install R here

Your installation path must NOT contain any non-English characters. Otherwise, you will have troubles using it.

安裝路徑必須為純英文，否則運行可能出錯。

Please download and install RStudio here

Your installation path must NOT contain any non-English characters. Otherwise, you will have troubles using it.

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