The Wharton School, University of Pennsylvania
Operations and Information Management Department

OPIM 662: Enabling Technologies

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Class Information

Class time and location: Monday and Wednesday: 3:00pm-4:30pm
Office Hours:
Professor Wu: Tuesday, 5-6pm
TA: Bowen Lou: Wednesday 4-5pm

Course Description

Conducting business in a networked economy invariably involves interplay with technology. The purpose of this course is to improve understanding of technology (what it can or cannot enable), the business drivers of technology-related decisions in firms, and to stimulate thought on new applications for commerce (including disruptive technologies). The class provides a comprehensive overview of various emerging technology enablers and culminates in discussion of potential business impact of these technologies in the near future. No prior technical background is assumed and hence every effort is made to build most of the lectures from the basics. However, the Fall semester class will assume basic understanding of statistics and will focus more on big data analytics. Some assignment in the fall will involve data analytics using Python or R.

We will use lectures, class discussion, guest speakers, exercises and team projects to examine a variety of topics including: Google trends, online advertising, social networks, social media, IBM Watson/Deep learning, peer-to-peer economy, people analytics and a variety of other topics. Fundamental economic principles will be illustrated using business case studies. We will choose a specific sector of the tech industry and investigate the technology enablers, the major players in the sector, competitive dynamics and future opportunities in the sector.

Course Goals

1. To learn how to leverage emerging media to better communicate with customers
2. To learn how to respond to new technologies as they arise
3. To understand the basics of business analytics

4. To know how to leverage Google and other online advertising platforms
5. To understand how trends like social and mobile media affect company strategies

Tentative Schedule of Sessions

DATE		SESSION	Due (at 10pm)
Weds 8/31	1	Introduction	
Mon 9/7	2	Model I	
Mon 9/12	3	Model II	
Weds 9/14	4	Competing in Analytics	
Mon 9/19	5	Google Trends: housing	Memo
Weds 9/21	6	Data Analytics Lab	
Mon 9/26	7	Google Trends: race, gender, social trends	
Weds 9/28	8	Data Analytics Primer	
Mon 10/3	9	Search Engines	Assignment #1
Weds 10/5	10	Search Advertising	Memo
Mon 10/10	11	Internet Marketing 1	
Weds 10/12	12	Internet Marketing 2	Memo
Mon 10/17	13	Social Media Analytics 1	
Weds 10/19	14	Social Media Analytics 2	Memo
Mon 10/24	15	Social Networks	
Weds 10/26	16	Enterprise Social Media & People Analytics	
Mon 10/31	17	**Project proposal**	Proposal slides
Weds 11/2	18	Deep QA	Assignment #2
Mon 11/7	19	IBM Watson	Memo
Weds 11/9	20	Deep learning /exam review	
Mon 11/14	21	Exam	
Weds 11/16	22	Peer-to-Peer Economy	
Mon 11/21	23	Project time	
Weds 11/23	24	Thanksgiving	
Mon 11/28	25	Final Project Presentation	
Weds 11/30	26	Final Project Presentation	
Mon 12/5	27	Final Project Presentation	
Weds 12/7	28	Final Project Presentation	
Mon 12/12	29	Hit-Driven Businesses	Final Project write up (Due 12/16)

Please check the class website before every class for announcements, assignments and schedule changes.

Intended Audience and Prerequisites

Anyone interested in understanding the various technologies fundamental to business in a networked world. No prerequisite or technical background is assumed. Class lectures are built from the basics and are self-contained. Students with a limited technical background will find the course a useful primer on technology from a managerial perspective. Students with moderate to advanced technical backgrounds may find the course a useful survey of emerging technologies. The course is highly recommended for students with interest in any of the following areas: new media, consulting/strategy, and product management/business development, entrepreneurial management, and venture capital in the tech sector.

Requirements and Grading

There are 4 parts that contribute to the final grade in the course. One of these is based on group work.

1) Exam 20%

2) Memos 10% (Individual)
   There will be 5 memos in the class. The lowest memo grade will be dropped.

3) Homework 20% (Individual)
   There will be two assignments (2x10%). Both assignments requires data analytics. Homework submitted late (i.e. after they have been discussed in class) will not be graded. Unfortunately, I cannot help you make up missed homework through other assignments/readings. It is not easy to create new assignments for individual students. Please do not email the professor or TA regarding this.

4) Class participation 20%
   To minimize subjectivity, class participation will be primarily (though not entirely) based on attendance. If you miss up to 2 sessions (i.e. a full 3-hour class), there will be no penalty. We understand that things come up (interviews, weddings, fevers/flus) and everyone has a buffer of two 90-minute classes for this. You are not expected to notify the professor or TA about your absence. For every missed class beyond the first two, points will be deducted. If you miss more than a third of the classes, you will get 0% for class participation. The purpose of this penalty is to account for the fact that several students who wanted to take the course were denied registration due to insufficient seats. Similarly, if you are late for the class, points will be deducted. Being late is very disruptive to both the professor and your follow students. We will take a photo at the very beginning of each class to account for attendance.

5) Project (Group) 30%
   A group of 4-5 students can work on a class project. The scope of the project can vary from being a business plan, a survey, or a case-based analysis of a problem. Sample projects from previous years will be posted on Canvas.

Guidelines for Project

Project Report

1. No required length (page limit). The reports will be judged on content.
2. I will evaluate the reports for the following (the latter two will be weighted more):
   a. Quality of information gathered ("research")
   b. Structured information on your own ("writing and logical presentation")
   c. Analysis (quantitative or based on sound logical reasoning).

Project Presentations

1. All teams must submit presentation slides as well.
2. On the last day, I will ask most of the teams to present the project (it is in your best interest to have 1-2 person present because time management is usually better achieved with one person presenting).
3. The goal of the presentation would be to convey the basic idea in under 20 minutes. You will also have a 5 minutes Q/A following the presentation.
4. Additional details regarding the presentation slides and the presentation will be emailed later.

Grading Approach

There will be three components to the grades.

1. Presentation and final report assessment by the professor and TAs
2. Team presentation score from peers
3. Individual assessment of team members

As this is a group project, all team members will get the same points irrespective of the person who presents in the first two components. The third component is an individual score, to ensure that each team member has pull sufficient weight for the team project.

Objective: The idea is to use the project to explore topics of significant interest to you (but ones we did not cover in class in great detail).

Reading Materials for the Course

All readings will be posted online (see course website for updates as we proceed).