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

Enabling Technologies

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Course Description

The course provides a broad overview of what's going on in the tech industry. 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. The class provides a comprehensive overview of various emerging technologies and culminates in discussion of potential business impact of these technologies in the near future. This year, our focus will exclusively be on Cloud Computing, Mobile, Data/AI, and Web3. No prior technical background is assumed but some interest in (and exposure to) technology is helpful. Every effort is made to build most of the lectures from the basics. That said, students with prior background in tech will find it easier.

Objectives: The course has two main objectives: (i) Provide a broad overview of what's going on in tech (ii) Understand how technology can enable the delivery of online products & services (cloud computing, analytics) and in marketing of these products or services.

Every week, 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. The sectors covered include:

Calendar (each lecture below is an 90-minute lecture)

01. Introduction + Internet Industry Structure
02. Cloud Computing

03. Wireless/Cellular Markets I (Introduction + 3G/4G/5G)
04. Wireless/Cellular Markets II (Platforms: iOS, Android) (**Quiz 01 covers sessions 1-3**)

05. Data Cloud and AI
06. Guest talk – ML on Snowflake **(Homework 01 due)***
      Reading: Chap 04 of *A Human's Guide to Machine Intelligence* (uploaded on Canvas)

07. Machine Learning Models + Generative AI (**Quiz 02 covers sessions 4-6**)
      Reading: Chap 05 of *A Human's Guide to Machine Intelligence* (uploaded on Canvas)
08. Generative AI in practice

09. Guest talk – Decentralization and Custody
10. Web 3 and Decentralization (more on music/film/gaming) (**Quiz 03 covers 7-9**)

11. Launching tech products/services

12. Project Presentations (**Quiz 04 covers sessions 10-12**)

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: **entrepreneurial management, venture capital, new media, consulting/strategy, and product management/business development in the tech sector**.

Requirements and Grading

There are 3 parts that contribute to the final grade in the course. One of these is based on group work.

1) Project (Group)
    26%. A group of 4 students can work on a class project. Students will select the project of their choice (see details below).
2) Top 3 scores out of 4 in-class Quizzes (Individual; closed notes)
    54%. I'll take the 3 best scores from 4 in-class quizzes. Unfortunately, I cannot help you make up missed quizzes 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.
3) Homework (Individual)
    20%. Your answers should reflect your own thoughts on the subject and cannot be based on discussions with classmates. Homework submitted late will not be graded. Unfortunately, I cannot help you make up missed homeworks 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.

Academic Integrity

All relevant University policies regarding Academic Integrity must be followed. Please consult the Code of Academic Integrity for details and clear descriptions of prohibited actions. Any violation of the Code will automatically lead to a FAIL or F grade. Violation of the MBA Code of Ethics may lead to additional sanctions.

Guidelines for Project Presentations

1.   Projects can cover any of the following (see sample projects on Canvas):
    a.   Overview of an emerging technology and its likely impact on the market.
    b.   Business Plan
    c.   Case study of a tech-oriented company or startup
2.   The final deliverable can be a set of slides or a regular report. No required length. The reports will be judged on content.
3.   Please prepare slides that can be read and interpreted independently by TAs and myself (i.e. they are not just for your presentations but also designed for independent consumption). 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; structure; logical presentation")

        c.   Analysis (conclusions are well justified and based on sound logical reasoning).

4.   On the last day, I will ask all/most teams to present their project (it is in your best interest to have 1 person present because time management is usually better achieved with one person presenting).

5.   The goal of the presentation would be convey the basic idea in under 5 minutes. I realize this is insufficient time to showcase all the work you have done (☺), but the other option will be to have an additional class.

6.   Additional details regarding the presentation slides and the presentation will be emailed later.

Grading Approach: All team members usually receive the same grade unless there is broad consensus among members of a team that effort has been disproportionate.