

# Digital Economy: Platforms, AI and The Business

## Overview

The course discusses a rich list of topics from recent economics literature on the digital economy. They include the theory of network industries, multi-sided platforms, platform strategies, platform design, recommender and reputation systems, Internet business models, online start-ups, AI technologies, big data analytics in platform businesses, AI start-ups, online pricing strategies, algorithmic pricing, financial technology platforms, payment networks, Blockchain and virtual currencies, firm digital transformation, strategic decisions for incumbent firms in adopting digital technologies, automation, and competition policies for the digital world. The course is a great fit for anyone who is considering starting a business or joining a start-up in the digital platform space or is trying to decide what type of sector or business to focus on. The class will provide the structure and conceptual framework to gain a solid understanding of digital technologies, AI and related businesses.

The course will draw on rich recent economic and firm data to support analyses. All analyses are empirically based.

## Aims

The course is both analytical and applied; it uses relatively recent economic theories and developments and a rich set of recent cases to help students understand the digital economy.

The course aims to provide a solid understanding of foundational concepts, theories and technologies that are essential for understanding the digital economy. It offers a thorough review of platform strategies / competition and covers the emerging literature on

corporate digital transformation: the process by which traditional firms adopt digital and AI technologies to adapt to changes in the market.

The course also aims to demonstrate how emerging technologies such as AI and Blockchain, joined with platform technologies, have begun to transform industries such as the financial sector, retail, advertising, healthcare and transportation.

By examining a rich list of cases and data and using recent theories, the course aims to help students form a systematic view of how digital technologies are likely to shape corporations and industries and change the nature of competition.

By examining numerous young online firms from different sectors, the course will seek to explain the process of start-up formation and show how to set up an online business.

Finally, equip students with an ability to use Excel (or R - optional) to analyse firm data in business decision making, use economic theories to make sense of economic data and news, and use their empirical understanding to improve on business decisions and master data-driven business decision making.

## Learning outcomes

- Understand the logic of network industries, gain a solid understanding of the theory of multi-sided platform, AI (artificial intelligence) technologies and digital business,
- Understand platform leadership strategies, platform competition, and algorithmic pricing,
- Gain a solid knowledge of online / platform start-ups and their growth strategies, and learn how to establish and growth our online business
- Understand platform design - various key components forming modern online platforms such as recommender and reputation systems as well as governance rules,
- Form a sound understanding of the AI revolution, Blockchain and general-purpose technologies, and explore how these technologies are likely to transform businesses

- Gain an understanding of how platform technologies, AI and cloud technologies have already begun to transform industries such as finance, providing a good understanding of Fintech start-ups
- Understand challenges faced in digital transformation of industries and firms and relevant tactics and strategies - the process of corporate digital transformation,
- Understand dominant internet business models and how to generate new online business models
- Develop an ability to use Excel or R to analyse data in business decision making in firms.
- Develop an ability to make sense of economic data / news in an intuitive manner to enhance decision making in the firm.
- Design business strategies for growing and running digital marketplaces.

## Teaching and learning methods

Methods of delivery: Lecture and practices. The first half of each lecture will cover theory and second half will apply the theory to business cases and discuss emerging digital / AI start-ups.

Total study hours: 50 hours split between lectures, classes, self-study and preparation for classes, coursework and examinations.

## Assessment methods

Examination (50%)

Coursework (50%)

## Recommended reading

McAfee, A. and Brynjolfsson, E., 2017. Machine, platform, crowd: Harnessing our digital future. WW Norton & Company.

Agrawal, A., Gans, J. and Goldfarb, A., 2018. Prediction machines: the simple economics of artificial intelligence. Harvard Business Press.

The course comes with extensive self-sufficient teaching materials that cover advance topics not found in textbooks. The materials will mainly draw on research papers. In addition, the course will draw on:

Gawer, A. (Ed.). (2011). Platforms, markets and innovation. Edward Elgar Publishing

Peitz, M. and Waldfogel, J. eds., 2012. The Oxford handbook of the digital economy. Oxford University Press.

## Study hours

Contact hours	30
Independent study hours	20