







# BUSINESS MODELS IN THE DIGITAL ECONOMY

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## 1. Course Outline

This course initially introduces students to the basic principles of digital network economics. Its ultimate goal is to provide a sound understanding of the strategic decisions made by firms that adopt the platform business model and create online networks.

The significance of digital network economics for shaping business strategy is justified by noting that 9 out of 10 most valuable companies in the world operate in digital network industries. In addition, the top five most valuable firms are all tech giants (Apple, Google-Alphabet, Microsoft, Amazon and Facebook) which all adopt platform business models and digital strategies to remain competitive. Other up-and-coming companies, such as Airbnb and Uber, serve as marketplace platforms creating online networks that facilitate digital interactions between people.

The success of these firms is mainly attributed to the managerial decisions made from a network point of view. The building block of such decisions is the strategic analysis of the characteristics that make network goods differ from the conventional ones, namely: (i) network externalities; (ii) complementarity, compatibility and standards; (iii) switching cost and lock-in effects; and (iv) significant economies of scale in production.

## 2. Course Objectives

Upon successful completion of the course, students are expected to be capable of:

- Identifying and analyzing digital network industries
- Recognizing the reasons that digital network industries should be examined and analyzed in a specific context
- Evaluating and estimating the probability of success of a new digital network technology or a new digital network good
- Assessing the characteristics of digital network goods to make strategic decisions from a firm and consumer perspective
- Understanding the platform business model and analyzing it from a multi-sided market standpoint
- Recognizing the differences between traditional and digital markets
- Shaping strategic decisions in digital markets

## 3. Textbooks and Reading

### Books

Shapiro, C., & Varian, H. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Harvard Business School Press.

Shy, O. (2001). *The Economics of Network Industries*. Cambridge University Press.

### Research Articles

Economides, N., & Tåg, J. (2012). Network neutrality on the Internet: A two-sided market analysis. *Information Economics and Policy*, 24(2), 91–104.

Hagiu, A., & Jullien, B. (2007). Designing a Two-Sided Platform : When To Increase Search Costs ? No 473, *IDEI Working Papers from Institut d'Économie Industrielle (IDEI), Toulouse*.

Farrell, J., & Klemperer, P. (2007). Coordination and lock-in: Competition with switching costs and network effects. *Handbook of Industrial Organization*, 3, 1967–2072.

Jullien, B., & Sand-Zantman, W. (2019). *The Economics of Platforms: A Theory Guide for Competition Policy*.

Klemperer, P. (1987). The competitiveness of markets with switching costs. *The RAND Journal of Economics*, 18(1), 138-150.

Rosotto, C. M., Lal Das, P., Ramos, E. G., Miranda, E. C., Badran, M. F., Licetti, M. M., & Murciego, G. M. (2018). Digital platforms: A literature review and policy implications for development. *Competition and Regulation in Network Industries*, 19(1–2), 93–109.

Shy, O. (2011). A Short Survey of Network Economics. *Review of Industrial Organization*, 38(2), 119–149.

Spulber, D. F. (2019). The economics of markets and platforms. *Journal of Economics and Management Strategy*, 28(1), 159–172.

## 4. Grading

The evaluation consists of a final exam (70%) and an assignment (30%). The assignment concerns a teamwork on a case study that will be presented and discussed in the classroom.

## 5. Detailed Schedule

Week	Description
1	Introduction to digital network industries
2	Network externalities
3	Complementarity, compatibility and standards
4	Switching cost and lock-in effects
5	Economies of scale in production
6	The digital economy
7	Introduction to multi-sided markets
8	The marketplace platform business model
9	The role of data and artificial intelligence in digital marketplaces
10	Net neutrality and platform regulation
11	Student presentations
12	Final Revision
13	Final exam