

E-Commerce

This course will change how you think about online marketplaces!

There are now more than twenty years of accumulated experience in building electronic commerce platforms and solving their fundamental problems. The creator of a new e-commerce platform can draw upon this experience easily, standing on the shoulders of e-commerce giants such as eBay and Amazon.

At the same time, ongoing technological leaps create new capabilities that allow trading partners to find each other more efficiently and trade goods and services previously thought not possible. Entrepreneurs leverage on these new capabilities to create radical new online markets, which pose exciting new challenges: How should Uber match drivers with passengers? How should Airbnb select which listings to show to a guest who is searching for accommodation? How should Turo and Getaround convince car owners to trust renters with their cars? Should Amazon compete with individual Amazon sellers, and sell its own products on its marketplace? How do online platforms price their products? What are the policy implications of the bigger scale and the different nature of these new applications?

This course will teach you how to analyze online markets, how to address their fundamental problems, and how to develop and evaluate business plans related to online markets. We will first examine the characteristic problems of “traditional” e-commerce platforms, and their typical solutions. We will then develop the basic conceptual, analytic, and data science tools used to address challenges encountered in the budding area of two-sided online marketplaces, assuming the role of a “market designer.” Finally, we will learn how to design, conduct, and interpret experiments to optimize the operations of online markets. Application areas will include---but not be limited to---transportation, rentals, sharing, e-commerce, and labor markets.

The class sessions will be a combination of lectures, discussions of business applications of the ideas and techniques covered, and case discussions. Lectures will be supplemented by hands-on sessions in R, where the concepts and techniques discussed will be applied on real-world data (no prior programming experience is required; we will cover everything you need in class). Overall, the course will provide business knowledge for future product managers, marketeers, operation managers, investors, as well as anyone interested in online marketplaces.

After taking this course you will:

- understand the importance and benefits of e-commerce platforms
 - learn how to solve the fundamental problems of e-commerce platforms
 - understand the technical requirements of e-commerce platforms
 - understand the characteristic problems of two-sided online marketplaces
 - learn and apply conceptual and analytic tools to analyze online marketplaces
 - learn how to efficiently design and operate online markets through market design decisions such as pricing, reputation systems, ranking, and matching
 - design, interpret, and analyze experiments to optimize the operation of online markets
 - gain expertise in analyzing and visualizing data with R
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