Introduction

Industrial Organization

Frieder Neunhoeffer

ISEG, 2025/26

What is industrial organization?

Industrial organization deals with:

- the way markets and industries work
- the way firms compete with each other in these markets

It is also the subject of microeconomics, but...

- industrial organization focuses on the study of "imperfect competition", as opposed to a utopian vision of perfect competition and the counterexample of monopoly
- industrial organization analyzes competition between firms in more detail, emphasizing the impact of non-price variables (advertising strategy, differentiation, investment in R&D...)

A dual approach, *positive* (explanation of facts) and *normative* (construction of theories, welfare analysis)

What is industrial organization useful for?

IO provides conceptual tools to analyze markets and business strategies: understand, evaluate, anticipate

- for companies and strategy consulting firms (e.g., BCG, McKinsey) that analyze and anticipate the conducts of firms in markets
- for regulators (e.g., ANACOM, ERSE) and competition authorities (DG Competition in Europe) that take action to avoid the negative effects of excessive market power

The development of industrial organization

At the end of the 19^{th} century, an antitrust law (competition policy) was passed in the US (The Sherman Antitrust Act of 1890)

- to preserve competition and prevent cartels or even attempts at monopolization (abuse of dominant position)
- what constituted a cartel was clear, but what constituted an illegal conduct was less so:

  in 1920, the US Supreme Court ruled that US Steel did not violate the Sherman Antitrust Act, even though the company owned 70% of the production capacity

First development of industrial organization: Harvard School (Chamberlin, Bain...)

- developed from the 1930s to 1960s to provide guidelines for competition policy
- seeks to determine certain characteristics, e.g., firm size, to be used to infer illegal behavior
- $\rightarrow$ The SCP Paradigm: Structure - Conduct - Performance. The structure of a market (number of suppliers, differentiation, costs...) determines market conduct (price, investment...), which then determines the performance of the market (efficiency, product variety...)

The development of industrial organization

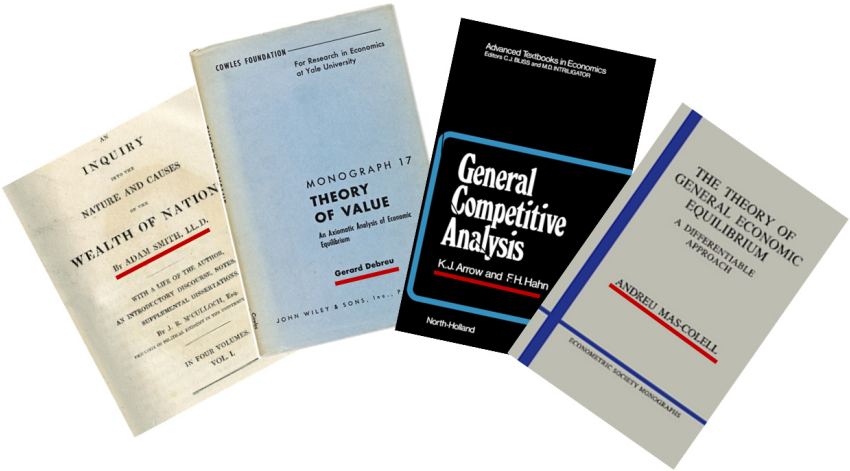
Second wave in the 1970s: Chicago School

- the SCP paradigm is challenged: no conclusive empirical support
- the Chicago School of IO (Posner, Bork, Peltzman, Stigler...) emerged in reaction to the SCP approach $\rightarrow$ *markets regulate themselves through free competition*
- but lacks tools to describe the strategic interactions between firms

Industrial organization from 1980 to 1990: "Post-Chicago" or "New Industrial Organization"

- Analysis of strategic interactions between firms by using non-cooperative game theory. Firms' behavior, market structure and performance influence each other.
- Progress in two fundamental areas: - dynamic analysis of the behavior of economic agents
  - study of information asymmetries

Classical Economic Theory and Industrial Organization



Classical Competitive Paradigm vs. Industrial Organization

Classical competitive equilibrium paradigm:

- fine description of economic goods or *commodities*, (physical properties, date of availability, location, ...)
- consumers' utility maximization and producers' profit maximization give rise to supply and demand functions
- equilibrium price clears the market, i.e., supply = demand

Welfare theorems of classical analysis (Adam Smith's idea of the *invisible hand*):

- **First Welfare Theorem**: competitive equilibrium is pareto optimal
  - a benevolent and fully informed social planner could not replace the competitive allocation of goods with another feasible allocation that would increase overall consumers' welfare
- **Second Welfare Theorem**: any pareto-optimal allocation can be decentralized
  - can be implemented by a market organization through a choice of the right prices and an appropriate redistribution of income among consumers

Classical Competitive Paradigm vs. Industrial Organization

Classical competitive equilibrium analysis is based on a number of assumptions:

- Regularity on preferences (convexity) and non-increasing returns to scale in production
- Perfect information on preferences and technologies
- No externalities (standard assumption of private goods)
- No market power (price-taking behavior)

Industrial organization is mostly concerned with the causes and consequences of market power.

$\rightarrow$ Industrial organization uses a partial-equilibrium approach: it focuses on one specific market at a time, ignoring the others.

How to do Industrial Organization?

Joseph Schumpeter,
History of Economic Analysis (1954)

"*What distinguishes the scientific economic analyst from other people who think, talk and write about economic topics, is a command of three main techniques: history, statistics and theory – theory being defined as a "box of tools" or a set of models that permit one to deal analytically with broad classes of cases by focusing on certain properties or aspects they have in common.*"

→ In IO, we develop quite general and simple models applicable to a large variety of cases

Example 1: carriage dispute - Nexstar (broadcaster) vs. Altice (distributor)

USA, January 2025

- Nexstar demanded higher retransmission fees, but Altice refused Nexstar's terms.
- Nexstar stations were blacked out. Millions of viewers lost access to TV programs.
- New agreement not disclosed, but Nexstar expected to obtain higher fees than before.

Why did Altice back down? $\rightarrow$ outside options

- Nexstar: lose cable viewers $\rightarrow$ still reachable via antenna, streaming, ads partially preserved
- Altice: lose "must-have" content $\rightarrow$ higher churn, reputational damage $\rightarrow$ **weaker position**

How can you quantify the impact of audience loss for Altice?

- Impact on the price and volume of advertising price?
- Consideration of "capacity constraints" (limited advertising space)?

$\rightarrow$ IO provides tools for analyzing these questions: models of competition, strategic reaction,...

Example 2: competition between platforms

Digital platforms

- compete to attract consumers
- but without charging them anything (e.g., services from OpenAI, Google, Facebook, ...)

If competition isn't based on price, what is it based on?

- Product quality
- Protection of personal data (privacy)
- Product and service innovation, ...

→ In IO, we consider dimensions of competition other than price: investment in quality, R&D..

Should we intervene to regulate digital platforms?
→ Efficiency criteria: consumer surplus and social welfare

Course structure

Part 1: From monopoly to oligopoly

- Monopoly, regulation, price discrimination
- Oligopoly
- Collusion

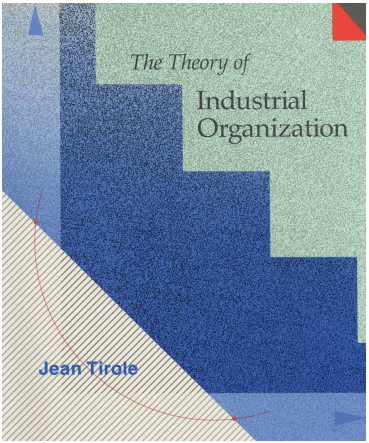
Part 2: Strategic behavior

- Differentiation and advertising
- Vertical relations and vertical integration
- Market structure and market power
- Strategic behavior, entry and exit
- Competition and technology (R&D, networks)

Week 1	26-Jan	Mon	Introduction + 01 Monopoly lecture
	28-Jan	Wed	01 Monopoly lecture
Week 2	2-Feb	Mon	Monopoly problem set
	4-Feb	Wed	02 Oligopoly lecture
Week 3	9-Feb	Mon	Oligopoly problem set
	11-Feb	Wed	03 Collusion lecture
Week 4	18-Feb	Wed	Collusion problem set
Week 5	23-Feb	Mon	04 Differentiation lecture
	25-Feb	Wed	04 Differentiation lecture
Week 6	2-Mar	Mon	Differentiation problem set
	4-Mar	Wed	05 Advertising lecture
Week 7	9-Mar	Mon	06 Market structure lecture
	11-Mar	Wed	Market structure problem set
Week 8	16-Mar	Mon	07 Entry/exit lecture
	18-Mar	Wed	Entry/exit problem set 1
Week 9	23-Mar	Mon	Entry/exit problem set 2
	25-Mar	Wed	08 Vertical relations lecture
Week 10	8-Apr	Wed	Vertical relations problem set
Week 11	13-Apr	Mon	09 Innovation lecture
	15-Apr	Wed	10 Networks lecture
Week 12	20-Apr	Mon	Networks problem set
	22-Apr	Wed	Exercises
Week 13	27-Apr	Mon	Exercises
	29-Apr	Wed	Q&A

Main reference

Jean Tirole, 1988, *The Theory of Industrial Organization*, MIT Press



Other references

- A good introduction: Cabral, 2017, *Introduction to Industrial Organization*, MIT Press, 2nd edition
- More advanced: Belleflamme and Peitz, 2015, *Industrial Organization: Markets and Strategies*, Cambridge Univ. Press, 2nd edition
- Course materials are based on the Industrial Organization course by Michele Fabi and Marc Bourreau, whom I gratefully acknowledge for generously sharing their materials.

Course organization

Grading

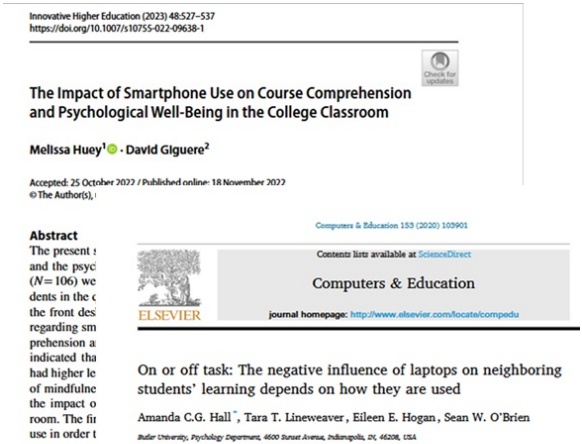
- classroom attendance and participation (10%)
  - sign-in sheets
- weekly problem sets (20%)
  - groups solve exercises on the white board
- final exam (70%)
  - ability to use industrial organization concepts to analyze a problem
  - ability to solve a simple modeling problem

Course material and contact info

- slides, problem sets, and additional readings are available on Fenix ("Contents" section)
- questions about the course: neunhoeffer@iseg.ulisboa.pt

Course code of honor

- be on time
- electronic devices (no smartphone)
  → only for course-related matters
- LLMs (e.g., ChatGPT)
  → use responsibly



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The Impact of Smartphone Use on Course Comprehension and Psychological Well-Being in the College Classroom

Melissa Huey[1] · David Giguere[2]

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Abstract

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Computers & Education

journal homepage: http://www.elsevier.com/locate/compedu

On or off task: The negative influence of laptops on neighboring students' learning depends on how they are used

Amanda C.G. Hall, Tara T. Lineweaver, Eileen E. Hogan, Sean W. O'Brien

Course code of honor

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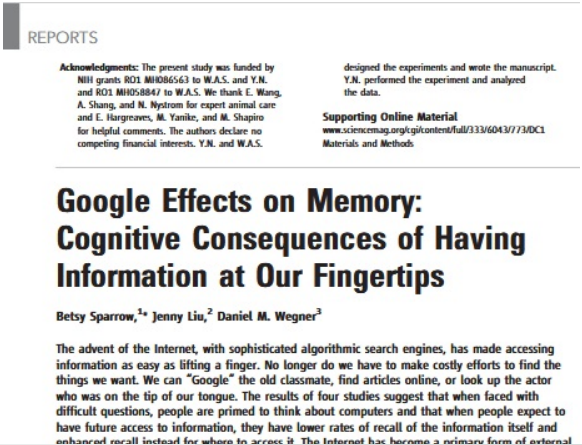
- LLMs (e.g., ChatGPT)
  → use responsibly
  - *google effect / digital amnesia*
  - *transactive memory / knowledge*



REPORTS

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Supporting Online Material
www.sciencemag.org/cgi/content/full/333/6043/773/DC1
Materials and Methods

Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips

Betsy Sparrow,[1]* Jenny Liu,[2] Daniel M. Wegner[3]

The advent of the Internet, with sophisticated algorithmic search engines, has made accessing information as easy as lifting a finger. No longer do we have to make costly efforts to find the things we want. We can "Google" the old classmate, find articles online, or look up the actor who was on the tip of our tongue. The results of four studies suggest that when faced with difficult questions, people are primed to think about computers and that when people expect to have future access to information, they have lower rates of recall of the information itself and enhanced recall instead for where to access it. The Internet has become a primary form of external