

Economics of Innovation 2

Microeconomics of innovation - Master 1

Prerequisites

Microeconomics course and introductory course in non-cooperative game theory at Licence 3 level.

Objective

Introduce the main microeconomic issues related to the production and diffusion of innovation
innovation: the race to innovate, incentives for cooperation in innovation production, optimal patent duration, external effects, mechanisms of competition between different network technologies.

Bibliographical references

- Oz Shy, Industrial Organization: Theory and Applications, 1996, MIT Press.
- Oz Shy, The Economics of Network Industries, 2001, Cambridge University Press.
- Robert Gibbons, Game Theory for Applied Economists, 1992, Princeton University Press.

Plan

I Research and Development

- I-1 The race for innovation
 - I-1-1 Issues and modeling
 - I-1-2 Equilibrium situations
 - I-1-2 Socially optimal situations
- I-2 Cooperation and competition in R&D
 - I-2-1 A Cournot duopoly augmented by an R&D phase
 - I-2-2 The solution: the perfect equilibrium for its subgames
 - I-2-2 Solution
 - I-2-3 Cooperation versus competition in the R&D phase
- I-3 Patents
 - I-3-1 Definition and issues
 - I-3-2 A two-stage model
 - I-3-3 Determining the optimal patent term

II Technology adoption and network effects

- II-1 Network externalities
 - II-1-1 Definitions
 - II-1-2 Adoption of a communication service
 - II-2-3 Standardization or variety?
 - II-2-4 Social optimization and standardization
- II-2 Evolution vs. optimization
 - II-2-1 Evolutionism
 - II-2-2 An example: DSK vs QWERTY
 - II-2-3 The status of a Darwinian model in economics
 - II-2-4 Replicator dynamics