

# The Economics of Network Industries

Oz Shy

## Table of Contents:

### **1 Introduction**

- 1.1 Overview of Network Industries
- 1.2 Welfare Aspects
- 1.3 References and the Scientific Literature
- 1.4 Notation
- 1.5 Selected References

### **2 The Hardware Industry**

- 2.1 Hardware Compatibility
- 2.2 The Network Externalities Approach
- 2.3 The Components Approach
- 2.4 Empirical Findings on Network Externalities
- 2.5 Exercises
- 2.6 Selected References

### **3 The Software Industry**

- 3.1 Principles of Software Production
- 3.2 The Determination of Software Variety
- 3.3 Software Variety Under Hardware Competition
- 3.4 Software Variety and Partial Compatibility
- 3.5 Software Piracy
- 3.6 Software Pricing and Market Segmentation
- 3.7 Empirical Findings
- 3.8 Exercises
- 3.9 Selected References

## **4 Technology Advance and Standardization**

- 4.1 New Technology Adoption: A Static Approach
- 4.2 Technology Revolutions: A Dynamic Approach
- 4.3 International Standardization
- 4.4 Exercises
- 4.5 Selected References

## **5 Telecommunication**

- 5.1 Telecommunication Services
- 5.2 Telecommunication Services: A Calculus Approach
- 5.3 Interconnections
- 5.4 Exercises
- 5.5 Selected References

## **6 Broadcasting**

- 6.1 Broadcasting and Cable Television
- 6.2 Spectrum Allocation
- 6.3 Digital Convergence
- 6.4 Exercises
- 6.5 Selected References

## **7 Markets for Information**

- 7.1 Information Reproduction
- 7.2 The Economics of Libraries
- 7.3 The Internet
- 7.4 Pricing Information Goods
- 7.5 Exercises
- 7.6 Selected References

## **8 Banks and Money**

- 8.1 Switching Costs and Competition
- 8.2 Automatic Teller Machines (ATMs)
- 8.3 Media of Exchange as Networks
- 8.4 Exercises
- 8.5 Selected References

## **9 The Airline Industry**

- 9.1 Network Structures and Network Economies
- 9.2 Deregulation and Entry
- 9.3 Code-Sharing Agreements
- 9.4 Exercises
- 9.5 Selected References

## **10 Social Interaction**

- 10.1 Status-seeking vs. Conformism: A Calculus Approach
- 10.2 Conformity, Vanity, and Price Competition
- 10.3 The Economics of Entertainment Places
- 10.4 Gifts
- 10.5 Exercises
- 10.6 Selected References

## **11 Other Networks**

- 11.1 Languages as a Networks
- 11.2 Religious Affiliations as Networks
- 11.3 Lawsuits and Lawyers
- 11.4 International Time Coordination
- 11.5 Who is Driving on the "Wrong" Side of the Road?

11.6 Exercises

11.7 Selected References

## **Appendices**

### **A Normal-Form Games**

A.1 What is Game Theory?

A.2 What is a Game?

A.3 Equilibrium Concepts

A.4 Best-Response Functions

A.5 Pareto Comparisons Among Outcomes

A.6 Exercises

### **B Extensive-Form Games**

B.1 Defining Strategies and Outcomes in Extensive-Form Games

B.2 A Normal-Form Representation

B.3 Subgames and Subgame Perfect Equilibrium

B.4 Exercises

### **C Undercut-Proof Equilibria**

C.1 The Simplest Product Differentiation Model

C.2 Nonexistence of a Nash-Bertrand Equilibrium

C.3 The Undercut-Proof Equilibrium

C.4 Four Important Properties of the UPE

C.5 Exercises

C.6 Selected References

**--- The End ---**