

Economics of Information Technology 資訊經濟

Fall 2010

Instructor: Dr. Yung-Ming Li

李永銘 博士

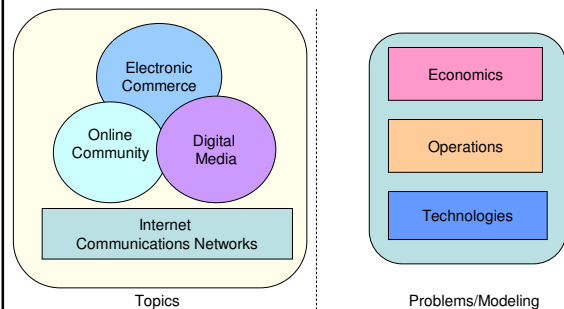
Course Information

- Instructor: Dr. Yung-Ming Li
- Meeting time:
– TH 0900-1200
- Meeting room: MB 312
- Office hours : Tuesday 1000-1200 or by appointment
- Email: yml@mail.nctu.edu.tw
- Web: www.nctu.edu.tw/~yml

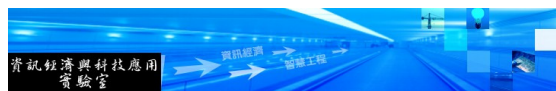
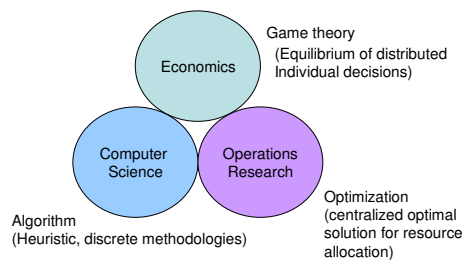
Instructor's Information

- Name: Yung-Ming Li
- Education
 - **Ph.D., University of Washington** (Information Systems)
 - **M.S., University of Southern California** (Computer Science)
 - **B.S., National Chiao Tung University** (Computer & Information Science)
- Experiences
 - A TA/RA (UW Business School)
 - A start up cofounder (KEYNet/KEYCITI)
 - A lecturer (KYU)
 - An engineer (Institute for Information Industry)

Research Interests



IS Methodologies



- 資訊經濟 (Information Economics)
 - digital content, electronic commerce, web social networks, Internet/telecommunication service
- 企業智慧 (Business Intelligence)
 - Soft Computing, Knowledge Computing, Social Computing in Web & Business Environment

CS v.s. Econ - Examples

- 1. Online Auction (eBay)
 - Technology issues: networks security, database, AI, etc.
 - Economics issues: auction rule design (who will win ? Intermediary, bidders, sellers, or society), reputation/trust, etc.
- 2. P2P Networks (Kazaa)
 - Technology issues: content search and download protocol and network topology design, etc.
 - Economics issues: Incentive to sharing (free riding), pricing P2P networks services, etc.

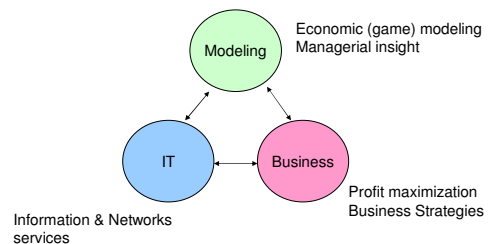
CS v.s. Econ – Examples (Cont')

- 3. Knowledge Management
 - Technology issues: workflow design, data mining, document presentation, etc.
 - Economics issues: incentive mechanism to induce cooperative sharing behavior, stability and efficiency, etc.
- 4. Digital Media (content)
 - Technology issues: multimedia, compression technology, DRM technologies, etc.
 - Economics problem: versioning content, bundling content, etc.

Course Objectives

- IT economics becomes one of the IS main stream areas in US (research papers in top journals and courses offered in top business schools)
- IT changes traditional economic behavior (like Auction, P2P, Intelligent property, etc)
- Apply **economics** method to study the emerging Internet/digital economy

Course Objectives (Cont')

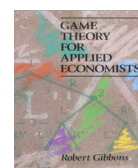
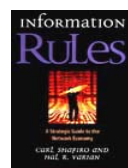


Course Outline

- Introduction (IT Economics)
- Game theory
- Information asymmetry
- Networks externality
- Incentive mechanism
- Competition and cooperation
- Trust and reputation Mechanism
- Networks Pricing
- Digital Content Pricing
- Emerging Internet applications (P2P, DRM, electronic commerce, online community,... etc)

Reference books

- Textbooks
 - Shaprio, C. and Varian, 1999, Information Rules. Harvard Business School Press.
 - Gibbons, R, 1993. Game Theory for Applied Economists. Princeton University Press.
 - Shy, Oz. 1996. Industrial Organization: Theory and Applications. MIT Press



Reference Materials

- Magazines
 - Business Week, Economist, Business 2.0 (start up)



Reference Materials (cont')

Journals

- Select research papers from
 - *Management Science*
 - *Information Systems research (ISR)*
 - *MIS Quarterly*
 - *Journal of Management Information systems (JMIS)*
 - *Decision Support systems (DSS)*

Course Activities

- Lectures (from the instructor)
- Homework practices
- General IT-Business articles and research papers reading, presentation, and discussion
- Term project

Lecture and Homework

- The instructor will provide the class notes for each lecture (Powerpoint)
- Homework will be assigned to help students practice and familiarize the methodologies
- All students are expected to try the problems by himself. However, you are highly encouraged to discuss the problems

Reading, Presentation, and Discussion

- Identify and position the research question
- Evaluate the proposed approach to the question
- Theoretical modeling issues
- Suggest a research question that would extend the work

Term Project

- Select a interesting, timely, and promising topic
- Emphasize the importance of chosen topic (technology and business opportunities)
- Utilize discussed methodologies to model the economic behaviors
- Derive managerial implications based your model

Grading

- Homework (30%)
- Presentation (30%)
- Midterm Exam (20%)
- Term Project or Final Exam (30%)



Lecture Part I-1 The Information Economy

- Information goods
- Cost structure of production
- Characteristics of consumption
- Networks effect
- Lock-in
- Compatibility and System competition

