This course covers distinctive managerial issues in the network and information industries - including the Internet, telecommunications, computing, consumer electronics, entertainment and media, many services, and transportation. We discuss distinctive characteristics of these industries, and how they affect strategic interactions among firms as well as consumers' choices of products and services. The course covers pricing strategies; product standardization; product line design; complementarities; and systems competition. Students should be comfortable with economics and mathematical modeling.

Texts:


Additional readings and cases to be distributed on course web site.

Pre-requisites  This course is ideally taken after completing your MBA core, especially the core classes in economics (“Markets and the firm”), statistics (“Data analysis for managers”) and marketing management. Please consult with me if you have not taken these classes.
Objectives

Information goods and services are a rapidly growing segment of our economic life, and include software, digitized music, video, cable entertainment, real-time information services, online transaction services etc. These products are often delivered over a communication network, and/or are associated with a virtual network - users or groups who use a compatible product. Networks - comprising physical, electronic, or virtual linkages - are fundamental to IT, services, communication, and entertainment industries, as well as traditional sectors such as transportation and energy. Networks play a distinctive role in business decisions and strategy, oftentimes posing unique and significant problems. Common to all networks are externalities, complementarities, economies of scale and scope, compatibility, and standards. This course examines how characteristics of network and information goods affect strategic interactions among firms, and consumers' choices of products and services. The course covers pricing strategies; product standardization; product line design; complementarities; and systems competition. The course will include numerous case studies drawn primarily but not exclusively from communication and information sectors in the economy. The course will help you understand and analyze questions such as:

1. Why do so many firms in the IT industry give away their best products free?
2. Why do online stores often exhibit product lines with long tails?
3. What might happen if the FCC forces cable companies to offer a la carte pricing?
4. Why do firms force consumers do buy bundles of goods rather than just the components they need?
5. How can a gasoline station manage to charge substantially higher price than its competitor just across the street?
6. How can software firms increase profit by damaging their own product (even when doing so increases cost)?
7. What are the implications of long-running format wars (say, between Sony Blu-Ray and Toshiba’s HDVD for the high-definition DVD format) and should technology firms be forced to adopt a common standard?
8. Why do some firms work hard to build converters to their competitors’ products while others work equally hard to obstruct such converters?
9. How can the ability to charge personalized prices (extracting more consumer surplus) be profit-reducing to the seller?
10. What factors affect the price path for IT goods –should prices increase or decrease over time?
11. Why do wireless and Internet service providers offer “all you can eat” pricing?

12. Who are the least profitable customers under flat-rate pricing and how do firms deal with them?

**Cases and Mini-Cases**

Cases under consideration include


2. Apple - iTunes and iPod.

3. AOL - battle for instant messaging standard, and co-product effects.

4. Mapquest.

5. Britannica - Pricing information goods.

6. The Magazine Cover Gifts War.

**Grading and Evaluation**

The evaluation process is still to be fully defined, since this is the first time I am teaching this topic as an MBA class. But it will be a mix of (a) short assignments (to keep some continuity and to give me some feedback on students’ learning), (b) a substantial project that applies the principles learnt in the class to (ideally) a real-world problem, and (c) class participation, which will involve attendance, participation in discussions, case presentation and analysis, and discussion leadership (since the course will partially be conducted as a “seminar”).

**Class Policies and Rules**

- **Participation**: Your presence and active participation is extremely critical to the success of the course. Please attend class, read material in advance, work out assigned exercises, and contribute actively to discussion. Each student will have at least one opportunity to frame and lead the class discussion.

- **Attendance**: Classes will begin on time. Please try to arrive before start and remain through the session. One or two absences are permissible under certain circumstances, with automatic reduction in points for class participation and assuming a “make up” effort on your part (see below: “What to do if you miss a class?”). More than two absences are not permitted. You must attend the first and final sessions.
- All reports and written assignments should be delivered on time in **hard copy** form (please retain a copy) – at the **beginning** of the corresponding session (20% penalty for each level of delay). Reports should be easy to read (clearly legible, if handwritten), with good layout and organization into subsections, and as concise as possible. Please separate essential points and details, by moving details into an Appendix. Excessive use of color or other attempts to beautify the report are unnecessary.

- Please avoid distractions - cell phones, talking among yourselves, food, music, etc. If you have something relevant to discuss, please share with the class.

- Please report any exigencies and constraints to me as early as possible.

In addition to these, you are expected to conduct yourself according to the University of California’s standards of ethical conduct for students, in particular, the sections on academic conduct and integrity. Details may be obtained from the GSM Associate Dean or the Office of Judicial Affairs.

**What to do if you miss a class?**

In case you do miss a class session, it is your responsibility to catch up with independent readings, problem-solving, etc. But, in addition, you must also (a) obtain the essential aspects of class discussions by meeting with at least two students who attended the class, for at least twenty minutes each, and (b) document the results of all these efforts by submitting a written document summarizing the session (as a rough guideline, this will be 1-3 page write-up). This document is due by the next class session.

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**Disclaimer:** The syllabus design is tentative, will evolve with time, in consultation with interested students. Please communicate your inputs and suggestions to me.
## 1 Detailed Schedule, Readings, Assignments

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<th>WEEK</th>
<th>TOPIC</th>
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<td>Introduction. Characteristics of technology and network goods.</td>
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<td>2.</td>
<td>Economics review. Pricing, competition, price discrimination, bundling, game theory.</td>
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<td>3.</td>
<td>Hardware industry: economics of compatibility, network effects, standardization.</td>
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<td>5.</td>
<td>Standardization. Format wars, technology adoption.</td>
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<td>6.</td>
<td>Product and price differentiation, product line design. Case: AOL IM.</td>
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<td>8.</td>
<td>Price mechanisms for IT goods (e.g., site licensing), differentiation through pricing schemes. Prof. V. Choudhary, UC Irvine.</td>
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A more detailed weekly description of the course topics follows below. Numbered references for “required readings” should be traced to the list of required readings given at the end.

### 1.1 Week 1


- **Required Readings**: [2](Part I, sections 7-10)

- **Assignment** ?.

### 1.2 Week 2

• Required Readings: [2](Part I, sections 5-6), [1](Appendix A)

• Assignment: TBD.

1.3 Week 3

• Lecture: Hardware industry: economics of compatibility, network effects, standardization.

• Required Readings: [1](Ch. 2)


• Assignment: TBD.

1.4 Week 4

• Lecture: Software industry. Economics of product complementarities.

• Required Readings: [1](Ch. 3–3.4)

• Assignment: TBD.

1.5 Week 5

• Lecture: Standardization. Format wars, technology adoption, dynamic pricing strategy.

• Case: TBD.

• Required Readings: [1](Ch. 4), [3]

• Assignment: TBD.

1.6 Week 6

• Lecture: Product and price differentiation, product line design. Versioning, bundling, nonlinear pricing, quantity discounts, intertemporal pricing, versioning under piracy and network effects.

• Case: AOL instant messenger standards battle.

• Required Readings: [1](Ch. 3.5 onwards), [4]

• Assignment: TBD.
1.7  Week 7
- **Lecture**: Tariff structures for price discrimination. Flat-rate tariffs, linear tariffs, two-part tariffs, three-part tariffs, tapered tariffs, progressive tariffs, co-designed tariffs.
- **Case**: Brittanica (tentative).
- **Required Readings**: [5, 6]
- **Assignment**: TBD.

1.8  Week 8
- **Lecture**: Price structures for marketing of IT goods (e.g., site licensing), performance-contingent pricing, differentiation through pricing schemes.
- **Required Readings**: [1](Ch. 7), [7]
- **Assignment**: TBD.

1.9  Week 9
- **Lecture**: Network effects in two-sided networks. Matching systems, search engines, recommender services, etc.
- **Case**: Adobe e-Books.
- **Required Readings**: TBD.
- **Assignment**: TBD.

1.10 Week 10
- **Student projects.**
Course Readings on myucdavis Web Site

The following articles (except for the two textbooks) will be available through the course web site. Depending on copyright restrictions we will either post PDF files of these articles in a secure area, or provide links for obtaining these files through the library system. Of course you can also do a search at the library and get these on your own. The most likely library databases to use are JStor and ABI/INFORM.


Further Reading:
