Course Information

Business organizations and markets use a wide variety of structures to coordinate the productive activities of their stakeholders. Dramatic changes in information technology and the nature of economic competition are forcing firms to come up with new ways of organizing work. Similarly, new types of digital information goods, much lower search costs, and improved targeting and personalization are changing the nature of many markets. This course uses economic theory to investigate the roles of information and technology in the existing diversity of organizations and markets and in enabling the creating of new organizational forms.

The class is designed for Ph.D students in management, economics, information technology, organizational behavior, industrial relations and related disciplines. For economists, this class offers the opportunity to apply economic tools to understand how information technology and information in general affect organizations and markets. For non-economists, this class offers an exposure to fundamental ideas in the economics of information, organizations, and markets.

A seminar class works because students come prepared to engage in thoughtful discussions of the material. Students are therefore asked to write informal, two page memos prior to several of the classes. These memos will generally be responses to some questions or issues we pose prior to each class. In addition, each student will be asked to lead part of the class discussion. This will typically involve meeting with the instructor ahead of time to discuss objectives and discussion plans and may involve suggesting new readings.

There are no exams in this class but a final paper is due at the end of the semester. It can be either a survey of the research in a particular area or a research paper on a specific topic. Either way, the paper can be thought of as a step towards developing a research program. In the past, some of these papers have led to publications. Further details of the paper will be provided in class.

Location: E51-390
Time: Mondays 2:30-5:25
First Class: Feb 8, 2010
Course Website: http://stellar.mit.edu/S/course/15/sp10/15.575/
Instructor’s website: http://digital.mit.edu/erik/

**Readings:**

Handouts are distributed in class.

Optional:


**Requirements:**

- Weekly readings and class discussion
- Each participant will serve as a facilitator for one or two class sessions
- Term Paper (suitable for conference submission when complete)
- Short papers: Five 2-page short papers, as noted in the syllabus

**Grading:**

Grades will be assigned on the following basis:

Class participation and leadership 40%

Two page papers on readings (5) 20%

One Survey or Research Paper 40%
### Session Overview

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<td>Introduction; Information Goods; Bundling</td>
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<td>Prof. Sinan Aral</td>
<td>2/16 (Tues)</td>
<td>Network Effects; Two sided networks and Information Complements</td>
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<td>IT, Productivity and Performance (2 page analysis due)</td>
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<td>Prof. Yannis Bakos</td>
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<td>Switching Costs and Knowledge Spillovers (2 page analysis due)</td>
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*Note: We will be updating both the topics and the specific readings based on student input. In particular, student preferences and recommendations will help shape the readings for the last half of the semester.*
Feb 8: Readings

1A. Introduction

Optional:


1B. Information Goods and Information Bundles

Optional:

Shapiro and Varian, Information Rules (S&V), Ch. 1 – The Information Economy


Recommended URLs:

http://www.apple.com/itunes/ What do you think of Apple’s pricing model?

http://www.ascap.com/licensing/generalfaq.html How does ASCAP’s revenue model work?

http://www.comcast.com/ Click on “get prices” for Comcast Cable. You can put in MIT and 02142 for the address, if you like. How does Cable TV charge for most content? Why?
Feb 16: Readings

2A. Network Effects and Increasing Returns

Shapiro and Varian, *Information Rules* (S&V), Ch. 7 – Networks and Positive Feedback


http://wwwpub.utdallas.edu/~liebowit/palgrave/network.html

2B. Two Sided Networks and Information Complements


Study Question:

Read the New York Times article by Motoko Rich about the free best sellers on Kindle.

1) Is this example really a 2-sided network? Why or why not?

2) When does a free strategy like this really work? What are the conditions for it to succeed? Where else might a strategy like this work?
Feb 22: Readings

3A. IT, Productivity and Labor Demand


Optional:


**Two Page Assignment due February 21 at 11:59pm (day before class).**

Please write a short, two page essay addressing the following questions:

1. To what extent can IT be analyzed the same way as other inputs into production (ordinary capital, labor, materials)? In what ways, if any, must it be treated differently? What the implication for theory and for empirical analysis.

2. Considering your answer to question 1, as well as the research that has already been done, how would you design a study to go beyond these studies and shed new light on IT, productivity and labor demand?

Please email this memo to: Erik Brynjolfsson (erikb@mit.edu). The length is a maximum of 500 words – be concise and feel free to use bullet points. Please email the memo to me no later than 11:59pm on Sunday (the day BEFORE class).
March 1: Readings

4a. Computational Social Science


4b. Social Networks


Optional:

Aral, Sinan, Brynjolfsson, Erik and Van Alstyne, Marshall W., "Productivity Effects of Information Diffusion in Networks" (May 18, 2007)


Study Questions

1. Lazer et al. describe how new types of electronic data is revolutionizing social network research and Wu and Brynjolfsson show how simple use of Google trends data can outpredict traditional models. What other types of “nanodata” are available today that could lead to breakthrough research?

2. Leading publications touted research published in the New England Journal of Medicine claiming that obesity, happiness and many other characteristics were “contagious”. Do you find this research credible? How can social network researchers distinguish contagion from homophily?
March 8: Readings

5a. Organizational Complementarities

Optional:


5b. Knowledge Spillovers
Tambe, Prasanna and Hitt, Lorin M., Job Hopping, Knowledge Spillovers, and Regional Returns to Information Technology Investments (February 1, 2010).

5c. Switching Costs


Two Page Assignment due March 7 at 11:59pm (day before class). Please write a short, two-page essay addressing the following question:

Pick an industry (preferably IT intensive, but not online brokerage) where you believe switching cost plays a role in competition.

A) Explain how you believe switching costs affects competition (including the prices firms can charge),
B) Explain how a firm might be able to affect their level of switching costs,
C) Discuss the implications of engaging in the practices you describe in part B (potentially positive or negative) for the firm and for overall consumer welfare.

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March 15: Readings

Search and Competition

Required:


Ellison, G. and S. F. Ellison "Lessons About Markets from the Internet", Journal of Economic Perspectives, Volume 19, 2, Spring 2005, 139-158

Recommended:


Stiglitz, J. "Imperfect Information in the Product Market." Ch. 13 in Schmalensee, R. and R. Willig (eds.), Handbook of Industrial Organization, Vol. 1. 769-844. Elsevier Science, 1989. (Read especially pp. 771-823.) Note: This is a long reading, and heavy going, but worth it, since it captures the essence of literally dozens of seminal articles, many by the Nobel Prize-winning author.

Study Questions

1. What is the role of search costs in electronic markets?
2. Think of a market that was created as a result of lower search costs. How did it come into being? How do you expect it to evolve?
3. What is the role of intermediaries operating electronic systems? (examples: eBay, Pricegrabber, Expedia). Will these tend to disappear over time when search costs are even lower?
4. How do Brynjolfsson and Smith’s findings compare to Bakos’s theory?
5. How do price dispersion vs. elasticity compare as a measure of competition?
6. Ariely and Lynch argue that sellers should have more transparent e-environments. Bakos notes that sellers have incentives to not do so. How do you explain the differences?
7. Describe an empirical phenomenon that you think can be explained by changes in search costs. How would you test your hypothesis?

Two Page Assignment due March 14 at 11:59pm (day before class).

We will have a debate in class on the following topic:

Resolved: Mobile search will lead to more price competition among traditional retailers.

You should prepare to defend both sides of the argument. Two people will be randomly assigned to each side of the debate. The “pro” side will have 4 minutes to make their case, followed by 4 minutes for the “con” side. Then each side will have 3 minutes for a rebuttal and a closing statement. Accordingly, please prepare a one-page case for the “Pro” side and a one-page case for the “con” side, with a maximum of 500 words total. You can use an outline format to maximize the amount of content per word. For the debate, you may not use PowerPoint, but you may use the blackboard and, of course, your notes.

Please email this memo to: Erik Brynjolfsson (erikb@mit.edu). The length is a maximum of 500 words – be concise. Please email the memo to me no later than 11:59pm on Sunday (the day BEFORE class).
March 22, 2008: No Classes, Spring Break
March 29: Collective Intelligence

Readings

4a. Knowledge in Organizations;


*Collective Intelligence:*


*Optional:*


1. What does Hayek regard as incomplete in the existing (i.e., 1940’s) research? What do you regard as his contributions? How are these relevant to IT and organizations today?
2. How does Jensen and Meckling’s approach to knowledge differ from Hayek?

*Due: Paper Proposal. Details discussed in class.*
April 5: Economics of Information and “Superstars”

Readings

Required:

Recommended:

Two Page Assignment due April 4 at 11:59pm (day before class). Please write a short, two-page essay addressing the following question:

1. How can the superstar theory of Rosen help understand the money earned by the super-rich?
2. How will the proliferation of the most recent wave of Internet and digital technologies affect the sales of music and the earnings of musicians?

Please email this memo to: Erik Brynjolfsson (erikb@mit.edu). The length is a maximum of 500 words – be concise and feel free to use bullet points.
April 12: Innovation Incentives/Open Source

Readings

Required:


Eric von Hippel will be joining us for the first part of class


Recommended:


7. Summary of the Digital Millennium Copyright Act by U.S. Copyright office


The following two are books. Feel free to look at them if you are interested, now or at some future time.


**Study Questions**

Please think about the following questions as you do the readings.

1. How do Carliss Baldwin and Eric von Hippel see as the key drivers of the “paradigm shift” they describe? Do you agree? What questions do you have for Prof. von Hippel, who will be coming to class?
2. What does Randy Davis think are the main problems with current intellectual property protection for software? What is his proposed solution?
3. Where does Eric Raymond think open source software will be most successful? Do you agree?
4. Can you think of any information goods with incentives systems similar to the one described by Brynjolfsson and Zhang?
5. Sloan Management Review plans to make its articles available on the web and wants to build a creative community of content and discussions. What should the “business model” be? Why?

**Assignment due April 11 at 11:59pm (day before class)**

Students will be asked to give a short presentation to the class. After reading all the articles, you should pick one of the first three articles (by Baldwin and von Hippel, Davis, or Raymond) that you most AGREE with and one that most DISAGREE with. Prepare a three to four minute explanation of why your favorite article is more convincing than the one you disagree with. Be detailed with specific economic arguments.

Please write up the talking points for your mini-presentation in a two-page paper for class, with a maximum of 500 words total. Please email this memo to: Erik Brynjolfsson (erikb@mit.edu).
April 26: Consumer Surplus and the “Long Tail”

Readings

Required:

6a. The Long Tail


6b. File Sharing and Music Sales


Recommended:


Liebowitz, Stan J., "How Reliable is the Oberholzer-Gee and Strumpf Paper on File-Sharing?" (September 2007). Available at SSRN: http://ssrn.com/abstract=1014399*

“More on the famous file-sharing paper “
http://newmarksdoor.typepad.com/mainblog/2008/03/more-on-the-fam.html#more

Smith, Michael D. and Telang, Rahul, "Competing with Free: The Impact of Movie Broadcasts on DVD Sales and Internet Piracy" (January 2008). Available at SSRN: http://ssrn.com/abstract=1028306 *


**Study Questions**

1. What is the Long Tail?
2. What is the theory and evidence for the Long Tail becoming more important? What is the theory and evidence for the Long Tail becoming less important?
3. Looking forward 5-10 years, what business and economic predictions can you make based on the Long Tail theory and evidence?
4. Why might file sharing reduce the sales of music CDs? Why might it increase their sales? Why might file sharing be correlated with increases in CD sales even if there was no causal relationship?

**Assignment**

Please email a draft of your term paper before class. We will distribute these to your classmates for them to read and comment on before your presentation.
May 3: Student Papers and Presentations

Required Readings

Draft Student Papers and Presentations

Advice on writing and presenting (Optional):


10. Levine, David, “David Levine’s Cheap Advice: How to Present for Results”.  
http://faculty.haas.berkeley.edu/levine/cheap_advice.html#results

11. Piazzesi, Monika, “Tips on How to Avoid Disaster in Presentations”  
http://www.docstoc.com/docs/2558775/Tips-on-how-to-avoid-disaster-in-presentations

12. David Laibson’s Job Market Advice  
http://www.economics.harvard.edu/files/LaibsonNotes.pdf


Assignment due May 2 at 11:59pm (day before class)

1. Please prepare a presentation for class based on your term paper.  
The presentation should be approximately 15-20 minutes, plus 10 minutes for Q&A.  
Feel free to ask the class for help or advice on how to best addressing portions of your research question. Please send me either your PowerPoint/Acrobat/Keynote presentation file, or a detailed written outline for your talk.

2. For each one of your classmate’s papers, please prepare a separate sheet with your brief (1-2 sentence) answers to these questions:  
   1. What did you like best about this paper?  
   2. What would you recommend changing about this paper?  
   3. What is the most important thing you learned from this paper?  
   4. What concrete suggestions do you have (e.g. related articles, contacts at companies or elsewhere, data sources,other comments)?  
   5. What questions do you still have about the research? (You may want to ask these during your classmate’s presentation).

Print out each of these sheets and bring them to class. During each presentation, you may wish to write additional comments. After class, give the relevant sheet to each presenter and collect corresponding sheets on your own presentation from your classmates.
May 10: The Future of the Information Economy

It’s useful to understand what the future will be like. After all, we’ll be spending the rest of our lives there. Fortunately, some predictions are relatively easy to make. For instance, we can be pretty confident that Moore’s law will continue and not only microprocessors, but all sorts of information and communication technologies from data storage and memory, to fiber optics and wireless bandwidth, will improve by orders of magnitude in the next decade. But what are the implications for how we live and work, or even whether we live and work? Two authors, each with something of a track record, make their best estimates. The predictions may surprise you.

Readings

Pick one:

Kelly, Kevin “We are the Web” KurzweilAI.net Jan, 2006
http://www.kurzweilai.net/meme/frame.html?main=memelist.html?m=1%23664
(originally published in Wired, August 2005) (11 breezy pages)

Joy, Bill “Why the Future Doesn’t Need Us”, Wired, 8.04
http://www.wired.com/wired/archive/8.04/joy.html
(19 sometimes-depressing pages)

Study Questions

Please think about the following questions as you do the reading and think back on the course.

1) Do you think the bold, shocking predictions made in the article(s) you read are likely to come true? If so, what are the implications for you personally? If not, what is the flaw in the author’s reasoning?
2) Make one bold, shocking prediction that you are ready to share with the class and be ready to explain why you think it might come true.