University of Pennsylvania, Wharton School
Department of Operations and Information Management

**OPIM 210 - Management Information Systems**
**Fall 2007**
Section 001: MW 12-1:30

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## Course Overview

With the recovery of Internet-based businesses and the need for ever increasing levels of performance and efficiency for all firms to compete in the global economy, information technology (IT) investment is at an all time high. While there is certainly heavy demand for technology skills, there is even greater demand for analysts and managers that can combine technology knowledge with business skill. This course focuses on how information and information systems can be used to achieve competitive advantage in information intensive businesses. The first half of the class focuses on IT strategy and how IT can be combined with new business practices to create economic value. The second half of the class focuses on IT implementation – the necessary technology and business knowledge needed to evaluate, coordinate, and manage technology implementation.

New for 2007. This course has had a significant redesign for Fall 2007. Due to the increasing technical skill of students we have reduced the amount of pure technology content to make room for a broader treatment of information based businesses and competition in digital markets. Also, with a few exceptions, the technology material will be combined with a case discussion of a relevant firm.

This course is specifically targeted at students interested in information technology consulting, investment banking in high technology industries, and entrepreneurial opportunities in the information economy. There are no prerequisites except for a general interest in both business and technology issues.

## Course Format

Classes will include a mixture of case discussions, lectures, computer demonstrations and (occasionally) guest speakers. The course is highly interactive in nature, so students are expected to come to class prepared to discuss the readings.

Material: There are three sources of reading material for the class: 1) A bulk pack from Wharton reprographics, and 2) A trade book, "How Computers Work" (8th Edition, by Ron White, 2005), 3) The course Webcafe. Although I will try to post as much of the course content on Webcafe as possible, some readings cannot be posted digitally due to copyright restrictions – as such you will need to acquire the bulk pack as soon as possible. You will not need "How Computers Work" until a few weeks into the course, so online ordering is a reasonable strategy (encouraged even). When I use slides, I will typically

distribute them to the class as well as posting them on the course web site (handouts will be billed to your bursar account through Wharton reprographics).

Assignments: There will be 5 Short Paper opportunities (you choose 4 out of 5) plus two *Problem Sets.* Short papers are approximately 1 page in length (single spaced, regular margins) and address a specific issue related to the day's session. There are two problem sets which have similar content to Short Papers but more or more involved questions.

There will be both a midterm and a final. The midterm will focus on the technology strategy portion of the course, while the final will focus on the course as a whole. These two exams are equally weighted in the final grade. The midterm will be in class, the final will most likely be take home.

There will be a three-part course project to draft components of a business plan for an information technology related innovation. The first part, due around mid-semester is a description of the idea; the second part is the business case, and the emphasis of the third part is implementation. These components will be done in small groups (size to be established early in the semester) or individually. Pretty much any IT-related innovation is acceptable for the project – software, a technology-enabled service, or a web- based business. Past projects have included: applications of cellular or radio-based personal digital assistants, a gaming center, GPS and mapping services for public safety agencies, "smart" automobile keys, personal security devices, location-based services, reengineering the Wharton campus recruiting function, on-demand video service, and a variety of web-based businesses ranging from interactive sports trivia games to on-line auto dealerships.

You are strongly encouraged to collaborate with your fellow students on working through the course material including the problem sets and short essays. However, any work which is handed in (other the group project) must be written entirely and only by you, which includes doing your own versions of any computer generated text or diagrams.

**Grading**

Grading is based on a number of individual and group exercises:

| | |
|---|---|
| Short Papers (4) | 15% |
| Problem Sets (2) | 15% |
| Mid-term examination | 25% |
| Business Plan Project | 20% |
| Final examination | 25% |

Because we will often discuss the problem sets on the day that they are due, **late assignments cannot be accepted.** Note that late is defined as any paper arriving after the beginning of class on the due date (unless otherwise noted). If a due date presents a particular problem, I am happy to discuss ways in which you can complete the assignment early.

Class participation will also be included as part of the grade. Students are expected to come prepared to participate in the case discussions and all students are expected to contribute at least occasionally in class. Quality of contribution is much more important than quantity. I recognize that not all students are equally comfortable with participating in class; however, this is a relatively low risk environment in which to practice skills that you will need later in life. The class participation grade policy is simple: if

you make an effort to attend regularly and participate occasionally, you will get full credit. If you are concerned about your class participation, please come see me to work out a solution.

The grade distribution for this course is not fixed. In the past, I have given about 25-35% A's and 50-60% B's. Grading is based on rank order performance relative to your peers, and the cutoffs for the various letter grades will vary depending on how the class as a whole performs.

**Questions and Assistance**

Since this is a course in information technology, IT will be used heavily for distribution of course materials and assignments. I will post reading guides, readings (when possible), assignments and lecture on the course Webcafe. This is the definitive source for the course schedule and you are expected to review the material on the Webcafe before each class (note that due to copyright issues and availability there will be materials that are ONLY on the Webcafe and some materials that are ONLY in the bulk pack so you will need access to both). I will also occasionally send e-mails to the course reading list for time sensitive items. You are welcome to use other electronic communications channels and discussion capabilities on the Webcafe or other technologies but I do not intend to monitor or moderate these discussions.

I will hold regular office hours to discuss course and advising related issues. The TA will hold office hours by appointment. The best way to reach me is via e-mail or stopping by my office. I read my e-mail several times a day up until about 1AM (once or so a day on weekends), and am generally around my office during the early part of the week when I am not teaching or in meetings. Feel free to stop by and see me at any time on course related issues although I can only guarantee that I'll be free during office hours.

Finally, there are several books on reserve at Lippincott that may prove useful. I have placed copies of "How Computers Work", "How the Internet Works", and "Business Plans that Win $$$" on reserve. These books can also be bought from Amazon (linked off the course web site) and many other internet sites. Please see me if you would like additional suggestions for supplementary readings on a particular topic.

**On Technical Ability**

Many of you have a strong background in technology from personal experience or educational background. If you are an expert in a particular area, please contribute your expertise to the class discussion. A potentially dangerous strategy is to assume that because you are technologically literate, you know everything you need to know about information technology strategy and management. In the past, several students put this theory into practice with unsatisfactory results.

The course is deliberately designed to provide a baseline of technical knowledge for those without this background and then build complementary analytical skills. The material we cover is not something you would likely discover on your own and is not typically taught in engineering or computer science. While it is difficult to not get a B or better if you do the readings and attend regularly, it is very difficult to do well if you rely only on prior knowledge and/or doing the readings on your own. Moreover, technological progress notwithstanding, it is very difficult to participate in class when you aren't there.

**Guidelines for Written Work**

*Problem Sets and Short Papers (Case Analyses and Technical Problems).* A few of the questions on the problem sets are straightforward technical questions, which you should answer as completely and concisely as possible. The majority of the questions are case analyses that will ask you to examine a particular business situation in depth. The most important thing to keep in mind as you do the problem sets and short papers is that you must answer the questions. I am not asking you to write an interesting story, conduct a general competitive analysis, or summarize the facts in the case. Problem sets with numbered questions should have numbered answers. You should emphasize analysis of the issues, with selected facts from the case used to bolster your argument. For case-based problem sets, your analyses should be typewritten, use formal business writing and contain no typographical errors. You are welcome to use bullet points, indentations or other styles that help you organize and present your thoughts but don't annoy the graders by using 8-point fonts, *bizarre typestyles,* unreadable colors, or unusual margins. Maximal credit is given to answers that are both complete and concise.

Many of the frameworks we discuss in the class are particularly useful for answering the questions. However, do not try to shoehorn a question into a framework that does not fit (not all management problems can be solved by Porter's "five forces"). Also, do not try to demonstrate that you have done the reading by including as many terms and phrases from the text and the articles as you can. In particular, avoid management gibberish, buzzwords ("we are going to proactively reengineer our key business processes to focus on our core competencies and exploit scale economies in pursuit of competitive advantage") and platitudes ("people are our most important asset") since the use of such phrases suggests to intelligent people that you really have no idea what you are trying to say. If you want to use a particular management phrase such as "competitive advantage", define your terms precisely and apply them consistently and thoughtfully.

**Reading Guides for the First Three Sessions**

Sep 5 W Introductions, Course Overview and the Business Value of IT

Read Brynjolfsson and Hitt, Beyond the Productivity Paradox
Read: Course Syllabus

Things to do:
1) Pick a spot in the classroom where you can stay for a while (so I can learn your name)
2) Fill out the online "student profile" (so I can get a sense of who you are) – see the Webcafe for the link.

Sep 10 M Strategy Fundamentals in Technology-Intensive Industries

Read: Background on Competitive Strategy (read as needed)
Reading: Varian, Economics of Information Technology

Things to think about:
1) What is competitive advantage? What is sustainable competitive advantage? How would you know it if you saw it?
2) Do you agree that profitability of a firm is principally determined by industry structure (as argued by Porter)?
3) What is difficult about obtaining a sustainable competitive advantage in an information technology intensive industry? How about on the Internet?
4) What is price discrimination? What does it have to do with IT?
5) What is product differentiation? What does it have to do with IT?

Sep 12 W Information Goods

Read (online): Markets for Information Goods (Varian)
Read (online); Versioning: The Smart Way to Sell Information

Things to think about:
1) What are the essential properties of information goods? Do all information goods exhibit these properties?
2) How do the properties of information goods affect competition in information goods markets (or in other words, why might information goods competition be different)?
3) What are the benefits and limitations of versioning as a strategy?

*Short Paper 1 (max length 1 page, Electronic Submission – Due by 9/17): Identify an information good that utilizes an interesting pricing strategy. Then: 1) Describe the good and the pricing strategy, 2) explain why you think it is interesting, and 3) make some suggestions how the product could be more profitable through changes in product design or pricing approach.*

Course Calendar (initial plan – schedule after the first two weeks subject to change)

| Date | Day | Session | Content | Due |
|---|---|---|---|---|
| 9/5/2007 | Wed | 1 | Introduction/Business Value of IT | |
| 9/10/2007 | Mon | 2 | IT Strategy Introduction | |
| 9/12/2007 | Wed | 3 | Economics of Information Goods | |
| 9/17/2007 | Mon | 4 | Software: Microsoft Case | SP1 |
| 9/19/2007 | Wed | 5 | IT Hardware: Intel Case | |
| 9/24/2007 | Mon | 6 | IT Hardware II: EMC/VMWare Case | SP2 |
| 9/26/2007 | Wed | 7 | Database: MySQL Case | |
| 10/1/2007 | Mon | 8 | IT and Organizational Design | |
| 10/3/2007 | Wed | 9 | Knowledge Management: KPMG | SP3 |
| 10/8/2007 | Mon | 10 | Networking Technology | |
| 10/10/2007 | Wed | 11 | Networks: Cisco Systems | |
| 10/15/2007 | Mon | 12 | No Class | |
| 10/17/2007 | Wed | 12 | Internet Technology and Security | PS1 (Fri) |
| 10/22/2007 | Mon | 13 | Wireless Technology: NTT DoCoMo | |
| 10/24/2007 | Wed | 14 | Midterm | Project: Ideas (Fri) |
| 10/29/2007 | Mon | 15 | Information Strategy: Cemex | |
| 10/31/2007 | Wed | 16 | Bundling and Unbundling | |
| 11/5/2007 | Mon | 17 | Two-Sided Networks: PayPal | SP4 |
| 11/7/2007 | Wed | 18 | Electronic Markets: Online Advertising | |
| 11/12/2007 | Mon | 19 | Valuing IT Investments | |
| 11/14/2007 | Wed | 20 | Software Project Management | Project: Bus Case |
| 11/19/2007 | Mon | 21 | Software Projects: Classic Mistakes | SP5 |
| 11/21/2007 | Wed | 22 | Software Projects: ERP Systems | |
| 11/26/2007 | Mon | 23 | Intellectual Property and Open Source | |
| 11/28/2007 | Wed | 24 | Outsourcing and Offshoring | |
| 12/3/2007 | Mon | 25 | Outsourcing Risks: Stasis Bank Case | PS2 |
| 12/5/2007 | Wed | 26 | Course Summary | Project: Impl Plan |

SP=Short Paper, PS=Problem Set