

**BUS-360 PRINCIPLES OF MANAGEMENT OF INFORMATION SYSTEMS/
also called TECHNOLOGY MANAGEMENT**

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Office Hours: Mon. & Wed., 1-3 p.m. or by appointment

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[Note: after sln, two hyphens, two underlines, then 2004]

Semester: Fall Classes: Tues, Thurs., 5 to 6:15 p.m.

DESCRIPTION: This introductory course in Technology Management is intended for business and non-business majors. It explores how technology has acted as a major pressure on business organizations and government in the last 40 years. We will illustrate by examples why certain, firms/nations with good technology have become global and continues to innovate while other, though blessed with technical talent and cash, failed to become a first tier player in the global scene and are fading.

Typical elements of analysis of firms include:

- Global mindset of the company's culture and its ability to think of the entire business process of which technology is only one of the key elements
- How quickly a firm can respond to customer's wish
- Distinctive technological competencies may allow finding why, when and by what means the company established itself on the market. How did those competencies emerge? What role did they play in competitive positioning of the company
- R&D profile and expenditure; in which domains is the company a leader or a follower; is the company in basic research?
- Management of patents, licenses, technology acquisition and off-shoring
- Manufacturing or other process technologies; examples of manufacturing methods and process technologies developed or applied in the company may be used to illustrate how technology strategy has been implemented, and how did it influence business position of the company.

COURSE OBJECTIVES:

After completing this course you will understand how technology -- with new innovations every minute, quick obsolescence of what is available today, information overload on everyone, and unlimited access to Internet—exerts enormous pressure on corporations, non-profit organizations, national leaders. You will also learn the interplay between technology and two other key players which shape the world we live, namely, market and societal values. Market spawns global competition, changing workforce, rising power of the consumers and society demands social responsibility from corporations, enacts new government regulations, ethical standards, and sets limit of deregulation. These two factors in turn affect the development and deployment process of old and new technology.

REPRESENTATIVE STUDY MATERIALS

(subject to change)

Importance of Process Innovation

Y. Sheffi lecture in 2007, *Geeks and Chiefs* (available from mit.edu.com)

Technology Trends

T. Friedman lectures in 2005 and 2007 (available from mit.edu.com); his book, *World is Flat, Release 3.0*, Penguin Books (also available in Japanese from 日経新聞出版社)

Application of Technology in Businesses

Issenberg, S. (2007) *The SUSHI Economy: Globalization and the Making of a Modern Delicacy*, Gotham Books, (also available in Japanese from 日経新聞出版社)

Herstatt, C., Stockstrom, C., Tschirky, H., Nagahira, A. (2006). *Management of Technology and Innovation in Japan*. Springer.

Autobiography of Yoshizo Shimano (in Japanese, appeared in *Nikkei* in 2005)

Organizational Structure and Birth of Innovations

Nonaka, I, Takeuchi H.(1995). *The Knowledge-Creating Company*. Oxford University
Von Hippel, E. (2005), *Democratizing Innovation*, The MIT Press.

S. Burger & MIT Industrial Performance Center, (2005), *How We Compete*, Doubleday; also translated into Japanese :グローバル企業の成功戦略

Chandler, A. D., Jr. (2005). *Inventing the Electronic Century*. Harvard University Press.

Christensen, C. M. (2003), *The Innovator's Dilemma: The Revolutionary Book that Will Change the Way You Do Business*.

ASSESSMENT:

2 midterms 40%; final 20%; presentations 25%; assignments 15%

ACADEMIC PREPARATION: Students are encouraged to have successfully completed courses in algebra, statistics, economics, accounting, and physics or chemistry before taking this course. However, it is not a requirement to enroll. Students will find it advantageous also to have worked part-time or full time and/or completed a course in marketing. Non-business students with interest in technology are welcome.

COURSE FORMAT AND ACTIVITIES:

Class sessions will be divided into lectures and presentations/discussions. On lecture days, I (or guest speaker) will review theories and key concepts related to a particular theme. Before the lecture, students are expected to have completed the assigned reading. On student group presentation days, students who are assigned a specific topic and background material (which

may include video clips, newspaper articles) and will give a Power Point presentation. Midterm exams are based on lectures and such presentation materials.

SCHEDULE:

The following is a representative schedule and is subject to change

Week 1: Why liberal arts students must study process and product technology

Week 2-4: Key technology trends, based on T. Friedman's *World is Flat*

Week 5-7: Freezing technology and sushi economy

Week 8-9: Shimano (called Intel of bicycle industry) and Cold Forging Technology

Week 10: Leading edge users and innovation Models by V. Hippel of MIT

Week 11: Organization and innovation models by I. Nonaka of Hitotsubashi U.

Week 12: Disruptive technology and innovation models by C. Christensen of Harvard

Week 13: How top corporations compete by S. Burger of MIT

Week 14: Project Presentations

During Week 1, we will have an extra session in the evening to get to know each other, probably over pizza and coke or something more healthy. I want to find out the your background and expectations from this course.