Strategic Information Technology Management MIS 375 (04010) Fall 2010 M W 12:30 – 2:00 p.m., UTC 1.130

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Hours : M W 2:00 - 3:30 p.m.

Course Objectives

Information technology (IT) has the potential to change the landscape of global competition, increase productivity, change industry structure, make markets more efficient, and alter a firm's boundary and competitive position. While IT can provide competitive advantage, it has, in many cases, become a strategic necessity. It is no wonder that more than \$2 trillion is invested in IT each year on a worldwide basis, which is over 50% of all capital expenditures. Given the level of investments and the importance of IT, it is imperative that forward-thinking managers understand the process of using information and evaluating, assimilating, and managing IT within products, services and all value activities of a firm for operational efficiency, and business partner and strategic values. Managers need to be able to articulate the impact of IT products and services at the firm, industry and economy levels, so that investments are meaningful and productive.

However, the bursting of stock market bubble, decline in IT investments, increase in well-publicized bankruptcies, and the significant gap between the promise and the perceived benefits of IT have led skeptics to question the economic contribution of IT. The skepticism is not bad in itself, since it raises numerous questions involving how IT can provide cost leadership, differentiation and/or strategic benefits. The true benefits of IT can be realized only when organizations exploit certain characteristics of IT, and align business processes, incentives and partner (e.g., customers and suppliers) readiness with IT capabilities.

This course is designed to provide students frameworks and analytical tools to understand the economic and strategic implications of IT, transformation dynamics, and risks and pitfalls of IT decisions. The course will address many issues that are of interest to all

managers including (a) identifying the characteristics of IT innovation and their implications on firm IT adoption; (b) understanding IT and the Internet contributions to economic growth; (c) evaluating the strategic implications of IT; (d) developing a framework for electronic business transformation; (e) exploring emerging IT-driven business practices (e.g., supply chain management, customer relationship management, and enterprise resource planning); and (c) developing frameworks for IT investment justification.

Course Themes

Theme I: Firm and industry transformation enabled by IT

Theme II: Macro-level assessment of the impacts of IT -- Economics of IT investments -- efficiency, productivity, business value, firm & economy-wide performance, the information economy, etc.

Theme III: Strategy & economics of IT -- IT as a driver of strategies, the fit between technology and business strategies, IT-induced changes in firm boundaries, leveraging IT for cost and value leadership, IT and switching costs, integrating into business partners' value networks, IT enabled new business models, etc.

Theme IV: Justifying IT decisions: ROI, risk assessment, options approach to IT investments

Theme V: Leveraging customer knowledge in a digital world

Required Course Material

- 1. Textbook: "Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner" by Galit Shmueli, Nitin R. Patel and Peter C. Bruce, Wiley-Interscience (December 11, 2006), ISBN-10: 0470084855, ISBN-13: 978-0470084854.
- 2. Readings packet available at **IT Copy & Printing** (512 West Martin Luther King, Austin. Tel: 512-476-6662).
- 3. Additional material will be posted on the Blackboard.

Grading

Your course grade will be based on the following weights:

ITEM	Date	Weight
	(month/day)	
1 Group Case Study	11/29	11%
2 Individual Casa Writa una	9/20, 10/11,	24%
3 Individual Case Write-ups	11/15	
Take home midterm	10/13	25%
Take home final exam	12/1	30%
Course/class participation		10%

A grade of X (incomplete) is very uncommon and will be given only for unusual circumstances (e.g., documented medical emergencies for you or your <u>immediate</u> family members). You are required to provide sufficient evidence of the problem and notify me as soon as it occurs. **NOTE:** A student receiving an incomplete grade in the course is required to complete such work by the end of the next academic session.

Class Participation

In this class much of the learning is dependent on the accessing the combined knowledge and experience of the group. It is everyone's job to keep the discussion productive and moving forward. In evaluating your class participation grade, I take the following into consideration:

- useful arguments expressed coherently and succinctly
- good analysis supported by case facts or your own experience
- relevance to previous contributions, i.e. ability to listen and build on what others say
- constructive disagreement
- regard, respect and acknowledgment of others' contributions
- readiness to contribute to class discussions

Case Reports

Several cases will be discussed during the semester. You are <u>individually responsible</u> for 3 case study write-ups, about 4 pages, 12 font size, single spaced, due at the beginning of class on the day of the case discussion. I have also assigned a group project (ideal group size is 4-5 students). <u>Late submissions will not be accepted.</u> The objective of these assignments is to help you prepare for the case discussion, and to maximize the value of the case discussion for the entire class. A set of questions for each case will be handed out in class two weeks in advance. Your write-up should address the questions based on the facts discussed in the case, and your

own research through other sources. Case write-ups will be evaluated on the accuracy and details of facts, analysis and clarity of arguments. The four cases are:

1. September 20 : "Cemex: Global Growth Through Superior Information Capabilities"

(individual)

2. October 11 : "FedEx Corp" (individual)

3. November 15 : "RFID at the Metro group" (individual)4. November 29 : "Air France Internet Marketing" (group)

Most of the questions in the cases require you to collect additional information above and beyond what is already in the case. This activity helps you develop one of the critical skills for managers, which is the ability to search, collect, and synthesize information that is available in the public domain and to make meaningful inferences. For individual assignments, please do not share your thoughts or case analyses with others. Please cite the web addresses or any magazine articles that you use in your write-up. Please don't include the actual articles.

Course Agenda

Date	Topic	Readings
August 25	Introduction to IT enabled business innovation: Strategic and economic perspectives	
August 31	How IT influences business strategies & decisions	 Read the first half of A. Barua and P. Konana, "IT-Enabled Transformation" in the readings packet.
September 1	IT enabled customer knowledge & pricing strategies	G. Loveman, "Diamonds in the Data Mine," in the readings packet
September 6	IT, business processes & operational efficiency:	 Read the first half of A. Barua and P. Konana, "IT-Enabled Transformation" in the readings packet.

September 8	Assessment of financial impacts of IT on operational efficiency: inventory, receivables and payables	 Read the second half of A. Barua and P. Konana, "IT- Enabled Transformation" in the readings packet.
September 13	Competitive advantage through IT	 Porter, "Strategy and the Internet" (in the readings packet)
September 15	Competitive advantage through IT	 Porter and Millar, "How Information Gives You Competitive Advantage" (in the readings packet)
September 20	Case study: "Cemex: Global Growth Through Superior Information Capabilities"	Cemex Case study (individual) write-up due electronically by the beginning of class
September 22	Competitive advantage through IT	Porter and Millar, "How Information Gives You Competitive Advantage" (in the readings packet)
September 27	Switching cost and network effects	Annotated slides
September 29	Switching cost and network effects	Annotated slides

October 4	Business intelligence and data mining : Introduction & XLMiner setup	Shmueli, Patel and Bruce, "Data Mining for Business Intelligence," Chapters 1 and 2
October 6	Midterm Review	Go through sample midterm (to be posted on the BB)
October 11	"FedEx Corp: Structural Transformation Through e- Business"	Case study report (individual) due by beginning of class
October 13	Take-home midterm	
October 18	Business intelligence and data mining: Evaluating classification methods	Shmueli, Patel and Bruce, "Data Mining for Business Intelligence," Chapters 4
October 20	Business intelligence and data mining: Classification methods	Shmueli, Patel and Bruce, "Data Mining for Business Intelligence," Chapter 7
October 25	Business intelligence and data mining: Association Rules	Shmueli, Patel and Bruce, "Data Mining for Business Intelligence," Chapter 11

October 27	Business intelligence and data mining: Mini cases	 Shmueli, Patel and Bruce, "Data Mining for Business Intelligence," Chapter 13
November 1	IT ROI	• "B&K Distributors"
November 3	IT Options	Dixit and Pindyck, "The Options Approach to Capital Investment" HBS Product # 95303.
November 8	IT Options	Dixit and Pindyck, "The Options Approach to Capital Investment" HBS Product # 95303.
November 10	IT Options	R.G. Fichman, M. Keil and A. Tiwana, "Beyond Valuation: Options Thinking in IT Project Management," California Management Review, February 2005.
November 15	"RFID at the METRO Group"	Case study report (individual) due at the beginning of class

November 17	Online search and paid advertising	• "Google Inc."
November 22	Prediction markets	 "Prediction Markets at Google"
November 24	Prediction markets	 "Prediction Markets at Google"
November 29	Case study: "Air France Internet Marketing"	 Case study report (individual) due at the beginning of class
December 1	Review for Final + Take-home final handed out	