

**IOM538 Integrating Information Technology to Your Business
Strategy
HOH306
Fall 2005 Tues 6:30-9:30pm**

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Office Hours: Tuesdays 1-2pm; Thursdays: 4-5pm

Course Description & Goal:

Consider These Facts:

- GM spends more than \$1.5 billion on information technology to tie together design centers around the world and dramatically reduce the time to market for a new vehicle
- Cisco uses the internet to take 90% of its orders
- Pepsi co uses data mining to develop new marketing strategies to help it take market share from Coke
- A 2001 Brookings Institution study estimates that in one year, the internet saves 1.2 to 2.5% of GDP measured in 2000 dollars
- Companies spend on average 2/6% revenues on info techn; yet it is not how much you spend, but how you spend it that drives productivity (Deloitte Consulting study of 488 companies)

IT divides managers into 2 types: those who *don't 'get it'* (managers who provide little IT-enabled business leadership, expensing technology rather than using it for its competitive advantage) and managers who *'get IT'* (managers like Michael Dell, John Chambers and Jack Welch who understand what technology can do and want to take maximum advantage of it).

The goal of this course is to help you *'get IT'* by:

- Understanding relationship between IT strategy and business strategy
- Learning about how IT architecture and infrastructure can limit or enable business growth
- Identifying different IT-enabled business models such as rapid sense-and-respond, rapid experimentation, reuse and regeneration of information resources, cross-organizational collaboration
- Managing IT Outsourcing as a critical competitive weapon
- IT security as a component of today's business strategy
- Technology forecasting: what should we expect in the future for business

Prerequisites and Technical Requirements

None

Reading

Management Information Systems Custom Course Book (2005) Mc Graw Hill. *Excerpts from Applegate et al Corporate Information Strategy and Management* [Applegate]

Pearlson, K.E. & Saunders, C.S. *Managing and Using Information Systems: A Strategic Approach*. 2nd Edition. Wiley 2004. [Pearlson]

Brown, S.L. & Eisenhardt, K.M. *Competing on the Edge: Strategy as Structured Chaos*. HBS Press 1998, ISBN: 0-87584-754-4 [Brown]

Assessment

- 312 points total
- Future Technology Scenario: 72
- Today's technology: 60
- IS Strategy Analysis: 150
- Participation (bring 1 question to each class from reading + prep for case discussions (case questions for preparation will be posted in Outlook Public Folder a few days before) X 9 sessions): 30

Session	Date	Readings	Due	Topic
1	8/23			Course overview. Why IT strategy, Overview & framework
2a	8/30	- Pearlson Ch 6 - Pearlson Case: Saab p. 150; if time permits: Houston Airport pp150-152 - Gartner Hype Cycle for Emerging Technologies 2004 (find on Library Electronic Resources)	"Future Techn" Scenario signups Today's Techn signups	-Understanding IT architecture and infrastructure from a strategic perspective -Future Technology Scenario #1 (I present on Wiki's) -Preparing for the IT Strategy Analysis Assignment (SHs, Qs, identify industry) - Preparing for Today's & Future Techn presentations
2b	9/6	- Pearlson Ch 7 - Applegate Case 2-1: Taco Bell	Today's Tech: Wireless architectures Today's Tech: Linux & Open Source Software	- IT architecture & infrastructure cont. - Taco Bell case analysis - Preparing for IS Strategy Analysis Project

			Future Techn: Sign up for IS Strategy Analysis Project	
3a	9/13	- Applegate Chap 4 incl Appendix 4A	- Future Techn Scenario - Today's Tech: ERP	- Guest Speaker: Tim Vadney, IT Strategy, Deloitte Touche, "Competitive Analysis and IT Strategy for a Leading Japanese Automotive Manufacturer" - Analyzing & Developing an IT-enabled business model. - Time in class: Strategic IS Analysis (Identify questions to ask to understand client's business model and possible roles for IT)
3b	9/20	- Applegate Case: Jamcracker	Bring Ex of failed assumption in a business model Ask client Qs Future Techn Today's Techn: CRM/ERM	- IT-enabled business models cont - Time in class: reviewing what learned about client's business model and possible roles for IT
4a	9/27	- Pearlson ch2 - Applegate Case: Dell (p.134-145 (just past Ford Case)	Future Techn Scenario Today's Tech: RFID	- Fitting business models with competitive environment. Identifying factors affecting IT Strategic Opportunities; Extending Porter's models - Time in class: IS Strategy Analysis (Identify Qs to ask about client's competitive envt)
4b	10/4		Future Tech Scenario Today's Tech: Use of agent-	-Factors affecting IT Strategic Opportunities cont -Learning Marshall resources for strategic analysis by John Juricek,

			based modeling & AI today Ask Client Qs	Marshall Labs (in HOH401 from 8-9:30) - Time in class: Analyze client's competitive envt. Prepare 1 st presentation on Topics 1-4
5	10/11	- Brown: ch1 & 9	-Future Techn Scenario -Today's Tech: Corporate dashboards	-Using IT to create infrastructure for Hypercompetition -Time in class: Round Robin presentation on IS Strategy Project Topics 1-4
6	10/18	- Brown Ch 2 & 5 - Case: Western Digital (distributed in class week before)	- Future Tech - Today's Tech Collaborative filtering	- Using IT to help firm improvise - Using IT to help a firm experiment & rapidly fail - Time in Class: IT Strategy Project: Brainstorm multiple what-if scenarios for strategic use of IT; identify Qs to ask client
7	10/25	- Brown: Chs 3 & 4 - Pearlson Ch 3 -Pearlson Case: McKinsey (p303-305) - Case: Radical Innovation without Collocation (distributed week before in class)	-Future techn Scenario -Today's Tech: Web services -Ask Client Qs	- Using IT to help firm reuse/regenerate as a business strategy. - Using IT to help firm create cross-business synergies through collaboration & virtual networking - IT Strategy Project: continue brainstorming what-if scenarios & prepare for presentation of Topics 1-6
8	11/1	- Applegate ch 9 -Applegate Case: Xerox	-Future Techn Scenario -Today's Tech: Electronic signatures	- IT Outsourcing as a critical component of business strategy - IS Strategy Analysis Topics 1-6 Round Robin
9	11/8	- Applegate Ch 6 - Applegate Case: iPremier	-Future Tech Scenario -Today's Tech: Data Mining	- IT Security as a business strategy 6:30-7:30pm Demo of security issues with USC's Chief Security Officer

				-Time in class: IS Strategy: improvements to analysis thus far
10	11/15	- Pearson Ch 4,5 - Pearson Case: General Motors (download from Pearson book website) - Applegate Ch10	Future Techn Today's Tech: Social presence	- IS Strategy in Practice; Implementing IT Strategy; IT Project Portfolios - Prepare Qs for speaker Time in class: IS Strategy Analysis: Prepare Specific recommendations; identify client Qs
11	11/22	Pearlson Ch 12		- Guest speaker: Wade Fransson, VP for Strategic Planning, Countrywide Administration & Real Estate - Using information systems ethically - Prepare IS Strategy Presentation; identify final client Qs
11	11/29	Presentations on industry and company strategy; turn in white paper	Presentations & Executive Summary on IS Strategy Analysis	Clients invited

Today's Technology Assignment Sheet

Purpose of assignment:

- 1) For class to learn about a technology that currently has strategic impacts on companies today by limiting or increasing their competitive options
- 2) For presenters to learn how to explain technologies in a way that helps listeners attend to the strategic implications.

Throughout the class, we will be discussing various specific information technologies that are being used in today's companies. These include:

- Linux & Open source
- CRM/ERM
- ERP
- Wireless architectures
- Agent-based modeling of complex adaptive systems
- RFID
- Web Services
- Presence awareness technologies
- Collaborative filtering
- Data Mining
- Electronic signatures
- Corporate dashboards
- Case-based reasoning

This is an individual project

Pick a technology (HW/SW) you currently know something about, or want to learn about. Read about it using such resources as techweb.com, webopedia.com, computerworld.com, and cio.com. Prepare a handout for the class on it, describing briefly what it is, well-known case examples of use, management implications, strategic implication, and references for follow-up. At the appointed time in the class, I will ask you to share your knowledge with the class and distribute the handout for students' future reference. Plan to spend from 10-15 minutes. **The purpose of the session is two fold: 1) explain the technology to the students and 2) help them understand its strategic implications.**

Defined throughout this course, strategic implications refer to:

- Changes in the fundamental nature of the basis on which companies in an industry will compete (.e.,g from cost to quality, from service to commodity, from stand-alone to integrated)
- Changes in the way consumers think of their needs and what they expect from vendors
- Changes in the relationships among companies in the industry (alliances, partnerships, value chain)
- Changes in how a firm runs its business (financially, marketing, operations, sales)
- Changes in the R&D evolution of firms in an industry

Grade rubric:

- Handout explains what technology is, using common language, defining key acronyms, and using bullets distinguishing key features from lesser important features: 10
- Handout lists what are the considered benefits of the technology, whether benefits have generally been achieved, and barriers to achieving benefits: 5
- Handout lists well-known implications of the technology for changes to work, procedures, organizational structures, or operational practices (including managing risks of technology) 8
- Handout includes major vendors and competitive technologies: 5
- Handout lists well-known strategic implications for firms in industries that might use the technology (i.e., how companies relate to each other in an industry such as basis for competition): 8
- Handout lists names of well-known companies serving as best practices of using it right: 5
- Handout includes references of where to learn more: 4
- Presentation of handout does more than simply read from the handout: 10
- Order of presentation: up to 5 points for being first or second: 5

Total possible: 60

Future Technology Scenario Assignment Sheet

The purpose of this is 2 fold:

- 1) For class to learn about an information technology that's on the horizon
- 2) For class to help identify how technology identifies possible strategic opportunities/challenges scenarios for an organization
- 3) For presenters to learn how to encourage discussion around future technology scenario planning.

This is an individual project.

Pick an information technology that is at least several years out in the future for most companies (i.e., on the initial swing of Gartner's hype cycle, technologies with lots of promise but unclear proof; not yet state of the practice). Examples include:

- wiki's (which I'll do),
- social network analysis,
- sensor networks,
- augmented/virtual reality,
- biometrics
- single electronic record for medical patients
- programmable DNA & biochemical memories
- "contextually aware" wireless applications
- AI tomorrow: Search of the future: knowing what people need before they know it when searching
- Grid computing
- Intellectual property protection technologies (e.g., for music, etc.)
- New storage devices (e.g., Blue Ray discs)

First, identify a future information technology you're fascinated/interested in. Find it by: scanning Computerworld for new information technologies, checking out Gartner, looking at industry trends for emerging technologies.

Sign up individually by 2nd week for a class session that you will host; up to 9 different sessions will be hosted.

Session will run 20 minutes and will consist of two parts: 1) a 10 min lecture & hopefully demo of the technology along with descriptions of at least one leading edge company that is trying it and 2) leading a discussion of the strategic implications for the technology for an organization

Defined throughout this course, strategic implications refer to:

- Changes in the fundamental nature of the basis on which companies in an industry will compete (e.g. from cost to quality, from service to commodity, from stand-alone to integrated)

- Changes in the way consumers think of their needs and what they expect from vendors
- Changes in the relationships among companies in the industry (alliances, partnerships, value chain)
- Changes in how a firm runs its business (financially, marketing, operations, sales)
- Changes in the R&D evolution of firms in an industry

When leading a strategic implications discussion, you should be prepared with a summary of what you think are the implications, but then encourage the participants to get to the implications themselves and generate ones you hadn't thought of.

When future technologies involve consumers directly, the strategic discussion might start with envisioning how the consumer's life will change. Then moving upstream to the vendor and vendor relationships. Alternatively, the discussion might start from the R&D stage and move out to the consumer. You could have participants do both and see where they end up. Or you could have them address directly the questions above. As a summary, the following questions should be answered as a result of your session:

What practical problems does the technology solve?

How does it work?

What is the technology similar to?

Is there new technology infrastructure required to support it

What business practices need to be changed to make it work?

How ready for deployment is it?

What case examples are there of its use

What are possible strategic implications across different industries?

Under what competitive industry situations should technology be put on a corporate watch list (i.e., probability of great impact to that industry is high)?

Grading rubric:

Order of doing presentation (additional point up to 8 points the closer to being first): 8

Clarity of what technology is: 8

Clarity about what is so different about this technology both positively and negatively? 5

Clarity about how this technology will change industry relationships for bad and good? 8

Case examples used? 8

Clarity about maturity level of technology? 5

References used are reliable? 5

Cleverness in leading discussion about strategic implications? 5

Good understanding of strategic implications: 10

Good summarization of participants' comments? 5

Handouts? 5

Total points possible: 72

IS Strategy Analysis Assignment Sheet

Purpose: Identify two possible scenarios of creative ways to use IT competitively in an organization. Compare the 2 on technical, organizational, and economic feasibility; risk, competitors, and potential benefit to the organization and make recommendations to follow one.

Perform a strategic IS analysis for a real company as if you were a consultant to that company. Your focus is on how your “client” company should be using IT for competitive advantage. You will need to assess:

- what is the competitive business situation facing your client in its industry
- Existing and emerging information technologies and applications
- How IT is changing the bases of competition in your client’s industry
- How other companies in the industry (or ‘best practice’ companies in other industries) are using IT for competitive advantage

Do the project in teams of 2.

USC online resources to consider using include: Gartner, ABI/Inform (for industry & compy), & Standard & Poors for industry trends. Public web-based resources to consider include: cioinsight.com, informationweek.com, cio.com, computerworld.com, byte.com, forrester.com, and ganthead.com

Your data should be based on data obtained from:

- Market research reports, financial news articles, industry newsletters, annual reports. You may want to contact the company. While interviews with individuals in the company may prove interesting, you will need to correct for biases inherent in soliciting the views of individuals in an organization.

Two final deliverables: PPT presentation, and written 3-page executive summary with PPT presentation attached, annotated with notes (or some other format if approved in advance by me). The PPT & 3-page executive summary should include:

- 1) Brief background of client company (history, mission, structure, geography, products, markets, core competencies that could be used for competitive advantage)
- 2) Description of client company’s primary industry, competitors, and/or supply chain, and company’s current basis for competition
- 3) Description of how company is using IT today competitively using one or more of models presented in class, depiction of current IT architecture, and competencies that are used and not used with IT
- 4) Description of how other companies in industry are using IT competitively
- 5) Description of future likely competitive trajectory for industry in which IT can play a part: identify 2 what-if scenarios of strategic opportunities that IT can play using benchmarks or new technologies..

- 6) Comparison of the 2 scenarios on technical, organizational, and economic feasibility, risk, competitors, and general cost-benefit analysis concluding with a general recommendation of which scenario to pursue
- 7) Specific suggestions for implementing chosen scenario including reasonably detailed cost figures, at least 2-3 screen shots of critical user interfaces, outsourcing suggestions if any, functional and technical requirements for IT, and suggested management actions.

3-stage development of work:

Stage I: topics 1-4

Stage II: topics 1-6

Stage III: topics 1-7

Stages I and II will be shared as Round-Robin. Feedback will be provided to improve the final report.

Grading rubric:

Stage I Topics 1-4:

- Is background of client company succinctly & comprehensively summarized (to include: mission, history, structure, geography, products, markets, core competencies): 10
- Is the primary industry identified and key competitors & supply chain identified: 10
- Is the company's current basis for competition appropriately identified and justified (based on an analysis of how the firm has competed in the past)? 10
- Is the role of IT in competing described in some detail including architecture and infrastructure? 10
- Are models discussed in class used including Porter, Competing on the Edge strategies and IT dimensions? 10
- Are the ways in which other companies in the industry are using IT described in detail? 10

Stage II Topics 5,6 (update Topics 1-4 to include Competing on the Edge strategies)

- Scenario #1: Is the scenario clear about the IT architecture and the IT tools needed? 10
- Scenario #1: Is it clear how this scenario fills in for a strategic need that was identified in Topics #1-4? 10
- Scenario #2: Is the scenario clear about the IT architecture and the IT tools needed? 10
- Scenario #2: Is it clear how this scenario fills in for a strategic need that was identified in Topics #1-4? 10

Stage III Topic 7

- Is it clear what additional competencies the firm will need to acquire to take advantage of new strategic opportunities? 10

- Are recommendations specific with respect to technologies (e.g., “adopt an ERP” is not specific since ERP spans a wide range of modules). In other words, do the recommendations include a proposed architecture, infrastructure, drawings of at least 2-3 critical sample screen shots and a list of functional and technical requirements the system would need to meet? 10
- Are recommendations specific with respect to management actions inside the company, and changes to work, marketing, R&D, and/or operational practices (e.g., adopt the HR module of SAP” is not specific to indicating the range of management changes that might need to be undertaken for such a package to achieve strategic benefits, and realistic compared to what is achievable in the near term)? 10
- Is the link between the specific recommended actions and the strategic benefit to the company vis-à-vis its competition clear? 5
- Are recommendations actionable, given the existing set of competencies (e.g.? “hire a new CEO” is often not immediately actionable) 10
- Are costs and benefits described in enough detail (e.g., ROI, payback, discounted cash flow analysis) to make a decision on financial basis? 5

Total: 150