How does information technology create business value? How can firms capture this value? This course introduces technologies that are critical to operations, marketing, decision making, and eBusiness activities. It examines the role of technology and its evolution over time, factors that govern the choice of IT applications, and how IT influences business strategy. The course also covers key challenges in managing IT resources, and factors that limit business’ ability to exploit the latest technologies.

Text: Course pack, made available via study.net.

From Jackie Romo @ GSM: “Textpaks are available through study.net to students who are officially enrolled in the course. You will receive an email from the GSM textpak managers with password and login information and instructions on how to access materials. Please contact Study.net directly at 1888-462-0660 or email customerservice@study.net or textpaks@exchange.gsm.ucdavis.edu.”

Note: Syllabus is tentative. Final design will depend on class size, availability of guest speakers, and scheduling flexibility. Number of cases discussed in class may vary in each section. Assignments will be handed out at least one week in advance.
1 Course Structure ......................................................................................................................... 3
2 Tentative Course Schedule ........................................................................................................ 4
3 Sessions Details .......................................................................................................................... 5
  3.1 Session 1 .............................................................................................................................. 5
  3.2 Session 2 .............................................................................................................................. 5
  3.3 Session 3 .............................................................................................................................. 5
  3.4 Session 4 .............................................................................................................................. 6
  3.5 Session 5 .............................................................................................................................. 6
  3.6 Session 6 .............................................................................................................................. 6
  3.7 Session 7 .............................................................................................................................. 6
  3.8 Session 8 .............................................................................................................................. 7
  3.9 Session 9 .............................................................................................................................. 7
  3.10 Session 10 .......................................................................................................................... 7
4 Complete Reading List ............................................................................................................... 8
5 Administrative Details ............................................................................................................... 9
  5.1 Session Format .................................................................................................................... 9
  5.2 Grading and Evaluation ....................................................................................................... 9
  5.3 Team formation ................................................................................................................... 9
  5.4 Class Policies and Rules .................................................................................................... 9
6 Case discussion and presentations ............................................................................................ 10
7 Team Project ................................................................................................................................ 10
  7.1 Creating business value with IT ........................................................................................ 10
  7.2 Consulting Report on IT Strategy .................................................................................... 11
  7.3 Emerging Technology ....................................................................................................... 11
  7.4 IT-enabled process redesign ............................................................................................. 11
1 Course Structure

Information technology impacts the firm, industry and the economy. It can alter industry structure and competition; make markets more efficient; increase productivity; and redefine a firm’s core activities and processes. Almost 50% of capital expenditures in developed economies today are on IT, totaling about $2 trillion worldwide. Given the pervasiveness and large scale of IT, it is critical for managers to understand the variety of technologies and applications relevant to modern business; know how IT can add value to the firm; and learn how to manage in an increasingly IT-intensive world.

Types of information technologies covered in course:

- Transaction processing technologies, including database and ERP systems,
- Decision technologies, including data-oriented (such as online analytical processing and data mining) and model-based decision technologies,
- Internet and Web-based technologies, including inter-firm and business to consumer communication technologies.

Learning objectives by the end of the course, you should understand

- how modern information technologies are relevant to managerial activities and decision making today, and how this has changed over time,
- the marketplace for IT - products, major vendors, factors affecting major IT-related decisions,
- technical and management challenges relevant to contemporary business computing, and
- the business strategies that IT enables, and environmental constraints that affect the use of IT.

Grading and evaluation

- Student project: 25%
- Case write-ups, assignments and case presentation: 20%
- In-class quizzes: 25%
- In-class participation, including case discussions: 30%
2 Tentative Course Schedule

The course schedule is designed in terms of 10 3-hour sessions. Every Tuesday from … to ….

<table>
<thead>
<tr>
<th>#</th>
<th>Topics</th>
<th>Discussion</th>
<th>Exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Overview IT: Technical &amp; Historical Overview</td>
<td>Matching IT capabilities and applications</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Economic impact of IT Business value of IT IT &amp; Business transformation</td>
<td>Case: eChoup</td>
<td>Business Value Dials</td>
</tr>
<tr>
<td>3</td>
<td>Evaluating IT investments Managing IT resources</td>
<td>IT decisions in business, BVI</td>
<td>Quiz, Sessions 1-2 BVI</td>
</tr>
<tr>
<td>4</td>
<td>Process-enabling IT, ERP Business value of ERP Implementing large IT projects</td>
<td>Intel ERP Application releases</td>
<td>Guest speaker:</td>
</tr>
<tr>
<td>5</td>
<td>Enterprise Architecture IT and business strategy alignment</td>
<td>IT for Business Agility</td>
<td>Quiz: Sessions 3-4</td>
</tr>
<tr>
<td>6</td>
<td>Inter organizational IT IT-enabled supply chain mgmt</td>
<td>Case: Cisco Web-enablement</td>
<td>Exercise: TBD</td>
</tr>
<tr>
<td>7</td>
<td>IT-enabled business intelligence, data management and decision support</td>
<td></td>
<td>Quiz: Sessions 5-6</td>
</tr>
<tr>
<td>8</td>
<td>Data collection and mining IT-enabled marketing</td>
<td>Business intelligence at Continental Airlines</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Information privacy and security</td>
<td>Case: Harrah's Entertainment</td>
<td>Quiz: Sessions 7-8 Privacy policy analysis</td>
</tr>
<tr>
<td>10</td>
<td>Course wrap-up Emerging issues</td>
<td>(How) Does IT matter?</td>
<td>Student presentations.</td>
</tr>
</tbody>
</table>
3  Sessions Details

3.1  Session 1

Introductions, Course Overview.
Technical and Historical Overview of Business IT: Technical glossary.

Required Readings

- [1] Mastering the Three Worlds of Information Technology HBR 17Nov06

3.2  Session 2

• Business value of IT [1], impact of IT investments [2]
• Case discussion: ITC eChoupal [3].

Required Readings

- [1] Defining the Value of e-Business Intel IT May 2003

3.3  Session 3

Managing IT resources: Evaluating IT investments [1], Managing IT like a Business [3]

Discussion: IT decisions in business (business value dials) [4].

Required Readings

3.4 Session 4

Technology overview: ERP [1].

Discussion: Implementing large IT projects

Required Readings

3.5 Session 5

Technology overview: Enterprise Architecture. [1].

IT and business strategy: strategic alignment [3].

Discussion: IT for Business Agility [2]

Required Reading

3.6 Session 6

Case discussion: Cisco Web enablement and IT strategy [1].

IT-enabled supply chains: supply chain integration, inter-organizational technologies for data exchange, collaborative workflow, messaging and electronic exchanges [2].

Required Readings

3.7 Session 7.

Technology Overview: Web 2.0 and the consumerization of IT [2]

Disruptive technologies [1]

Required Reading
3.8 Session 8.

Discussion: Business intelligence at Continental Airlines [1].

Technology overview: data mining [2].

IT-enabled Marketing: Knowing your customer - learning without asking [3].

Required Readings


3.9 Session 9


Required Readings


3.10 Session 10

Course wrap-up: (How) Does IT Matter? [23].
Student presentations.
4 Complete Reading List

1. [Mastering the Three Worlds of Information Technology](HBR 17Nov06)
4. Martin Curley A Value Based IT Capability Maturity Framework IVI Working Paper 0701
8. Defining the Value of e-Business Intel IT May 2003
9. Managing IT Investments Intel IT August 2003
10. Sadhana Allen, Leela Mohan, and Andrew Stewart, Best Methods for Managing Enterprise Application Releases Intel Corporation, December 2005
18. Curley, Martin 2006 “IT Innovation, a new Era” Proceedings of the International Conference of Computational Science, Reading,
20. The emerging Web 2.0 social software: an enabling suite of sociable technologies in health and health care education1
5 Administrative Details

5.1 Session Format
- Typical sessions will be 3 hours long, with one 10-15 minute break. Student participation is encouraged and required.
- Most sessions will include multiple formats - lecture, discussion, and case analysis.
- In the event that a class lists a guest speaker who can speak only in one section, we will need to combine day and evening sections into one class, most likely in the evening time slot.
- Suggestions are welcome.

5.2 Grading and Evaluation
The grading plan listed below is tentative and subject to minor changes.
- Student project (see below for details): 25%
- Case writeups, assignments and presentation: 20%
Choose any 3 assignments in the course, including at least one case write-up and at least one non-case assignment. There is usually a 2-page limit (exceptions for additional graphics and other necessary attachments), longer submissions will lose points.
- In-class quizzes: 25%
- In-class participation, including case discussions: 30%

Each class is an opportunity to earn 3 points for participation. Especially valued is an effort to contribute towards the discussion by providing examples (or counterexamples) based on your reading and experience. Typically, presence in class will earn 1 point, outstanding performance earns 3, and moderate participation earns 2 points. Absence without notification earns -1.

Historically, the typical grading pattern is an A-/A grade for a score of 85% or above, B+ for 75-85, and B for 65%–75.

5.3 Team formation
Please form your project groups early and communicate this information to me via email. Group size will be between 2-3 students, and will depend on overall class enrollment, and will be decided first day of class. The ideal number of groups in each section is 5-6.

5.4 Class Policies and Rules
- Please attend class, read material in advance, and contribute to discussion. Class will begin on time. Please try to arrive before start and remain through the session. One absence is permissible under certain circumstances. More than two absences are not.
- All reports and written assignments should be delivered on time in hard copy form (please retain a copy) – at the beginning of the corresponding session (20% penalty for each level of delay).
Reports should be easy to read (clearly legible, if handwritten; good layout and organization into subsections) and as concise as possible. Please separate essential points and details, by moving
details into an Appendix. Excessive use of color or other attempts to beautify the report are unnecessary.
• Please avoid distractions - cell phones, talking among yourselves, food, music, etc.
  If you have something relevant to discuss, please share with the class.
• Please report any exigencies and constraints to me as early as possible.
  In addition to these, you are expected to conduct yourself according to the University of California's standards of ethical conduct for students, in particular, the sections on academic conduct and integrity.
  Details may be obtained from the GSM Associate Dean or the Office of Judicial Affairs.

6 Case discussion and presentations
Cases are an important aspect of this class, but to be successful it relies on active and meaningful participation of class members. Everyone should read and be prepared to discuss the assigned case. I will email a list of relevant questions a week before the case. If you chose this case writeup as one of your 3 assignments, then your writeup should specifically respond to these questions. If you did not choose it, then these questions would still be a useful guide as you prepare for case discussion. During the discussion, you should be prepared to participate and present your analysis of these issues. Many of these issues raised in the case are only semi-structured and sometimes without a definitive answer. What is important is a logical analysis leading to some clear insight and recommendation, where appropriate.
  For each case, one student group will be responsible for presenting an in-class 15 minute overview to kick-off the case discussion. This summary should be based on the case document as well as your independent research (e.g., you might search for relevant facts and events in the period before or after what is discussed in the article). It should include company and competitor background, facts, relevant technology, strategic considerations, and should end by motivating and raising the key issues for discussion.

7 Team Project
Your team can choose one of the following 3 types of projects, and feel free to consult me once you have one or more candidate topics in mind. The project work should adhere to the following timeline and deliverables, counting from weeks after start-of-class.

Sessions 1-2 Initiate email discussion of your project plans.
Session 3 Project proposal - list the topic and describe the intended final output.
  Timeline. Half to 1 page.
Session 5 Progress report and remaining work plan. 2 pages.
Session 8 Draft report and description of work-to-date.
Session 10 Project presentation, structured as "presentation to the board". Written report is an executive summary (approximately 3-5 pages) supported by additional materials from your presentation.

7.1 Creating business value with IT
Identify an organizational unit of manageable size (e.g., a small business, or a division in a larger corporation) - and investigate how you would use IT to create business value, transform the organization and/or create a new organization, product or market. Discuss what new technologies you would use (and what information-processing mechanisms they would replace), what changes this would make in
information availability, latency and accuracy, and how these information changes should imply business transformation.

A useful way to structure your research and project results is the following.

1. Introduce the context: the organizational unit of analysis, its products, markets, mission.
2. Explain the new technology and its key characteristics, and relate it to current information processing abilities.
3. Explain how the new technologies would lead to redesigned processes and other aspects of business transformation, and examine the direct and indirect effects (on business value) of these transformations.
4. Summary.

Some possible connections with UCDavis Medical Center: use of “intelligent” infusion pumps to administer intravenous drugs; use of ultrasound technologies to track expensive assets (people, machines); use of RFID in medication management and administration.

7.2 Consulting Report on IT Strategy

Identify an organizational unit of manageable size (e.g., a small business, or a division in a larger corporation), apply your knowledge about IT and business to analyze the role of IT for this unit, and develop an IT Plan for it. The plan would specify (at a high level) the key IT applications that the unit should focus on, the underlying infrastructure technologies necessary to support these applications, how to go about achieving this (e.g., sequencing the introduction of major applications), whether services should be delivered via in-house resources or outsources, etc. Explain how the IT plan is consistent with (and whether it suggests changes to) the units strategy, financial resources, competitive position etc.

7.3 Emerging Technology

Select an emerging information technology topic (e.g., RFID, VOIP, wide-area wireless technologies, biocomputing) for in-depth research and business analysis. Choose a technology that has the potential to become a significant aspect of business computing in coming years. Develop an understanding of the underlying technology - what's new or neat about it, what existing technologies does it replace and how it differs, how does it work, and what set of supporting technologies would comprise the technology ecosystem? What is the business potential and likely applications of this new technology? How will it change business practice - and in what industries? Who are the vendors (of the core and related sub-technologies) and what will the industry structure look like?

Your report and presentation should cover (a) a description of the technology and the technology ecosystem that should grow around it, (b) a discussion of what the supply side would look like, and (c) on the user side: its business potential, likely applications, and important ways in which it will cause changes in business practices; this part of the report should employ a concrete context and offer at least a couple of specific illustrations that make precise the general points in your analysis.

7.4 IT-enabled process redesign

Identify a business process of significant scope and importance in a particular firm or industry, which might be impacted by changes in information technologies - perhaps because the process currently employs outdated methods and technologies for
information processing. Analyze the potential introduction of new information technologies and discuss how the process and organizational responsibilities should be redesigned in order to best extract the advantages of the new technology. Your report should (a) describe the context of the research a detailed description of the process and its objectives, and the information technologies presently in use for managing the information flow and computation, (b) propose and justify process redesign in light of new technology, and (c) explain how these changes should lead to a positive payoff from the new technology.