ISM 50 - Business Information Systems

Introduction

Instructor: Prof. Ram Akella

UC Santa Cruz

1/5/2010
ISM 50 -

Course Parameters:
- Tuesdays and Thursdays 12-1:45 PM
- Simularium E2-180
- WEB PAGE:
  - (write this down, go home, and bookmark it!)
  - http://www.soe.ucsc.edu/classes/ism050/Winter10/

Instructor:
- Prof. Ram Akella
- Office: E2 563
- akella@soe.ucsc.edu
ISM 50

TA
- Megha Mohabey
  - mmohabey@ucsc.edu
  - Office Hours:
    - TBA
What is this class about?

- Supply Chain Management (SCM)
More Examples

- **Customer Relationship Management (CRM)**
  - Other examples?
Business Process Example

Customer
- Order
  - Take Order
    - Enter Order
      - Check Stock
        - Print Packing list
        - Find Goods
          - Ship

Sales
- Print Invoice
  - Tell Mfg. to make order

Finance
- Check Credit Check

Inventory Control

Warehousing

Business Functions
A Streamlined Business Process

Business Functions:
- Customer
- Sales
- Finance
- Inventory Control
- Warehousing

Process:
1. Customer
   - Order
   - Take Order
   - Enter Order
   - Check Stock
   - Automatic Credit Check
   - Print Packing list
   - Tell Mfg. to make order
   - Print Invoice
   - Find Goods
   - Ship

- Automatic Credit Check
A Reengineered Business Process

Business Functions

- Customer
  - Order
    - On web

- Sales
  - Automatic Credit Check
  - Automatic Checking of Stock

- Finance

- Inventory Control

- Warehousing

Inform Mfg. to replenish stock

Print Packing list And invoice

Find Goods

Ship
Some Examples

- Supply Chain Management
- Customer relationship Management
- Inventory Control
- Transaction Processing
- ...
What is an information system?

- First let us answer: what is a system?
  - Interrelated components
    - Input
    - Processing
    - Output
What is an information system?

- **Information system**
  - A combination of people, hardware, software, networks..
  - that collects, transforms, and disseminates information in an organization.
What is information technology?

- It’s the technology you use to make an information systems
  - Computer Hardware, Software, Networks, etc...
Why is IT changing so fast?
What’s happening lately?

*What's happening lately?*

**Net Neutrality, What is it?**

**FCC chair Julius Genachowski**

Internet access providers "must be transparent about their network management practices,"

"We could see the Internet's doors shut to entrepreneurs, the spirit of innovation stifled,... Or we could take steps to preserve Internet openness..."

**Senator Kay Bailey Hutchison (R) TX:**

"The case has simply not been made for what amounts to a significant regulatory intervention into a vibrant marketplace,"

NPR, “FCC Chairman Proposes 'Open Internet' Rules,” September 21, 2009
My Travel Schedule

✗ Away last week of Jan
  - Jan 26 Tue

✗ Possibly away 1 week in Feb
The objectives of ISM 50 are to understand

- needs of business
- role of information systems in supporting those needs
- How information systems are designed
- How information technology is evolving
- How changes in technology can enable new ways of doing business.
- How to conceptualize and analyze new technologies to solve business problems.
Information Systems Management 50

- **What it is *not***:
  - A programming class
    - (Though some simple programming may be required for some assignments and/or projects)
  - A detailed focus in any particular technology.
    - (A survey of IS technology landscape and its relation to business problems)
No specific programming language knowledge required, though useful

We will assume you know word-processing and PowerPoint

- PowerPoint is easy to learn
- We will assume you are motivated and eager to learn!
  - Come to class having done the reading!
What comes first?

- Do business needs drive the design of technology?
- Or does the technology drive the design of a business?
What comes first?

- Do business needs drive the design of technology?
- ...Or does the technology drive the design of a business?

- Both!
Course Organization

- **Top Down (Roughly)**
  - IT Terminology and IT History
  - Businesses and their needs
  - Technological Applications
  - Technology concepts
  - Important “building block” Information Technologies
    - Data Bases
    - Networks

- **Case Studies Throughout**
Reader 1: Pages from

- **Author:**
  - David Messerschmitt, Professor of EECS, UC Berkeley

- **Focus on**
  - Technological concepts in computing and communications.
  - Applications.

- Top down organization, like our course

- **Available now at Bay Tree Bookstore!**
Reader 2

- This reader contains
  - Case Studies
  - Other Readings

- Also available now at the Bay Tree Bookstore

- Reader 2 is same as reader from past quarters
Case Studies (in reader)

- Examples of Businesses using Information Technology
- Illustrates the concepts we learn in the class
- The case studies are mostly from the Harvard Business School
  - Designed to stimulate classroom discussion in MBA classes
Class Webpage

http://www.soe.ucsc.edu/classes/ism050/Winter10/

Contains

- Syllabus
- Assignments
- Instructor contact information
- Requirements for business paper, database project
- Exam dates
<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topics</th>
<th>Reading</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 5 Tue</td>
<td>Class Introduction</td>
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<td>Assignment 1</td>
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<tr>
<td>2</td>
<td>Jan 7 Thu</td>
<td>IT History and Background</td>
<td>IT Management from 1960-2000 (reader pp 1-26) Chapter 1 - Section II of O’Brien (reader pp 47-60)</td>
<td>Project Preferences</td>
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<td>3</td>
<td>Jan 12 Tue</td>
<td>Competing with IT</td>
<td>Chapter 2 - Section I of O’Brien (reader pp 69-77) Cash Flows and Rate of Return</td>
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<td>4</td>
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<td>Competing with IT (contd.)</td>
<td>Chapter 2 - Section II of O’Brien (reader pp 78-90)</td>
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<td>5</td>
<td>Jan 19 Tue</td>
<td>Business Processes</td>
<td>Frito-Lay Case (93-103 + figs)</td>
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<td>6</td>
<td>Jan 21 Thu</td>
<td>Enterprise Applications, Information Access Terms Enterprise Applications (contd.)</td>
<td>Messerschmitt Ch 2.3 (38-50) Messerschmitt Ch 3.1-3.3 (59-82) Cisco Case (114-124 + figs)</td>
<td>Folio 1 (if ass</td>
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<td>Jan 26 Tue</td>
<td>E-Commerce</td>
<td>Messerschmitt Ch 3.4-3.6 (83-98) Alibris Case (133-143 + figs)</td>
<td>Business Paper Proposal</td>
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<td>Jan 28 Thu</td>
<td>No Class Makeup lecture on Jan 21st</td>
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<td>9</td>
<td>Feb 1 Tue</td>
<td>IT Concepts</td>
<td>Messerschmitt Ch 4 (107-132)</td>
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<td>10</td>
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<td>Client Server Computing</td>
<td>Messerschmitt Ch 5 (139-154) Sun-N Tier Case (145-164 + figs)</td>
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<tr>
<td>11</td>
<td>Feb 9 Tue</td>
<td>Modularity and Layering</td>
<td>Messerschmitt Ch 6 (157-190)</td>
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<td>12</td>
<td>Feb 11 Thu</td>
<td>Mid-Term Exam (might get moved to an earlier date)</td>
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<td>13</td>
<td>Feb 16 Tue</td>
<td>Computer and Communication Industry</td>
<td>Messerschmitt Ch 7 (198-226)</td>
<td>Folio 2 (if as</td>
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<td>Feb 18</td>
<td>Database Management</td>
<td>Messerschmitt Ch 11.1 - 11.2 (325-335)</td>
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<td>Messerschmitt Ch 15.1 - 15.2 (415-425)</td>
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<td>Database Management (contd.)</td>
<td>MySQL Database Case (179-199 + figs)</td>
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<td>Feb 25</td>
<td>Networking</td>
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<td>Mar 2</td>
<td>Networking (contd.)</td>
<td>Akamai Case (213-228 + figs)</td>
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<td>Messerschmitt Ch 9 (273-289)</td>
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<td>19</td>
<td>Mar 9</td>
<td>Applications Architecture</td>
<td>Messerschmitt Ch 10 (293-321)</td>
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<td>Folio 3 (if assigned)</td>
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<td>20</td>
<td>Mar 11</td>
<td>Applications Architecture,</td>
<td>American Airlines Case (165-171 + figs)</td>
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<td>Wrap Up, Final Review</td>
<td>Business Paper</td>
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<td>21</td>
<td>Mar 17</td>
<td>Final Exam</td>
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<td>Wed, 8-11 AM in E2 180</td>
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<td>Participation</td>
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<td>Oral Presentation or Folio</td>
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<td>Weekly Assignments</td>
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<td>Business Paper Proposal</td>
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<td>Midterm</td>
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<td>Database Assignment</td>
<td>To be Assigned</td>
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<td>Business Papers Final</td>
<td>Mar 11 Thu</td>
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<td>Final Exam</td>
<td>Mar 17 Wed, 8-11 AM</td>
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EXAMS and Quizes
Exams

- Midterm
  - Probably 2/11

- Final
  - March 17

- Closed book

- A mix of short answers and 1 or 2 essays

- One or two analytical questions
Pop Quizzes

- 3 quizzes, unannounced times
- Simple questions pertaining to the reading assigned for that day
- Only your top 2 quizzes will count
- 5% of your overall grade
Participation
Participation

- We will have a lot of classroom discussion over the course of the quarter.
  - especially when we read case studies!
- This is an opportunity for you to
  - think through ideas.
  - give feedback.
  - learn from your classmates.
- We will evaluate your participation.
Classroom Participation

- You earn 1 participation point in each class session in which you make an intelligent comment.

  - Participating more than once in a class session is encouraged, but does not earn more points.

- For full participation credit, you need to earn 8 participation points over the quarter.
Online Forum Participation

- Alternate way of earning participation points
- 1 point for each intelligent post to a discussion thread.
- Discussion forum should begin operating next week!
Participation

- **In Summary...**
  - You need 8 participation points to get full credit.

- Participation is 10% of your overall grade.
ORAL PRESENTATION
and
NEWS FOLIOS
Presentation/Folio

You will be **assigned** either

- Presentation
- News Folio
Oral Presentations

- 5 minutes in length
- Assigned to present **one** of the following:
  - Summary of the case study we will discuss in class that day.
  - Recent news story involving business and information systems.
  - Your group’s business paper project

- PowerPoint Presentation.
  - **E-mailed to me and TA by the night before**
Presentation Evaluation

**Content**
- Did the summary capture most important aspects of the case study?
- Was the news story relevant to the class?

**Delivery:**
- Organization
- Voice Articulation
- Eye Contact
- Enthusiasm
Presentation Tips

- Ask the following question: Who is my audience and what is my major message?
- Don’t try to say too much for five minutes
- Avoid jargon - explain technical concepts with simple examples.
- Avoid reading
- Act interested!
• Folios

- There are too many of you to have everyone give a presentation 😞
- Those who are not assigned a presentation will do a “news folio.”

Task:
- Collect 3 news articles that are relevant to the class
- print/copy them
- For each article, write a 200 word description of how the article relates to issues discussed in class.
- Due dates:
  - Article 1 - Jan 21
  - Article 2 - Feb 16
  - Article 3 - Mar 9
Presentation /Folio Summary

- You will be assigned *either* a news folio or an in-class presentation

- In either case this will be worth 5% of your grade.
Need Presentation Volunteers!

- TuThursday 1/7: Two News Stories.

- Tuesday 1/12: Two News Stories.

- The rest of this quarter’s presentation assignments will be announced next week.
BUSINESS PAPER
Business Analysis Paper

- Write a paper about a company of your choice.
- Pick a company for which information systems played a key role in making that company successful
  - How did information systems help make the company successful?
- Paper Organization
  - Up to your group (Work in groups of 3 to 4)
  - chronologically, by topics, or some combination of both.
Business Analysis Paper

- The paper should answer questions like:
  - What industry does the company compete?
  - What is the competitive environment like?
    - "Porter model" (competitors, substitute products, buyers, suppliers, new entrants...)
  - How did your company use IT to gain a competitive advantage?
  - (Detailed guidelines are posted on the website)
Business Analysis Paper

- How did the company use IT to support or enable its business processes and competitive strategies?
  - What technologies in particular did it use?
  - How much of the company's success do you attribute to its use of IT and/or the company's early adoption of IT into their business processes?
Citing Sources

- Plagiarism is illegal and cheating and will not be tolerated!!!
- More than thirty words verbatim must be cited.
- Any facts or figures that are not your own must be cited.
  - Ebay’s revenues in US Revenues in 2002 were $1.39 billion [1].

Citing Sources

You must cite your sources in the **body** of the text!!!!

“Semiconductors have found a place in virtually every electronic device in existence. This helps explain why the industry was able to reach $200 billion in sales before a slump brought the figure back down in 2001” [1].

End Note:

Citing Sources

- The easiest way to lose points on your paper is to not cite sources!

- Guide on class website will be posted soon to help you cite your sources correctly.

- Talk to the TA or instructor if you have questions.
Suggested sources of Information

- Company website
- 10K report
  - (This is the annual report public companies file with Security and Exchange Commission.)

- Business article database
  - A database of articles from magazines like “Business Week” and economics journals.
  - Find it at: [http://library.ucsc.edu](http://library.ucsc.edu)
  - Click on “articles databases” on left margin.
  - Click on “By subject”
  - Click on “economics”
  - Try this tonight! And let us know if you have problems

- Industry specific publications
  - Example: Aviation Week

- Books
- Good Magazines ([The Economist](http://www.economist.com))
- Consulting groups: Forrester, Gartner, …
Business Analysis Paper Preferences
Due Thursday Jan 7th!

- You are encouraged to try to form your own groups.
  - However, we want a mix of
    - Engineers and non-engineers
    - Experience levels
  
  So, we may modify the groups.

- As a group, turn in 3 things:
  1. List of your proposed group members.
  2. List of companies you would like to study.
  3. Suggested person to do the 5 minute presentation on your group’s project.

- If you don’t have someone in mind to work with, turn in the above 3 things as an individual.
Business Analysis Paper Preferences

Due Thursday Jan 7th!

At least two of your preferred companies must be from this list:

- Southwest Airlines
- Federal Express
- Home Depot
- Wal-Mart Stores
- Charles Schwab
- Amazon.COM
- EBay.COM

With your preferences in mind, we will make the final company assignments to the groups.
Business Paper Proposal

- As a group write a 2-3 page description of what you plan to investigate in your business paper!

- Show that you’ve done some research!

- Cite some facts, and some technologies and or strategies that you’ve heard about the company that you would like to investigate further.

- Remember to cite your sources properly!!!!

- **PROPOSAL DUE January 26th.**
Assignments
Database Assignment

- Learn and Use database software
- An opportunity for “hands-on” experience without having to use advanced programming.
- Assignment will be done individually
- We will give you the details of the assignment sometime after the midterm.
- Database Tutorial later in the quarter
- 10% of your grade
Weekly Assignments

- Approximately once every week or two.

- They will be posted on the class webpage in the assignments column of the syllabus.

- Usually,
  - Questions from the textbook
  - Questions pertaining to Case Study Readings.

- However, Assignment 1 is to make a resume and cover letter!
Assignment 1

- Turn in **Both**:  
  - A Resume  
  - And Cover Letter  

Due January 12 (1 week from today)

Resume should be:
  - One page

Focus:
  - Education, Experience, Skills and Abilities  
  - What can YOU do for an employer?  
  - You may choose to use a header with the purpose of the resume highlighted.
Personal Resume Criteria

- Looks appealing. (fonts, format, margins)
- No Spelling mistakes
- Avoid irrelevant information from too far in the past
- One Page

- It takes time to build a good resume...
Building Your Resume

Some things employers look for:

- Academically Qualified.
- Well Rounded (includes extra curricular activities)
- Summer Internships, or Part-time work During School
- Professional Presence (Society Memberships)
- Interested and Understanding of Employer’s Area.
Educational Content

- Degrees held or degrees you are currently working on.
  - Name of the university.
  - Degree Type and Program
  - (Expected) Completion date
  - GPA

- Include High School degree?
  - Maybe if you are a freshman or sophomore.
Work Experience Content

- Reverse Chronological Order
- Provide Complete Information
  - Company Name
  - Location (city and state)
  - Employment dates (from - to)
    - 1999 to Present if still employed
  - Job Title
    - Major responsibilities
    - Major accomplishments

How do these pertain to the job you are seeking?
**BRAD A. KANG**  
Local address: 4123 Hagerstown Hall • College Park, MD 20742 • (301) 314-5464  
Permanent address: 3829 Belvoir Court • Newtown, PA 18940 • (215) 537-4177  
E-mail address: sstudent@umd.edu

<table>
<thead>
<tr>
<th><strong>OBJECTIVE</strong></th>
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<tr>
<td>To obtain a co-op, summer, or part-time position in biomedical engineering or biotechnology.</td>
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<tr>
<th><strong>EDUCATION</strong></th>
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| **University of Maryland**  
B.S., Biological Resources Engineering  
GPA 3.6  
| College Park, MD  
December 2005 |
| **Virginia Polytechnic Institute & State University**  
Chemical Engineering coursework  
| Blacksburg, VA  
August 2001 - May 2003 |

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<tr>
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| **Engineering Co-op & Career Services Office**  
Peer Assistant  
- Critique engineering student resumes.  
- Provide information to engineering employers.  
- Present introductory job skill workshops and orientation sessions.  
- Maintain office databases and employer information files.  
| College Park, MD  
June 2004 - present |
| **University of Maryland**  
Design Team Leader - Engineering Design  
- Managed a team of 5 students to work within project constraints and deadlines.  
- Designed, fabricated, and evaluated a digital postal scale according to design specifications.  
- Submitted prototype chosen to compete in the final design competition.  
- Prepared and formally presented a preliminary and final design package using Pro Engineer, Adobe Photoshop, Microsoft Excel, and Microsoft Powerpoint.  
| College Park, MD  
Spring 2004 |
The O. Hommel Company (OHCO) Carnegie, PA
Chemist/Lab Technician May 2003 - January 2004

- Formulated new and improved existing epoxy printing inks used for protecting, coating, or decorating glass surfaces.
- Conducted tolerance experiments on OHCO products for resistance to ultraviolet degradation, solubility, melting and freezing points.
- Independently filled product orders of up to 50 pounds and coordinated shipping itinerary.
- Continued work during academic calendar breaks.

COMPUTER SKILLS

- Engineering Applications: AutoCAD-R13, Pro Engineer, TKSolver
- Language: C++
- Applications: Mathematica 5, Microsoft Office, MiniTab 11, Web Browsers
- Platforms: Windows 98/NT/2000/XP, Linux

ACTIVITIES

- Society of Plastics Engineers: Student Member 2002 - 2003 academic year
- Virginia Tech Varsity Rowing Team: Spring 2002 & 2003
Cover Letter

- A letter of introduction, to accompany resume.
- Include brief description of background
- Write it as if you were applying to take the class, or pretend like you are applying to a job.
- Format it as a business letter.
Dear Ms. Smith:

I am writing to apply for the position of Web Architect at ABC Corporation. I feel especially well qualified for this position because of my extensive coursework in both programming and in information systems I have had as an Information Systems Management (ISM) student at UC Santa Cruz. I have also had experience designing the website of XYZ corporation … … I have enclosed a copy of my resume. Please contact me if you have any questions about my background. I look forward to hearing from you.

Sincerely,

Bob Brown
TO DO:

By Thursday (1/7):
- Read “IT Management from 1960-2000” in Reader
- Read Chapter 1, Section II, of O’brien Book (this material is also in your reader.)
- Business Paper Preferences
  - (Group members, Companies)
  - Turn in as a group

By Tuesday (1/12):
- Resume & Cover Letter
  - Turn in as an individual