ISM 50 - Business Information Systems

Introduction

Instructors: Mary Doyle, Geoff Ryder
UC Santa Cruz
3/30/2009

ISM 50 – Course Parameters:

- Mondays and Wednesdays 5-6:45
- Classroom Unit 1
- WEB PAGE:
  - (write this down, go home, and bookmark it!)
  - http://www.soe.ucsc.edu/classes/ism050/Spring09

What is this class about?

Supply Chain Management (SCM)

More Examples

Customer Relationship Management (CRM)

Business Process Example
A Streamlined Business Process

Customer → Sales → Take Order → Order → Automatic Credit Check → Finance → Enter Order → Print Invoice → Order → Print Packing List
→ Find Stock → Print Invoice → Ship
→ Inform Mfg. to replenish stock

A Reengineered Business Process

Customer → Order → On web → Automatic Credit Check → Automatic Checking of Stock → Sales → Finance → Enter Order → Print Invoice → Order → Print Packing List
→ Find Stock → Print Invoice → Ship
→ Inform Mfg. to replenish stock

Some Examples
- Supply Chain Management
- Customer relationship Management
- Inventory Control
- Transaction Processing
- Enterprise Resource Planning

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

What is an information technology?
- It's the technology you use to make an information systems
  - Computer Hardware, Software, Networks, etc...
Course Objectives

- The objectives of ISM 50 are to understand
  - The needs of business
  - The 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)

What is Information Systems Management (ISM)?

An exciting new discipline that combines engineering and management to address:

- The Technology of Management: the design and use of technologies to efficiently and profitably manage and operate any enterprise or company
- The Management of Technology: how to develop, manage, and commercialize technologies/products (e.g., computers, networks, and software)

ISM Specializations / Focii

- ISM - Information Systems Management (The Technology of Business) - Use information and computer systems to solve business problems (e.g., finance and resource allocation)
- MOT - Management of Technology (The Business of Technology) - Develop and commercialize a new product or idea (business strategy, marketing, etc.)
- ISTM - Information Systems and Management of Technology - A combination of the above two

ISM 50 Teaching Staff

Instructors:
- Mary Doyle
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  - mdoyle1@ucsc.edu
- Geoff Ryder
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  - gryder@gmail.com

Teaching Assistants:
- Peter Towbin
  - Office: E2 367
  - ptowbin@ucsc.edu
- Lei Yang
  - Office: E2 367
  - jeffy2008@gmail.com
Instructor Dr. Mary Doyle, Vice-Chancellor for IT

- **Current Focus**
  - Manages all IT development and deployment for the campus (network, telecommunications, enterprise systems, applications and project management, support services, security, classroom technology, computer labs, client relationship management) and a staff of 270
- **Selected Previous Work**
  - Vice President for Information Systems and Vice Provost for Planning, Budget and Resource Management - Washington State University
  - Ph.D., UC-Santa Barbara, Dissertation: "A Study of the Importance of Information Technology in Higher Education"
  - MBA, Arizona State University
  - Native of Santa Cruz (Westside)

Co-Instructor Geoff Ryder, Ph.D. Candidate, CMPE / TIM

- **Academics**
  - Completed dissertation research in CMPE/TIM (Brandwajn, Mehrotra, Musacchio, Ross), grad. in June
  - TA, Web and Database Programming Labs, & Course Design: ISM 211 (Musacchio), ISM 270 (Ross)
  - TA, Matlab Programming Lab for AMS 147 (Wang)
  - MS-CMPE, UCSC. (Di Blas, Hughey, Manduchi, Tao)
  - BS-EE, BA-Asian Studies, University of Illinois
- **Industry: 4 startups**
  - EPI → to Mentor Graphics
  - Caly Networks → X
  - Flashpoint Technology → ??
  - Arithmos → to ST Microelectronics

Teaching Assistant Peter Towbin, Ph.D. Grad. Student, Economics

- **Academics**
  - Research focus connecting classical decision theory with an experimental and evolutionary understanding of human decision making.
  - Fellow in the University of California’s Institute for Global Conflict and Cooperation, in their program on Public Policy and Nuclear Threats.
  - MS-Computer Science, University of California - Berkeley
  - BA-Mathematics, University of California - Berkeley
- **Industry - Silicon Valley**
  - Developed a diverse array of scientific and enterprise software products in companies ranging from start-ups to multi-nationals.

Teaching Assistant Lei Yang, Ph.D. Grad. Student, Computer Science-TIM

- **Academic Interests**
  - Research Projects:
    - Query Answers in Inconsistent Databases
    - Link Analysis on Web Graphs
    - An Efficient Dictionary Mechanism Based on Double-Byte
  - BS-CS, Beijing Institute of Technology
    - Java, C++, SQLSERVER, MySQL, PostgreSQL
  - Microsoft Research Asia
    - Search engine toolbar project for Internet Explorer: detects spam URLs for users

Coming Soon in ISM / TIM

- ISM minor
- Revised ISM B.S. degree requirements
- TIM Graduate Program

ISM 50 Course Pre-requisites

- 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?
- 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

Our Textbook
- 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
- We also have a reader
- The reader is available now at the Bay Tree Bookstore
- The reader contains
  - Case Studies
  - Other Readings

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
### Syllabus (Tentative) on WebPage

<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topics</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/30</td>
<td>Class Introduction</td>
<td>Assignment 1 (due)</td>
</tr>
<tr>
<td>2</td>
<td>4/1</td>
<td>IT History and Background</td>
<td>Chapter 1 of O’Brien (reader pp 1-26)</td>
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<tr>
<td>3</td>
<td>4/6</td>
<td>Competing with IT</td>
<td>Chapter 2 - Section I of O’Brien (reader pp 69-77)</td>
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<tr>
<td>4</td>
<td>4/8</td>
<td>Competing with IT (cont’d)</td>
<td>Chapter 2 - Section II of O’Brien (reader pp 78-90)</td>
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<tr>
<td>5</td>
<td>4/13</td>
<td>Business Processes</td>
<td>Folio Article 1 due</td>
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<tr>
<td>6</td>
<td>4/15</td>
<td>Applications, Information Access Terms</td>
<td>Chapter 2 - Section I of O’Brien (reader pp 69-77)</td>
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<tr>
<td>7</td>
<td>4/20</td>
<td>Applications (cont’d)</td>
<td>Chapter 2 - Section II of O’Brien (reader pp 78-90)</td>
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<td>8</td>
<td>4/22</td>
<td>E-commerce</td>
<td>Chapter 3.4-3.6 (83-98)</td>
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<tr>
<td>9</td>
<td>4/27</td>
<td>IT Concepts</td>
<td>Chapter 4 (107-132)</td>
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<tr>
<td>10</td>
<td>4/29</td>
<td>Client Server Computing</td>
<td>Chapter 5 (139-154)</td>
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<tr>
<td>11</td>
<td>5/4</td>
<td>Modularity and Layering</td>
<td>Messerschmitt Ch 6 (157-190)</td>
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<tr>
<td>12</td>
<td>5/6</td>
<td>MIDTERM EXAM</td>
<td>Messerschmitt Ch 7 (198-226)</td>
</tr>
<tr>
<td>14</td>
<td>5/13</td>
<td>Database Management</td>
<td>Messerschmitt Ch 11.1 &amp; 11.2 (325-335)</td>
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<tr>
<td>15</td>
<td>5/16</td>
<td>Database Management Control</td>
<td>Messerschmitt Ch 11.1 &amp; 11.2 (325-335)</td>
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<td>16</td>
<td>5/20</td>
<td>Networking</td>
<td>Messerschmitt Ch 15.1-15.2 (415-425)</td>
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<td>5/22</td>
<td>Networking (Cont’d)</td>
<td>Messerschmitt Ch 15.1-15.2 (415-425)</td>
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<tr>
<td>18</td>
<td>5/24</td>
<td>AGGREGATE MART Organization</td>
<td>Messerschmitt Ch 15.1-15.2 (415-425)</td>
</tr>
<tr>
<td>19</td>
<td>5/26</td>
<td>AGGREGATE MART Organization (Cont’d)</td>
<td>Messerschmitt Ch 15.1-15.2 (415-425)</td>
</tr>
</tbody>
</table>
| 20    | 5/28 | Wrap-up, Final Review | Final Exam
Time: 7:30-10:30 pm |
| 21    | 6/1  | Applications and the Organization | Final Exam
Time: 7:30-10:30 pm |

### Evaluation (posted on web page)

<table>
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<tr>
<th>Item</th>
<th>Due Date</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Participation</td>
<td>Each Class</td>
<td>10%</td>
</tr>
<tr>
<td>Pop Quizzes</td>
<td>3 per qtr.</td>
<td>5%</td>
</tr>
<tr>
<td>Oral Presentation or Folio</td>
<td>assigned</td>
<td>5%</td>
</tr>
<tr>
<td>Weekly Assignments</td>
<td>Each week</td>
<td>10%</td>
</tr>
<tr>
<td>Business Paper Proposal</td>
<td>Oct 21</td>
<td>5%</td>
</tr>
<tr>
<td>Midterm</td>
<td>Nov 4</td>
<td>15%</td>
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<tr>
<td>Database Assignment</td>
<td>Nov 25</td>
<td>10%</td>
</tr>
<tr>
<td>Business Papers Final</td>
<td>Dec 4</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Dec 10</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Exams

- **Midterm**
  - **May 6th**
- **Final**
  - 7:30 – 10:30 Monday, June 8th
- 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
- 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 starts Monday, April 6
Online Forum Participation

- Feel free to answer the question directly, or to build on points raised later by other students--if so, try to add your own unique perspective to the developing thread of opinions.
- We will bring up interesting points from some of the best forum posts during lecture.

Participation

- In Summary...
  - You need 8 participation points to get full credit.
  - Participation is 10% of your overall grade.

Presentation/Folio

You will be assigned either

- PowerPoint Presentation.
- E-mailed to us by the night before

Presentation Evaluation

- Content of presentation
  - Did the case summary outline the most important aspects of the case study?
  - Was the news story relevant, and furthermore where the points most relevant to the class discussed?
- Delivery:
  - Organization
  - Voice Articulation
  - Professionalism
  - Timing
  - Eye Contact
  - Enthusiasm

ORAL PRESENTATION

and NEWS FOLIOS

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 us by the night before
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 - 4/27
  - Article 2 - 5/11
  - Article 3 - 6/1

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!

- Wednesday 4/8: Two News Stories.
- The rest of this quarter's presentation assignments will be announced next week

Business Analysis Paper

- Write a paper about a company of your choice.
- Pick a company for which information systems played a key roll 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).
  - Organized chronologically, by topics, or by some combination of both.
  - Looking for between 10 - 20 text pages, double spaced (fewer or more pages are frowned upon)
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?
- More detailed guidelines will be posted on the website over the next few weeks

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?

Grading: the writing should be...

- (i) **Focused**: the discussion and supporting examples were relevant to the topic.
- (ii) **Persuasive**: the authors took an analytical approach, and the arguments put forth were sufficient and convincing.
- (iii) **Organized**: the structure of the report enhanced the content.

- (iv) **Clear**: the style followed accepted writing conventions (spelling, grammar, punctuation).
- (v) **Supported**: suitable references were used and attributed to establish credibility.
- About that last point...

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].

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!

- A guide is posted on the class website to help you cite your sources correctly.

- Talk to the TA or instructor if you have questions.

Suggested sources of Information

- Company website
  - [Link to company's annual report or ETG]

- ABI/Inform article database
  - A database of articles from magazines like "Business Week" and economics journals.
  - Find it at: [http://library.ucsc.edu]
  - Click on "article database" on left margin.
  - Click on "ABI/Inform" and try this tonight!

- Industry specific publications
  - Example: Aviation Week

- Good Magazines [The Economist]

- Consulting groups: Forrester, Gartner, ...

Business Analysis Paper Preferences Due Monday April 6th!

- 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 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 April 22nd

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 Wednesday April 8th
- 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)
  - Job Title
  - Major responsibilities
  - Major accomplishments

How do these pertain to the job you are seeking?

Sample

Sample

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Job Title</th>
<th>Employment dates (from – to)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company A</td>
<td>Job A</td>
<td>2000-2005</td>
</tr>
<tr>
<td>Company B</td>
<td>Job B</td>
<td>2010-2015</td>
</tr>
</tbody>
</table>

EXPERIENCE

- Company A: Project Manager, 2000-2005
  - Developed and managed large-scale projects.
  - Led teams of 10-15 employees.
- Company B: Senior Analyst, 2010-2015
  - Conducted feasibility studies.
  - Created and maintained project schedules.

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.

TO DO:

By Wednesday (April 1st):
- Read "IT Management from 1960-2000" in Reader
- Read Chapter 1, Section II, of O'Brien Book (this material is also in your reader.)

By Monday (April 6th):
- Business Paper Preferences
  - Group members, Companies
- Turn in as a group

By Wednesday (April 8th):
- Resume & Cover Letter
  - Turn in as an individual

Bob Brown
1234 Ocean St
Santa Cruz, CA 95060

September 21, 2009

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 an Information Systems Management (ISM) internship at ABC Inc. I have also had experience designing the website of XYZ Company... 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