ISM 50 - Business Information Systems

Introduction

Instructor: John Musacchio
UC Santa Cruz
9/21/2006
ISM 50 -

Course Parameters:
- Tuesdays and Thursdays 2-345
- Thimann Lecture Hall Room 001
- Course Control Number: 16874
- WEB PAGE:
  - (write this down, go home, and bookmark it!)
  - http://www.soe.ucsc.edu/classes/ism050/Fall06

Instructor:
  - John Musacchio
  - Office: E2 557
  - johnm@soe.ucsc.edu
- Office Hours 10-12 Tuesdays (No office hour on 9-26)
ISM 50

TA

- Suresh Iyer
  - suresh@soe.ucsc.edu
  - Office Hours:
    - Wednesday 2.30pm-4.30 pm
    - Friday 9.30-11.30am
    - Baskin Engineering 314
What is this class about?

- Supply Chain Management (SCM)
More Examples

- Customer Relationship Management (CRM)
  - Other examples?
Customer

Sales

Finance

Inventory Control

Warehousing

Business Functions

Order

Take Order

Enter Order

Credit Check

Check Stock

Print Packing list

Tell Mfg. to make order

Find Goods

Print Invoice

Ship

Tell Mfg. to make order
A Streamlined Business Process

Business Functions

- Customer
- Sales
- Finance
- Inventory Control
- Warehousing

Steps:
- Order
  - Take Order
  - Enter Order
  - Check Stock
    - Print Packing list
    - Find Goods
    - Ship
    - Tell Mfg. to make order

- Automatic Credit Check
  - Credit Check
  - Find Goods
A Reengineered Business Process

Business Functions

Customer
  Order
  On web

Sales
Finance
Inventory Control
Warehousing

Inform Mfg. to replenish stock

Automatic Credit Check
Automatic Checking of Stock

Print
Packing list
And invoice

Find Goods
Ship
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 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...
Who am I?

- John Musacchio
- New Assistant Professor in ISM
  - Joined January 2005
- PhD from Berkeley in Electrical Engineering
  - Minor in Management of Technology

Experience

- 2 ½ years at a high tech Start-Up
  - Helped design a chip-set for computer-networking switches
- Other experience at large companies: GE, Bell Labs etc.
Why does IT change so fast?!

- Moore’s Law is 40 years old [1]
- In 1965, Gordon Moore (Intel Co-founder) said
  - The number of components on a silicon chip would be doubling every year or so.
- Later it has been quoted as “every 18 months,” which has proven to be correct for 40 years!

Moore's Law

- What does this have to do with Business Information Systems?
- The cost of computation is being driven to zero.
- Businesses that learn to use computation and communications to
  - Add value to their products and services
  - Improve efficiency
- Will gain a competitive advantage over those who don’t.
Can we always predict IT future?

I think there is a world market for maybe five computers.
Thomas J. Watson, Sr., Chairman and CEO
IBM Corporation, 1943

Computers in the future may weigh no more than 1.5 tons.
Ken Olsen, CEO and Founder,
Digital Equipment 1977

There is no reason anyone would want a computer in their home.

Popular Mechanics - 1949

640K ought to be enough for anybody.
Bill Gates, 1981
What is happening Lately?

Cities like San Francisco are proposing to deploy wireless access points throughout the city [2]?

- Is this a good idea?
- What are some of the advantages and disadvantages?

What is happening Lately?

- Companies are eavesdropping on online discussion forums to see what people think of their products.
  - IBM and Accenture have software to automatically trawl through discussion forums.
  - Specialist firms use human researchers to read through posts and identify the most influential posters.

- Is this good?
- Is it bad?

Courses Objectives

- The objectives of ISM 50 are to understand
  - The needs of business
  - The roll 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.
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)
Who Should Take it?

- **ISM Majors, and those thinking of an ISM major**
  - A survey of the ISM major.

- **BME Majors**
  - Seeking a basic understanding of technology and its role in solving business problems.

- **CS, CE, and other engineering majors**
  - Those seeking a higher level overview of what technologies are used for.
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
Class Webpage

http://www.soe.ucsc.edu/classes/ism050/Fall06/

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>
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<tbody>
<tr>
<td>1</td>
<td>9/21</td>
<td>Class Introduction</td>
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<td>Assignment 1 out</td>
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<tr>
<td>2</td>
<td>9/26</td>
<td>IT History and Background</td>
<td>IT Management from 1960-2000 (reader pp 1-26)</td>
<td>Project Preferences Due</td>
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<td>3</td>
<td>9/28</td>
<td>Competing with IT Cash Flows</td>
<td>Chapter 2 - Section I of O’Brien (reader pp 69-77)</td>
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<td>Competing with IT (Cont’d)</td>
<td>Chapter 2 - Section II of O’Brien (reader pp 78-90)</td>
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<td>5</td>
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<td>Business Processes,</td>
<td>Frito-Lay Case (93-103 + figs)</td>
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<td>6</td>
<td>10/10</td>
<td>Enterprise Applications,</td>
<td>Messerschmitt Ch 2.3 (38-50)</td>
<td>Folio Article 1 due</td>
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<td>Information Access Terms</td>
<td>Messerschmitt Ch 3.1-3.3 (59-82)</td>
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<td>Enterprise Applications (cont’d)</td>
<td>Cisco Case (114-124 + figs)</td>
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<td>8</td>
<td>10/17</td>
<td>E-commerce</td>
<td>Messerschmitt Ch 3.4-3.6 (83-98)</td>
<td>Business Paper Proposal Due</td>
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<td>Alibris Case (133-143 + figs)</td>
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<td>9</td>
<td>10/19</td>
<td>IT Concepts</td>
<td>Messerschmitt Ch 4 (107-132)</td>
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<td>10/24</td>
<td>Client Server Computing</td>
<td>Messerschmitt Ch 5 (139-154)</td>
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<td>Sun-N Tier Case (145-164 + figs)</td>
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<td>11</td>
<td>10/26</td>
<td>MIDTERM</td>
<td>Thimann Lecture Hall 001</td>
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<td>Topic Description</td>
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<td>12</td>
<td>10/31</td>
<td>Modularity and Layering</td>
<td>Messerschmitt Ch 6 (157-190)</td>
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<td>11/2</td>
<td>Computer and Comm. Industry</td>
<td>Messerschmitt Ch 7 (198-226)</td>
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<td>Database Management Cont’d</td>
<td>MySQL Database Case (179-199 + figs)</td>
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<td>Networking</td>
<td>Messerschmitt Ch 18 (493-512)</td>
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<td>11/16</td>
<td>Networking (Cont’d)</td>
<td>Akamai Case (213-228 + figs)</td>
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<td>Applications and the Organization</td>
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<td>11/23</td>
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<td>Thanksgiving Holiday</td>
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<td>19</td>
<td>11/28</td>
<td>Application Architecture</td>
<td>Messerschmitt Ch 10 (293-321)</td>
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<td>20</td>
<td>11/30</td>
<td>Application Architecture (Cont’d) Wrap Up, Final Review</td>
<td>American Airlines Case (165-171 + figs)</td>
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<td>12/7 (Thurs.)</td>
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<td>FINAL EXAM Time: 8-11am Thimann Lecture Hall 001</td>
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# Evaluation

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<thead>
<tr>
<th>Item</th>
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<th>Value</th>
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<tr>
<td><strong>Participation</strong></td>
<td></td>
<td>10%</td>
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<tr>
<td>- in class</td>
<td>Each Class</td>
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<tr>
<td><strong>Pop Quizzes</strong></td>
<td>3 per qtr.</td>
<td>5%</td>
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<tr>
<td><strong>Oral Presentation or Folio</strong></td>
<td>assigned</td>
<td>5%</td>
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<td>- 1 talk or news folio (to be assigned)</td>
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<tr>
<td><strong>Weekly Assignments</strong></td>
<td>Each week</td>
<td>10%</td>
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<tr>
<td><strong>Business Paper Proposal</strong></td>
<td>October 17</td>
<td>5%</td>
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<tr>
<td><strong>Midterm</strong></td>
<td>October 26</td>
<td>15%</td>
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<tr>
<td><strong>Database Assignment</strong></td>
<td>TBA</td>
<td>10%</td>
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<tr>
<td><strong>Business Papers Final</strong></td>
<td>November 30</td>
<td>20%</td>
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<tr>
<td><strong>Final Exam</strong></td>
<td>December 7</td>
<td>20%</td>
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EXAMS and Quizes
Exams

- **Midterm**
  - Probably October 26

- **Final**
  - December 7

- 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.
Participation

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

- Participation is 10% of your overall grade.
ORAL PRESENTATION
and
NEWS FOLIOS
You will be assigned *either* Presentation or 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 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
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 - 10/10
- Article 2 - 11/2
- Article 3 - 11/21
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!

- Tuesday 9/26: Two News Stories.
- Tuesday 10/3: 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 Business Paper Guidelines are posted on the website)
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?
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 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.)

- **ABI/Inform 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 “article database” on left margin.
  - Click on “ABI/Inform”
  - **Try this tonight!** And let us know if you have problems

- **Industry specific publications**
  - Example: Aviation Week
- **Books**
- **Good Magazines (The Economist)**
- **Consulting groups: Forrester, Gartner, ...**
Business Analysis Paper Preferences
Due Thursday Sept 28!

- 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 Tuesday April 11th!

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 October 17th.**
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 September 28 (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

OBJECTIVE

To obtain a co-op, summer, or part-time position in biomedical engineering or biotechnology.

EDUCATION

University of Maryland
B.S., Biological Resources Engineering
GPA 3.8

Virginia Polytechnic Institute & State University
Chemical Engineering coursework

EXPERIENCE

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.

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.
The O. Hommel Company (OHCO)  
**Chemist/Lab Technician**  
Carnegie, PA  
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.
Bob Brown
12345 Ocean St
Santa Cruz, 95060
September 21, 2005

Jane Smith
Chief Information Officer
ABC Corporation
Scotts Valley, CA 95000

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 a 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 any questions about my background. I look forward to hearing from you.

Sincerely,

Bob Brown
TO DO:

By Tuesday (9/26):
- 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 Thursday (9/28):
- Business Paper Preferences
  - (Group members, Companies, and suggested person to give presentation)
  - Turn in as a group
- Resume & Cover Letter
  - Turn in as an individual
Instructor Travel plans

- You will have a substitute instructor
  - Tuesday September 26 (Yi Zhang)
  - Thursday September 28 (Subhas Desa)

- Be sure to attend and participate!

- My office hours next week are cancelled
  - Email me, or ask TA(Suresh Iyer) any questions
Some Terminology from Messerschmitt
Definitions

- **An application**
  - a software program that provides direct and specific value to a user or organization

- **A networked application**
  - distributes programs across 2 or more computers which collaborate in realizing an application.