Some Examples

Supply Chain Management (SCM)

Customer Relationship Management (CRM)

Payroll

Supply Chain Management
Customer relationship Management
Accounts
- Payable
- Receivable
Inventory Control
...

What is an information system?

First let us answer: what is a system?
- Interrelated components
  - Input
  - Processing
  - Output
- Systems thinking leads to notions of feedback and control.
What is an information system?

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

Who am I?

- John Musacchio
- New Assistant Professor in ISTM
- PhD from Berkeley in Electrical Engineering
- Experience
  - 2 years at a Start-Up
    - Helped design a chip-set for computer-networking switches
  - Office Hours 10-12 Tuesday and Thursday
    - (Subject to change)

What's happening?

- Moore's Law is 40 years old¹
- 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 else is happening?

- SAP buys Retek, a retail industry software vendor.
- SAP is the Largest Seller of ERP Applications
- Acquisition part of strategy to make its NetWeaver suite the standard Enterprise software platform.

Oracle, largest database firm
- Last year, Oracle acquired applications firm PeopleSoft
- Oracle wants its database to become the standard platform for enterprise software.

¹“Moore's Law is 40 years old”, The Economist, March 23, 2005.
Courses 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

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

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 will also have a reader
  - The reader will be available on Wednesday March 30, at the Bay Tree Bookstore
  - The reader will contain
    - Case Studies
    - A chapter from a different text book

**Case Studies**

- **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

**Additional Material**

- Textbook from previous versions of the course.
- More Business Coverage than Messershmitt.
- We will use only the second chapter.

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**Syllabus (Tentative)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Textbook Reading (Required)</th>
<th>Case Reading</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-9-Mar</td>
<td>Class Introduction</td>
<td>Messerschmitt Ch 1</td>
<td></td>
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<tr>
<td>9-15-Mar</td>
<td>Definitions, Application, Technology, Social Application, History (IT)</td>
<td>Messerschmitt Ch 2.2 (Required)</td>
<td>History of IT (Optional)</td>
<td>Assignment (Due)</td>
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<tr>
<td>16-4-Apr</td>
<td>Business Processes, Strategies</td>
<td>Chapter 2 (Required)</td>
<td>Strategy and the Internet (Optional)</td>
<td>Assignment (Due)</td>
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<tr>
<td>4-10-Apr</td>
<td>Enterprise Applications, ERP, CRM, SCM</td>
<td>Messerschmitt Ch 3.1, 3.2, 3.3 (Required)</td>
<td>Case ERP Case (Required)</td>
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<tr>
<td>11-17-Apr</td>
<td>Enterprise Applications Continued</td>
<td>Firefly Case (Required)</td>
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<tr>
<td>17-23-Apr</td>
<td>E-commerce</td>
<td>Messerschmitt Ch 4.3-4.9, 9.37 (Required)</td>
<td>Affinity Case (Required)</td>
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<tr>
<td>24-30-Apr</td>
<td>Information Technology Concepts</td>
<td>Messerschmitt Ch 8 (Required)</td>
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<tr>
<td>4-10-May</td>
<td>Client Server Computing</td>
<td>Messerschmitt Ch 9-11 (Required)</td>
<td>Web IT Case (Required)</td>
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<tr>
<td>11-17-May</td>
<td>Programming on Application</td>
<td>Messerschmitt Ch 11 (Required)</td>
<td>Internet Projects</td>
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<td>17-23-May</td>
<td>Wireless, E-commerce</td>
<td>Messerschmitt Ch 12 (Required)</td>
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</table>

**Syllabus Continued**

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<th>Assignments</th>
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<tr>
<td>11-17-May</td>
<td>Database Management</td>
<td>Messerschmitt Ch 13 (Required)</td>
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<td>Database Assignment (Due)</td>
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<td>18-24-May</td>
<td>Database Contrasted</td>
<td>MySQL Case (Required)</td>
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<td>Database Assignment (Due)</td>
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<td>25-31-May</td>
<td>Database Management</td>
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<td>Database Assignment (Due)</td>
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<tr>
<td>1-7-Jun</td>
<td>SQL</td>
<td>Messerschmitt Ch 15 (Required)</td>
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<td>8-14-Jun</td>
<td>SQL</td>
<td>Messerschmitt Ch 16 (Required)</td>
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<td>15-21-Jun</td>
<td>Application Architecture</td>
<td>Messerschmitt Ch 17 (Required)</td>
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<td>22-28-Jun</td>
<td>Information Technology Concepts</td>
<td>Messerschmitt Ch 18 (Required)</td>
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<tr>
<td>29-Jul-5-Aug</td>
<td>Case Summary Due</td>
<td>MySQL Case (Required)</td>
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<tr>
<td>6-12-Aug</td>
<td>IT Doesn’t Matter</td>
<td>IBM Case (Required)</td>
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<td>13-19-Aug</td>
<td>Database Assignment</td>
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<td>20-26-Aug</td>
<td>XML</td>
<td>Messerschmitt Ch 20 (Required)</td>
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<td>27-Aug-2-Sep</td>
<td>Add-IT Day Holiday – No Class</td>
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<tr>
<td>3-9-Sep</td>
<td>Wrap up</td>
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<td>10-16-Sep</td>
<td>Final Exam</td>
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<td>17-23-Sep</td>
<td>Final Exam</td>
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<tr>
<td>24-30-Sep</td>
<td>Final Exam</td>
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<tr>
<td>31-Oct-7-Nov</td>
<td>Final Exam</td>
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</tbody>
</table>
**Class Webpage**

http://www.soe.ucsc.edu/classes/ism050/Spring05/

Contains
- Syllabus
- Assignments
- Instructor contact information
- Requirements for business paper, database project
- Exam dates

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**Exams**

- Midterm (April 27) and Final (June 8)
- Closed book
- A mix of short answers and 1 or 2 essays
- Possibly an analytical question

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**Database Assignment**

- Learn and Use Microsoft Access
- An opportunity for "hands-on" experience without having to use advanced programming.
- Assignment will be done individually
- Details soon to follow...
- Tutorial later in the quarter - probably on a Friday 5 - 6:45

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**Business Analysis Paper**

- Focus on the use of information systems within 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.

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**Business Analysis Paper**

- The paper should answer the questions like:
  - What is the industry?
  - What is the competitive environment like?
    - Porter model (competitors, substitute products, buyers, suppliers, new entrants...)
  - Was there a time in the company’s history where its use of IT gave it a great advantage?
    - If so, what was the competitive landscape like at that time?

---

**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.

> "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


### Business Analysis Paper Preferences

**Due Monday April 4!**

- 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 a list of your proposed group members.
  - A ranked list of companies you would like to study.

### Suggested sources of Information

- Company website
- Articles
- Annual report
- 10K report
- ABI/Inform article database (should be available at library)
- Industry specific publications
- Books
- Good Magazines (The Economist)
- Consulting groups: Forrester, Gartner, ...

### Classroom 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.
- We realize this is a big class...

### Discussion Forum

- We will also maintain an online discussion forum.
  - [http://forums.delphiforums.com/ism50](http://forums.delphiforums.com/ism50)
Forum Evaluation

- Each week, starting next week, we will begin a new discussion thread on the forum
  - For your post to count, it must be
    - thoughtful, relevant, and non-repetitive.
    - Made within one week of us starting the thread.

Classroom & Online Forum Evaluation

- You will earn 1 participation point for each class that you contribute to the classroom discussion.
- A good post you make to the forum.
- For full participation credit, you need to earn 10 participation points.
- Participation constitutes 10% of your overall grade.

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

Oral Presentations

- Each class will begin with two student presentations
- Presentation should be five minutes in length
- The presentations will either be
  - A summary of the case study we will discuss in class that day.
  - A recent news story involving business and information systems.
- PowerPoint Presentation.
  - E-mailed to me by the night before at the latest!
- Students who don’t make a presentation will hand in a folio of collected news stories over the quarter.

Presentation Evaluation

- Content of presentation.
  - Did the 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?
- Try to avoid saying too much for five minutes
- Avoid reading
- Act interested!
**Need Presentation Volunteers**

- Wednesday: Two News Stories.
- Monday: Two News Stories.
- The rest of this quarter's presentation assignments will be announced in the next class.

**News Folios**

- Not enough classes for everyone to give a presentation.
- Those not assigned a presentation must collect a folio of news articles.
- Collect at least 5 articles.
- For each article, post to the discussion forum:
  - A citation of the article (or URL if possible)
  - A ~200 word paragraph discussing the article's relevance to what we've learned in class.
- Anyone else can earn Forum participation credit by posting a comment regarding someone's news folio posting.

**Weekly Assignments**

- Approximately one per week.
- 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 will be to make a resume and cover letter!

**Resume (Assignment 1)**

- One page
- For a job application.
- Focus:
  - Knowledge, Experience, Skills and Abilities
  - What can YOU do for the employer?
  - You may choose to use a header with the purpose of the resume highlighted.
- Ultimate Objective?
  - To get an interview!
  - It should SELL you!

**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

Sample

Sample Cover Letter

- A letter of introduction, usually accompanies your resume when you apply for a job.
- Include a brief description of your 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.

Some Terminology from Messerschmitt

- Understanding Networked Applications
  - David E. Rossenwasser
**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.

---

**Definitions**

- **Information Technology**
  - the suite of technologies that manage the storage, communication, and manipulation of information.

- **Infrastructure**
  - part of the information technology shared by many applications
    - **Hardware** - computers and the network
    - **Software** - operating system, middleware

---

**Definitions**

**Middleware**

software falling between the operating system and the application.

---

**History of Computing**

- **Centralized**
  - A few big mainframes to automate business functions such as payroll and accounting

- **Time-Shared**
  - Terminals added so many could access main frame

- **Decentralized**
  - PCs on every desk

- **Networked**
  - Applications could be geographically distributed

---

**Definitions**

**Legacy Applications**

- Applications implemented in the technology of yesterday.

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**Next time**

- More discussion of IT history
- Review of capital budgeting concepts
- Messerschmitt Chapter 2.3