TIM 50 –

Business Information Systems

Introduction

Instructor: Kwang sub Song
UC Santa Cruz
9/27/2012
TIM 50

Business and Information Systems

Course Parameters:

Class: Tuesdays and Thursdays 8-9:45 AM
Building
WEB PAGE:
(write this down, go home, and bookmark it!)
http://classes.soe.ucsc.edu/tim050/Fall12/

Instructor:
Kwang sub Song
Office: E2 562
johnm@soe.ucsc.edu
TIM 50

TAs
Qi Zhao  (manazhao@gmail.com)
    Office
    Office Hour

Shenshen Liang (erikaeriga@gmail.com)
    Office
    Office Hour
Class Webpage

http://classes.soe.ucsc.edu/tim050/Fall12/
Contains

Syllabus
Assignments
Instructor contact information
Requirements for assignments and projects
Exam dates
Courses Objectives

The objectives of TIM 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.
TIM 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)
TIM 50 Course Pre-requisites

No specific programming language knowledge required, though useful
Course Organization

Top Down (Roughly)
Businesses and their needs
IT Terminology and IT History
Technology concepts
Technological Applications
Important “building block” Information Technologies
Data Bases
Networks
Case Studies Throughout
Main Points;

What comes first?

Do business needs drive the design of technology?

Or does the technology drive the design of a business?

>> Both!
Reading Material 1

Selected Chapters from:
D. Messerschmitt, *Understanding Networked Applications*

Case Studies

From Prof. John Musacchio’s Note
Reading Material 2

Selected Chapters from:
Laudon & Laudon, Essentials of MIS, 9th edition

From Prof. John Musacchio’s Note
Case Studies

- Otis Elevator
- Cisco Systems
- Alibaba
- Zhejiang Corporation
- Amazon Web Services and Others
Basic Concepts of Class Examples

Acquiring a Song in 1982

Drive to record store

Search for hours for desired music

Buy

From Prof. John Musacchio’s Note
1982: Who's got the power?

From Prof. John Musacchio’s Note
Todays..

Acquiring a car in 2012

Push iTunes Button
Type name of song
Press “Buy”

From Prof. John Musacchio’s Note
2012: Who's got the power?

From Prof. John Musacchio’s Note
This can be happened Via;

Web/Business
Computer/ I-Phone
Communication Networks
WiFi, Hot Spots, Internet
Electronic Pay, Credit Card..

>> Information Technologies
UPS

- DIAD (Delivery Information Access Device)
To be Some Specific inside..

What is Business?

The Concept of Business

- The exchange of goods/services with money for mutual benefit/profit
- An organization that provides goods and/or services to earn profits
- All profit-seeking activities that are organized and directed to convert factors of production into goods and services or combination between goods and services for customers in the markets to achieve the business objectives

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
The Concept of Business and the Concept of Profit

Business

An organization that provides goods or services to earn profits

Profits

The difference between a business’s revenues and its expenses
## Differences between goods and services

<table>
<thead>
<tr>
<th>Goods</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangible and durable outputs</td>
<td>Intangible outputs</td>
</tr>
<tr>
<td>Output can be inventoried</td>
<td>Output can not be inventoried</td>
</tr>
<tr>
<td>Low customer contact</td>
<td>High customer contact</td>
</tr>
<tr>
<td>Long response time</td>
<td>Short response time</td>
</tr>
<tr>
<td>Regional, National or International markets</td>
<td>Local markets</td>
</tr>
<tr>
<td>Large facilities</td>
<td>Small facilities</td>
</tr>
<tr>
<td>Capital intensive</td>
<td>Labor intensive</td>
</tr>
<tr>
<td>Quality easily measured</td>
<td>Quality not easily measured</td>
</tr>
</tbody>
</table>

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
Entrepreneur

Entrepreneur - A person who takes the risks to organize and manage a business innovatively and creatively that receives the financial profits and non-monetary rewards for his

The Growth Oriented Entrepreneur

- Need for Achievement - A Strong desire to succeed, to grow up and to accomplish challenging tasks
- Low need to conform, persistence, High energy level
- Risk-taking tendency

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
Big Picture of Business Activities

“Pure Market Economy”

FIRMS
- Supply products in output markets
- Demand resources in input markets

OUTPUT MARKETS
Goods
Services

SUPPLY

DEMAND

INPUT MARKETS
Labor
Capital
Entrepreneurs
Physical Resources
Information Resources

SUPPLY

DEMAND

HOUSEHOLDS
- Demand products in output markets
- Supply resources in input markets

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
Factors of Production

Labor

Capital

Information Resources

Entrepreneurs

Physical Resources

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
Factors of Production

- **Labor or human resources** – the physical and mental capabilities of people that contribute in economic production
- **Capital** – the funds needed to create and operate a business enterprise
- **Land or physical resources** – tangible resources used in the conduct of their business
- **Entrepreneurs** – people who take opportunities and the risks in creating and operating business
- **Information resources** – data and information used in decision making and problem solving in operating business

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
**Business Objectives**

- **Business Profit** = **TR - TC**
- **Economic Profit** – business profit that considered opportunity cost as a part of expenses
- **Survival**
- **Growth**
- **Social Responsibility**

From Lecture note of Dr. Fahmy Radhi, MBA
Internet Source
Information?
in its most restricted technical sense,
is a sequence of symbols that can be interpreted as a message.

Information can be recorded as signs, or transmitted as signals. Information is any kind of event that affects the state of a dynamic system. Conceptually, information is the message (utterance or expression) being conveyed.

The ancient Greek word for form was μορφή (morphe; cf. morph) and also εἶδος (eidos) "kind, idea, shape, set".
Technology?

is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function.

It can also refer to the collection of such tools, machinery, modifications, arrangements and procedures. Technologies significantly affect human as well as other animal species' ability to control and adapt to their natural environments.

The word technology comes from Greek τεχνολογία (technología); from τέχνη (téchnē), meaning "art, skill, craft", and -λογία (-logía), meaning "study of-". The term can either be applied generally or to specific areas: examples include construction technology, medical technology, and information technology.
Information technology (IT)

is a branch of engineering dealing with the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data.

The Information Technology Association of America has defined IT as "the study, design, development, application, implementation, support or management of computer-based information systems".
The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Humans have been storing, retrieving, manipulating and communicating information since the Sumerians in Mesopotamia developed writing in about 3000 BC,[4] but the term "information technology" in its modern sense first appeared in a 1958 article published in the Harvard Business Review; authors Leavitt and Whisler commented that "the new technology does not yet have a single established name. We shall call it information technology (IT).“

Based on the storage and processing technology employed, it is possible to distinguish four distinct phases of IT development: pre-mechanical (3000 BC – 1450 AD), mechanical (1450–1840), electromechanical (1840–1940) and electronic.
A system is a set of interacting or interdependent components forming an integrated whole or a set of elements ('components') and relationships which are different from relationships of the set or its elements to other elements or sets.

Systems have structure, defined by components/elements and their composition;
Systems have behavior, which involves inputs, processing and outputs of material, energy, information, or data;
Systems have interconnectivity: the various parts of a system have functional as well as structural relationships to each other.
Systems may have some functions or groups of functions
What is an information system?

- Interrelated components
  - Input
  - Processing
  - Output

From Prof. John Musacchio’s Note
Why is IT changing so fast?

- Business trend >> Profit generation >> Mass Production >> Past Changing Environment
<table>
<thead>
<tr>
<th></th>
<th>AGRICULTURAL AGE</th>
<th>INDUSTRIAL AGE</th>
<th>INFORMATION AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time Period</strong></td>
<td>Pre-1800s</td>
<td>1800s to 1957</td>
<td>1957 to present</td>
</tr>
<tr>
<td><strong>Majority of Workers</strong></td>
<td>Farmers</td>
<td>Factory workers</td>
<td>Knowledge workers</td>
</tr>
<tr>
<td><strong>Partnership</strong></td>
<td>People and land</td>
<td>People and machines</td>
<td>People and people</td>
</tr>
<tr>
<td><strong>Principal Tool</strong></td>
<td>Hand tools</td>
<td>Machines</td>
<td>Information technology</td>
</tr>
</tbody>
</table>
U.S. Workforce by Sector
Ordering Good in Old Times

Business Process Example

From Prof. John Musacchio’s Note
Then Technology made A little Changes..

A Streamlined Business Process

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

Order
- Take Order
- Credit Check
- Automatic Credit Check
- Enter Order
- Check Stock
- Print Packing list
- Find Goods
- Ship
- Tell Mfg. to make order
- Print Invoice
Today, We Restructure the process of Business and..

A Reengineered Business Process

From Prof. John Musacchio’s Note
With Information Technologies Applications, We Can ..

Some Examples

- Supply Chain Management
- Customer relationship Management
- Transaction Processing
- ...

Enterprise Resource Planning
What’s happening lately?

Net Neutrality, What is it?

FCC chair Julius Genachowski

- Internet access providers “must be transparent about their network management practices [1],”

- “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 [1]”

April 2010: Court rules FCC lacks power to censure Comcast.

August 2010: Google and Verizon proposal: neutral wired, less neutral wireless.


From Prof. John Musacchio’s Note
Today’s Economic and Business activities are

**Peoples:**
- I-Phone 5
- Galaxy
- LTE
- Cloud Computing
- Smart Phone Shopping

**Business:**
- BPRE
- Business process with IT Application
What comes first?

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

- Both! Through Application of IT Technologies
<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Topics</th>
<th>Reading</th>
<th>Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1/10</td>
<td>Class Introduction</td>
<td>Laudon &amp; Lauden Ch 2 (1-35, can skip cases on 16 and 26)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1/12</td>
<td>Business Background and Technology, Types of Enterprise Information Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1/17</td>
<td>Competing with IT, Transforming Business Processes</td>
<td>Laudon &amp; Lauden Ch 3 (49-74, can skip cases on 52 and 62)</td>
<td>Bus Paper Frt's Due</td>
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<tr>
<td>4</td>
<td>1/19</td>
<td>Business Process Transformation Cont'd, Enterprise Applications</td>
<td>Olins Case Begin Laudon &amp; Lauden Ch 8 (83-97 until end of section 2, can skip case on 93)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1/24</td>
<td>Enterprise Applications (cont'd)</td>
<td>Finish Laudon &amp; Lauden Ch 8 (67-108, can skip case on 100)</td>
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<tr>
<td>6</td>
<td>1/26</td>
<td>Conclude Enterprise Applications Begin E-commerce</td>
<td>Cisco Case Begin Laudon &amp; Lauden Ch 9 (117-127)</td>
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<tr>
<td>7</td>
<td>1/31</td>
<td>E-commerce (cont'd)</td>
<td>Laudon &amp; Lauden Ch 9 (128-148, can skip case on 132)</td>
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<tr>
<td>8</td>
<td>2/2</td>
<td>IT Concepts</td>
<td>Messenheimer Ch 4 (107-132)</td>
<td>Business Paper Proposal</td>
</tr>
<tr>
<td>9</td>
<td>2/7</td>
<td>Client Server Computing</td>
<td>Messenheimer Ch 5 (139-154)</td>
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<tr>
<td>10</td>
<td>2/9</td>
<td>MIDTERM EXAM</td>
<td>(DATE SUBJECT TO CHANGE)</td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>Notes</td>
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<tr>
<td>2/14</td>
<td>Modularity and Layering</td>
<td>Masser</td>
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## Evaluation (posted on web page)

<table>
<thead>
<tr>
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<th>Due Date</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Regular Assignments</td>
<td>multiple</td>
<td>10%</td>
</tr>
<tr>
<td>Database Assignments</td>
<td>multiple</td>
<td>10%</td>
</tr>
<tr>
<td>In-class exercises / Quizes / Discussion Forum</td>
<td>multiple</td>
<td>10%</td>
</tr>
<tr>
<td>Business Paper Proposal</td>
<td>2/2</td>
<td>5%</td>
</tr>
<tr>
<td>Business Paper First Draft</td>
<td>2/28</td>
<td>5%</td>
</tr>
<tr>
<td>Business Paper Final Draft</td>
<td>3/15</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>2/9 (tentative)</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>3/22</td>
<td>25%</td>
</tr>
</tbody>
</table>
Regular Exercises  (10%)

- Exercises pertaining to the reading and class discussion
- About 6 or so of these in the quarter
- First one due  Tuesday 10/9
Please re do this schedule

**Database Exercises (10%)**

- Early in the quarter, TAs will hold tutorial sessions on MS Access
  - Choose from 3 times in each of week 3 and week 4.
- Scheduled:

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<table>
<thead>
<tr>
<th></th>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
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<tbody>
<tr>
<td></td>
<td>22</td>
<td>23 8-9:45</td>
<td>24 6-7:45</td>
<td>25 6-7:45</td>
<td>26 27 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>30 8-9:45</td>
<td>31 6-7:45</td>
<td>1 6-7:45</td>
<td>2 3 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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- Social Sciences 1, Room 135
Please re do this or leave it

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**In Class Exercises/ Quizzes / Discussion Forum (10%)**

- Some classes, we will break into groups to discuss readings and case studies  
  - Groups will turn in answers after class
- A online forum will be created  
  - Follow up questions from class, and group exercises
- Online Reading quizzes  
  - After some readings, we might ask you to fill out an online quiz to check your understanding
- Pop quizzes (In-Class)  
  - ~3 per quarter. Easy questions pertaining to reading
Exams

- Midterm
  - Probably Tuesday 10/30

- Final
  - Thursday 12/6

- Closed book

- A mix of short answers and multiple choice
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
- Work in groups of about 4
Business Analysis Paper

- Paper Should address the following areas:
  - Industry Profile
  - Company Profile
  - Information Technology
  - Leadership
  - Market and Financial Performance
  - Trajectory
Business Analysis Paper

- **Industry Profile**
  - What is the industry?
  - What value does the industry provide to its customers?
  - Describe the competitive environment (Porter Model)
Business Analysis Paper

- **Company Profile**
  - What business is your company in?
  - What value does it provide its customers?
  - In what ways is it different than its competitors?
  - How has its history shaped what it can offer its customers?
Information Technology

Information Technology

- How does the company use IT to support or enable its business processes and competitive strategies?
- What technologies does it use?
- Does the company use existing technologies, develop its own technology, or some combination of both?
- 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?
- Is it used to enhance or differentiate their product, reduce costs, or both?
Business Analysis Paper

- Leadership
  - Who are/were the key leaders of the company
  - What decisions did these leaders make, in particular decisions relating to the deployment of IT?
  - What opportunities did they identify that helped make their company what it is today?
Business Analysis Paper

- **Market and Financial Performance**
  - What is the company's revenue and profit, and how has it evolved over the years?
  - How does the company's performance compare to its competitors?
  - Industry specific measures:
    - Cost per Available Seat Mile (Airlines)
    - Sales per square foot (retail)
Business Analysis Paper

- Trajectory
  - If the company successfully used information systems in its past, has it continued to innovate and improve up until today?
  - Is the company effectively postured for the future?
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 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:


From Prof. John Musacchio’s Note
Citing Sources

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

- Guides 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
  - See UCSC Library website!

- Industry specific publications
  - Example: Aviation Week
- Books
- Good Magazines (*The Economist*)
- Consulting groups: Forrester, Gartner, ...
Citing Sources

- To receive Full Credit, you must cite at least 5 print sources.
  - If your source is available both online and in print, cite the print version.
Business Analysis Paper Preferences
Due Thursday 10/4

- We want you 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:**
  - Names of proposed group members with emails
  - List of companies you would like to study

- Use the form we provide on the class webpage!
Business Analysis Paper Preferences

Due Thursday 10/4

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

- Wal-Mart
- Southwest Airlines
- Charles Schwab
- Home Depot
- Netflix
- Amazon

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

- To help us create balanced groups...
- ...you will self identify your best skills from:
  - W: Writing
  - A: Accounting and finance
  - C: Computers and technology
  - S: Business strategy
  - L: Literature Search

From Prof. John Musacchio’s Note
Business Paper Preferences

Example:

- Bob Smith  smith@yahoo.com  A, L
- Jane Do  do@hotmail.com  C, W
- Chris Tomas  chris@gmail.com  S, W


From Prof. John Musacchio’s Note
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!!!!

- **DUE** Tuesday 10/23

From Prof. John Musacchio’s Note
Business Paper

First Draft
- draft of your final paper
- The closer the better

Due Tuesday 11/15
Business Paper

- Final Draft
- Due  Tuesday 12/4 (Last Day of Class)

From Prof. John Musacchio’s Note
Thank you for your attentions

Do you have any questions?

Please, or

To TAs (Fine Friendly Persons)