TIM 50 - Business Information Systems

Introduction

Instructor: Ram Akella
UC Santa Cruz
January (10 moved to) 12, 2017
T I M  5 0 -

WEB PAGE:

- (write this down, go home, and bookmark it!)
  http://classes.soe.ucsc.edu/tim050/Winter17/

Be sure to capitalize Winter 17.

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TIM 50

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What is this class about?
Acquiring a Song in 1980

Drive to record store

Search for hours for desired music

Buy
Acquiring a car in 2015

Push iTunes Button

Type name of song

Press “Buy”
1980: Who's got the power?
2015: Who's got the power?
UPS

- DIAD
  (Delivery Information Access Device)
Business Process Example

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

Sales
- Finance
- Inventory Control
- Warehousing

Tell Mfg. to make order
A Streamlined Business Process

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

**Process Diagram**
- **Take Order**
- **Enter Order**
  - **Credit Check**
    - **Print Packing list**
    - **Find Goods**
  - **Check Stock**
    - **Print Invoice**
    - **Ship**

**Key Processes**
- Automatic Credit Check
- Tell Mfg. to make order
A Reengineered Business Process

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

Order
On web

Automatic Credit Check
Automatic Checking of Stock

Inform Mfg. to replenish stock

Print
Packing list
And invoice

Find Goods

Ship
Some Examples

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

Enterprise Resource Planning
What is an information system?

First let us answer: what is a system?

- Interrelated components
  - Input
  - Processing
  - Output

```
[Diagram]
Input   SYSTEM   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...
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.
Course Objectives (2)

- Learn to prepare for corporate and other careers
  - By responding to questions and interacting in class, and also working in teams, much as you would at work
  - May be new to some students, but critical skill to succeed in any environment during after-school career
  - Intent is NOT to put you on the spot, but to teach you competitive and creative skills
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
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
    - Data Mining
    - Networks

- Case Studies Throughout
Selected Chapters from: D. Messerschmitt, *Understanding Networked Applications*

Case Studies

= Reading Material 1
Selected Chapters from: Laudon & Laudon, Essentials of MIS, 11th edition
Case Studies

- Otis Elevator
- Cisco Systems
- Alibaba
- Zhejiang Corporation
- Amazon Web Services
Class Webpage

https://classes.soe.ucsc.edu/tim050/Winter17/

Contains

- Syllabus
- Assignments
- Instructor contact information
- Requirements for assignments and projects
- Exam dates
<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Topics</th>
<th>Reading</th>
<th>Assignments</th>
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Regular Exercises  (10%)

- Exercises pertaining to the reading and class discussion

- About 6 or so of these in the quarter

- First one assigned this week.
  - See class web site for link to ecommons.
  - On ecommons, there is an Assignment 1
  - due Thursday-Tuesday 1/24 (Tuesday after next... )
  - On the reading...
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.

- Times to be announced next week.
In Class Exercises/ Quizzes (10%)

- Some classes, we will break into groups to discuss readings and case studies
  - Groups will turn in answers after class

- Pop quizzes (In-Class)
  - ~3 per quarter. Easy questions pertaining to reading
Exams

- **Midterm**
  - February 16

- **Final**
  - March 23

- **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

- You’ll work in groups of about 4-5
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)
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 it’s history shaped what it can offer its customers?
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?
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?
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)
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... industry was able to reach $200 billion in sales ...” [1].

End 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 NEXT WEEK - Thursday 1/19!

- We want you to try to form your own groups.
  - However, we may modify the groups to balance skills and experience

As a group, turn in (paper):
- 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 1/19!

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

- Emirates (airline),
- CVS Caremark,
- eBay,
- Carrefour (Supermarket Chain),
- Charles Schwab,
- Inditex (Clothing retailer),
- Netflix,
- Toyota,
- 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
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

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: February 7
First Draft

- draft of your final paper
- The closer to “done” the better

- Due February 28
Business Paper

- Final Draft
- Due March 16 (Last Day of Class).
What is a Business?

An organization that provides a product and/or a service that satisfies a need for which people are willing to pay money.

Makes money if revenues exceed costs.
Why Does a Company Need to Make a Profit?

- An obligation to owners/shareholders
  - Owners and shareholders have invested money and time. They expect to see something in return.

- Survival requires continued investments
  - new product development.
  - facilities and equipment.
  - acquiring other companies.
  - Invest in employees (training and salary increases)

- Stakeholders want to see performance before investing in a company’s future.
Recall: What is a System?

- Interrelated components
  - Input
  - Processing
  - Output
Business as a system

A business is an organizational system where

- economic resources (input)
- are transformed by various organizational processes (processing)
- into goods and services (output).

![Diagram of a system with input and output]
**Business as a system**

A business is an organizational *system* where

- economic resources (input)
- are transformed by various organizational processes (processing)
- into goods and services (output).

Information systems provide

- information (feedback) on the operations of the system
Important Things to Understand

Two terms:

1) business functions

2) business processes

Will be frequently used throughout this course.

It would be a good idea to make absolutely sure that you know what they are.
Business Functions

Function: An area of specialization within an enterprise
Business Functions

Examples

- Design
- Engineering
- Sales
- Finance
- Marketing
- Etc...
What prompts the creation and justification of business functions?

- Specialization
- Size
- Efficiency
- More cost effective
What is a business process?

- A designed *succession of actions* to the accomplish of some result in a business.

Example

- Order Fulfillment
A Business Process

Customer

Sales

Finance

Inventory Control

Warehousing

Business Functions

Order

Take Order

Enter Order

Credit Check

Check Stock

Print Packing list

Find Goods

Print Invoice

Ship

Tell Mfg. to make order
Cross Functional Process

- A business process that crosses over multiple functions
- Are all business processes cross functional?
A business process within a function

Example: Channel Selection Process within Marketing function

- New Product idea
- Conduct Focus Group Studies
- Find sales by channel Data for similar products
- Mine Demographic data
- Combine information Make decision
Processes tend to be more simple at smaller organizations

Enrollment Process at a small, fictitious university...

- Fee Processing
- Financial Aid
- Housing
- Dinning
- Recreation Membership
- Health Insurance
- Class Registration
Processes tend to be more simple at smaller organizations

Enrollment Process at UCSC...

- Billing
- Financial Aid
- Health Insurance
- Housing
- Dinning
- Rec center
- Class Reg.
Similarly, at small companies

Example: Capital Equipment Purchase
Business Process...
Big company

Capital Equipment Purchase Business Process

Director

manager

finance

accounting

IT Dept
Business and Firm Hierarchies

- Hierarchy with authority is concentrated at top
- Goal: Achieve Coordination
- Typical Breakdown:
  - Senior management
  - Middle management
    - Knowledge workers
  - Operational management
    - Data workers
    - Production or service workers
- Each group has different needs for information
Components of a Business

Levels in a Firm

- **Senior Management**
- **Middle Management**
  - Scientists and knowledge workers
- **Operational Management**
  - Production and service workers
  - Data workers

Figure 2-3