TIM 50 - Business Information Systems

Lecture 2

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UC Santa Cruz
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Announcements

- Business paper preferences due Thursday (9/29)
- Assignment 1 posted and due Tuesday (10/4)
  - On OTIS case
- Read ch 3 of Laudon and Laudon for Thursday
Reading Material 1

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

Case Studies

= Reading Material 1
Selected Chapters from: Laudon & Laudon, Essentials of MIS, 11th edition
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 9/29!

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 THURSDAY 9/29

- 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

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).
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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
Business Processes

What is a business process?

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

Example

- Order Fulfillment
A Business Process

**Business Functions**
- **Customer**
  - Order
  - Take Order
  - Enter Order
  - Credit Check
- **Sales**
  - Check Stock
- **Finance**
- **Inventory Control**
- **Warehousing**

**Steps**
- Print Packing list
- Find Goods
- 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
- Dining
- Recreation Membership
- Health Insurance
- Class Registration
Processes tend to be more simple at smaller organizations

Enrollment Process at UCSC...
Similarly, at small companies

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

Capital Equipment Purchase
Business Process

- Director
- finance
- accounting
- IT Dept
- manager

Emoticon with a sad face
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

Figure 2-3

Senior Management

Middle Management
Scientists and knowledge workers

Operational Management
Production and service workers
Data workers
Types of Business Information Systems

Systems For Different Levels of Management

- **Transaction processing systems:**
  - Keep track of basic activities and transactions
  - (e.g., sales, credit decisions, flow of materials in a factory)

- **Management information systems and decision-support systems:**
  - Assist monitoring, controlling, decision making, and administrative activities

- **Executive support systems:**
  - Help address strategic issues and long-term trends, both in firm and in external environment
• **Transaction processing systems:**
  
  • Serve operational managers.
  
  • Answer routine questions
    • E.g., Is the widget in stock? Was Bob paid?
  
  • Monitor status of internal operations and firm’s relationship with external environment.
    • E.g. Is the gizmo in production? Did we get paid?

  • Feed information to higher level info. systems.
A TPS for payroll processing captures employee payment transaction data (such as a timecard). System outputs include online and hard copy reports for management and employee paychecks.

Figure 2-5
Management information systems:

- Assist *middle managers* with reports on firm’s performance.
- Summarize and report on basic operations using data from TPS.
- Provide weekly, monthly, annual results, but may enable drilling down into daily or hourly data.
- Typically not very flexible systems with little analytic capability (in contrast to higher level systems).
Components of a Business

How MIS Obtain Their Data from TPS

Transaction Processing Systems  Management Information Systems

Order file  Order processing system  MIS FILES

Production master file  Materials resource planning system

Accounting files  General ledger system  Managers

Sales data

Unit product cost data

Product change data

Expense data

Reports

Figure 2-6
This report, showing summarized annual sales data, was produced by the MIS in Figure 2-9.

### Sample MIS Report

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>PRODUCT DESCRIPTION</th>
<th>SALES REGION</th>
<th>ACTUAL SALES</th>
<th>PLANNED</th>
<th>ACTUAL versus PLANNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4469</td>
<td>Carpet Cleaner</td>
<td>Northeast</td>
<td>4,066,700</td>
<td>4,800,000</td>
<td>0.85</td>
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<td></td>
<td>South</td>
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<td>3,750,000</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Midwest</td>
<td>4,867,001</td>
<td>4,600,000</td>
<td>1.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West</td>
<td>4,003,440</td>
<td>4,400,000</td>
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</tr>
<tr>
<td>TOTAL</td>
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<td></td>
<td>16,715,253</td>
<td>17,550,000</td>
<td>0.95</td>
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<tr>
<td>5674</td>
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<td>Midwest</td>
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<tr>
<td></td>
<td></td>
<td>West</td>
<td>4,563,440</td>
<td>4,900,000</td>
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</tr>
<tr>
<td>TOTAL</td>
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<td></td>
<td>18,559,253</td>
<td>17,700,000</td>
<td>1.05</td>
</tr>
</tbody>
</table>
Decision Support System Example:
Voyage-Estimating Decision Support System

This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.

Figure 2-8
Executive support systems (ESS):

- Serve senior managers.
- Address strategic issues and long-term trends
  - E.g., what products should we make in five years?
- nonroutine decision making
- Provide generalized computing capacity that can be applied to changing array of problems
- Draw summarized information from MIS, DSS, and data from external events
- Typically use portal with Web interface to present content
This system pools data from diverse internal and external sources and makes them available to executives in an easy-to-use form.

Figure 2-9
Systems That Span the Enterprise

- Enterprise applications
  - Systems that span functional areas, focus on executing business processes across the firm, and include all levels of management.
    - Supply chain management systems
    - Customer relationship management systems
    - Enterprise Resource Planning Systems
    - Knowledge management systems
Supply Chain Management Systems

• Manage relationships with suppliers, purchasing firms, distributors, and logistics companies.

• Manage shared information about orders, production, inventory levels, and so on.
  • Goal is to move correct amount of product from source to point of consumption as quickly as possible and at lowest cost

• Type of interorganizational system:
  • Automating flow of information across organizational boundaries
Customer Relationship Management Systems

- Help manage relationship with customers.
- Coordinate business processes that deal with customers to optimize revenue and customer satisfaction, and increase sales.
- Combine sales, marketing, and service record data from multiple communication channels to provide unified view of customer, eliminate duplicate efforts.
- E.g., Saab CRM applications to achieve 360 degree view of customers resulted in greater follow-up rate on sales leads and increased customer satisfaction.
Enterprise Resource Planning Systems

- Integrate data from key business processes into single system.
- Speed communication of information throughout firm.
- Enable greater flexibility in responding to customer requests, greater accuracy in order fulfillment.
- Enable managers of large firms to assemble overall view of operations.
- Alcoa used ERP to eliminate redundancies and inefficiencies in its disparate systems.
Knowledge Management Systems

- Intangible knowledge assets
  - Knowledge about producing and delivering products
  - Source of value and advantage for firms
- Knowledge management systems:
  - Help capture, storage, distribute, and apply knowledge so that it can be leveraged for strategic benefit.
  - Include systems for:
    - Managing and distributing documents, graphics, other digital knowledge objects
    - Creating knowledge directories of employees with specialized expertise
    - Distributing knowledge