TIM 50 - Business Information Systems

Lecture 2

Instructor: John Musacchio
UC Santa Cruz
September 27, 2016

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

Selected Chapters from:
Laudon & Laudon, Essentials of MIS, 11th edition

Business Analysis Paper Preferences
Due THURSDAY 9/29!

- 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!

Reading Material 2

Selected Chapters from:
Laudon & Laudon, Essentials of MIS, 11th edition

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
- Twitter
- 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

Example:
- Bob Smith smith@yahoo.com  A, L
- Jane Da do@hotmail.com  C, W
- Chris Tomas christ@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

A business is an organizational system where
- economic resources (input)
- are transformed by various organizational processes (processing)
- into goods and services (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

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**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.

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**Business Functions**

**Function**: An area of specialization within an enterprise

- Design
- Engineering
- Sales
- Finance
- Marketing
- Etc...

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**Business Functions**

**Examples**
- Design
- Engineering
- Sales
- Finance
- Marketing
- Etc...

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**What prompts the creation and justification of business functions?**

- Specialization
- Size
- Efficiency
- More cost effective

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**Business Processes**

**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**
- Order

**Sales**
- Take Order

**Finance**
- Credit Check
- Enter Order
- Print Invoice

**Inventory Control**
- Check Stock
- Print Packing list

**Warehousing**
- 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...**

- Student

- Universal Bureaucrat
- Fee Processing
- Financial Aid
- Housing
- Dining
- Recreation Membership
- Health Insurance
- Class Registration

### Similarly, at small companies

**Example: Capital Equipment Purchase Business Process...**

- Student

- BOSS
Big company

Capital Equipment Purchase

Business Process

Director

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

Operational Management

Knowledge workers

Scientifics and knowledge workers

Production and service workers

Data workers

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.

Executive support systems:

• Help address strategic issues and long-term trends, both in firm and in external environment

Types of Business Information Systems

A TPS for payroll processing captures employee payment transaction data (such as a timesheet). System outputs include online and hard copy reports for management and employee paychecks.
Types of Business Information Systems

- 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

- Transaction Processing Systems
- Management Information Systems
- MIS files
- Sales data
- Unit product cost data
- Product charge data
- Managers
- Reports

Systems That Span the Enterprise

Sample MIS Report

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>PRODUCT DESCRIPTION</th>
<th>SALES REGION</th>
<th>ACTUAL SALES</th>
<th>PLANNED SALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>4469 Carpet Cleaner</td>
<td>Northeast</td>
<td>4,000,703</td>
<td>4,000,000</td>
<td>0.85</td>
</tr>
<tr>
<td>5058 New Year</td>
<td>South</td>
<td>3,708,112</td>
<td>3,700,000</td>
<td>1.01</td>
</tr>
<tr>
<td>5058 New Year</td>
<td>Midwest</td>
<td>3,708,112</td>
<td>3,700,000</td>
<td>1.01</td>
</tr>
<tr>
<td>5058 New Year</td>
<td>West</td>
<td>4,023,440</td>
<td>4,000,000</td>
<td>0.91</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>16,710,253</td>
<td>17,000,000</td>
<td>0.93</td>
</tr>
</tbody>
</table>

This system pools data from diverse internal and external sources and makes them available to executives in an easy-to-use form.

Decision Support System Example:

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

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
<table>
<thead>
<tr>
<th>Enterprise applications</th>
<th>Supply chain management systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems that span functional areas, focus on executing business processes across the firm, and include all levels of management.</td>
<td>Manage relationships with suppliers, purchasing firms, distributors, and logistics companies.</td>
</tr>
<tr>
<td>Supply chain management systems</td>
<td>Manage shared information about orders, production, inventory levels, and so on.</td>
</tr>
<tr>
<td>Customer relationship management systems</td>
<td>Goal is to move correct amount of product from source to point of consumption as quickly as possible and at lowest cost.</td>
</tr>
<tr>
<td>Enterprise Resource Planning Systems</td>
<td>Type of interorganizational system:</td>
</tr>
<tr>
<td>Knowledge management systems</td>
<td>• Automating flow of information across organizational boundaries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Relationship Management Systems</th>
<th>Enterprise Resource Planning Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help manage relationship with customers.</td>
<td>Integrate data from key business processes into single system.</td>
</tr>
<tr>
<td>Coordinate business processes that deal with customers to optimize revenue and customer satisfaction, and increase sales.</td>
<td>Speed communication of information throughout firm.</td>
</tr>
<tr>
<td>Combine sales, marketing, and service record data from multiple communication channels to provide unified view of customer, eliminate duplicate efforts.</td>
<td>Enable greater flexibility in responding to customer requests, greater accuracy in order fulfillment.</td>
</tr>
<tr>
<td>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.</td>
<td>Enable managers of large firms to assemble overall view of operations.</td>
</tr>
<tr>
<td>Alcoa used ERP to eliminate redundancies and inefficiencies in its disparate systems.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge Management Systems</th>
<th>Systems That Span the Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intangible knowledge assets</td>
<td>Types of Business Information Systems</td>
</tr>
<tr>
<td>Knowledge about producing and delivering products</td>
<td>Systems That Span the Enterprise</td>
</tr>
<tr>
<td>Source of value and advantage for firms</td>
<td>• Enterprise applications</td>
</tr>
<tr>
<td>Knowledge management systems:</td>
<td>• Systems that span functional areas, focus on executing business processes across the firm, and include all levels of management.</td>
</tr>
<tr>
<td>Help capture, storage, distribute, and apply knowledge so that it can be leveraged for strategic benefit.</td>
<td>• Supply chain management systems</td>
</tr>
<tr>
<td>Include systems for:</td>
<td>• Customer relationship management systems</td>
</tr>
<tr>
<td>Managing and distributing documents, graphics, other digital knowledge objects</td>
<td>• Enterprise Resource Planning Systems</td>
</tr>
<tr>
<td>Creating knowledge directories of employees with specialized expertise</td>
<td>• Knowledge management systems</td>
</tr>
<tr>
<td>Distributing knowledge</td>
<td></td>
</tr>
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</table>