1. Global E-Business and Collaboration

Lecture 2
TIM 50  Autumn 2012
Objective of the Learning

The Major Feature of Business Systems
Performance of Business Organization
Levels of Business management
The Role of Information System
Enterprise Application
Importance of Collaboration and Teamwork of Systems
The Role of Information systems in the Business
Nature of Business Information Systems

- Business Systems
- Information Systems
- Functions
- Processes
- Actions
- Technologies
- Enterprise System
  - SCMS
  - CRMS
  - KMS
- Levels
  - TPS
  - MIS
  - DSS
  - ESS

What About Human Beings?? Business Systems??

Collaboration Team works

After 1900

Max Profits
Min Cost
There is a growing interdependence between a firm’s information systems and its business capabilities. Changes in strategy, rules, and business processes increasingly require changes in hardware, software, databases, and telecommunications. Often, what the organization would like to do depends on what its systems will permit it to do.
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
## Differences between goods and services

<table>
<thead>
<tr>
<th>Goods</th>
<th>Services</th>
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</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>
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<tr>
<td>Long response time</td>
<td>Short response time</td>
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<tr>
<td>Regional, National or</td>
<td>Local markets</td>
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<tr>
<td>International markets</td>
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<tr>
<td>Large facilities</td>
<td>Small facilities</td>
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<tr>
<td>Capital intensive</td>
<td>Labor intensive</td>
</tr>
<tr>
<td>Quality easily measured</td>
<td>Quality not easily measured</td>
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</tbody>
</table>
“Pure Market Economy”

**OUTPUT MARKETS**
- Goods
- Services

**INPUT MARKETS**
- Labor
- Capital
- Entrepreneurs
- Physical Resources
- Information Resources

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

**HOUSEHOLDS**
- Demand products in output markets
- Supply resources in input markets
Business Functions

Manufacturing and production
Assembling the product

Sales and marketing
Identifying customers

Finance and accounting
Creating financial statements

Human resources
Hiring employees
Business processes:

- Workflows of material, information, knowledge
- Sets of activities, steps
- May be tied to functional area or be cross-functional

Businesses: Can be seen as collection of business processes
Manufacturing and production systems

Functional concerns include:
- Managing production facilities, production goals, production materials, and scheduling

Examples of systems:
- Machine control (operational mgmt)
- Production planning (middle mgmt)
- Facilities location (senior mgmt)
Sales and marketing systems

Functional concerns include:
  Sales management, customer identification
  market research, advertising and promotion,
  pricing, new products

Examples of systems:
  Order processing (operational level)
  Pricing analysis (middle mgmt)
  Sales trend forecasting (senior mgmt)
Finance and accounting systems

Functional concerns include:
Managing financial assets (cash, stocks, etc.) and capitalization of firm, and managing firm’s financial records

Examples of systems:
Accounts receivable (operational mgmt)
Budgeting (middle mgmt)
Profit planning (senior mgmt)
Human resource systems

Functional concerns include:
Identifying potential employees, maintaining employee records, creating programs to develop employee talent and skills

Examples of systems:
Training and development (operational mgmt)
Compensation analysis (middle mgmt)
Human resources planning (senior mgmt)
Business Environment

Near

Customers
Suppliers
Stockholders
Regulations
Competitors

Far

Economy, Economic cycle
Technology and Science
Politics
International Changes
Management in all business and organizational activities is the act of getting people together to accomplish desired goals and objectives using available resources efficiently and effectively.

Management comprises planning, organizing, staffing, leading or directing, and controlling an organization or effort for the purpose of accomplishing a goal.
Business organizations are hierarchies consisting of three principal levels: senior management, middle management, and operational management. Information systems serve each of these levels. Scientists and knowledge workers often work with middle management.
Information technology enhances business processes in two main ways:

• Increasing efficiency of existing processes
  • Automating steps that were manual
  • Amount of Information
  • Speed of Communications
  • Accuracy of Data
  • Stability of Executions

• Enabling entirely new processes that are capable of transforming the businesses
  • Change flow of information
  • Replace sequential steps with parallel steps
  • Eliminate delays in decision making
Benefits of information Systems

Operational Excellence
New products, services, and business models
Customer and Supplier intimacy
Improved Decision-making
Competitive Advantage
Survival
**Information system**: Three activities produce information organizations need

**Input**: Captures raw data from organization or external environment

**Processing**: Converts raw data into meaningful form

**Output**: Transfers processed information to people or activities that use it
Feedback:

Output returned to appropriate members of organization to help evaluate or correct input stage

Computer/Computer program vs. information system

Computers and software are technical foundation

and tools, similar to the material and tools used to build a house
An information system contains information about an organization and its surrounding environment. Three basic activities—input, processing, and output—produce the information organizations need. Feedback is output returned to appropriate people or activities in the organization to evaluate and refine the input. Environmental actors, such as customers, suppliers, competitors, stockholders, and regulatory agencies, interact with the organization and its information systems.
Information system:
Set of interrelated components
Collect, process, store, and distribute information
Support decision making, coordination, and control

Information vs. data
Data are streams of raw facts
Information is data shaped into meaningful form
Raw data from a supermarket checkout counter can be processed and organized to produce meaningful information, such as the total unit sales of dish detergent or the total sales revenue from dish detergent for a specific store or sales territory.
Using information systems effectively requires an understanding of the organization, management, and information technology shaping the systems. An information system creates value for the firm as an organizational and management solution to challenges posed by the environment.
Case study

The TATA NANO Motors, Nano Car

Business Objects: Automobile under US$2,500

Challenges: Old manufacturing system, Manual Works
Longer time from design to the market

Application of IT; Deploy Digital manufacturing System (DELMIA)
Tata’s SAP Enterprise resource planning system

Results: Time from design to market less than 6 months
Manufacturing time < 30%
Manufacturing planning cost < 20%
Overall design to market cost < 50+%
Types of Business information Systems

Hierarchy of authority, responsibility

**Senior management**
- Long term strategies, Vision

**Middle management**
- Knowledge workers > plan, program

**Operational management**
- Data workers
- Production or service workers
Transaction Processing Systems (TPS)

Serve operational levels

Perform and record daily routine transactions necessary to conduct business

E.g. sales order entry, payroll, shipping

Allow managers to monitor status of operations and relations with external environment

Serve predefined, structured goals and decision making
Fulfilling a customer order involves a complex set of steps that requires the close coordination of the sales, accounting, and manufacturing functions.
This system captures sales data at the moment the sale takes place to help the business monitor sales transactions and to provide information to help management analyze sales trends and the effectiveness of marketing campaigns.
This system provides information about the number of items available in inventory to support manufacturing and production activities.
An accounts receivable system tracks and stores important customer data, such as payment history, credit rating, and billing history.
An Employee Record Keeping System

This system maintains data on the firm’s employees to support the human resources function.
Management Information Systems (MIS)

Serve middle management
Provide reports on firm’s current performance, based on data from TPS
Provide answers to routine questions with predefined procedure for answering them
Typically have little analytic capability
In the system illustrated by this diagram, three TPS supply summarized transaction data to the MIS reporting system at the end of the time period. Managers gain access to the organizational data through the MIS, which provides them with the appropriate reports.
This report, showing summarized annual sales data, was produced by the MIS.
Decision Support Systems (DSS)

Serve middle management

Support non-routine decision making
  E.g. What is impact on production schedule if December sales doubled?

Often use external information as well from TPS and MIS

Model driven DSS
  Voyage-estimating systems

Data driven DSS
  Intrawest’s marketing analysis systems
This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.
Executive Support Systems (ESS)

Support senior management

Address non-routine decisions requiring judgment, evaluation, and insight

Incorporate data about external events (e.g. new tax laws or competitors) as well as summarized information from internal MIS and DSS

E.g. ESS that provides minute-to-minute view of firm’s financial performance as measured by working capital, accounts receivable, accounts payable, cash flow, and inventory.
This system pools data from diverse internal and external sources and makes them available to executives in an easy-to-use form.
Relationship of systems to one another

TPS: Major source of data for other systems

ESS: Recipient of data from lower-level systems

Data may be exchanged between systems

In reality, most businesses’ systems only loosely integrated

Need Accuracy and Integration in Enterprise Wide
The various types of systems in the organization have interdependencies. TPS are major producers of information that is required by many other systems in the firm, which, in turn, produce information for other systems. These different types of systems are loosely coupled in most business firms, but increasingly firms are using new technologies to integrate information that resides in many different systems.
Enterprise applications

• Span functional areas
• Execute business processes across firm
• Include all levels of management
• Four major applications:
  • Enterprise systems
  • Supply chain management systems
  • Customer relationship management systems
  • Knowledge management systems
Enterprise applications automate processes that span multiple business functions and organizational levels and may extend outside the organization.
Enterprise systems

• Collects data from different firm functions and stores data in single central data repository
• Resolves problem of fragmented, redundant data sets and systems
• Enterprise Resource Planning System (ERP)

• Enable:
  • Coordination of daily activities
  • Efficient response to customer orders (production, inventory)
  • Provide valuable information for improving management decision making
Enterprise systems integrate the key business processes of an entire firm into a single software system that enables information to flow seamlessly throughout the organization. These systems focus primarily on internal processes but may include transactions with customers and vendors.
• Supply Chain Management (SCM) Systems

• Manage firm’s relationships with suppliers
• Share information about
  • Orders, production, inventory levels, delivery of products and services
• Goal: Right amount of products to destination with least amount of time and lowest cost
Customer orders, shipping notifications, optimized shipping plans, and other supply chain information flow among Haworth’s Warehouse Management System (WMS), Transportation Management System (TMS), and its back-end corporate systems.
Customer Relationship Management (CRM) Systems:

• Provide information to coordinate all of the business processes that deal with customers in sales, marketing, and service to optimize revenue, customer satisfaction, and customer retention.

• Integrate firm’s customer-related processes and consolidate customer information from multiple communication channels.
Some of the capabilities of salesforce.com, a market-leading provider of on-demand customer relationship management (CRM) software. CRM systems integrate information from sales, marketing, and customer service.
Knowledge Management Systems (KMS)

- Support processes for acquiring, creating, storing, distributing, applying, integrating knowledge
- Collect internal knowledge and link to external knowledge
- Include enterprise-wide systems for:
  - Managing documents, graphics and other digital knowledge objects
  - Directories of employees with expertise
Investing in information technology does not guarantee good returns

Considerable variation in the returns firms receive from systems investments

Factors:
- Adopting the right business model
- Investing in complementary assets (organizational and management capital)
Although, on average, investments in information technology produce returns far above those returned by other investments, there is considerable variation across firms.
Complementary assets:
Assets required to derive value from a primary investment.

Firms supporting technology investments with investment in complementary assets receive superior returns.

E.g.: invest in technology and the people to make it work properly.
Complementary assets include:

Organizational investments, e.g.
  Appropriate business model
  Efficient business processes

Managerial investments, e.g.
  Incentives for management innovation
  Teamwork and collaborative work environments

Social investments, e.g.
  The Internet and telecommunications infrastructure
  Technology standards
• Technical approach
  • Emphasizes mathematically based models
  • Computer science, management science, operations research

• Behavioral approach
  • Behavioral issues (strategic business integration, implementation, etc.)
  • Psychology, economics, sociology
The study of information systems deals with issues and insights contributed from technical and behavioral disciplines.
Sociotechnical view

• Optimal organizational performance achieved by jointly optimizing both social and technical systems used in production

• Helps avoid purely technological approach
Information Networks/communications

Intranets:

• Internal networks built with **same tools and standards as Internet**
• Used **for internal distribution of information** to employees
• Typically utilize private portal providing single point of access to several systems
• May connect to company’s transaction systems
• **Extranets:**
  
  • Intranets extended to authorized users **outside the company**
  
  • Expedite flow of information between firm and its suppliers and customers
  
  • Can be used to allow different firms to collaborate on product design, marketing, and production
New Kinds of Business based on Information systems

• **E-Business (Electronic business):**
  • Use of digital technology and Internet to execute major business processes in the enterprise
  • Includes **e-commerce** (electronic commerce):
    • Buying and selling of goods over Internet

• **E-Government:**
  • The application of Internet and networking technologies to digitally enable government and public sector agencies’ relationships with citizens, businesses, and other arms of government
Systems for Collaborations and Teamwork

Collaborations?

is working others to achieve shared and explicit goals. Collaboration focus on task or mission accomplishment and usually takes place in a business or other organizations, or between business.

Why collaboration and teamwork?

Changing nature of work
Growth of processional works
Changing organization of the firm
Changing scope of the firm
Emphasis on innovation

Improve Business Activity in Productivity, Quality, Innovation, Customer service, Financial Performance
Collaborations with Information Systems

E-mail and instant Message(IM)
Social networking
Wikis
Virtual Worlds
Internet based Collaboration Environments

• Virtual Meeting Systems (teleference tech.)
  Google Apps/Google Sites
  Microsoft Share Point
  Lotus Note, . . .

• Selecting Collaboration Software Tools
  Same time – Same Place: Face to face
  Same time- Diff’ Place: Remote interaction
  Diff’ time - Same Place: Continuous task
  Diff’ time – Diff’ Place: Communication and coordination
The information systems Function in Business

- Small firm may not have formal information systems group
- Larger companies typically have separate department which may be organized along one of several different lines:
  - Decentralized (within each functional area)
  - Separate department under central control
  - Each division has separate group but all under central control
There are alternative ways of organizing the information systems function within the business: within each functional area (A), as a separate department under central control (B), or represented in each division of a large multidivisional company but under centralized control (C).
B: A separate department under central control
C: Represented in each division of a large multidivisional company but under centralized control
Experts in the Department

• Chief information officer (CIO)
• Chief Security Officer (CSO)
• Chief privacy Officer (CPO)
• Chief Knowledge Officer (CKO)
• Information systems manager
  system analysts
  Programmer
Review
Home work
Notice