Chapter 3
Organizational Strategy and Information Systems

Jason C. H. Chen, Ph.D.
Professor of MIS
School of Business Administration
Gonzaga University
Spokane, WA 99258
chen@jepson.gonzaga.edu

Copyright © 2010 John Wiley & Sons, Inc.

Learning Objectives

- Understand how the use of information technology impacts an organization.
- Identify the type of organizational structure that tends to be most willing to embrace technological change and sophistication.
- List the advantages and disadvantages of the networked organizational structure.
- Discuss how IT has changed the way managers monitor and evaluate
- Define and explain the concept and importance of virtual organizations.
- Identify the challenges that are faced by virtual teams.

Real World Examples

- Cognizant Technology Solutions grew fast to become a $1.4 billion revenue company providing IT outsourcing services.
- This quick growth required that they reinvent their organization – move from a cost based to a relationship based structure.
- Managers had to interact with customers and with developers in different locations.
- A tremendous strain was put on managers because they had to work day and night.
- However, some of the units adopted a matrix structure that shared managerial responsibilities.

Who/What Delivers IT Value?

IT Value is a function of **people**, **process**, and **technology**

IT Value is also a function of **organizational** value.

MIS and Management Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
<th>Actionable Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader</td>
<td>Very easy role</td>
<td>Judgment, promoting, training</td>
</tr>
<tr>
<td>Monitor</td>
<td>Specific information</td>
<td>Transmits information to employees, managers, etc.</td>
</tr>
<tr>
<td>Facilitator</td>
<td>Critical information</td>
<td>Facilitates project, develops projects</td>
</tr>
<tr>
<td>Spokesperson</td>
<td>Self and external</td>
<td>Represents the firm in settling disputes</td>
</tr>
<tr>
<td>Entrepreneur</td>
<td>Problems and solutions</td>
<td>Initiates improvements, develops projects</td>
</tr>
<tr>
<td>Problem Solver</td>
<td>Problems and solutions</td>
<td>Allocates and approves resources</td>
</tr>
<tr>
<td>Resource Allocator</td>
<td>Problems and solutions</td>
<td>Reorganizes the firm</td>
</tr>
</tbody>
</table>

Organizational Ware

- **Strategy**
- **Structure**
- **Culture (SOS)**
- **Infra-structure**

SOM is a key process to help groups come together to plan and take effective action for change.
Learning Objectives

- Understand how the use of information technology impacts an organization.
- Identify the type of organizational structure that tends to be most willing to embrace technological change and sophistication.
- List the advantages and disadvantages of the networked organizational structure.
- Discuss how IT has changed the way managers monitor and evaluate.
- Define and explain the concept and importance of virtual organizations.
- Identify the challenges that are faced by virtual teams.

Real World Example

- Cognizant Technology Solutions grew fast to become a $1.4 billion revenue company providing IT outsourcing services.
- A quick growth required that they reinvent their organization - move from a cost based to a relationship based structure.
- Managers had to interact with customers and developers in different locations.
- A tremendous strain was put on managers because they had to work day and night.
- Some of the units adopted a matrix structure sharing managerial responsibilities.

Real World Example - (Cont.)

- Tata Consultancy Services (TCS), the largest outsourcing company and software exporter in India, chose a different organization structure designed to focus on customers and boost revenue growth.
- Added a new layer of leaders to oversee the businesses and free up the CEO’s time to work on strategy.
- Different organizational structures reflect different organizational strategies that are used by organizations to implement their business strategies and accomplish organizational goals.

Organizational Strategy

- the organization’s design, as well as the managerial choices it makes to define, set up, coordinate, and control its work processes.
- Optimized organizational design and management control systems support optimal business processes which reflect the firm’s values and culture.
- Models used: business diamond and managerial levers (see chapter 1)
- This chapter builds on the managerial levers model discussed in chapter 1.
  - Three types of managerial levers: organizational, control, cultural.

Key Characteristics

- Includes the organization’s design, as well as the managerial choices that define, set up, coordinate, and control its work processes.
- Optimized organizational design and management control systems support optimal business processes which reflect the firm’s values and culture.
- This chapter builds on the managerial levers model discussed in chapter 1.
- Figure 3.1 summarizes complementary design variables from the managerial levers framework.

Figure 1.5 The Leavitt Business Diamond

- Structure
- Tasks
- Information and Control
- People
**Decision Rights**

- **Who** in the organization has the responsibility to initiate, supply information, approve, implement, and control various types of decisions.
- Ideally the person with the most information and in the best position should have these rights (i.e. senior leaders).
- Organizational design focus on making sure that **decision rights** are properly allocated.
- Zara - decision rights moved to the **store managers**, providing for quicker responses to their local customer base.

**IS and Organizational Design**

- IS in the organizational designs:
  - Defines the flow of information throughout the organization.
  - Facilitate management control at the organizational and individual levels.
- Culture impacts IS and organizational performance.
- IS in the organization’s physical structure is designed to facilitate the **communication** and **work processes** necessary to accomplish the organization’s goals.
- The organization structures of Cognizant and TCS, while very different, reflect and support the **goals** of each company.

**Formal Reporting Relationships and Organization Structures**

- Organization structure is the way of designing an organization so that decision rights are correctly allocated.
- The structure of reporting relationships typically reflects the flow of communication and decision making throughout the organization.
- Traditional organizations are hierarchical, flat or matrix in design (Fig. 3.2).
Networked Organizational Structure

- Made possible by new information systems.
- They feel flat and hierarchical at the same time.
- Decision rights are decentralized in this structure.
- Defined by their ability to promote creativity and flexibility while maintaining operational process control, which is achieved by substituting hierarchical controls with controls based on IS.
- Extensive use of communication technologies and networks also makes it easier to coordinate across functional boundaries.

Hierarchical, Flat and Matrix Organization Structures

<table>
<thead>
<tr>
<th>Type of Environment Best Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable: Certain</td>
</tr>
<tr>
<td>Stable: Uncertain</td>
</tr>
<tr>
<td>Unstable: Certain</td>
</tr>
<tr>
<td>Unstable: Uncertain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Basis of Structuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary function</td>
</tr>
<tr>
<td>Secondary function</td>
</tr>
<tr>
<td>Functions and purpose</td>
</tr>
<tr>
<td>Networks</td>
</tr>
</tbody>
</table>

Other Organizational Structures

- An organization is seldom a pure form of one of the four structures described above (i.e., hierarchical, flat, matrix and networked).
- It is more common to see a hybrid structure in which different parts of organization use different structures depending on their information needs and desired work processes.
- **Adaptive or zero** time organization:
  - a newer organizational design is designed to be highly flexible, agile and responsive so that resources can be configured quickly to respond to changing demands.

Informal Networks

- Informal relationships exist and can play an important role in the functioning of an organization.
- Some informal relationships are designed by management:
  - Working on a project.
  - Job rotation program, etc.
- Unintended networks are formed throughout an organization by:
  - Proximity
  - Shared interest
  - Family ties, etc.
- Some even cross organizational boundaries.
What is Organization Transformation?

- Organization transformation is a comprehensive organization-wide change initiative that results in change in the “deep structure” of the firm, radically altering strategy, structure, systems, processes, human resource requirements, and core values and beliefs.
- With the overall change initiative resulted in radical change, the implementation process proceeded through overlapping episodes of incremental and radical change consistent with the change process.

Dilemma in Organization Design

<table>
<thead>
<tr>
<th>Complex Organization</th>
<th>Simple Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Environment</td>
<td>Dynamic Uncertain</td>
</tr>
<tr>
<td>Certain Environment</td>
<td>Dynamic Uncertain</td>
</tr>
</tbody>
</table>

The IT Design Challenge Parallels the Organization Design Challenge

<table>
<thead>
<tr>
<th>Complex Organization</th>
<th>Simple Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainframe (Control)</td>
<td>Microcomputer (Autonomy)</td>
</tr>
<tr>
<td>&quot;Centralized Intelligence&quot;</td>
<td>&quot;Decentralized Intelligence&quot;</td>
</tr>
<tr>
<td>1960s, 1970s</td>
<td>1980s and beyond</td>
</tr>
</tbody>
</table>

The Emerging Information Age Organization

Transitions in Organization Design

- From Control to **Learning**
  - Promote flexibility, creativity, and learning while continuing to enable tight control of operating process
- From Autonomy to **Collaboration / Co-opetition**
  - Line managers are empowered to make decisions
  - Timely, quality **distributed information** and new communication technologies (e.g., video conferencing) are important factors that are enabling dramatic changes in organization redesign.
The Organization Design Challenge

- **Hierarchy**: centralized intelligence control
  - complex organization in stable environment
  - mainframe
- **Entrepreneurial**: autonomy decentralized intelligence
  - simple organization in dynamic environment
  - microcomputer
- **Information/K. Age**: distributed intelligence collaboration
  - complex organization in dynamic environment
  - networked IT architecture
  - flat, fast, flexible and focused on areas of core competency

Lessons of the Information Age Organization Design

- **Speeds** counts, but not at the expense of control.
- **Empowerment** is not anarchy.
- Transforming an organization requires more than just changing the structure.
  - Maximizing flexibility, innovation, and control.
  - Maximizing independence and interdependence: collaboration, the missing organization design criterion.
  - Organization transformation needs a comprehensive organization-wide change initiative that results in change in the "deep structure" of the firm, radically altering strategy, structure, systems, processes, human resource requirements, and core values and beliefs.

Formal Reporting Relationships and Organization Structures

- Organization structure is the way of designing an organization so that decision rights are correctly allocated.
- The structure of reporting relationships typically reflects the flow of communication and decision making throughout the organization.
- Traditional organizations are hierarchical, flat or matrix. (Fig. 3.4).
- The networked structure is a newer organizational form.
  - **Social networks** and **virtual communities**.

<table>
<thead>
<tr>
<th>Description</th>
<th>Hierarchical</th>
<th>Flat</th>
<th>Matrix</th>
<th>Networked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Environment Best Supported</td>
<td>Bureaucratic</td>
<td>Centralized</td>
<td>Centralized</td>
<td>[\text{Figure 3.4 Comparison of organizational structures}]</td>
</tr>
<tr>
<td>Basis of Structuring Power Structure</td>
<td>Centralized</td>
<td>Centralized</td>
<td>Centralized</td>
<td>[\text{Figure 3.4 Comparison of organizational structures}]</td>
</tr>
<tr>
<td>Key Task Supporting this</td>
<td>Maintains, controlled data processing</td>
<td>Personal computers</td>
<td>Networks</td>
<td>[\text{Figure 3.4 Comparison of organizational structures}]</td>
</tr>
</tbody>
</table>

Social Network

- Computer and information technologies facilitate **collaboration** across distances, **social networks** and **virtual communities** are formed.
- Useful in getting a job done, even if not all of the members of the network belong to the same organization. (i.e. LinkedIn)
- **Social network** is
  - an **IT-enabled** network that links individuals together in ways that enables them to find experts, get to know colleagues, and see who has relevant experience for projects across traditional organization lines.
  - a form of **informal network**

INFORMATION SYSTEMS AND MANAGEMENT CONTROL SYSTEMS
INFORMATION SYSTEMS AND MANAGEMENT CONTROL SYSTEMS

- IT changes the way Managers Monitor.
- IT changes the way Managers Evaluate.
- IT changes the way Managers Provide Feedback.
- IT changes the way Managers Compensate and Reward.
- IT changes the way Managers Control Processes.

Management Control

- IT profoundly affects the way managers control their organizations.
- People and processes are monitored in ways that were not possible only a decade ago.
- Managers need to control work done at the process level.
- The organizational structure will determine the level of control that a manager must exercise.
- IS plays three important roles in management control processes:
  - Data collection, Evaluation, and Communication.

IT Changes the Way Managers….

- Monitor: IS makes possible new ways to track performance and behavior.
- Evaluate: models are easily built, making it easier to understand progress and performance.
- Provide Feedback: IS makes rapid feedback possible (e.g., through electronic forms).
- Compensate & Reward: team-based efforts can be evaluated and complex formulas used.
- Control Processes: IS also used extensively in industrial processes, and makes it easier to collect, analyze and move information.
Planning and Information Technology

• Information technology can play a role in planning in three ways:
  – IS can provide the necessary data to develop the strategic plan
  – Some IS actually automate the planning process
  – IS can lie at the heart of a strategic initiative and can be used to gain strategic advantage

Data Collection and IT

• Monitoring work can take on a completely new meaning with the use of information technologies.
  – IS make it possible to collect such data as:
    – number of keystrokes
    – precise time spent on a task
    – exactly who was contacted
  – Specific data that passed through the process
  – Organizational design challenge in data collection is to:
    – embed monitoring tasks within everyday work
    – reduce the negative impacts to workers being monitored.

Monitoring and Performance Software

• Software collecting monitoring **data** directly from work tasks, or embedding the creation and storage of performance information into software used to perform work is more reliable.
  – Monitor “cyberslacking” and “cyberslouching.”
  – Monitoring is **ethical** and in the **best interest of business**.
  – Employees must be informed about monitoring software.
  – Reward increase in productivity derived from monitoring information.
  – Balance employees’ right to **privacy** against the needs of the business to have surveillance mechanisms in place.

Performance Measurement, Evaluation and IT

• IS make it possible to evaluate data against reams of standard or historical data.
  – Managers can more easily understand work progress and performance.
  – However, analysis paralysis (too much data/information) can cause managers to become overwhelmed.
  – How the information is used is important to performance measurement.
  – How feedback is communicated in the organization plays a role in affecting behavior.
  – Key is making sure that the information is handled discreetly and appropriately.

Incentives and Rewards and IT

• Enables organizations to encourage good performance.
  – Done properly, can make employees feel good without paying them more money.
  – Organizations use their Web sites to **recognize high performers**.
    – Using electronic badges that are displayed on the social network to identify the award recipients.
    – Reward with allocation of new technology.
  – IS makes it easy to design complex reward systems (shared or team based).
  – Managers must consider both the **metrics** and qualitative data in assigning compensation and rewards.
CULTURE

- Culture is the third managerial lever.
- Plays an increasingly important role in IS development and use.
- It is defined as a shared “set of values and beliefs about what is desirable and undesirable in a community of people” (also see TAM model in chapter 4).
- Culture is not static but always changing.
- Different levels of culture.
- Culture should be considered as the most important organizational strategic resources for improving its competitive advantage as it is non-imitatable.

Levels of Culture and IT

- Culture can be found in countries, organizations, or even within organizations.
- IS development and use can be impacted by culture at all levels within the organization.
- Both national and organizational cultures can affect the IT issues and vice versa.
- Differences in national culture may affect IT in a variety of ways: impacting IS development, technology adoption and diffusion, system use and outcomes, and management and strategy.
- Figure 3.5 and describe the model for the impact culture of on IT issues.

Figure 3.5 Levels of culture.

CULTURE

- Hofstede is one of the best known researchers in the values across national cultures.
- Awareness of the Hofstede or GLOBE dimensions may help improve communications and reduce conflict.
- The GLOBE (Global Leadership and organizational Behavior Effectiveness) research program was a team of 150 researchers who have collected data on cultural vales and practices and leaderships attributes from over 18,000 manages in 62 countries.
- The GLOBE dimensions and their relationship to Hofstede’s dimensions are found in Figure 3.5.
Organizational Culture and Information Technology Management

- Differences in culture result in differences in the use and outcomes of IT.
- At the organizational level, cultural values are often related to satisfied users, successful IS implementations, or knowledge management success.
- Culture affects planning, governance, and perceptions of service quality at the national and organizational levels.
  - Having planning cultures at the top levels, signal that strategic systems investment is important.

Awareness of Cultural Differences

- Effective communication means listening, framing the message in a way that is understandable to the receiver, and responding to feedback.
- Effective cross-cultural communication involves all of these plus searching for an integrated solution that can be accepted and implemented by members of diverse cultures.
- Communication in meetings is also subject to cultural differences.
- Knowing that a society tends to score high or low on certain dimensions helps a manager anticipate how a person from that society might react.
- Without awareness of cultural differences, it is unlikely that IS will be developed or used effectively.

SUMMARY