

Organizational Impacts of Information System Use

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OUTLINE

- INTRODUCTION
- INFORMATION TECHNOLOGY AND ORGANIZATIONAL DESIGN
- IT AND MANAGEMENT CONTROL SYSTEMS
- IT AND CULTURE
- SUMMARY

COGNIZANT TECHNOLOGY SOLUTIONS

- 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

ORGANIZATIONAL STRATEGY

- 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

Variable	Description
<i>Organizational variables</i>	
Decision rights	Authority to initiate, approve, implement, and control various types of decisions necessary to plan and run the business.
Business processes	The set of ordered tasks needed to complete key objectives of the business.
Formal reporting relationships	The structure set up to ensure coordination among all units within the organization.
Informal networks	Mechanism, such as ad hoc groups, which work to coordinate and transfer information outside the formal reporting relationships.
<i>Control variables</i>	
Data	The information collected, stored, and used by the organization.
Planning	The processes by which future direction is established, communicated, and implemented.
Performance measurement and evaluation	The set of measures that are used to assess success in the execution of plans and the processes by which such measures are used to improve the quality of work.
Incentives	The monetary and non-monetary devices used to motivate behavior within an organization.
<i>Cultural variables</i>	
Values	The set of implicit and explicit beliefs that underlie decisions made and actions taken.

Figure 3.1 Organizational design variables

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DECISION RIGHTS

- Who in the organization has the responsibility to initiate, supply information for, approve, implement, and control various types of decisions
- Ideally the person with the most information and in the best position should have these rights
- Organizational design is all about making sure that decision rights are properly allocated

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)

Organization Structures

- In hierarchical organizations, middle managers tell subordinates what to do and tell superiors the outcomes. IS supports this hierarchy
- In flat structured organizations, work is more flexible and employees do whatever is needed. IS allows offloading extra work and supports intra-firm communications
- In matrix organizations, work is organized into small work groups and integrated regionally and nationally/globally
 - IS reduces operating complexities and expenses by allowing information to be easily shared among different managerial functions

Hierarchical Organizational Structure

- Based on the concepts of division of labor, specialization, and unity of command. Functional and divisional organizational forms are based upon this structure
- Key decisions are made at the top and filter down through the organization
- Middle managers do the primary information processing and communication function
- IS is typically used to store and communicate information along the lines of the hierarchy and to support the info management function of the managers

Flat Organizational Structure

- Decision-making is centralized
- As everyone does whatever needs to be done, they can respond quickly to dynamic, uncertain environments
- However, this organizational structure often becomes less flexible as the organization grows

Matrix Organizational Structure

- This typically assigns workers with two or more supervisors in an effort to make sure multiple dimensions of the business are integrated
- Each supervisor directs a different aspect of the employee's work
- Matrix organizations often fail to enable managers to achieve their business strategies
- Employees may be frustrated and confused since they are often subjected to dual authority

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

T-Form

- Form of the networked organizational structure
- “T” stands for “technology-based” or “technology-oriented”
- IT is combined with traditional organizational components to form new types of components such as:
 - electronic linking
 - production automation
 - electronic workflows
 - electronic customer/supplier relationships
 - self-service Internet portals

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

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IT and 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

Planning and IT

- 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

Software Monitoring Products

- Many are available to monitor employees
- They are installed to record specific data about what employees are doing
- Monitoring can backfire and cause stress in employees
- Monitoring products must be carefully managed and productively used to reward employees, and not just punish them
- Productivity and morale may fall

Performance Measurement, Evaluation and IT

- IS make it possible to evaluate data against reams of standard or historical data
- Models can be built and simulations can be designed
- Managers can more easily understand work progress and performance
- However, analysis too much data/information can cause managers to become overwhelmed
- How the information is used is important to performance measurement

Feedback

- How feedback is communicated in the organization plays a role in affecting behavior
- “360-degree” feedback: the individual’s supervisors, subordinates, and coworkers all provide input
- Key is making sure that the information is handled discreetly and appropriately

Incentives and Rewards and IT

- Ways organizations encourage good performance
- Done properly, can make employees feel good without paying them more money
- Organizations use their Web sites to recognize high performers
- Others reward them with 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

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Information Technology and 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”
- Culture is not static but always changing
- Different levels of culture

Culture

- National culture differences may affect system development and use
- Cultural differences have not totally disappeared
- Convergence is a challenge for an organization that employs people from a variety of countries and cultures
- Having an understanding and appreciation for cultural values, practices and subtleties can help in smoothing the challenges
- Effective communication means listening, framing the message in a way that is understandable to the receiver and responding to feedback

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- Next week: IT and the Work Design (C4)
 - Talk: send me an email