Management Information Systems

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B16. The Impacts of IT on Individuals, Organizations, and Society

- **Code: 166137-01+02**
- **Course: Management Information Systems**
- **Period: Spring 2013**
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- 16. The Impacts of IT on Individuals, Organizations, and Society

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Learning Objectives

- 01. Describe some of the major impacts of information technology on individuals, organizations, and society.
- 02. Understand the changes that take place in the workplace and the lives of individuals when information technology eliminates geographical and spatial barriers.
- 03. Discuss the positive and negative effects associated with the abundance of information made available by IT.
- 04. Identify the issues that arise due to uneven diffusion of information technology across countries and socioeconomic classes.
- 05. Understand the complexity of effects of technological progress on labor markets and individual employees.
- 06. Discuss the impacts of information technology on the quality of life and interpersonal relationships.
- 07. Recognize the legal, ethical, and moral issues that become particularly critical due to proliferation

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01. IT Positive Effects Only

- IT Positive Effects Only?
    - We assume that organizations will reap the fruits of new technology and that computers have no major negative impact.
    - But is this really true?
    - Will society have any control over the deployment of technology?
    - Where will technology critics be able to make their voices heard?
    - Who will investigate the costs and risks of technologies?
    - What about health and safety issues?
    - What impact will IT have on employment levels?
   - What impact will IT have on the quality of life?

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02. Impacts on Organizations

- Impacts on Organizations
    - The use of computers and information technology has brought many changes to organizations.
        - The manager's job
        - Organizational structure, authority and power
        - Job content (value and supply chain)
        - Employee career paths
        - Supervision

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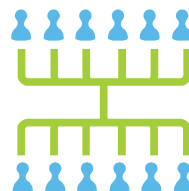
02. Impacts on Organizations

- The Manager's Job
  - The most important task of managers is making decisions.
  - IT changes the manner in which many decisions are made.
    - Automation of routine decisions
    - Less expertise required for many decisions.
    - More rapid identification of problems and opportunities
    - Less reliance on experts to provide support to top executives.
    - Empowerment of lower and middle levels of management.
    - Decision making undertaken by non-managerial employees.
    - Power redistribution among managers
    - Thinner organizations.
    - Organizational intelligence that is more timely, comprehensive, accurate, and available

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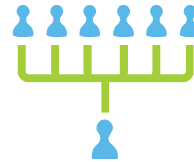
02. Impacts on Organizations

- Authority, Power, and Job Content
  - The IT revolution has resulted in many changes in structure, authority, power

Impact	Effect of IT
Flatter organizational hierarchies	IT increases **span of control** (more employees per supervisor), increases productivity, and reduces the need for technical experts (due to expert systems). Fewer managerial levels will result, with fewer staff and line managers. Reduction in the total number of employees, reengineering of business processes, and the ability of lower-level employees to perform higher-level jobs may result in flatter organizational hierarchies.
Change in blue-to-white-collar staff ratio	The ratio of white- to blue-collar workers increases as computers replace clerical jobs, and as the need for information systems specialists increases. However, the number of professionals and specialists could *decline* in relation to the total number of employees in some organizations as intelligent and knowledge-based systems grow.
Growth in number of special units	IT makes possible technology centers, e-commerce centers, decision support systems departments, and/or intelligent systems departments. Such units may have a major impact on organizational structure, especially when they are supported by or report directly to top management.
Centralization of authority	Centralization may become more popular because of the trend toward smaller and flatter organizations and the use of expert systems. On the other hand, the Web permits greater empowerment, allowing for more decentralization. Whether use of IT results in more centralization or in decentralization may depend on top management's philosophy.
Changes in power and status	Knowledge is power, and those who control information and knowledge are likely to gain power. The struggle over who controls the information resources has become a conflict in many organizations. In some countries, the fight may be between corporations that seek to use information for competitive advantage and the government (e.g., Microsoft vs. the Justice Dept.). Elsewhere, governments may seek to hold onto the reins of power by not letting private citizens access some information (e.g., China's restriction of Internet usage).
Changes in job content and skill sets	*Job content* is interrelated with employee satisfaction, compensation, status, and productivity. Resistance to changes in job skills is common, and can lead to unpleasant confrontations between employees and management (see Routt, 1999).

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03. Impacts on Personnel

- Impact on Personnel
    - Many personnel-related questions arise as a result of using IT.

| Impact	Effect of IT
Shorter career ladders	In the past, many professionals developed their abilities through years of experience and a series of positions that exposed them to progressively more complex situations. The use of IT, and especially Web-based computer-aided instruction, may short-cut this learning curve.
Changes in supervision	IT introduces the possibility for greater electronic supervision. In general, the supervisory process may become more formalized, with greater reliance on procedures and measurable (i.e., quantitative) outputs and less on interpersonal processes. This is especially true for knowledge workers and telecommuters.
Job mobility	The Web has the potential to increase job mobility. Sites such as *techjourney.com* can tell you how jobs pay in any place in the U.S. Sites like *monster.com* offer places to post job offerings and resumes. Using videoconferencing for interviews and intelligent agents to find jobs is likely to increase employee turnover.

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03. Impacts on Personnel

- Impact on Individuals
    - Information systems affect individuals in various ways.
    - What is a benefit to one individual may be a constraint to another.
        - Dehumanization and other psychological impacts
        - Information anxiety
        - Job stress
        - Video display
        - Radiation exposure
        - Repetitive strain (stress) injuries
        - Lack of proper Ergonomics
        - Other Impacts …

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03. Impacts on Personnel

- Other Impact on Individuals
    - Interactions between individuals and computers are numerous.
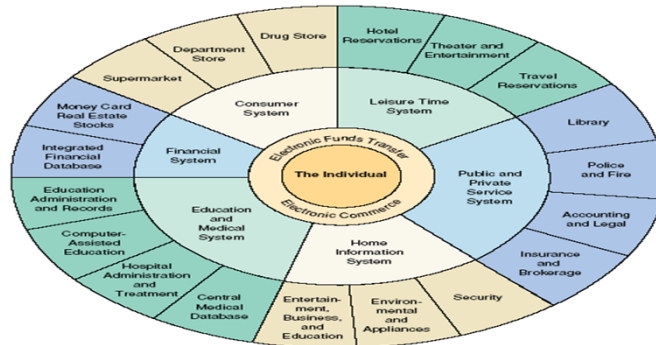
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04. Impacts on Society

- Impacts on Society
    - IT has already had many direct beneficial effects on society, being used for complicated human and social problems such as medical diagnosis, computer assisted instruction, government-program planning, environmental quality control, and law enforcement.

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04. Impacts on Society

- Benefits
    - Opportunities for people with disabilities
    - Quality of life improvements
    - Improvements in health care
    - Crime fighting

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04. Impacts on Society

- Issues
    - Use of IT has raised the issues of invasion of privacy.
        - Scanning crowds for criminals
        - Cookies and individual privacy
        - Digital millennium copyright act
        - Providing Social services
        - Possible massive unemployment resulting from the increased use of IT
        - The "digital divide" or gap between those who have technology and those who do not.
        - Impact of globalization on culture

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05. Virtual Communities

- Virtual Communities
    - A virtual (Internet) community is one in which the interaction among group members that share a common interest takes place via the Internet rather than face-to-face.

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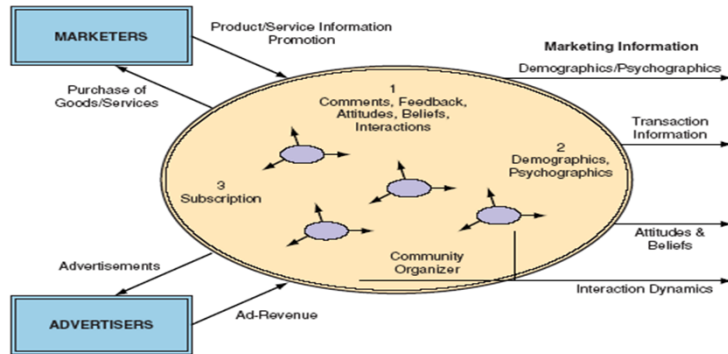
05. Virtual Communities

- Types of Virtual Communities

Community Type	Description
Transactions	Facilitates buying and selling (e.g., *ausfish.com.au*). Combines information portal with infrastructure for trading. Members are buyers, sellers, intermediaries, etc. Focused on a specific commercial area (e.g., fishing).
Purpose or interest	No trading, just exchange of information on a topic of mutual interest. *Examples:* Investors consult The Motley Fool (*fool.com*) for investment advice; *Geocities.yahoo.com* is a collection of several areas of interest in one place.
Relations or practice	Members are organized around certain life experiences. For example ivillage.com caters to women. Professional communities also belong to this category. *Example: isworld.org* for information systems faculty, students, and professionals.
Fantasy	Members share imaginary environments. *Examples:* sport fantasy teams at *espn.com;* over 80,000 members of Utopia (*games.swirve.com/utopia/*) can pretend to be kings of medieval provinces in an online multiplayer game.

Sources: Compiled from Armstrong and Hagel (1996) and Hagel and Armstrong (1997).

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05. Virtual Communities

- Financial Viability of Communities
  - Virtual communities have commercial as well as social aspects.

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