

# ***PENGARUH SISTEM PENDUKUNG MANAJEMEN***

- Model integrasi sistem pendukung manajemen
- Pemodelan cerdas dan manajemen model
- Integrasi dengan web, sistem perusahaan dan manajemen pengetahuan
- Pengaruh sistem pendukung manajemen : sebuah tinjauan
- Pengaruh sistem pendukung manajemen pada organisasi
- Pengaruh sistem pendukung manajemen pada individu
- Pengambilan keputusan dan tugas manajer
- Persoalan legalitas, privasi dan etika

Referensi lihat SAP : [5] Bab 15,  
[7] Chapter 19

## MSS

- MSS are important enablers of the *Information and Knowledge Revolution*
- Unlike slower revolutions (Industrial)
  - Much faster
  - Affecting our entire lives
- Many *managerial and social problems*
  - Impact on organizational structure
  - Resistance to change
  - Possible *rapid* increased unemployment levels
  - etc.
- Hard to separate the impact of MSS from other computerized system
  - Trend to integrate MSS with other CBIS
  - Little published information about MSS impacts
- Techniques are so new
- E.g., first: the Internet
- Now: the World Wide Web
  
- What next???

## MSS Impacts

- MSS can have both micro- and macro-implications
- MSS can affect:
  - Particular individuals and jobs
  - The work structure of departments
  - Units within the organization
- MSS can have significant long-term effects on:
  - Total organizational structures
  - Entire industries
  - Communities
  - Society as a whole.
- *Complete* management system framework (Figure 19.1)

# Movements of Major Changes

- Organization transformation
- Business process reengineering (BPR)
- Information technology is an *enabler* of BPR  
(Hammer and Champy, 1993)

## Overview of Impacts

- Computer technology has already changed our world
- *Much more change is anticipated*
- General categories
  - *Organizational*
  - *Societal*

## Organizational Impacts (Table 19.1)

- Reengineering and restructuring
- Span of control
- Centralization versus decentralization
- Authority, power, and status
- New organizational units
- Organizational culture
- Job content and roles
- Career ladder
- Supervision
- Individuals
- Productivity and competitiveness
- Decision-making and the manager's job
- Issues of legality, ethics, and privacy

## **Social Impacts** (Table 19.2)

- Employment levels
- Electronic communities
- Work in hazardous environments
- Opportunities for the disabled
- Changing role of women
- Telecommuting (working at home)
- Consumers
- Quality of life
- Computer crime
- Social responsibility

## **Organization Structure and Related Areas**

- Structure
- Centralization of authority
- Distribution of power and status
- New organizational units
- Organizational culture and virtual teams
- Virtual corporations

## Structure

- Flatter organizational hierarchies
- Staff-to-line ratio increasing

## Centralization of Authority

- Difficult to establish a clear pattern of IT influence on authority and power
- IT can support either centralization or decentralization

## Power and Status

- Knowledge is power
- Developments in IS are changing the power structure within organizations
- Who will control the computers and information resources?

## **New Organizational Units**

- DSS department
- Management support department
- AI department
- Knowledge management department (headed by a Chief Knowledge Officer (CKO))

## **Organizational Culture and Virtual Teams**

- Can impact the diffusion rate of technology
- Can be influenced by it
- Some dissolution of organizational structure due to technology
- Virtual teams can meet anytime / anyplace
- Individuals can join a virtual team as needed

## **Virtual Corporations**

- Relatively new idea
- Support by technology
- Communication and collaboration
- Individuals can join the corporation as needed



## MSS Support to Business Process Reengineering

- Business Process Reengineering (BPR)
- Major innovation
- Changing the way organizations conduct business
- Involves changes in:
  - Structure
  - Organizational culture
  - Processes
- BPR creates:
  - Management realignments
  - Mergers
  - Consolidations
  - Operational integrations
  - Reoriented distribution practices
- BPR greatly changes *organizational structure*:
  - Team-based organizations
  - Mass customization
  - Empowerment
  - Telecommuting
- MSS is an *enabler*

# MSS

(Especially ES, DSS and EIS)

- Business can be conducted in different locations
- Provides manufacturing flexibility
- Permits quicker delivery to customers
- Supports rapid and paperless transactions
- ES enable organizational changes by providing expertise to nonexperts
- Simulation modeling and BPR

# Personnel Management Issues

- Role of employees and managers
  - Many role definitions will be changed
  - New jobs (knowledge engineers)
  - Some jobs will disappear
  - Top management support staff moving to *information specialists*
  - Interesting changes in the jobs of experts supported by ES
- Job content
- Role ambiguity and conflict
- Employee career ladders
- Changes in supervision

## Other Considerations

- Impacts of MSS
  - On job qualifications?
  - On training requirements?
  - On worker satisfaction?
- How can jobs be designed to be a challenge?
- How might MSS be used to personalize or enrich jobs?
- What can be done so MSS does not demean jobs or has other negative impacts?
- How to allocate functions to people and machines?
- Should cost or efficiency be the major criterion for such allocation?
- What is the role of the human resources department in a virtual organization?

## Impact on Individuals

- Job satisfaction
- Inflexibility and dehumanization
- Cooperation of experts

## Impacts on Productivity, Quality, and Competitiveness

### Major MSS Benefits Leading to Competitive Advantage

- Increased productivity
- Increase in quality
- Cost reduction
- Timely production
- Faster time to market
- Fast training of employees
- Increased production (service) capacity
- Unique services
- Enable BPR and organization transformation
- Enhance other computer systems

## Decision Making and the Manager's Job

- Impact on the manager's job since the 1960s
- Until now mainly at lower- and middle-levels
- Now MSS impact at top manager's job
- MSS can change how managers make decisions
- So, MSS can change managers' jobs

## Impacts of MSS on Decision Making

- Automation of routine decisions or decision making phases
- Less expertise (experience) required for many decisions
- Faster decision-making
- Less reliance on experts to provide support to top executives
- Power redistribution among managers
- Support for complex decisions: faster and of better quality
- Provide information for high-level decision making
- MSS frees managers from routine tasks and decision making
- AI technologies can improve environmental scanning of information
- Change in leadership requirements
- Methods that managers use to do their jobs will change

# Issues of Legality, Privacy, and Ethics

## Legality

- Liability for the actions of intelligent machines are just
- A computer as a form of unfair competition in business  
(airline reservation systems)

## Specific Legal Issues

- What is the value of an expert opinion in court when the expertise is encoded in a computer?
- Who is liable for wrong advice (or information) provided by an ES?
- What happens if a manager enters an incorrect judgment value into an MSS and the result is damage or a disaster?
- Who owns the knowledge in a knowledge base?
- Should royalties be paid to experts who provide the knowledge to ES, and if so how much?
- Can management force experts to contribute their expertise?



## Some Legal Questions

- Who is liable if an enterprise finds itself bankrupt as a result of using the advice of ES?
- Will the enterprise itself be held responsible for not testing such systems adequately before entrusting them with sensitive issues?
- Will auditing and accounting firms, share the liability for failing to apply adequate auditing tests?
- Will the manufacturers of intelligent systems be jointly liable?

# Representative Issues in Ethics

- Computer abuse and misuse
- Electronic surveillance
- Software piracy
- Invasion of individuals' privacy
- Use of proprietary databases
- Use of intellectual property
- Exposure of employees to unsafe environments related to computers
- Computer accessibility for workers with disabilities
- Accuracy
- Protecting users' rights
- Accessibility to information
- Use of corporate computers for private purposes
- How much decision making to delegate to computers

## Personal Values

- Major factor in ethical decision making
- Ethical issues in MSS is complex (multidimensionality)

## Four Topics of Ethics

- Accuracy
  - Property
  - Accessibility
  - Privacy
- Mason et al. (1995)

## Privacy

- New computer systems can affect privacy rights
- Confidential information can be misused
- Can result in invasion of privacy and other injustices
- Cookies
- Law enforcement - use of AI technologies
- Other AI implications

## Intelligent Systems and Employment Levels

- Intelligent systems / MSS can affect productivity and employment
- AI (and ES and ANN) will increase the productivity of knowledge workers
- Impact on the aggregate employment level?
  - Massive unemployment? (Wassily Leontief)
  - Increased employment? (Herbert Simon)

# Massive Unemployment

1. The need for human labor will be reduced significantly
2. The skill levels of people performing jobs with the help of AI will be low
3. AI will affect both blue- and white-collar employees in all sectors
4. In the past few years (in 1991) several industries have laid off many employees
5. Industry, government and services already have a lot of hidden unemployment
6. Unemployment levels have grown steadily in the past decade in spite of increased computerization
7. The per capita amount of goods and services that people can consume is limited - may stop growing

## Increased Employment Levels

1. Historically, automation has always resulted in increased employment, by creating new occupations
2. Unemployment is worse in unindustrialized countries.
3. Work, especially professional and managerial, can always be expanded
4. The task of converting to automated factories and offices is complex - may take several generations
5. Many tasks cannot be fully automated
6. Machines and people can be fully employed, each where appropriate
7. Real wages may be reduced, however, because people will have income from other sources; people will have enough money to spend to create more jobs
8. The cost of goods and services will be so low that demand will increase significantly (automation will never catch up with increased demand)

## Other Questions

- Is some unemployment really socially desirable?
- Should the government intervene more in the distribution of income and in the determination of the employment level?
- Can the "invisible hand" in the economy continue to be successful in the future?
- Will AI make most of us idle but wealthy?
- Should the income issue be completely separate from employment?

# Internet Communities

## Electronic (virtual) communities

- Communities of transactions
- Communities of interest
- Communities of relations
- Communities of fantasy
- The business side of the community



# Other Societal Impacts

## Positive Effects

- Work in hazardous environments
- Opportunities for the disabled
- Changing role of women
- Working at home (telecommuting)
- Improvements in health
- Consumer aids
- Quality of life
- Law enforcement

## Negative Effects

- Computer crime
- Too much power
- The dangers of the Web
- Blaming the computer phenomenon
- Social responsibility
- Unemployment
- Creation of large economic gaps
- Other negative situations

## **Computer Crime: Fraud and Embezzlement**

- Losses in the hundreds of US \$ billion / year
- ES can deliberately provide bad advice
- DSS, ES and neural computing to detect and prevent computer crimes
- Neural computing: detect stolen credit cards and cellular phones almost instantaneously

## **Managerial Implications and Social Responsibilities**

- What can management do?
- How to anticipate the broad societal effects of MSS?
- What to do to ensure that people's attitudes toward MSS are well founded and that their expectations are reasonable?
- How to determine potential positive and negative beforehand?

## Key Issues

- Social responsibility
- Public pressure
- Computer and staff resources
- Planning
- Electronic community
  - Related to electronic commerce
  - Electronic communities will change the nature of corporate strategy and how business is done

## Ringkasan

- MSS are having far reaching and dramatic impacts on society and organizations
- Impacts
  - Providing rapid information access
  - Instantaneous communication
  - Artificial intelligence assisting and replacing human effort
- **Technology revolution**