Learning Objectives

- Understand the major impacts of information technology on organizations, individuals, and society.

Does IT have only positive effects?

- Our society (and other societies) have generally embraced IT
- Many people believe that humankind and our environment is threatened by the evolution of technology
- And there are those who stand in between
- What effect as individuals, as collective groups (business organisations), as a society, as a species

Does IT have only positive effects?

- Will society have any control over the decisions to deploy technology?
- Where will technology critics be able to make their voices heard?
- Who will investigate the costs and risks of technologies, and who is going to pay for that investigation?

IT and Organisations

- Automation of jobs
- Computerised databases
- Communications – speed
- Range of applications
- Reach of technology

Impact on organisations

- Flatter hierarchies
- Span of control
- Centralisation
- Power/status (“knowledge is power”)
- Job content
Impact on organisations (2)

- automated decisions
- less reliance on experience/expertise
- decrease face-to-face communication
- standardisation
- speed – rapid identification of problems/opportunities
- speed – quicker decisions

Structure, Authority & Job Content

- flatter organisational hierarchies
  - an increased span of control.
- blue-to-white collar staff ratio
  - the number of professionals and specialists could decline.
- special units
  - technology center, e-commerce center, etc.

Structure, Authority & Job Content (cont.)

- centralisation of authority
  - greater empowerment and decentralisation.
- power and status
  - online knowledge bases may reduce the power of certain professional groups.
- job content
  - if job content changes, people may need training, re-skilling.

Personnel Issues

- employee career ladders
  - the use of IT may short-cut a portion of the learning curve.
- changes in supervision
  - electronic supervision.
- other considerations
  - job qualifications, training, worker satisfaction.

The Manager’s Job

- IT changes the way Managers make decisions in the following ways:
  - automation of routine decisions (e.g., frontline employee).
  - less expertise required for many decisions.
  - less reliance on experts to provide support to top executives.
  - empowerment of lower and medium levels of management.
  - decision making undertaken by non-managerial employees.
  - power redistribution among managers, and power shifts down the organization.

Organizational Changes

The use of computer-assisted communication technologies leads to the following organizational changes (Huber, 1990):

- a large number and variety of people participating in decision making.
- a decrease in the number and variety of people participating in traditional face-to-face communication.
- fewer organizational levels involved in authorizing actions.
- more rapid and accurate identification of problems and opportunities, so better decisions are made.
- organizational intelligence that is more accurate, comprehensive, timely, and available.
- shorter time required to authorize actions and make decisions.
### Impacts of Individuals at Work

- **Job Satisfaction**
- **Dissatisfied Managers**
- **Dehumanization & Psychological Impacts**
- **Isolation and the Internet**

### Impacts of Individuals at Work

- **Information Anxiety**
  - Frustration with the quality of the information available on the Web.
  - Too many sources online.
  - Frustration with the guilt associated with not being better informed.

- **Impacts on Health & Safety**
  - **Job Stress**
  - **Repetitive Strain Injuries**
  - **Ergonomics**

### Impact on individuals

- **job satisfaction**
  - enriched
  - routine
- **individual identity** (see decreased face-to-face communication)
- **isolation**
- **stress**
  - speed
- **RSI**

### IS & the Individual

### IT and Individuals - other issues

- **telecommuting**
- **productivity**
  - personal
  - business
- **free speech vs. Internet indecency**
- **others**

### Social Impacts

- **Opportunities for People with Disabilities**
- **Quality of Life Improvements**
  - Potential positive uses of Robots
    - E.g., Case: Laying Fiber Optic Cables.
    - E.g., Case: Cleaning Train Stations in Japan
- **Improvements in Health Care**
- **Crime Fighting and Other Benefits**
Technology & Crime

• One of the major debates surrounding IT involves situations in which police are using technology to reduce crime.
  • Scanning Crowds for Criminals.
  • Casinos use face recognition systems to identify "undesirables".
  • The U.K. police have, since 1998, been using a similar system in East London borough with 300 cameras.
  • Many banks, gas stations, convenience stores, and even elevators use the system.

Cultural Lag

Ogburn’s Cultural Lag Thesis:
• An inherent conflict exists between the rapid speed of modern technological advances and the slower speed at which ethical guidelines for utilization of new technologies are developed.
• A failure to develop broad social consensus on appropriate applications of modern technology may lead to:
  • breakdowns in social solidarity
  • the rise of social conflict.

IT & Employment Levels

• A major attribute associated with automation is the replacement of people by machines.
• There is no doubt that many people have been displaced by automation, but many more have gained employment due to automation.
  • Computers encourage competition, which leads to a decline in prices.
  • Lower prices mean higher demand, which, in turn, creates more jobs.
  • The computer industry itself has created millions of new jobs.

Digital Divide

• Digital Divide – the gap between those that have information technology and those that do not.
  • Within countries and among countries.
  • In 2001, only 5% of the world’s population used the Web, and the vast majority of this 5% was located in the developed world.
  • Yet the Web has the potential to turn poor countries such as India into economic powerhouses & dissolve rigid social barriers.

Globalization & Free Speech

• International Implications
  • Many countries, willingly or unwillingly, knowingly or unknowingly, are being westernized as a result of information about western ways of life and values flowing freely across borders.

• Challenge to Free Speech
  • The problem of Internet pornography is very serious
  • Some countries take an entirely different line with respect to freedom of speech

Virtual Communities

• Communities of Transactions - facilitate buying and selling.
• Communities of Interest or Purpose - people have the chance to interact with each other on a specific topic.
  • Rugby365.com gets rugby fans, and music lovers go to mp3.com.
• Communities of Relations or Practice - are organized around certain life experiences, situation, or vacations.
• Communities of Fantasy - participants create imaginary environments.
Virtual communities as E-communities

- Value creation arises in virtual communities because the community brings together consumers of specific demographics and interests.
- This presents opportunities for transacting business, and for communicating messages about products and services.
- E-communities can attract advertising revenues from advertisers eager to communicate their messages to a specific target audience.
- Opportunities also arise for collecting valuable marketing information.
  - demographics and psychographics of members

Lessons Learned

- The major concern of most organizations today is how to transform themselves to a “new organization” adaptable to the new economy.
- The key to survival is the ability to properly and quickly adapt to changes in the environment.
- Change in the business environment is demonstrated not only in the increased competition and globalization, but also in industry structures, distribution channels, production systems, and more.
- IT can also save organizations, helping them to adjust and survive.
- IT is the major driver of the new economy.

“Digital – Economy Ready”

Actions organizations can take to become “digital-economy ready”:

- Build strategic information systems and use innovations such as electronic auctions and exchanges.
- Create effective and efficient communication and collaboration networks.
- Examine possible new models and initiatives of e-commerce
- Examine supply chains.
- Make a continuous effort to increase productivity, quality, security, and effectiveness in every facet of the organization’s operations.

“Digital – Economy Ready” (cont.)

- In moving to a “digital-economy-ready status,” carefully plan IT systems in coordination with the business plans they intend to support.
- Increase recognition of knowledge, its creation, preservation, storage, and dissemination.
- Support managerial decisions with IT and especially the Web.
- Have the ability to process a large amount of data.
- Facilitate innovation and creativity in digital economy applications by using intelligent systems.

“Digital – Economy Ready” (cont.)

- Carefully address the economies of IT in general and e-commerce in particular, including outsourcing, when moving to the new economy.
- Properly build and deploy information systems that will provide for internal efficiency and connect to the many business partners.
- Manage the increasing information resources in both business units and a centralized IS department.
- Address organizational, personal, and socioeconomic issues associated with the increase use of IT.