

Information Technology and Society

Topic 6:
**Changes in work,
education, and culture**

1. Economic and work-related effects of IT
2. IT in education
3. Effects on culture

Reading: Baase, Ch. 6; Sec. 7.2

Inquiry

Does the information revolution result in:

- individualization of work?
- increased fragmentation of society?
- Increased social connectedness and cohesion?
- radical changes in education?
- radical changes in our culture as a result of integration of text, video, and images?
- radical changes in our culture due to open access to culture?

Objectives

- 6a. Explain how changes in IT affect work life
- 6b. Discuss educational issues raised by IT changes
- 6c. Discuss how changes in IT influence cultural life
- 9f. Document sources used

1. Economic and work-related effects of IT

- Service economy
- Employment
- Labor-force flexibility
- A global labor force
- Structures of enterprises

Service economy and informational society

- *Classical theory* (to be challenged or qualified):
 - knowledge generation and communication explain productivity and growth
 - activity shifts from goods to services
 - managers, professionals, technical occupations will become core elements
- Distinction is not industrial vs. post-industrial, but between two forms of *knowledge-based production*
- *Emphasis*: informationalism, not post-industrialism
- “Goods,” “services” are hard to distinguish in the informational economy

IT and employment

- *IT industry*: \$1 trillion worldwide, 2005
- *IT jobs*: 10.5 million in U.S., 2004
- *Job churn*: 1993-2002, 310 million jobs disappeared; 328 million new jobs were created
- New jobs created by IT tend to require higher education, replacing old jobs that did not
- *Offshoring*: About 3.3 million white collar jobs will have left U.S., 2000-2015
- *Inshoring*: Working for a foreign employer

Effects of IT on employment

- Introduction of technology does not necessarily reduce employment
 - displaces some jobs
 - creates others
 - changes characteristics of new jobs
- One factor is that introduction of technology is associated with growth
- “There is no systematic structural relationship between the diffusion of information technologies and the evolution of employment levels in the economy as a whole”

Labor-force flexibility

- A two-layer model is emerging:
 - core labor force (“symbolic analysts”)
 - a disposable labor force (subject to automation, firing, outsourcing)
- IT fosters flexibility and the need for flexibility of the labor force
- “A crisis in the relationship between work and society”

A global labor force

- Capital is more mobile than labor
- Labor is constrained by borders and policies
- There is a “hierarchical segmented interdependence of the labor force” impelled by capital movements by multinational firms
- Integration of work process goes with disintegration of work force
- Firms and governments have chosen “low road” of short-term profitability by taking advantage of opportunities to cheapen labor

IT and restructuring of capital-labor relations

- Transition to informational society is accompanied by deterioration of living and working conditions for many workers
- Since early 1980s, governments and firms have squeezed labor costs to counter the profit crunch
- These changes were enabled by introduction of IT and by new organizational forms facilitated by IT

Structures of enterprises

- Small businesses have access to global market via the Web
- Mergers and splits of huge global companies
- Computer-driven narrowing of focus reduces company size because more products and services are obtained outside company
- Need for middle managers falls because IT enables more information to go directly to workers; workers manage selves more

New occupational structures and employment projections

- Different informational societies have different occupational structures
- Polarization of income distribution has occurred
- Different management styles are used, e.g., Japan (4% managers, 1990), U.S. (13%)
- Diverse paths are taken to informational paradigm

Effects on the work process

- A fundamental change in work: “the individualization of labor in the labor process”
- A reversal of the socialization of production initiated by the industrial revolution
- Management becomes decentralized, markets become customized, work segmented, and societies fragmented
- Work time, job stability, location of work, and the social contract between employer and employee undergo changes

The work process

- Taking advantage of productivity potential of technology requires greater freedom of more informed workers
- Factors fostering high performance in work: high skills, worker autonomy and feedback, teamwork
- Work force is partitioned as a result of decisions made in the course of introduction of IT
- In 1980s, technology was introduced more often to save labor, cut costs and subdue unions, than to improve quality and productivity other than by downsizing

Telecommuting

- increases flexibility
- reduces commuting cost and time
- increases home-related distractions
- reduces mentoring and team contact
- security issues arise

Employee crime

- *Embezzlement* using computers
- *Sabotage*, e.g., “logic bombs”
- *Security measures*: separation of roles (e.g., establishing insurance policies and authorizing claim payments), audit trails

Monitoring of employees

- Screen views, keystrokes, and voice can be monitored
- Surveillance cameras monitor many work environments
- *Goals:* Assess productivity, courtesy, accuracy, computer theft
- Employers have an ethical obligation to explain monitoring policies
- Location monitoring may occur in transportation and is a side effect of door-key IDs

Employer email systems

- About half of large U.S. companies sometimes access employee email, voicemail, or computer files
- 26% of employers surveyed said they had fired employees for misusing company email
- 15% of companies surveyed had had lawsuits against them because of employee email, 2006

Monitoring of employee email

- *Motivations:*
 - Obligation to prevent harassment by email
 - Employees emailing jokes
 - Running businesses or betting pools
- Courts have upheld most company email and computer-file monitoring

3. IT in education

- Custom preparation of course materials
- Communication by students outside classroom
- Collaboration tools
- Research access
- Self-construction of knowledge
- IT at FSU
 - Learning with IT
 - Learning about IT

Active learning

- Learning is an action/feedback process of *experience* interacting with the environment
- The learner may interact with educational software and with instructor and other students via software and telecommunications
- Online resources support interaction and provide access to research data

Collaborative learning

- Students reinforce their own learning by supporting each other's learning
- *Example:* a student who has just learned a concept may know just the words to help another overcome a conceptual obstacle
- Software and communications technology, e.g., Web 2.0, support collaboration

Advantages of technology

- Increases student-teacher interaction
- Cooperation and collaboration between students
- Active learning
- Prompt feedback
- Access to content
- Respect for diverse talents and learning styles
- Engagement of students
- Promotes critical thinking

Tools

- Course management systems (CMS), e.g., Blackboard
- Web links
- Interactive multi-media objects
- Collaboration tools, e.g., Merlot

Questions

- Is the classroom doomed?
- What is the place of online learning?
- What is the place of laptops in the classroom?

4. Effects on culture

Media and audience diversification

- VCRs and multiplication of TV channels enabled greater consumer choice, market segmentation, and product diversification
- Audience became more choosy
- Big corporations, governments retained power
- Are we living in a global village, or in “customized cottages globally produced and locally distributed”? (M. Castells)

Computer-mediated communication

- Minitel (France, 1984): government-subsidized videotex services accessed through dumb terminals
- Internet, 1999:
 - 63 million hosts, 950M lines, 3.6M web sites
 - 173 million users (U.S.-Canada: 102 million)
 - 1973, 25 computers
- Inequality: circa 2000, industrialized countries had 88% of users but 15% of world population
- Computer-mediated communication networks are pervasive, decentralized, and flexible
- Internet is suited for developing many weak social connections

Communications and culture

- Integration of electronic communication
- End of the mass audience
- Rise of interactive networks
- Alphabet (Greece) revolutionized mental infrastructure for thought and communication
- Integration of text, sound, images, video, interacting globally with open access, changes culture

A culture of real virtuality

- A new *culture of real virtuality* is emerging
- *Real virtuality*: “a system in which reality itself ... is entirely captured, fully immersed in a virtual image setting” in which appearances become the experience
- *Example*: Dan Quayle’s debate with Murphy Brown

Rise of the mass-media culture

- TV prevailed as path of least resistance for consumers (easier than reading)
- Mass culture resulted from control of electronic media by governments and mega-corporations
- Media are ubiquitous, but our reaction is subject to our will
- “Media tend to work on consciousness and behavior as real experience works on dreams, providing the raw material...”

Critiques of IT in entertainment

- The simplifications of virtual reality are “frequently misleading and treacherous”
- Computer games are said to invite addiction, violence, health problems, dehumanization
- Web-based pornography can be accessible to children
- *Opinions due to: G. Stamatellos*

Questions

What are the cultural roles of

- Reality TV?
- Video games?
- On-demand streaming?
- Facebook?

Concepts

audience diversification	mass media culture
audit trail	offshoring
two-tier work force	post industrialism
blog	real virtuality
decentralized management	self-construction of
disposable labor force	knowledge
collaborative education	service economy
employer monitoring policy	social contract
feedback management	social networking
inshoring	telecommuting
job churn	Web 2.0
knowledge labor force	wiki
location monitoring	Wikipedia
mass culture	worker autonomy

References

- S. Baase. *A Gift of Fire*, 3rd ed. Pearson Prentice Hall, 2008.
- M. Castells. *Rise of the Network Society*, 2nd ed. Blackwell, 2000, Ch. 4.
- Andrea Pickles. Lecture at Framingham State College. April 2008.
- G. Shelly and M. Frydenberg. *Web 2.0: Concepts and Applications*. Course Technology, 2011.
- R. Spinello and H. Tavani, ed. *Readings in CyberEthics*, 2nd ed. Jones and Bartlett, 2004.
- G. Stamatellos. *Cyberethics*. Jones and Bartlett, 2007.