

Information Technology and Society

Topic 5: Changes in work, education, and culture

1. Economic effects of IT
2. Effects on the work process
3. IT in education
4. A culture of real virtuality

Hypotheses

Results of the information revolution include:

- individualization of work
- fragmentation of society
- evolution of education as collaboration and as learner's construction of own knowledge
- centralization and decentralization of power and production
- social polarization
- "culture of real virtuality"

1. Economic effects of IT

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*: People who work 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”

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 new organizational forms facilitated by IT

Post-industrialism, 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 informational economy

A global labor force?

- Capital is more mobile than labor
- Labor is constrained by borders, 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

Structures of business

- 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 structure 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

2. Effects on the work process

Work and the informational divide

- A fundamental change in work: “the individualization of labor in the labor process”
- A reversal of the socialization of production
- 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 bipolar 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 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 FSC
 - Learning with IT
 - Learning about IT

4. A culture of real virtuality

- *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

Media and audience diversification

- VCRs, multiplication of TV channels enabled greater consumer choice, market segmentation, and product diversification
- Audience became more choosy
- Big corporations, governments retained power
- “We are not living in a global village, but in customized cottages globally produced and locally distributed”
- Despite diversity, media are still unidirectional

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

Multimedia as symbolic environment

- Integration of different media; interactive capability
- Social differentiation between the interacting (deciders) and the interacted (choice limited to prepackaged options)
- One's social group is determined by class, race, gender, country
- "Integration of all messages in a common cognitive pattern"
- MM ends separation of audiovisual/printed, popular/learned, entertainment/information, education/persuasion (Daily Show)

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 communication
- A new *culture of real virtuality* is emerging

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
- “Entertainment is the supra-ideology of all discourse on television”
- 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...”

References

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