Impacts of Computing Technology in the Workplace
(Class 5.1 – February 12, 2013)

CSE 3316 – Professional Practices
Spring 2013
Instructor – Bill Carroll, Professor of CSE
Chapter 6: Work
What We Will Cover

- Changes, Fears, and Questions
- Impacts on Employment
- Employee Communications and Monitoring
Changes, Fears, and Questions

- The introduction of computers in the workplace generated many fears
  - Mass unemployment due to increased efficiency
  - The need for increased skill and training widens the earning gap

- New trends still generating fears
  - Offshoring of jobs will lead to mass unemployment
  - Employers use of technology to monitor their employees
Impacts on Employment

Job Creation and destruction

- A successful technology eliminates or reduces some jobs but creates others
  - Reduced the need for telephone operators, meter readers, mid-level managers
- New industries arise
  - Internet
  - Cellular communications
- Lower prices increase demand and create jobs
  - Music industry changed from serving the wealthy to serving the masses, employing more than just musicians
Impacts on Employment

Job Creation and destruction

- Unemployment rates fluctuate
  - Growth of computers has been steady, while unemployment has fluctuated widely
- Unemployment has more to do with an economy’s ability to adapt to change.
Impacts on Employment

Job Creation and destruction

- Are we earning less?
  - Since the 1970s, wages decreased but fringe benefits increased
  - People work fewer hours since the Industrial Revolution
  - Decrease in take-home pay may be due to other factors (e.g. increased taxes)
  - Purchasing power increases as prices fall
Impacts on Employment

Changing Skills and Skill Levels

- The new jobs created from computers are different from the jobs eliminated.
- New jobs such as computer engineer and system analyst jobs require a college degree, where jobs such as bank tellers, customer service representatives and clerks do not.
- Companies are more willing to hire people without specific skills when they can train new people quickly and use automated support systems.
Impacts on Employment

Discussion Questions

- What jobs have been eliminated due to technology?
- What jobs that were once considered high-skill jobs are now low-skill due to technology?
- What new jobs have been created because of technology?
- Do automated systems mean fewer jobs for high-skilled workers?
- Will human intelligence in employment be “devalued”?
Impacts on Employment

Telecommuting

- Working at home using a computer electronically linked to one's place of employment
- Mobile office using a laptop, working out of your car or at customer locations
- Fulltime and part-time telecommuting
Impacts on Employment

Telecommuting

- Benefits
  - Reduces overhead for employers
  - Reduces need for large offices
  - Employees are more productive, satisfied, and loyal
  - Reduces traffic congestion, pollution, gasoline use, and stress
  - Reduces expenses for commuting and money spent on work clothes
  - Allows work to continue after blizzards, hurricanes, etc.
Impacts on Employment

Telecommuting

- Problems
  - Employers see resentment from those who have to work at the office
  - For some telecommuting employees, corporation loyalty weakens
  - Odd work hours
  - Cost for office space has shifted to the employee
  - Security risks when work and personal activities reside on the same computer
Impacts on Employment

Discussion Questions

- Would you want to telecommute? Why or why not?
- How has technology made entrepreneurship easier? Harder?
Impacts on Employment

A Global Workforce

- Outsourcing - phenomenon where a company pays another company for services instead of performing those tasks itself
- Offshoring - the practice of moving business processes or services to another country, especially overseas, to reduce costs
- Inshoring - when another company employs thousands of people in the U.S. (e.g. offshoring for a German company means inshoring for U.S.)
- Almost 5% of U.S. workers are employed by foreign companies
Impacts on Employment

A Global Workforce

- Problems and side effects of offshoring
  - Consumers complain about customer service representatives, because accents are difficult to understand
  - Employees in U.S. companies need new job skills (e.g., managing, working with foreign colleagues)
  - Increased demand for high-skill workers in other countries forces salaries up
Impacts on Employment

A Global Workforce

- Ethics of hiring foreign workers
Learning About Job Applicants

- The Web and social media provide new means of information collection on job applicants. Employers:
  - search online newsgroups and social networks
  - hire data-collection agencies
  - use a variety of screening methods to efficiently reduce a large pool of applicants to a reasonable number
- Some job-seekers attempt to clean up their online persona.
Impacts on Employment

Risks and Rules for Work and Personal Communications

- Employee monitoring is not new
  - Employers have always monitored their employees.
  - Degree of detail and frequency of monitoring has varied depending upon kind of work, economic factors, and available technology. (Time-clocks and logs.)
  - Early monitoring was mostly ‘blue-collar’ (factory) and ‘pink-collar’ (telephone and clerical) jobs
  - Bosses patrolled the aisles watching workers
  - Output counts at the end of the day
Risks and Rules for Work and Personal Communications

- Employee monitoring is not new
  - Data entry
    - Key stroke quotas
    - Encourage competition
    - Beep when workers pause
  - Phone work
    - Number and duration of calls
    - Idle time between calls
    - Randomly listen in on calls
- Retail
  - Surveillance to reduce theft by employees
Impacts on Employment

Risks and Rules for Work and Personal Communications

- Separating – or merging – work and personal communications
  - Employers often prohibit employees from using their work email, computers, and other devices for personal use.
  - What about employees using personal email accounts, social media, laptops, smartphones, and other devices for work?
    - Overhead of managing and maintaining systems to work with variety of brands and operating systems
    - Security of company information and operations.
Risks and Rules for Work and Personal Communications

- Monitoring employer systems
  - Roughly half of major companies in U.S. sometimes monitor the email or voice mail of their employees on company systems.
  - Many major companies use software tools that provide reports on employee Web use.
  - Purposes of monitoring employee communications include training, measuring or increasing productivity, checking compliance with rules for communication, and detecting behavior that threatens the employer in some way.
Impacts on Employment

Risks and Rules for Work and Personal Communications

- Monitoring employer systems
  - Roughly half of major companies in the U.S. monitor or search employee email, voice mail, or computer files
  - Most companies monitor infrequently, some routinely intercept all email
Impacts on Employment

Risks and Rules for Work and Personal Communications

- Monitoring employer systems
  - Some companies block specific sites (e.g. adult content, sports sites, job search sites, social-network sites)
  - Employees spend time on nonwork activities on the Web
  - Concerns over security threats such as viruses and other malicious software
  - Concerns about inappropriate activities by employees (e.g., harassment, unprofessional comment)
Impacts on Employment

Law and cases for employer systems

- Electronic Communications Privacy Act (ECPA) prohibits interception of email and reading stored email without a court order, but makes an exception for business systems
- Courts put heavy weight on the fact that computers, mail, and phone systems are owned by the employer who provides them for business purposes
Impacts on Employment

Law and cases for employer systems

- Courts have ruled against monitoring done to snoop on personal and union activities or to track down whistle blowers.
- Court decisions sometimes depend on whether an employee had a reasonable “expectation of privacy.”
- Many employers have privacy policies regarding email and voice mail.
- The National Labor Relation Board (NLRB) sets rules and decides cases about worker-employer relations.
Impacts on Employment

Personal social media

- Basing disciplinary action on personal, nonwork social media is more controversial because it extends employer control beyond the workplace.
- Content in social media is often widely distributed; thus impact is stronger than that of a private conversation.
- Employer restrictions on nonwork social media do not violate employee’s freedom of speech (unless, in some cases, when the employer is the government).
Impacts on Employment

Discussion Questions

- *It is reasonable for employers to fire employees for content of their blogs, tweets, or posts on social networks?*

- *Are there good reasons for employers to be concerned about what their employees post in such places?*
Impacts on Employment

Monitoring location and equipment usage

- Electronic identification badges that serve as door keys
  - Provide increased security
  - Allow monitoring of employee movement
Monitoring location and equipment usage

- Cards and badges used as electronic keys increase security but track employee movements.
- GPS tracks an employee's location:
  - Used in some hospitals to track nurse locations for emergency purposes, also shows where they are at lunch or when they use the bathroom.
  - Used to track long-haul trucks to reduce theft and optimize delivery schedules, also detects driving speeds and duration of rest breaks.
- Employees often complain of loss of privacy.

Impacts on Employment
Impacts on Employment

Discussion Questions

- How much privacy is reasonable for an employee to expect in the workplace?
- Under what circumstances is it appropriate for an employer to read an employee's email?