2. Social, ethical, and economic background

What is ... ?

- a theory
- good behavior
- bad behavior
- a policy
- a right
- a system
- an organization
- an economy
2. Social, ethical, and economic background

Objectives

2a. Explain what social factors have driven the information revolution
2b. Explain the effect of computing and information technology on society
2c. Discuss IT issues in the context of theories of ethics
0h. Document sources used

Readings: S. Baase, Ch. 1; M. Castells, pp. 13-23; T. Friedman, The World is Flat; D. Keil, IT and the economic crisis

1. Foundations of ethics

• What is the right way to behave?
• How do we allocate ethical importance to individual and to society?
• What are our rights in relation to IT?
Ethics (J. D’Andrea)

- Addresses principles that guide decision making: “How should I behave?”
- *Assumption:* people make free rational decisions
- *Principles* espoused by some ethicists:
  - *Nonmaleficence:* do no harm intentionally or not
  - *Beneficence:* obligation to help others
  - *Justice:* treat people fairly, treat like alike in compensation or distribution
  - *Autonomy:* respect decisions of rational beings

Ethical theory: Utilitarianism

- Aka *consequentialism*
- J. Bentham, 18th cent.; John Stuart Mill
- Act in most useful way to give maximum benefit to greatest number of people; aka consequentialism
- *Example:* lying to a predator who is pursuing a victim
The deontological theory of ethics

- *Immanuel Kant* (absolute deontological, 18th cent.)
- Follow rules that can universally apply to everyone; categorical imperative
- “Do unto others,” “Thou shalt not…” express a similar idea
- Humans seen as ends, not only as means
- Duty-driven, regardless of circumstances and consequences

Theories of rights

- *Liberal individualism* (J. Locke): Each individual has rights to life, health, freedom, property
- *John Locke*: Natural-rights theory
- *Communitarianism* places social needs first
- Underpinnings of ideas about rights and freedoms:
  - Life Property (Locke)
  - Autonomy and Rationality (Kant)
2. Social, ethical, and economic background

Rights, goals, laws

• (liberties)

• Claim rights Goals (e.g., profit maximization) may be ethical, but ethical constraints may also apply to actions pursuing these goals

• Laws may enforce ethical principles (e.g., against stealing) or may establish conventions (e.g., driving on the right)

Liberties (negative rights)

• imply that no one may prevent a person from acting

• Examples: freedom of speech, from unreasonable search, from arbitrary confiscation of property, to copy public-domain texts or for fair use
Claim rights (positive rights)

- Imply an obligation by others to provide something
- *Examples:* access to clean air, water, education, paved streets, firefighting, equal protection of law

Kinds of policy choice

- *Personal:* choices depend on values and on situation
- *Organizational or business:* choices depend on consumer demand, market behavior, ethics, laws
- *Law:* decisions impose constraints on people who didn’t make them
- A moral framework for legal discourse (*Baase*):
  - Based on notion of human rights
  - Freedom and autonomy of the individual must be recognized
  - Individuals have responsibility toward society
2. Social, ethical, and economic background

Example: policies for Internet service providers

- ISPs and web hosts have different roles
  - Common carrier
  - Distributor
  - Editor/creator/publisher
- These roles carry different expectations; for example, a common carrier such as an Internet service provider is not responsible for content
- A new look at the roles of the ISP may be needed for the legal system

Possible policies for a web browser

Allow a site
1. to install executable programs on user’s hard disk and run them
2. to delete information on user’s HD without user’s knowledge
3. to leave a file on user’s disk without informing user
4. to leave a file on user’s disk and inform user
5. to give user the information and ability to accept or decline cookies
Example: Copying software for friends

*Is it morally justifiable to copy copyrighted software for one’s friend?*

- Is the law just or unjust?
- Do ethics let us make exceptions for our friends and ourselves?
- Is this case different from stealing CDs?
- What about software makes it different?

*Note:* Morality is *public* and requires *impartiality* (B. Gert)

2. Informationalism

- What are the effects of universal connectedness, ubiquity of computing, and the speed and low cost of processing, storage, copying, and communication of information?
- Does today’s IT embody *values* from the social environment; or is it neutral and *value free*?
- Does information technology, acting on itself, *accelerate the rate of social change*?
2. Social, ethical, and economic background

The informationalist era

- A *mode of development* that has replaced industrialism, according to M. Castells
- Technology *enables* social actors; social actors *use* technology to pursue their interests
- *State* can be a leading force in technology, or can cause stagnation if it defaults
- Current technological revolution took place in, and to enable, a *restructuring of capitalism*

Theoretical foundations

- Studying a subject involves *concepts* and *assumptions* summarized as *models* or *theory*
- Manuel Castells’ framework: “societies are organized around human processes structured by historically determined relationships of *production, experience, and power*”
- *Network society*: A new social structure associated with emergence of the *informationalistic* mode of development
2. Social, ethical, and economic background

A theoretical framework (M. Castells)

- **Production**: Action by humans on nature for consumption and accumulation
- **Experience**: Action by humans on selves, interacting with nature and other humans
- **Power**: Forcible imposition of will by human on others, based on production and experience
- Production is associated with class relationships; experience is associated with gender; power is associated with the state

Knowledge and information

- **Knowledge**: organized statements presenting judgment or experience. Contrast: news, entertainment (Bell)
- **Information**: “data that have been organized then communicated” (Porat)
- What is crucial today is not the central role of knowledge and information, but the feedback effect, applying knowledge to the process of knowledge generation
2. Social, ethical, and economic background

**Modes of production**

- *Slavery* is ownership of humans by humans
- *Feudalism* binds producers to land and lord
- *Capitalism*
  - private ownership of means of production
  - owners appropriate surplus as profit
  - follows *market* principle
- *Statism* places control in hands of the state; Soviet statism failed to adopt informationalism
- Capitalism is driven by *profit* maximization, statism by *power* maximization

**Advanced capitalism and informationalism**

- Capitalism and statism are *modes of production*
- Industrialism and informationalism are *modes of development*
- Capitalism went into crisis period in 1970s with stagnating productivity
- Informationalism is linked to the rejuvenation of capitalism, its deregulation, the dismantling of the welfare state, and the disruption of the capital-labor social contract
Social context and dynamics

- Oil shock of 1973-74 coincided with inventions of 70s to cause, and enable, a restructuring of capitalism with a new model of accumulation
- Synergy between software and hardware, computers and communication, contributed
- Technological revolution was technologically induced, not socially, but was shaped by social forces (Castells)

Modes of development

- Modes of development are technological arrangements used in production
  - Agrarian
  - Industrial
  - Informational
- Specific to industrialism: use of energy, action of machines on machines
- Specific to informationalism: action of knowledge on knowledge
2. Social, ethical, and economic background

**Industrialism and Informationalism**

- *Informational* mode of development is distinguished by action of knowledge on knowledge as primary source of productivity
- *Industrialism* aims at economic growth, *informationalism* at technical development
- From informationalism we can expect new forms of social interaction, change, and control

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**Industrial revolutions and informational revolution**

- The ascendancy of the West (European-based societies) is associated with technological advances made there
- Two industrial revolutions occurred:
  - (1) machines;
  - (2) use of science, electricity, chemicals, communication
- An IT revolution is occurring now
2. Social, ethical, and economic background

**Actors and locations in the IT revolution**

- Milieus and clusters of innovation played a crucial role
- State, as well as innovative entrepreneurs, played a role
- State was initiator, entrepreneur was shaper of decentralized structures

**Informationalism and capitalism**

- “Informationalism is linked to the expansion and rejuvenation of capitalism” as industrialism was linked to setting it up
- The world has become digital (Negroponte)
- Informationalism is pervasive; as important as the Industrial Revolution
- Technologies aren't just *tools to use*, but *processes to develop*
What generated Informationalism

• The informational economy has the same profit-driven logic as the industrial economy
• The capitalist industrial economy became informational-global to avoid collapse as success of Keynesian economic policy lagged
• *One factor:* a profit squeeze, 1970s
• *Alternative case:* collapse of USSR due in part to failure to shift to new paradigm

Productivity, competitiveness and the Informational economy

• *Productivity* is output yield per unit of input
• It drives economic progress
• Around 1970s a *downward* trend in productivity growth occurred, creating a crisis
• The most productive IT users combined customer-focused business strategy with decentralized organizational structure
Mass customization

- IT enables a combination of the quality of high-end custom design with the efficiency of mass production
- The *customer-centric enterprise*, resulting from global economy, drove the trend of mass customization
- Cases:
  - Dell
  - Automobiles
  - Telcom

A restructuring of capitalism

- *Keynesianism* (strong government intervention in the economy to stabilize it through crises) met its limitations in 1970s, with rampant inflation
- Restructuring included deregulation, privatization, dismantling of the capital-labor social contract
- Goals of reforms:
  - deepen logic of profitability in social relations
  - enhance productivity
  - globalize production and markets
  - marshal state support
3. Globalization

- Has IT enabled a *global economy*?
- Have IT and globalization decreased or increased social polarization?
- Is the world “flat” and is that good?
- Does the *connectedness of all people* via IT raise social issues and enable changes in society?
- Why did an economic crash come in 2008?

**Features of globalization**

- It is the creation of a single world market that operates in real time
- It is a kind of *economy* (not culture)
- It is enabled by IT in the form of communications technology
‘The world is flat’

- Technologies have changed the rules of the game in the world market
- Innovation and ability to adapt quickly are conditions of business success
- Thomas Friedman argued that globalization “flattens” the world economy
- Key elements in flattening are information technologies that enable new kinds of collaboration even at distances

Eras of globalization

- 1492-1800: countries globalized
- 1820-2000: companies globalized
- 2000-: individuals and small groups became globalized dynamic agents
- In the current era
  – The “flatteners” (technical enablers) converge
  – Horizontal connections replace vertical control, changing all habits
  – 3 billion people from the East have joined the flattening process
2. Social, ethical, and economic background

Enablers of globalization

- Fall of Berlin Wall, 1989, led to one world economy
- *Windows* was introduced as graphics standard
- *Communication standards* enabled interoperability, e.g., Netscape Internet browser, 1995
- Standards to support *workflow* appeared in the 1990s
- *Outsourcing* (companies purchasing components rather than producing them)

Enablers of globalization

- *Offshoring*: companies moving production to other countries
- *Open source software* (Linux, Firefox, Apache)
- *Supply chaining*: sending orders to factory at time of a sale
- *Insourcing*: outsourcing internal logistics
- *Search engines* linked users with sites worldwide
- *Speedup technologies*: voice-over Internet and wireless
2. Social, ethical, and economic background

**Fall of the Berlin Wall**

- 11/9/89; signalled beginning of the end of seven decades of Soviet political/economic power
- The world came to be seen as unitary, not dual
- Centrally planned, collectivized economies were replaced by capitalist market economies in USSR, E. Europe, China
- Influences elsewhere: India (capitalist, but partly statized and planned)

**The dot-com bubble of 1990s**

- Netscape web browser (1995) triggered explosion in Internet use
- Popular wish to connect overcame technical obstacles
- Massive overinvestment in Internet start-ups
- Massive overdevelopment of fiber optic infrastructure
- Results: financial losses but a strong broadband Internet infrastructure
2. Social, ethical, and economic background

**Workflow software**

- IT enables tasks for a project to be distributed across the world and later reassembled
- This requires *interoperability* of systems in all locations
- Interoperability is supported by *standards* – e.g., protocols, languages (HTML, XML)
- Distribution and reassembly of work is supported by workflow software

**Triple convergence**

- Ten flatteners began in about 2000 to work together, causing more flattening
- New habits, processes, skills developed to the advantage of flatteners
- Population of global market (U.S., Europe, Japan) more than doubled to include former Soviet bloc, China, and India
2. Social, ethical, and economic background

Selective globalization

- Global R & D: 1993, 10 industrial countries did 84% of research and development
- R&D is skewed toward the concerns of these countries
- *Telephones*: late 90s, 20% of global population in high-income countries had
  - 74% of phone lines
  - 93% of Internet users
- Most non-public R&D is by multinational corporations

Hierarchy in the global economy

- 30 Organization for Economic Cooperation and Development (OECD) countries and four Asian tigers (Hong Kong, Singapore, South Korea, Taiwan) did 73% of all manufacturing in 1988
- G-7 countries had 90% of high-technology manufacturing, 80% of all computing power
- Wealth, resources, and dynamism are concentrated in a few countries
- Result: Segmentation of the world population, exclusionary and unstable at boundaries
The new economy

- Internet industry grew 68%/year, 1998-1999, to $500B
- Internet and IT became the core of the U.S. economy
- Electronic stock trading
  - twice as efficient, raises amount of value traded
  - but increases volatility exponentially
- Value of a business is the expectation of its future value
- This defines a new kind of capitalism unlike laissez-faire or Keynesian capitalism

Accumulation of economic power

- Capitalist ideal is free market, i.e., lacking central control
- Deregulation has fostered a merger process and a process of power accumulation by financial managers
- IT has further enabled these processes
- Business processes have been reengineered with the support of IT
- Competition has been intensified by Internet use
World trade and market competition

- In informationalist mode, action of knowledge on knowledge is the primary source of productivity
- 1980-2000, a main strategy of governments and enterprises was to broaden markets and fight for market share
- World trade accelerated, enabled by
  - IT support for capital mobility and communication
  - Globalization of the market and IT

A globalized economy

- Definition: “an economy with the capability to work as a unit in real time ... on a planetary scale”
- Not the same as world economy, which has existed since 16th century
- Core of most national economies is global
- Examples of global aspects: financial markets, international trade, transnational production
Political economy of globalization

- Global economy was result of
  - markets
  - governments
  - international financial institutions
- Three policies (Reagan-Thatcher-neoliberals)
  - deregulation of domestic economies
  - liberalization of international trade
  - privatization of state-owned firms

Globalization policy

- **Goal**: Unify all economies under the rules of the market
- IMF enforced rules of globalization, operating in more than 80 countries
- Those countries that declined were ostracized via loss of emergency IMF credit
- “The triumph of markets over governments,” an outcome *intended* by those governments
- There is no easy or political way back out of globalization
2. Social, ethical, and economic background

U.S. role in the new economy

- Technical: California was birthplace of many IT developments
- Economic: size of U.S. economy, dominance
- Cultural: entrepreneurialism, individualism, flexibility, multi-ethnicity
- Institutional: deregulation and liberalization

The global labor market

- The market for exceptionally-high-demand labor is globalized
- The market for unskilled labor is not
- There also exists a global networking of labor, interlinked by family and business connections
- Developed societies are increasingly multi-ethnic
# Pros and cons of flattening

- What is the effect of competition from Chinese and Indian industries for people in the most-industrialized countries?
- *Argument by Friedman:* “The higher [China and India] climb, the more room is created at the top” [for U.S. products and services]
- “lump of labor” theory assumes there is a limit on the number of jobs; but can ideas jobs can expand without limit?

## References

Joseph D’Andrea, lecture at Framingham State College, 5/1/08.