SI 110 - Introduction to Information Studies, Winter 2009

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Work in the Information Economy

What is new, what is not;
What is cool, what is hot.

We’ll look at the good, the bad, and the “other.”

Are work and workplaces being transformed?
Advantages of IT-Enabled Work

- Collaboration is improved
  - Differences in degree, not kind
  - Faster, more transparent, easier
  - Limited by increased need for communications and data standards
- The old organizational hierarchies were already dying; now we have ways to replace them with “flatter” structures
  - Difficult era of adaptation of both social practices and IT infrastructure
- It’s still unclear how far this will go—it does threaten a lot of people
Advantages of IT-Enabled Work, II

- The biggest: faster, cheaper, better
  - But does this enhance work, really?
  - Possibility of new opportunities for creative or “smarter” and more satisfying work

- New paths to the top
  - Old tracks for MBAs and engineers now have IT experts shoulder-to-shoulder
  - This might be illusory, merely a consequence of the novelty of IT in unfamiliar environments

- Better compensation in the short term
  - Already eroding, especially after dot-bomb of Spring 2000.
  - New opportunities for IT implementers—School of Information types—instead of CS “builders”
  - Contingent upon relative undersupply of IT skills
Disadvantages of IT-Enabled Work

- Massively more powerful techniques monitoring and surveillance, from RFIDs to performance measurement systems
- Emergence of standardized output measures and task descriptions pressures labor
- As more jobs become standardized, they can now be outsourced more easily
- Higher bars to cross for all workers in terms of the IT skills they need to have
  - Wide gap in practical IT training nationally
  - Need for constant skill upgrading as technology changes
  - Who will pay for this?
- Outsourcing of knowledge work is now much easier
- What of traditional labor rights, of unions?
Disadvantages of IT-Enabled Work, II

- Multiple devices and software applications require multi-tasking and ever-more-slim time slicing
  - Email, once a replacement for memos, now being supplanted by IM: what’s the response-time expectation?
  - Fully networked systems open possibility for pressure from myriad new sources
- Will employee burn-out occur at younger ages?
- If so, will robustness displace wisdom within the firm?
- Possibility of exacerbating the pervasive problem in US business: short-term horizons for profit & planning
  - Pressure to “get it out the door” regardless of quality
  - As attention gets micro-sliced, who will look at the big picture?
Disadvantages of IT-Enabled Work, III

Telecommuting and videoconferencing: who needs to “be there”?  
- Problems of presence: the water-cooler as social forum  
- Career cul-de-sacs  
- Both of these shown by research: face-to-face remains vital  

“Drying out of the middle”: The fate of middle managers and the middle class—IT supplants middle-level knowledge work  
- Example: bookkeeping, basic accounting, financial analysis, purchasing  
- Implications for social mobility  

IT-enabled global economies: who’s responsible?  
- Problems of governance & regulation: can we rely on the WTO? [answer: probably not!]
Dilemmas for the Firm in IT-Enabled Work

- **Managing risk:** downtimes can cost millions
  - Standard method of risk-mitigation, redundancy, is complicated when cut-overs require porting of real-time data
  - Dependence on outsiders for system architecture, if not maintenance: unable to keep risk factors in-house and controllable

- **Complicated benefit/cost calculations involved in IT choices and decisions**
  - Beyond standard of “acquisition costs + operations costs”:
    - Employee training costs as investments in human capital — the risks
    - Recurring employee and organization “learning curve” expenses
    - Unpredictability of IT performance: endless bug-fixing, etc.
    - Who gets blamed (or held responsible) for failures/glitches?
Dilemmas for the Firm in IT-Enabled Work, II

- Remapping organizations from pyramidal hierarchies to flatter structures
  - Broad consensus that this is needed, but:
    - How to remap?
    - Will power, responsibility, and knowledge still be co-located?
  - Software must somehow operate as a virtual process and representation of knowledge flows within the firm
    - Recurring problem that only certain kinds of knowledge can be mapped by IT
    - Software of this sort is inevitably from third parties, so conflicts over IP rights, overall operational responsibilities
    - Tangled lines of responsibility
  - Pervasive boundary issues: who’s responsible for what IT?
Some Larger, Unanswerable Issues

- Relocating knowledge in the workplace: who will benefit?
  - Tradition of engineering knowledge replacing tacit and craft knowledge: what is the fate of “soft” knowledge? More women in middle management?
- Problems of abstracting knowledge
  - Cultural frames
  - Invisible work
    - Tied to demographics of worker?
    - Cultural minimization of status associated with skill
- Does new technology empower or disempower existing workforce?
  - Remember: the workforce is like a river...
  - It’s really about *recomposition* of skills & knowledge
A Few Illustrative Instances

- The emergence of “smart manufacturing,” rapid prototyping, reconfigurability: who is responsible for retraining?

- Elegant integration: CATIA at Boeing—can programmers really comprehend the politics of the organization and remap accordingly?

- Delocation of transactions: where do transactions get “booked”? (think: Enron)

- Outsourcing knowledge work: radiology but not surgery or physical therapy
New Business Models and Labor

- Old model as parcellization of work (Taylorism), new model as reconstructing production process
- Is “deskillling” moving up the status hierarchy, now affecting white-collar as well as blue-collar workers?
- Pilots were once the “aristocracy” in airlines, but new IT & communications have shrunken cockpit crews
- IT-enabled productive archipelagos replace vertical integration: subcontracting grows for all types of work; a “race to the bottom”?
- As businesses complete to please Wall Street with higher dividends, there are strong incentives to slash incomes of all workers
[A Reminder] Elegant Integration: CATIA and the Boeing 777/7E7

- "Paperless design:" whither the draughtsman?
- Rapid prototyping to no prototyping
- The role of standards: all must conform, minimizing "local knowledge"
- Global outsourcing and global integration: foreign firms brought in as partners, but why not just simply to cut salaries?
- The social and cultural remapping of power and knowledge
  - Software as a social actor (replacing the plant manager)
  - Bridging professional subcultures & reshaping workplace social relations
The 24/7 production process across time zones

Medical imaging and consultations

Law and the rise of Lexis-Nexis and case databases

Financial integration

Institutional constraints (few after repeal of Glass-Steagall)

Problems of trust and enforceability—the promise of “records-based compliance” following Sarbanes-Oxley
Globally Outsourcing Knowledge Work

- Standard model of the 1990s: Outsource factory work to Asia (etc.) and keep knowledge work here
  - Serious consequences in that, vis-à-vis balance of trade

- Now outsourcing knowledge work
  - Why not worry before?
  - Done by IBM, Microsoft, Oracle, etc.
  - Bangalore as #1, but also China

- Positive consequences:
  - Helps develop peripheral economies—maybe...
  - Lowers production costs

- Negative consequences:
  - Loss of jobs and skill base in the USA
  - Fragmentation of a firm’s knowledge base & “knowledge capital”
  - post-9/11 security concerns
Does Outsourcing Help the “Periphery”?

- Two examples: India and Mexico—India wins & Mexico stagnates
- India increasingly does “knowledge work,” while Mexico does grunt work
  - Bangalore programmers vs. Chiapas women and girls sewing clothes and making wiring harnesses
  - The programmers can “move up,” perhaps even become entrepreneurs, the Chiapas women go nowhere
- Indian government has invested in educational infrastructure, the IITs, Mexico has done little (in part seduced by oil wealth & corruption).
- Biggest difference: in India, outsourcing is a path to learning and mastery; in Mexico, it’s dead-end