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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
Work at a Distance: Cover the Earth™

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