

MIS 175 - Overview

The Future Role of Computers
and the Internet

21st Century Corporation

- Style = Flexible
- Products = Mass customization
- Inventories = Hours
- Workers = Employees & Free Agents
- Leadership = Inspirational
- Job Expectations = Personal growth
- Quality = No Compromise



A New Industrial Revolution

- Corporation is undergoing a radical transformation
 - Partnerships > Assets
 - Collaboration > Fierce competition
 - Ephemeral > Enduring
 - Constant change > Stability
 - Partnerships > Self-sufficiency
 - Technology > Bricks & mortar

A New Industrial Revolution

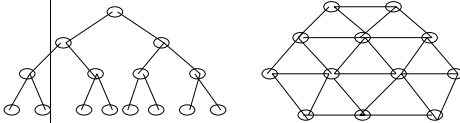
● Networks of Workers

- Hierarchies not important
- Contractors and freelancers
- Location/language not a factor
- Crucial to attract and retain the best thinkers
 - Empower workers
 - Reward them as if they were owners



A New Industrial Revolution

- Corporate hierarchy being replaced by a web of contractors, suppliers and customers
 - Players will grow more interdependent
 - Companies will outsource skills



A New Industrial Revolution

● Cisco Systems

- Owns only 2 of the 34 plants that produce its products
- 90% of the orders are never touched by human hands
- 52% of the orders are fulfilled without the involvement of a Cisco employee



A New Industrial Revolution

● Juno Online Services

- Designed an e-mail service and online interface
- Leased phone lines
- Hired out customer service
- Partnered with an ad agency
- Aligned with content companies
- Outsourced programming to India



A New Industrial Revolution

● Rapid Flow of Information

- Orders filled transparently
- Real-time sales & profit information

● Emphasis on Managing Bits

- Using information to manage business and serve customers
- Advantage will go to companies that can do things cheaper, faster, with less waste
- No time for deliberation or bureaucracy



A New Industrial Revolution

● Mass Customization

- Replacing Mass Production
 - Economies of scale less important
- Tailor products to each individual
 - Shift from “This is what I make, please buy it” to “This is what I want, please make it.”
- Huge savings to companies
 - Don't have to guess what to make and how many



Mass Customization...

●Levi's' Personal Pair

- Visit a participating store
- Choose a fabric and get measured
- Transmit info to Levi's plant in Tennessee
- Pieces are laser cut
- Bar-coded pieces are stitched together on a regular assembly line and mailed to customer
- \$15 premium... Why?

Mass Customization...

●Measurably Better Shoes

- Visit a Custom Foot Shoe Store
- Have your feet scanned on 13 dimensions
- Choose a style and color
- Send the data to one of seven Italian factories
- Two weeks and \$140 later, you receive your custom shoes

A New Industrial Revolution

●Digitization

- Removing human minds and hands from an organization's most routine tasks ("interaction costs") and replacing them with computers and networks
- Larger companies will use technology to reduce the costs of complexity

Interaction Costs

- Bank transaction handled by...

- Teller = \$1.25
- Mail = \$0.73
- Phone = \$0.54
- ATM = \$0.24
- Internet = \$0.02



- Job application handled by

- HR Employee = \$128
- IS Application = 6¢

A New Industrial Revolution

- The greatest beneficiaries will be the large, incumbent corporations

- Mobil created Speedpass, a key chain credit card



- Wingspan Bank approves home equity loans in 60 seconds
- P&G created an online cosmetics company allowing customers to custom-design their own cosmetics and perfumes

A New Industrial Revolution

- The greatest beneficiaries will be the large, incumbent corporations

- Dell makes computers to-order and therefore only makes products that it will sell
- Cemex routes its cement delivery trucks using a global positioning system and manages orders over the Internet



A New Industrial Revolution

"In an era of unprecedented choice, in which prices and product specs for almost anything are only a click away, companies will have to offer a lot more than bargain prices."



A New Industrial Revolution

"The gap between what we can imagine and what we can achieve has never been smaller."



Things Happen Fast

- Windows of opportunity in business are of shorter duration
 - Computers scan vendor prices and place electronic purchase orders
 - Suppliers have to deliver exactly when computers tell them to
 - Mortgage rates, insurance quotes can be provided in minutes

Constant Monitoring & Reaction

- Airlines monitor bookings and adjust allocations of seats to prices & deals
- Supermarkets monitor sales and take action to promote slow items and reorder fast ones (and change shelf prices)
- Nu-Skin Health Products pays commission to 300,000 reps immediately by electronic funds transfer



Fast Evolution

- Corporations are often replaced by more efficient corporations and die
- The corporate culture must regard change as a constant process, not a problem
- Strategic decisions must be made fast and implemented fast

Brutal New Competition

- Links to cheap-labor countries where labor rates are 1/10 of the U.S.
- Totally unexpected competition can come from anywhere
 - The Justice Department felt that Microsoft would have become a nationwide bank if it had purchased Intuit



Reinventing Work

- The best corporations today are creating work environments which energize and excite people
- They are reinventing work so that what is good for the company is good for the individual

Technophobic CEOs

- A CEO needs to be fully in control of how technology is used
- “Technology has become too important to be left to the techies”
- “If CEOs stay at their average level of ignorance about information technology, they are doomed to failure.” Charles Wang

What Experts Predict for 2001

- Bill Gates
 - Technology in 2001 will be roughly where the automobile was when Henry Ford launched the Model T. The big advances in digital technology are still ahead.

What Experts Predict for 2001

- Vinton Cerf (Father of the Internet)
 - Internet-enabled appliances – refrigerators, cameras, picture frames, cars, airplanes, etc. will come on the market.



What Experts Predict for 2001

- Michael Dertouzos (Dir., MIT CS Lab)
 - The entire 21st century will be spent trying to reach the goal of human-centric computing; that is, computers that help us work with other people, automate tasks, adapt to our personal preferences and find the information we need.

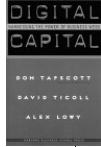
What Experts Predict for 2001

- More Predictions by Michael Dertouzos
 - Keyboards, windows and menus will be superseded by speech-understanding programs
 - Your “bodynet” will let you make phone calls, check your e-mail, watch TV, and pay your bills as you walk down the street
 - Computer programs will monitor your well-being and doctors will care for you on-line

Books Worth Reading



Michael Dertouzos. "An engaging and visionary guide to the future, filled with insights..." "A rich, detailed look at the future texture of our daily lives."



Don Tapscott. "The single best guide to corporate survival in the new economy." "If your company wants to be in the phone book in the year 2003 and beyond, read this book."

Any Questions?

