What is modern industrial work?
- Complex labor (divisions of labor)
- A key dimension of industrialization/productivity

Confusion between goods & services
- Exaggeration of services
- Confuses discussions of work & workers

Managerial & auxiliary labor
- Key inputs beyond the factory

What labor/workers count?
- Fetish of creative class
Complex & Creative Labor

I. • Goods & Services

II. Managerial Labor

III. Auxiliary Labor

IV. Creative Labor
I. Goods & Services

A. Goods vs. Services
B. Goods Industries
C. Service Industries
D. Occupations
Horribly confused in popular discourse

Two different kinds of OUTPUT
- Tangible vs. intangible (independent vs. attached)
- Both are sold as commodities
- Hence, two different kinds of industries

Confusion between OUTPUT & INPUTS
- “service labor” – muddled category
- Some service outputs feed into other industries
  - Esp. business services
### Value Added By Industry As A Percentage Of Gross Domestic Product

<table>
<thead>
<tr>
<th>Industry</th>
<th>2005</th>
<th>Percentage point change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>12.0</td>
<td>-3.9</td>
</tr>
<tr>
<td>Government</td>
<td>12.4</td>
<td>-1.0</td>
</tr>
<tr>
<td>Utilities</td>
<td>1.9</td>
<td>-0.6</td>
</tr>
<tr>
<td>Retail trade</td>
<td>6.6</td>
<td>-0.4</td>
</tr>
<tr>
<td>Agriculture, forestry, fishing, and hunting</td>
<td>1.0</td>
<td>-0.3</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>5.9</td>
<td>-0.3</td>
</tr>
<tr>
<td>Transportation and warehousing</td>
<td>2.9</td>
<td>-0.2</td>
</tr>
<tr>
<td>Other private sector services</td>
<td>2.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Arts, entertainment, and recreation</td>
<td>0.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Educational services</td>
<td>0.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Management of companies and enterprises</td>
<td>1.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>2.7</td>
<td>0.2</td>
</tr>
<tr>
<td>Information</td>
<td>4.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Real estate and rental and leasing</td>
<td>12.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>6.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Administrative and waste management services</td>
<td>3.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Mining</td>
<td>1.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Construction</td>
<td>4.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Professional, scientific, and technical services</td>
<td>6.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>8.1</td>
<td>1.5</td>
</tr>
<tr>
<td>Total Gross Domestic Product</td>
<td>100.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Goods

- Tangible objects
  - Even if very small
- Most production » goods
  - Why?
- Advantages of goods
  - Moveable & own-able
  - Tangible & reproducible
  - Mass production & labor productivity
Popular definition (census!)
  = non-manufacturing or non-production

Wikipedia: services = 78.5% of output
Incoherent category!!

Real Services = no tangible product
Output not an independent thing
Working directly for/on someone

True services
  Haircut, performance, health care, teaching, etc.

NOT services
  Retail, restaurants, hotel rooms, car repair, design, marketing, etc.

Measures:
output,
value-added,
employment
I. Goods & Services

A. Goods vs. Services
B. Goods Industries
C. Service Industries
D. Occupations
Goods Production

- Production sectors
  - Mining + Agriculture
  - Manufacture + Construction
  - [+ Utilities]

- Declining share of US economy
  - From 40% to 22% of GDP
    - Manufacturing = 25% to 13%
      - (1945-2005)
    - Mining & Agl = 4%
    - Construction = 5%

- GDP vs. jobs
  - Rising labor productivity
Goods Circulation

- Mass production » mass circulation of goods
  - Rising productivity » rising output

- Hence, distribution + retail larger
  - $= 8\% + 12\% = 20\% \text{ GDP}$

- Production + circulation = 42\% GDP
  - Bigger than most people think
  - Still an underestimate
I. Goods & Services

A. Goods vs. Services
B. Goods Industries
C. Service Industries
D. Occupations
(The Other 58%...)

Service sectors = 35%
- Business services = 15%
- Consumer services = 20%
  - Entertainment + domestic + personal services = 5%
  - Health & education* = 15%

Not Services = 23%
- Finance (‘financial services’) = 8%
  - (Part V of syllabus)
- Government = 15%

We won’t discuss consumer svc's & govt in this course
Different mix in different places

- Different shares of manufacturing, transport, business services, etc.
- E.g. Holland vs. Germany
I. Goods & Services

A. Goods vs. Services
B. Goods Industries
C. Service Industries
D. Occupations
Output ≠ Occupations (jobs)
  Industries vs. jobs
  Jobs = detail division of labor

Complex (social) labor
  Most production is complex
    'production systems'
  Most labor makes nothing by itself
    i.e., no final good or service

Tweeners (source of confusion)
  When part of DOL becomes an intermediate product
    Either a good or service
      E.g. business services (see below)
Basic & Non-Basic Labor

- Basic/non-basic labor
  - Work directly on good or service
  - Indirect labor inputs
    - Managerial labor
    - Auxiliary labor
  - Shorthand: blue/white collar

- Growth of complex labor
  - Key to industrialization
    - Not just machinery & automation
  - Hence, growth of non-basic labor

  *Hence discussion of managerial & auxiliary labor, below*
Geography of Detail DOL

- Occupational differences among places
  - Countries, cities, regions, etc.
- Old industrial cities
  - Lots of basic labor (blue collar)
- New city centers
  - Lots of indirect labor (white collar)
  - Creative class
- We’ll return to this later....
I. Goods & Services
II. Managerial Labor
III. Auxiliary Labor
IV. Creative Work
II. Managerial Labor

A. Managers
B. Business Services
C. Offices
D. Offshoring
Managers & Co.

- Executives
  - Top execs & layers of ‘mid-management’

- Supervisors
  - Bosses of work units/teams

- Specialists/technical
  - Accounting, legal, operations, personnel, IT, PR

- Clericals
  - Secretaries, typists, file clerks, mail room, etc.
II. Managerial Labor

A. Managers & Friends
B. • Business Services
C. Offices
D. Offshoring
Internal (corporate)
  Management employees

External (subcontract)
  = ‘Business services’
  Business services growing rapidly

Figure 1 Employment growth trends in the financial- and business-services sector

Source: Cambridge Econometrics (1994)
Big 3 Biz Services

By census data

Accounting
- Keeping the books
  - Deloitte & Touche, KMPG, etc.

Management consulting
- Advice to top managers
  - McKinsey etc.

Information Technology (IT)
- Technical services in computing & communications
  - IBM, Oracle, etc.
praxes n.pl: practical application as distinguished from theory

PRAXES GROUP
Outsourced Business Development

Your critical business challenges didn’t come to you in a package. That’s why we don’t offer you “pre-packaged” solutions.

Our commitment to our clients is that we will:

- Listen to you.
- Understand your short and long-term objectives.
- Understand your culture.
- Understand your products and services.
- Recommend and design a strategy that addresses challenges and root causes.
- Implement that strategy with you.
- Quantify success with you at critical points along the way.
- Be nimble and suggest tactical changes as appropriate.
- Focus on results, not “feel good” metrics.
- Help you grow your business.
II. Managerial Labor

A. Managers & Friends
B. Business Services
C. •Offices
D. Offshoring
Management workplace
- Emergence > 1900
- Dominance > 1950

Specialized buildings
- Skyscrapers
- Campuses

Location
- Downtown or suburban
Business Services & Office Clusters

- Business services clusters
  - Attorneys, advertisers, accountants, designers, etc.
  - Foundation of today’s big city Downtowns

NB: Consumer ‘business service’ clusters
- Small lawyers, tax preparers, real estate agents, etc.
- Like retail, near residences
Office Districts

- Same logic as industrial districts
  - Interaction/access
  - Labor pool
  - Shared infrastructure
  - *Face-to-face contact*

- First noted in 1950s study of New York
  - Hoover & Vernon, *Anatomy of a Metropolis*
II. Managerial Labor

A. Managers & Friends
B. Business Services
C. Offices
D. Offshoring
Offshore or Onshore?

IT subcontracting to India

- Biggest companies are Wipro, InforSys & Tata Consultancy

Paradoxically, Wipro setting up a center in Atlanta in 07.

"Falling dollar pushing up costs of outsourcing to India"

Sam Zuckerman, Chronicle Staff Writer

Tuesday, October 2, 2007
Complex & Creative Labor

I. Goods & Services
II. Managerial Labor
III. •Auxiliary Labor
IV. Creative Work
III. Auxiliary Labor

A. •Auxiliary Work
B. Design & Engineering
C. Marketing
D. Maintenance & Repair
Types of Auxiliary Labor

- Preparation
  - Design & engineering

- Support
  - Repair & maintenance of machinery & workplaces

- Finishing
  - Packaging & testing

- Marketing
  - Mkt. Research & advertising

- Post-production
  - Repair & maintenance

- All have grown relative to basic labor
III. Auxiliary Labor

A. Auxiliary Work
B. Design & Engineering
C. Marketing
D. Maintenance & Repair
Long History of Design

- Starts with Wedgewood in 1780s
- Function over form in 19th century
- Systematic by 1920s
- Clothing, autos, household machines, etc.
- Still crucial today
- Even in ‘High Tech’

- A. Forty,
  *Objects of Desire*
Design for Advantage

- Italian high fashion
  - Gucci, Versace, Genarra etc.
  - Centered in Milano

- Production offshoring, but not design
  - 50% of Italian production now done abroad
  - Shrinking textile districts
  - Silk @ Como, wool in NE Italy @ Biella
  - Cotton @ Varese, west of Milan
    - “the Manchester of Italy”
    - Employment fell by half, 1981-2001,
      - 54,000 to 27,000

- BUT: Italy still runs an export surplus of $10-12B in textiles & clothing
Engineering

- Process engineering
  - Designing machinery & factories
  - Materials & labor flow

- Product engineering
  - Not just for consumer
  - Shape, materials, components etc.
  - E.g. computers
    - Precast plastic cases
    - Simpler circuit boards
    - Preassembled components
System Design & Engineering

- Electronics SOC (system on a chip)
- Eliminates components, assembly
- Demotes board & computer design
- Cadence & Applied Materials
  - software for system chip design

- Ikea furniture
  - Simple pieces, little assembly
  - Elegant solutions & functionality
  - Easy Self-Assembly
  - The magic bolts
- Flat packages for transport & storage
Design & engineering

...as business services (subcontracted)

Hasbrouck Engineering
FROM RAW MATERIALS TO THE LAB
FROM THE LAB TO FINISHED PRODUCTS
WE SERVE INDUSTRY DAILY

About Us - Who We Are
Aroma Chemical Industry
Specialty Chemical Industry
Turpentine and Tall Oil
Upgrading
VOC Control - Printing Industry
VOC Control - Building Products
Technology Transfers
Engineering Drawings
Contact Us

Our services include chemical process design, simulation and process control, and finally technology transfer and other chemical engineering support.
Designing Cities

- Los Angeles, Silicon Valley, Paris & Milan
  - Designers & engineers for everything
  - E.g., 80% of chip design worldwide in SV

- Usual logic of industrial districts
  - Labor pool
  - Sharing ideas & action
  - Face-to-face contact

*Allen Scott, The Cultural Economy of Cities*
*Harvey Molotch, Where Stuff Comes From*
III. Auxiliary Labor

A. Basic Labor
B. Design & Engineering
C. Marketing
D. Maintenance & Repair
Marketing - key elements

- Product (Quality & Price)
  - Product as function & image
  - Integrating marketing with production

- Branding & advertising
  - Image & desire
  - Affinity & loyalty

(Retailing & sales system)

“Do you have anything newer and more useless?”
Integrating Design & Marketing

Problem of time & coordination
- How to work together?
- How to move quickly into production?

Solutions
- Sashimi model
- Project team model
- Listening Post model

Motorola's RAZR
- 'consumer experience design groups'
  - teams of designers, engineers, marketers & accountants
Advertising & Branding

- Toying with desire
- Consuming life
- Brands & identification
- Get ‘em young
- Loyalty
Advertising Industry

- Subcontracting ad campaigns
  - Specialist firms

- Advertising districts
  - Madison Ave., Bangkok, Paris, SF, LA
III. Auxiliary Labor

A. Basic Labor
B. Design & Engineering
C. Marketing
D. Maintenance & Repair
Repair ‘services’

- **Misnomer**
  - Not a direct labor service to a person

- ‘Follow-up’ labor on durable goods
  - Keep them in working order
  - Keep them clean & usable

- **Kinds of durable goods**
  - Office machines
  - Automobiles
  - Buildings
  - PCs
Geography of M&R – highly dispersed

- On-site @ business
  - Inside workers
  - Outside workers
    - Vendor rep (IBM, Xerox, etc.)
    - Contract maintenance (Cleaning services, factory repair)

- Repair & cleaning shops
  - Cars, clothing, TVs, etc.

- On-site @ home
  - Domestics (regular)
  - Contractors (intermittent)
    - Carpet cleaners, plumbers, etc.
Offshoring Repair Labor

- Technical back-up & product information
  - Self-repair with advice

- Outsourcing call centers
  - India has 450 firms, with 350K workers, $5.2B revenue
  - 70% from US
Complex & Creative Labor

I. Goods & Services
II. Managerial Labor
III. Auxiliary Labor
IV. Creative Labor
IV. Creative Labor

A. •Smart Production
B. Smart Goods
C. Smart Workers
D. Knowledge Economy?
Knowledge in Production

Knowledge
- Theoretical (basic principles)
  - Science & engineering
- Practical (applied to real situations)
  - ‘Know-how’

Technology
- Materialized knowledge (equipment, systems)
- Know-how of workers & managers

See lectures 1 & 6
Smarter Production

- The long rise of knowledge about nature
- The long arch of technological advance
- More sophisticated production methods
  - Better machinery
  - Better materials
  - Better flow
  - Better systems
  - Better management

= ‘smarter production’
IV. Creative Labor

A. Smart Production
B. • Smart Goods
C. Smart Workers
D. A Knowledge Economy?
Smart Goods

- All goods carry information/knowledge
  - Inscribed, implicit & instructions

- Rising info/knowledge content
  - Internal to function
  - Imparted to user
  - Interactive learning

- Goods in the digital age
  - Embedded ‘brainpower’ of goods
Are They Still Goods?

- Triumph of the intangible?
  - Vast storage & output of digital info
  - Numbers, words, music, pictures, algorithms, etc.

- Selling disembodied stuff
  - Commodification of information/knowledge

- Stubborn persistence of things (goods)
  - Laptops, CDs, iPods, cameras
A. Smart Production
B. Smart Goods
C. Smart Workers
D. A Knowledge Economy?
Smart Workers

Does smarter production = smarter workers?

**YES**
- Skills: technology embodied in people
- Education: rising level of worker knowledge
- Working smarter: better use of labor

**NO**
- Deskilling: technology goes to the machine
- Dull work: knowledge goes to managers
- Education? You must be kidding...
Division of (Creative) Labor

- Skilled elite vs. unskilled mass
  - True since industrial revolution
- Most work remains dull & constrained
  - Paradox of work under capitalism
- Today’s divide
  - Technical, professional & managerial labor
  - College educated
  - Manual labor (manuf., construction, sales)
  - High school or less
The Missing Middle

- It’s not so simple, in fact

- Pink-collar labor
  - Clericals, supervisors, teachers, agents, LVNs, etc.

- Light-blue collar labor
  - Skilled machinists, maintenance, drivers, supervisors, etc.

- Education + on-the-job training + practical know-how
The Creative Class?

The thesis
- Skilled workers are key to growth
- ‘The Creative Class’ ‘Symbolic analysts’
  Richard Florida, The Rise of the Creative Class

The geographic puzzle
- Where to find creative people?
- Cities? Universities? Rich countries?

The error
- Social labor needs all its parts
- Elite depends on mass
- Denigration of labor (see coming lectures)
IV. Creative Labor

A. Smart Production
B. Smart Goods
C. Smart Workers
D. • A Knowledge Economy?
A Knowledge Economy?

- A new industrial revolution?
  - Internet, computing & digital age

- Strategy for developed nations
  - EU & US fears of Asia & NICs

- The magical trinity for capital
  - Science, knowledge & creativity

- Dismissing the bulk of workers
  - Let China do it
  - Jail the rest?