Lecture 8

Localized Industry
Localized Industry

I. Sites
II. Places
III. Clusters
IV. Districts
I. Sites
A. Industries
B. Locations
C. Multiples
D. Dispersal
Industries

- Products
- Sectors (groups)
  - Metals: Steel, aluminum, copper
  - Vehicles: cars, trucks, buses, aircraft
  - Clothing: shoes, women’s, men’s, etc.
  - Electronics: computers, phones, games, etc.
- Categories
  - Capital goods vs. consumer goods
  - Capital-intensive vs. labor-intensive
  - Heavy industry vs. high tech
Spatial divisions of labor

- Different industries, different locations

- Technological bases
  - Products
  - Production methods
  - Inputs
  - Labor
I. Sites

A. Industries
B. Locations
C. Multiples
D. Dispersal
Factories

- Basic production unit
  - Breakthrough of industrial revolution

- Basic locational unit
  - One factory, one site

- Takes different forms in non-manufacturing...
  - Offices, warehouses, etc
  - See other lectures
Where to locate?

- Location decision
  - Firms choose
- Optimum location?
  - Classic location theory
    - Alfred Weber
Cost minimization

- **Input costs**
  - Resources
  - Energy
  - Labor

- **Access & transport**
  - Locate near inputs
  - Locate near good transportation
Energy
Materials (in bulk)

- ‘Heavy’ industry
Transport

- water
- rail
- road
- air
Labor
I. Sites
   A. Industries
   B. Locations
   C. Multiples
   D. Dispersal
One industry, many sites

- Why not one factory per product?
  - Giantism & its limits
  - Entry & competition
  - Product variation
  - Market areas
Giant factories & complexes

- Ford’s dream
- Fox Conn
  - Shenzhen

Hon Hai Precision Industry Co., Shenzhen is a walled factory city of 270,000 Hon Hai (Foxconn) employees. They have everything from a hospital, fire station, swimming pool, athletic field a separate area for the basketball courts and even a bookstore (see pictures below). Besides Apple iPods and iPhones, Hon Hai workers/residents make Dell and Hewlett Packard PCs, Motorola and Nokia cell phones, Sony PlayStation 2 and PSP and the Nintendo Wii. It’s a nice place to live and work.
A single-firm cluster

- BASF in Mannheim
  - Chemical company
  - 36K workers, 250 factories, 8,000 products

- Advantages
  - Lower transport costs
  - Direct production links
    - outputs & residuals as inputs
  - (Management oversight)

- Competitors
  - Separate divisions & factories
  - High transport costs from China etc.
Competitive locations

- Many factories/firms
- From different bases
  - National champions
  - Regional strengths
  - Product variations

Figure 10: Automobile production in Europe
Source: Dicken (2003) Figure 11.1
Repetitive location

- Many factories, same product
  - Market areas
    - Local, regional, national, etc

- Why market areas?
  - Perishable goods
  - Personal services
  - Local tastes
  - National boundaries

Berkeley bakeries

- Increasingly rare in hard goods
  (e.g. cars, furniture, cast iron)
I. Sites
A. Industries
B. Locations
C. Multiples
D. Dispersal
Factory dispersal

- Diminishing constraints on location
  - Less bulk (inputs & outputs)
  - Energy widespread
  - Transport improved
  - Labor surplus

- Greenfield locations
Many peripheries

- Urban
  - Suburbs & satellites
- National
  - US sunbelt, Mex. North, Japan’s countryside
- Continental
  - So Europe, Ireland, E. Europe
  - Japan to SE Asia
  - US to Mexico, Caribbean
- Global
  - Shift to Asia & within Asia
Limits to dispersal

- Lack of infrastructure
  - Energy, transport, water
    - (see also Part V)
- Poor quality labor
  - Higher cost
    - (see Part IV)
- Clustering effects
  - (see below)
I. Places
   A. Expansion
   B. Making Place
   C. Capital Moves
   D. Decline
Industry expands...

- Growth of an industry
  - Output
  - Inputs (supplies)
  - Labor (jobs)
  - Factories
  - Firms

- New industries
  - Etc etc.

- *Industrial geography is NOT chess*
  - Pieces & board grow
I. Places

A. Expansion

B. Making Place

C. Capital Moves

D. Decline
Growing industries create places

- Invest capital
  - Build factory, infrastructure

- Attract workers
  - Who live nearby

- Attract suppliers
  - Who build more factories

- Spending multipliers
  - Money circulates locally
I. Places

A. Expansion
B. Making Place
C. Capital Moves
D. Decline
New industrial geographies

- New industries create new places
  - “New industrial spaces”
Why New Places?

- New conditions of production...
  - Old places = old ways
  - New place = fresh start

- Notable shifts
  - beef v. pork
  - semiconductors v tubes
  - biotech v pharma
How can industry afford new places?

- Lower costs of land & labor
  - Logic of dispersal
  - But ... higher costs of transport, infrastructure

- Higher profits
  - Greater freedom of action
  - State aid (roads, water, etc.)

Hence, industry often ‘leapfrogs’ over existing places
I. Places

A. Expansion
B. Making Place
C. Capital Moves
D. Decline
Passing of old places

- **Locations ‘sticky’**
  - Fixed capital
  - Labor force
  - Infrastructure
  - Habit

- **Old industrial places**
  - Stay the same
  - Inevitably decline
Why old places decline

- Costs
  - Old capital
  - High wages
- Competition
  - Obsolete products & tech
  - Bad management
- Disinvestment
  - Slow decline
- Closure
Localized Industry

I. Sites
II. Places
III. Clusters
IV. Districts
III. Clusters

A. • Industrial Clusters
B. Transport & Infra.
C. Access & Markets
D. Labor & Capital
E. Clusters & Places
A World of Industrial Clusters

- Geographic concentrations of factories
- Big factories
  - Pittsburgh steel
  - Louisiana oil & chemicals
- Small factories (workshops)
  - Qiaotou, Zhejiang Province
    - 700 factories, 15 billion buttons
    - Big market with 1,300 button merchants
  - Yiwu = socks
  - Hang Ji = toothbrushes
  - Sheng Zhou = ties
Industrial clusters of Guangdong

- Foshan = tiles
- Zhongshan = lights, lamps
- West of Pearl River = white goods, TVs
- East of Pearl river = computers
- Northeast = 3 Japanese auto plants
Why not disperse?

- High costs of clustering
  - Rents (land), taxes, wages
  - Aren’t greenfield sites cheaper?
    - *Not necessarily*

- Economies of agglomeration

  *Collective logic* vs. individual calculus

  - Transport hubs (external trade)
  - Shared infrastructure (buildings, roads, water, etc)
  - Access to other factories (internal trade)
  - Labor pools (supply of workers)
  - Capital pools (finance)
  - Concentrations of demand (output markets)
III. Clusters

A. Industrial Clusters
B. Transport & Infra.
C. Access & Markets
D. Labor & Capital
E. Clusters & Places
External transport

- Transportation hubs
  - Airports
  - Ports
  - Rail yards
  - Highway nodes

- See also lecture 10
Shared Infrastructure

- Electricity & Gas
- Water & Sewers
- Phone & Internet
Building reuse
III. Clusters

A. Industrial Clusters
B. Transport & Infra.
C. Access & Markets
D. Labor & Capital
E. Clusters & Places
Access to many firms

- All buyers & suppliers
  = Total distance minimization
  i.e., lowest transportation cost overall
Market access

- Maximize access to buyers/consumers
- Market thresholds
- Merchant intermediaries
Comparison & competition

- Keeps business on its toes
II. Industrial Clusters

A. Clusters
B. Transport & Infra.
C. Access & Markets
D. • Labor & Capital
E. Clusters & Places
Concentration of workers

- Access to workers
  - Attracts more firms

- Access to jobs
  - Attracts more workers
More variety, more skills

- For firms: can find specific labor skills
- For workers: can find right job for skills
Access to capital

- Bank capital
  - Specialists in an industry
  - Specialists in capital markets

- Venture capital
  - Specialists in new firms
III. Clusters

A. Industrial Clusters
B. Transport & Infra.
C. Access & Markets
D. Labor & Capital
E. •Clusters & Places
Clusters Create Bigger Places

- Pittsburgh & steel
- Detroit & cars
- Osaka steel & metals
- Silicon Valley & electronics
Hollywood - Before
Hollywood - after
Making clusters

- Industrial parks
  - Land, infrastructure, transport, proximity

- Seeding clusters
  - Popular local strategy
  - Often does not work
Localized Industry

I. Sites
II. Places
III. Clusters
IV. • Districts
IV. Districts

A. Districts v. Clusters
B. Internal Specialization
C. Startups & Spinoffs
D. Innovation & Learning
E. Institutions
Industrial Districts

- Beyond agglomeration economies
  - More than access & sharing

- External economies
  - Specialization
  - Spinoffs
  - Innovation
  - Institutions
Industrial Districts

- **Historic**
  - Jewelry (Providence)
  - Guns & clocks (Connecticut Rivr)
  - Fine furniture (Grand Rapids)
  - Fashion garments (Paris)

- **Current**
  - Wine & tourism (Napa)
  - Movies & Garments (LA)
  - Electronics (Silicon Valley)
  - Banking (New York, London)
IV. Districts

A. Districts v. Clusters
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E. Institutions
Intense specialization

Figure 1: The California Wine Cluster
Auxiliary functions

- Financiers
- Attorneys
- Accountants

*see also Part IV of course*
Economies of specialization

- Specialization *within* an industry
  - Detail division of labor

- Advantages of specialization
  - Knowledge, skills, equipment

- Economies of external sourcing
  - Don’t reinvent the wheel in-house
  - Economies of scope
IV. Districts

A. Districts vs. Clusters
B. Internal Specialization
C. • Startups & Spinoffs
D. Innovation & Learning
E. Institutions
Startups

- Birth of new firms

- Why new firms?
  - New technology
  - New market niches
  - Entrepreneurial workers
  - Risk capital
Effect of startups

- Expand division of labor
  - More specialists
  - More external economies

- Move into new fields
  - Innovation (see below)
Spinoffs & buyouts

- Many start-ups are spinoffs from large firms
  - Investment banks & hedge funds in New York
- ‘Vertical disintegration’ within a district
  - Hollywood & decline of the studios
- Reconcentration by acquisition
  - Cisco, Oracle and other monsters
The Great & the Small

- Districts mix large & small firms
IV. Districts

A. Districts vs. Clusters
B. Internal Specialization
C. Startups & Spinoffs
D. Innovation & Learning
E. Institutions
Dynamism of industrial districts

- Beyond cost savings (ext. economies)
- Development of technology
  - New ways of working
  
See also lecture 12
Innovative milieux

- Massing of technical competence
  - Firms & skilled labor
- Sharing knowledge & skill
  - Movement of workers
- Technical interaction
  - Problem solving

- ‘Secrets of industry are in the air’ - Alfred Marshall

Innovation as complex labor process
Learning Regions

- Learning by doing (experience)
- Problem solving
- Upgrading of labor skills
- Upgrading of firm competence

Innovation as learning
IV. Districts

A. Districts vs. Clusters
B. Internal Specialization
C. Startups & Spinoffs
D. Innovation & Learning
E. •Institutions
Districts are not pure market economies

‘Frameworks of action’
‘Regional worlds of production’

New Institutional Economics & Geography
Local cultures of production

- Rules & expectations
- Personal relations & trust
- Shared values & beliefs
- Cooperative competition
Business coordination

- Industry/trade associations
  - Silicon Valley Manufacturers Group, Alabama Automobile Manuf. Association, Maritime Association, etc.

- Business clubs & meetings
  - MacWorld, Oracle Open World, etc.

- Regional leaders
  - David Packard, Andrew Carnegie, Paul Allen, Henry Ford, etc.
Government

- Government regulation
  - E.g., Incorporation laws
- Government aid
  - E.g. Stem cell research
- Local government agencies
  - E.g. San Jose
- Politicians & alliances
Labor institutions

- Specialized schools
- Labor agencies
- Labor unions & councils
What about universities?

- New science & technology
  - Sometimes provide usable products

- Train highly skilled labor
  - But only part of an industrial cluster...
The myth of Stanford & Silicon Valley

- Fred Terman, Hewlett-Packard & all that
DIU Silicon Valley?

- Everyone tries, most fail
- Very difficult to create an industrial district
- Lots of wasted money on industrial parks, technopolis policies, etc.