Industry and Services

Chapter 12

Key Question:

Where did the Industrial Revolution begin, and How did it Diffuse?

Industrial Revolution:

a series of inventions that brought new uses to known energy sources, new machines to improve efficiencies and enable other new inventions.

eg. steam engine

iron smelting

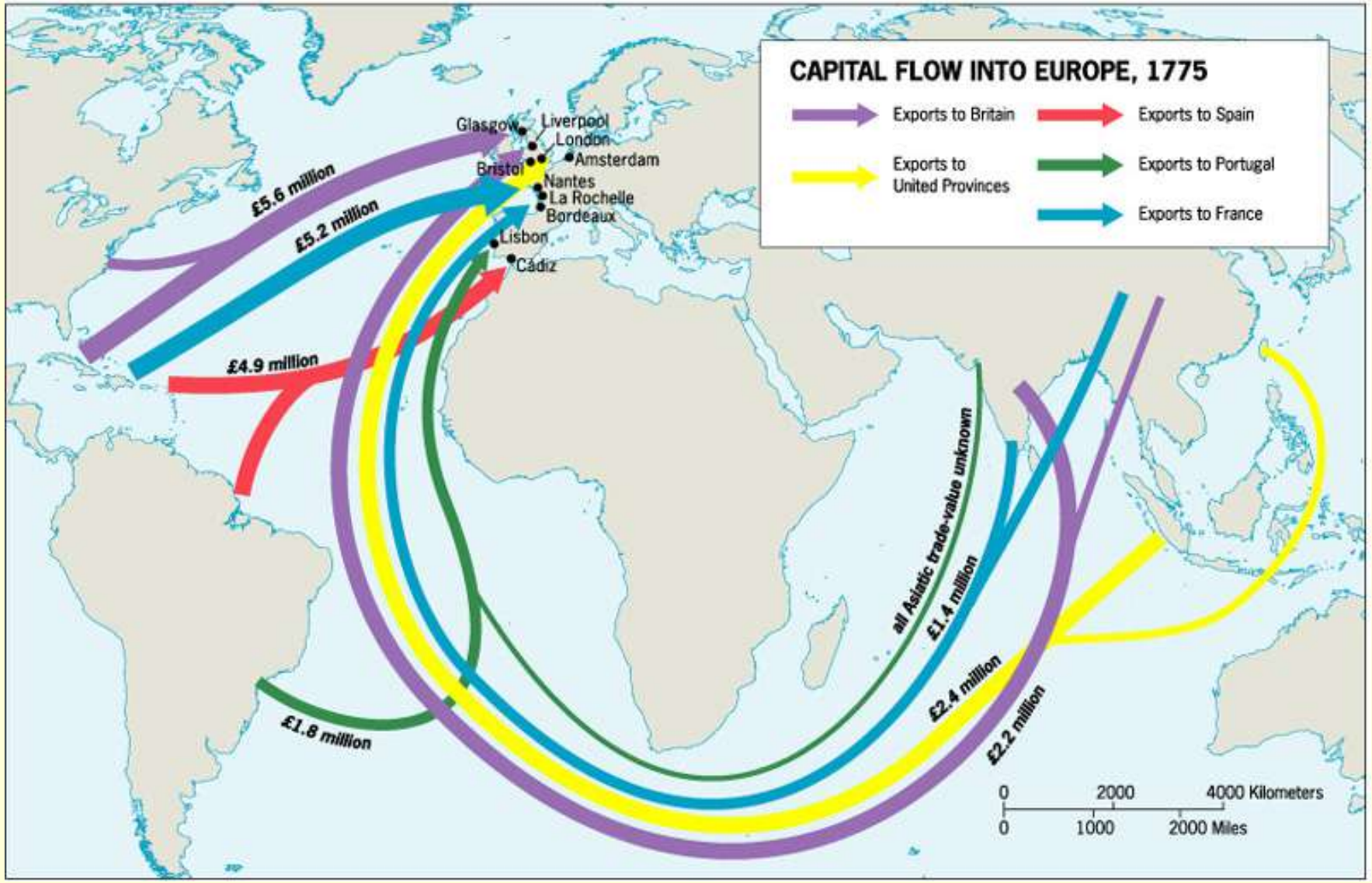
water pump

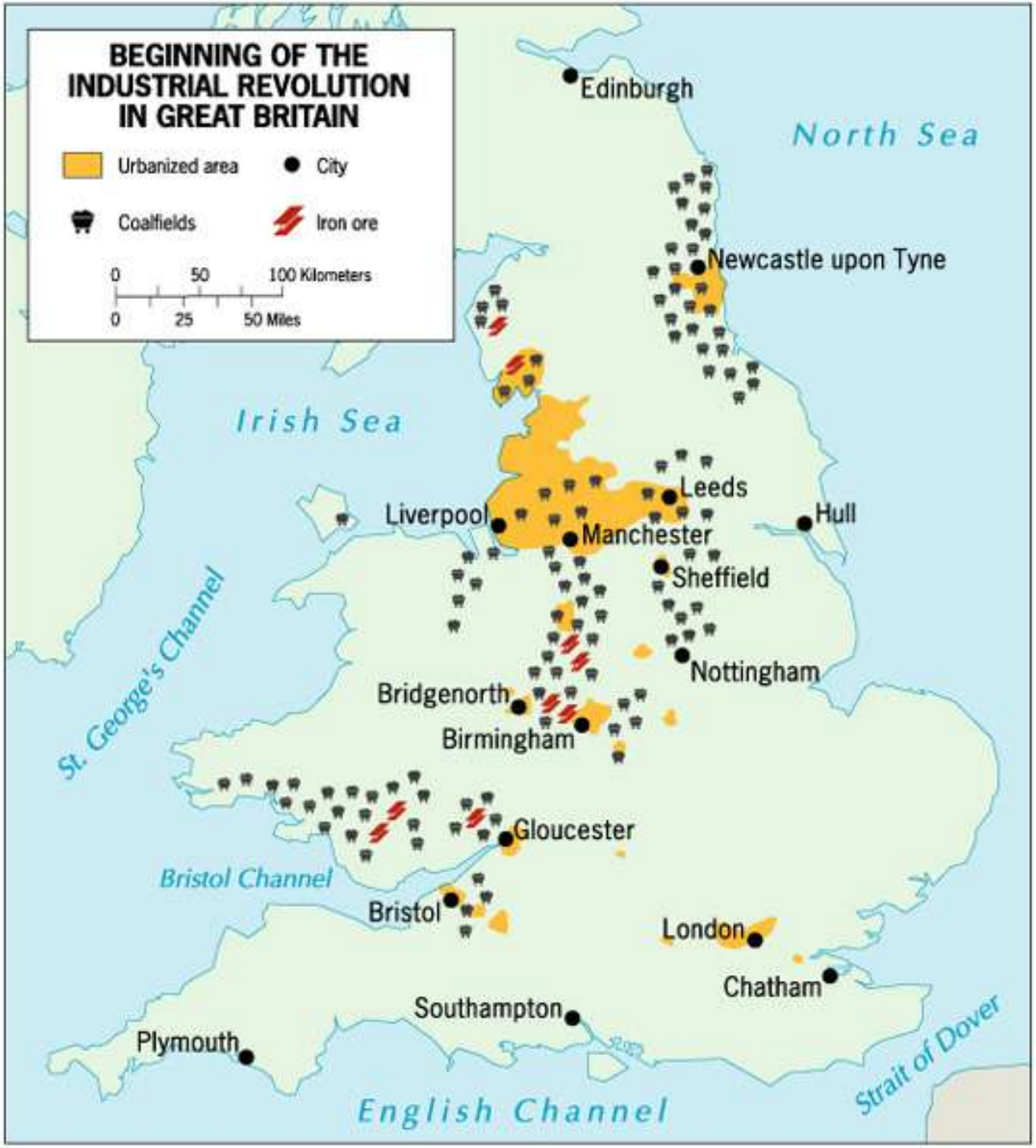
Beginning of Industrial Revolution

- When and where did the industrial revolution begin?
  - In Great Britain in the mid to late 1700s
- Why Great Britain?
  - Flow of capital
  - Second agricultural revolution
  - Mercantilism and cottage industries
  - Resources: coal, iron ore, and water power

Flow of Capital into Europe, 1775

Needed flow of capital in order to fuel the industrial revolution.





Textiles Production: Liverpool and Manchester

Iron Production: Birmingham

Coal Mining: Newcastle

Ironbridge, England

World's first bridge made entirely of cast iron, constructed in late 1700s.

Diffusion to Mainland Europe

In early 1800s, innovations diffused into mainland Europe.

Location criteria: proximity to coal fields

connection via water to a port

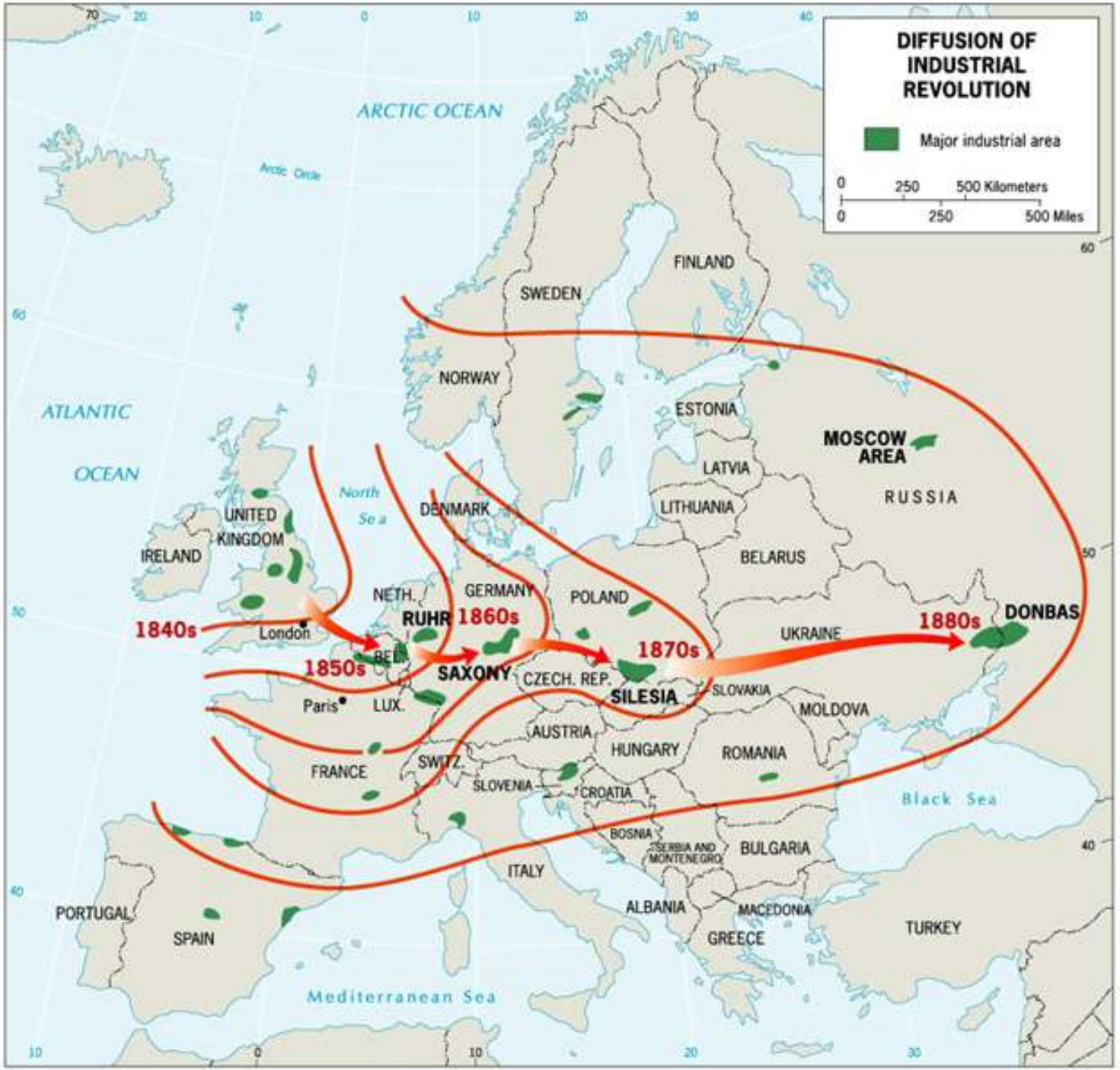
flow of capital

Later Diffusion

In late 1800s, innovations diffused to some regions without coal.

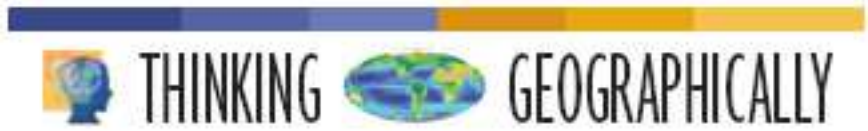
Location criteria:access to railroad

flow of capital



Diffusion of Industrial Revolution

The Paris Basin is the Industrial base of France. Rouen (pictured here) is at the head of navigation point on the Seine River.



Examine the map of diffusion of the Industrial Revolution into Europe and determine what other characteristics (aside from presence of coal) were necessary for industrialization to take hold in these regions.

Key Question:

How do Location Theories explain Industrial Location?

Location Theory

- Location Theory – predicting where business will or should be located.

Considers:

- Variable costs
- Friction of distance

Location Models

Weber's Model

Manufacturing plants will locate where costs are the least (least cost theory)

Theory:

Least Cost Theory

Costs: Transportation, Labor, Agglomeration

Hotelling's Model

Location of an industry cannot be understood without reference to other industries of the same kind.

Theory:

Locational interdependence

Losch's Model

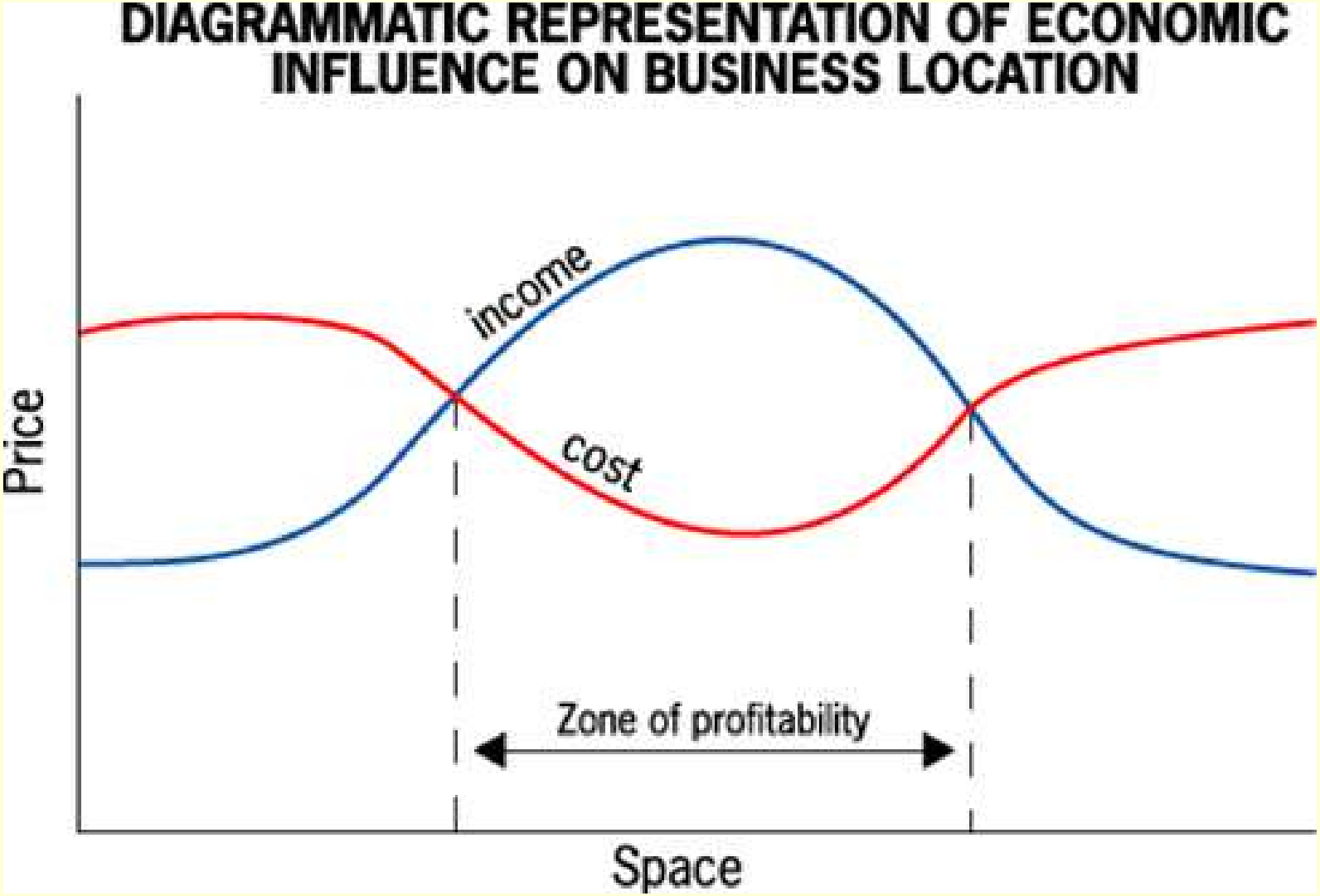
Manufacturing plants choose locations where they can maximize profit.

Theory:

Zone of Profitability

Losch's Model

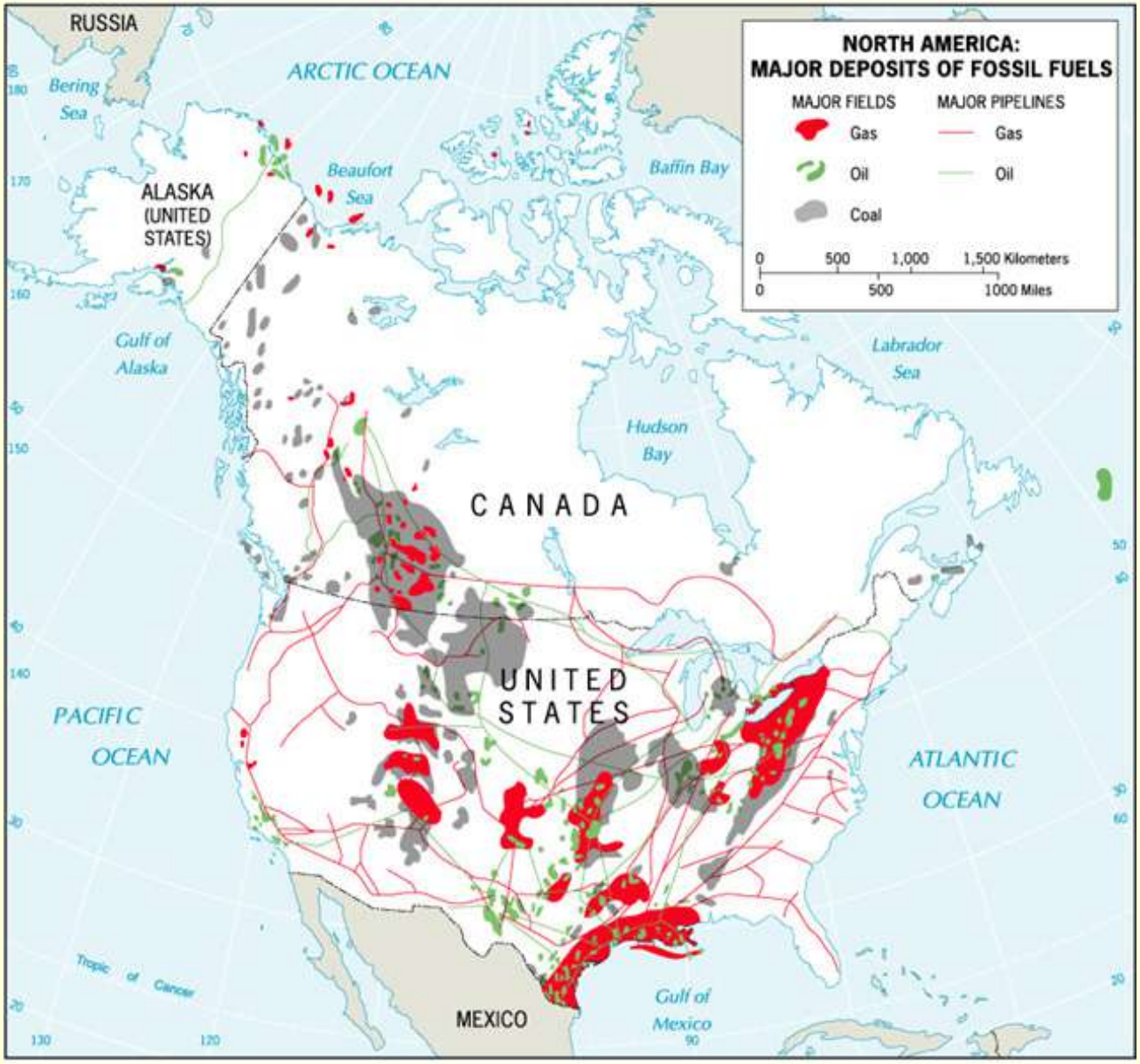
Zone of Profitability



Major Industrial Regions of the World before 1950

Western and Central Europe

Major Deposits of Fossil Fuels in North America



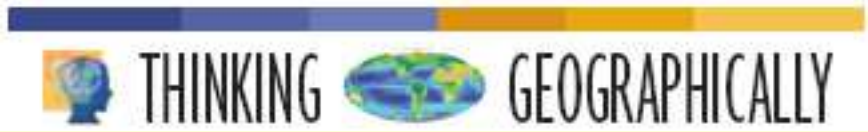
TOP STEEL PRODUCING COUNTRIES OF THE WORLD, 2003

Country	Rank	Tonnage
China	1	220.1
Japan	2	110.5
United States	3	90.4
Russia	4	62.7
South Korea	5	46.3
Germany	6	44.8
Ukraine	7	36.9
India	8	31.8
Brazil	9	31.1
Italy	10	26.7
France	11	19.8
Taiwan	12	18.8
Turkey	13	18.3
Spain	14	16.5
Canada	15	15.9
Mexico	16	15.2
United Kingdom	17	13.3
Belgium	18	11.1
South Africa	19	9.5
Poland	20	9.1

Major Manufacturing Regions of North America

Major Manufacturing Regions of Russia

Major Manufacturing Regions of East Asia



Think of an industrial area where you live, either an industrial park or a major conglomeration of industries. Drive through the area or look online or in the phone book to see what industries are located there. Consider the models of industrial location described in this section of the chapter and determine whether any of the models apply to this place.

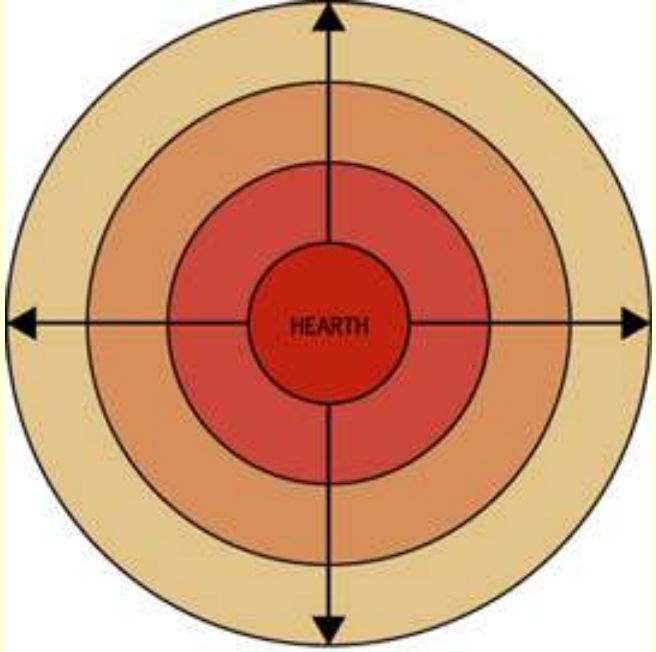
Key Question:

How has Industrial Production Changed?

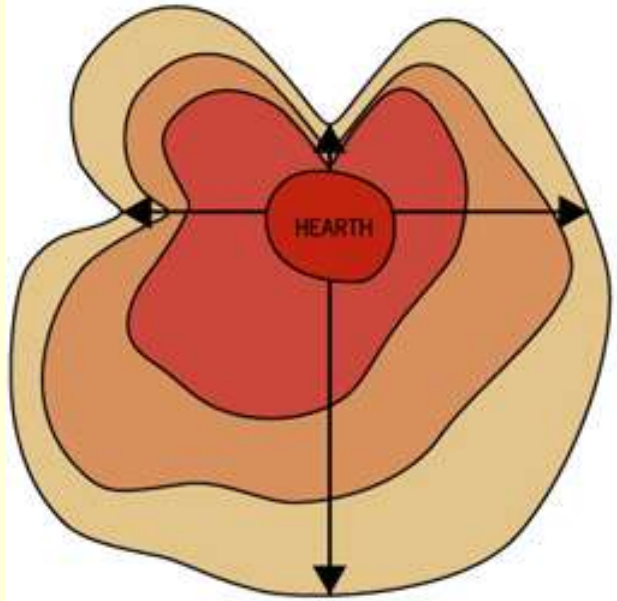
Post-Fordist

Fordist – dominant mode of mass production during the twentieth century, production of consumer goods at a single site.

Post-Fordist – current mode of production with a more flexible set of production practices in which goods are not mass produced. Production is accelerated and dispersed around the globe by multinational companies that shift production, outsourcing it around the world.



A. DISTANCE DECAY



B. TIME-SPACE COMPRESSION

Time-Space Compression

Through improvements in transportation and communications technologies, many places in the world are more connected than ever before.

Time-Space Compression

- **Just-in-time delivery**

rather than keeping a large inventory of components or products, companies keep just what they need for short-term production and new parts are shipped quickly when needed.

- **Global division of labor**

corporations can draw from labor around the globe for different components of production.

Production of Televisions

- Three key elements in television production:
  - Research and design
  - Manufacturing components
  - Assembly

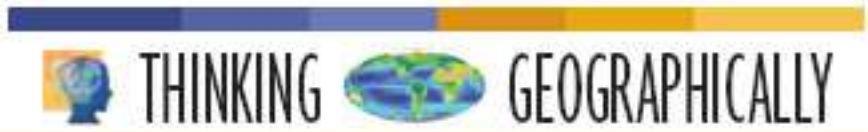
- Production of televisions has shifted across the world over time.

New Influences on the Geography of Manufacturing

- Transportation on industrial location
- Regional and global trade agreements
- Energy in industrial location

TOP WORLD OIL PRODUCERS, 2004

Country	Rank	Total Oil Production (million barrels per day)
Saudi Arabia	1	10.37
Russia	2	9.27
United States	3	8.69
Iran	4	4.09
Mexico	5	3.83
China	6	3.62
Norway	7	3.18
Canada	8	3.14
Venezuela	9	2.86
United Arab Emirates	10	2.76
Kuwait	11	2.51
Nigeria	12	2.51
United Kingdom	13	2.08
Iraq	14	2.03



Think about a cutting-edge, high-technology product that is still quite expensive to purchase and not yet broadly used (perhaps something you have read about but not even seen). Using the Internet, determine where this product is manufactured and assess why the product is manufactured there. Hypothesize which countries production will shift to and how long it will take for production costs (and the price of the product) to decrease substantially.

Key Question:

Where are the Major Industrial Belts in the World Today and Why?

Deindustrialization –

a process by which companies move industrial jobs to other regions with cheaper labor, leaving the newly deindustrialized region to switch to a service economy and work through a period of high unemployment.

Abandoned street in Liverpool, England, where the population has decreased by one-third since deindustrialization

Newly Industrialized

China – major industrial growth after 1950

Industrialization in the 1960s was state-planned:

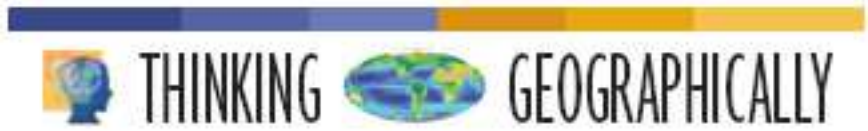
focus on:Northeast district

Shanghai and Chang district

Today, industrialization is spurred by companies that move production (not the whole company) to take advantage of Chinese labor and special economic zones (SEZs).

As China's economy continues to grow, old neighborhoods (right) are destroyed to make room for new buildings (below).

Beijing, China



How does a place change when deindustrialization occurs? Consider a place that has experienced deindustrialization, and research recent news articles on the Internet to find out how the economy of the place has changed since the loss of industry. What has happened to the place and its economy?

Key Question:

What is the Service Economy, and Where are Services Concentrated?

Service Economy

Service Industry –

Economic activity associated with the provision of services – such as transportation, banking, retailing, education, and routine office-based jobs.

Geographical Dimensions of the Service Economy

New Influences on Location:

- Information technologies
- Less tied to energy sources
- Market accessibility is more relevant for some and less relevant for others because of telecommunications
- Presence of Multinational Corporations

Wal-Mart

Requires producers of goods to locate offices in the Bentonville, Arkansas (Wal-Mart's headquarters) area in order to negotiate deals with Wal-Mart.

Proctor & Gamble put their office in nearby Fayetteville, Arkansas.

How does the presence of these companies in the region change the region's economy and its cultural landscape?

Nike

Headquartered in Beaverton, Oregon, Nike has never produced a shoe in Oregon. Beginning in the 1960s, Nike contracted with an Asian firm to produce its shoes.

Skopje, Macedonia

The swoosh is ubiquitous, but where is the shoe produced?

Nike has a global network of international manufacturing and sales.

Modern Production

Outsourcing –

moving individual steps in the production process (of a good or a service) to a supplier, who focuses their production and offers a cost savings.

Offshore –

Outsourced work that is located outside of the country.

High-Technology Corridors

- An area designated by local or state government to benefit from lower taxes and high-technology infrastructure with the goal of providing high-technology jobs to the local population.

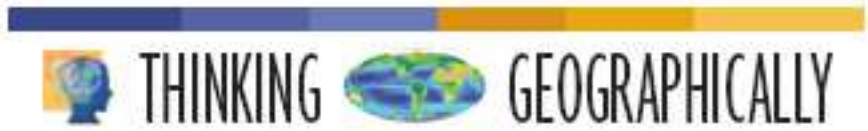
  eg. Silicon Valley, California

- Technopole – an area planned for high technology where agglomeration built on a synergy among technological companies occurs.

  eg. Route 128 corridor in Boston

Plano-Richardson, Texas

Telecom Corridor is just north of Dallas



What majors are most popular at your college or university? Consider what service/high-technology corridors may already exist near your college or university. Propose (where, why, how) a new service/high-technology corridor for your region based on what your college/university has to offer the industry.