

INDUSTRIAL GROWTH OF THE U.S.

1. Growth of Industrialization----1865 to 1900

♦ Why? **Factors in place**

♦ **Railroad industry**

- ♦ Distribution System
- ♦ Symbol of growth
- ♦ Government assists industry ---- 1860 to 1880

♦ **laissez faire** economy

♦ Laws to promote industry:

- ♦ **Morrill Tariff of 1861**
- ♦ **National Banking Act of 1863**
- ♦ **Morrill Act of 1862**
- ♦ **Land grants to railroads**

♦ Rise of Industrialists or Entrepreneur

- ♦ **Andrew Carnegie----steel**
- ♦ **John Rockefeller----oil**

Captains of Industry
or Robber Barons

Source:
Industrialization

♦ Cornelius Vanderbilt---railroad

♦ New types of businesses

♦ **vertical integration**

♦ **horizontal integration**

♦ created monopolies---"trusts"

♦ **philanthropists**

♦ Government regulates Business 1880 to 1900

♦ Robber Barons

♦ **Problem:** monopolies eliminating competition

♦ 1st US laws to regulate business

♦ **Interstate Commerce Act**

♦ **Sherman Anti-Trust Act**

♦ Response of Industrialists

♦ US govt. should not interfere with competition

♦ **defend laissez faire**

♦ **Social Darwinism**

♦ 14th Amendment

♦ Inventions and inventors

♦ **Thomas Edison**-----**Alexander Graham Bell**

♦ New stores

2. Response to Industrial Growth

♦ Rise of **Labor Unions**----Why?

♦ 3 main labor unions

♦ Strikes and labor disputes

♦ **Eugene Debs**

♦ **Great Railroad Strike--1877**

♦ **Haymarket Riot--1886**

♦ **Homestead Strike--1892**

♦ **Pullman Strike--1894**

Source: US Govt regulation

Changes in Daily Life

Life in the 1860s

- No indoor electric lights
- No refrigeration
- No indoor plumbing
- Kerosene or wood to heat
- Wood stoves to cook with
- Horse and buggy
- In 1860, most mail from the East Coast took ten days to reach the Midwest and three weeks to get to the West Coast.
- A letter from Europe to a person on the frontier could take several months to reach its destination.

Life in the 1900s

- US Govt issued 500,000 patents—electricity
- Refrigerated railroad cars
- Sewer systems and sanitation
- Increased productivity made life easier and comfortable.
- Power stations, electricity for lamps, fans, printing presses, appliances, typewriters, etc.
- New York to San Francisco to 10 days using railroad.
- 1.5 million telephones in use all over the country
- Western Union Telegraph was sending thousands of messages daily throughout the country.

FACTORS FOR INDUSTRIAL GROWTH

• Natural Resources

• Capital (gold, silver and banking)

• US Government support

• **Desire:** Creative inventors and industrialists

• Transportation System

• Labor force (**immigrants**)

NEW INDUSTRIES

• Oil

• Mining

• Sugar

• Steel

• Meatpacking

• Beef/Cattle

• Construction

• Telegraph

• Telephone

• Railroad

• Marketing

• Sewing Machine

• Vacuums

• Typewriters

• Automobile

• Salt

• Coal

• Agricultural

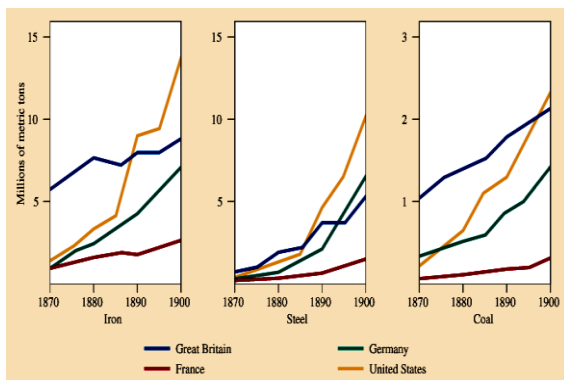
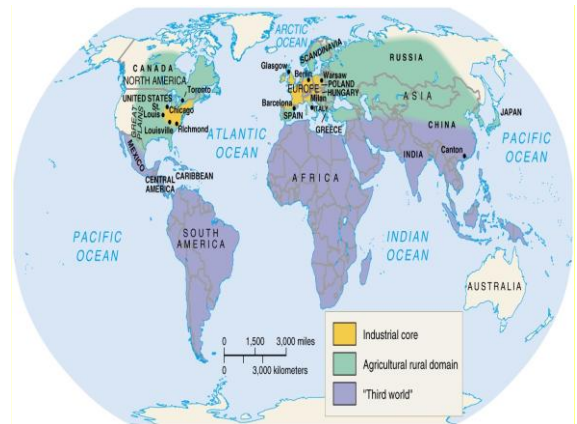


Figure 17.3 Iron, Steel, and Coal Production 1870–1900

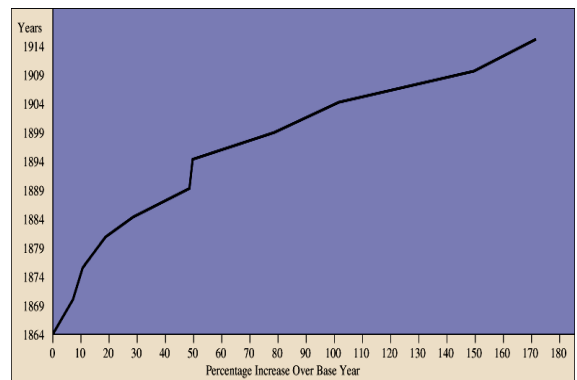
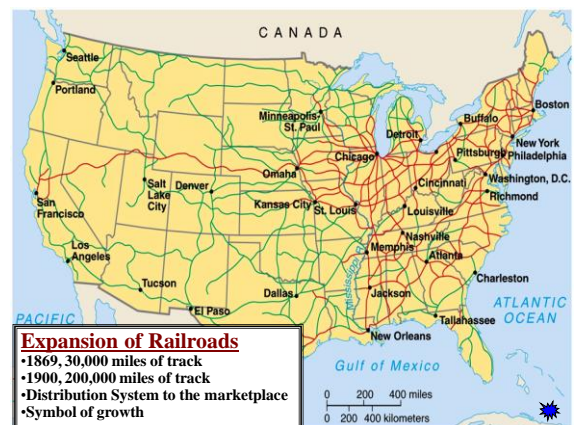
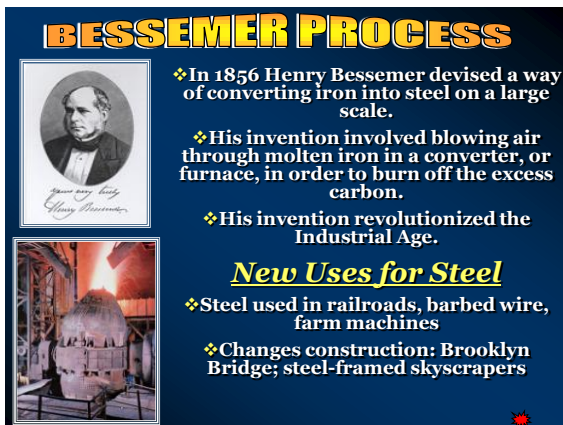
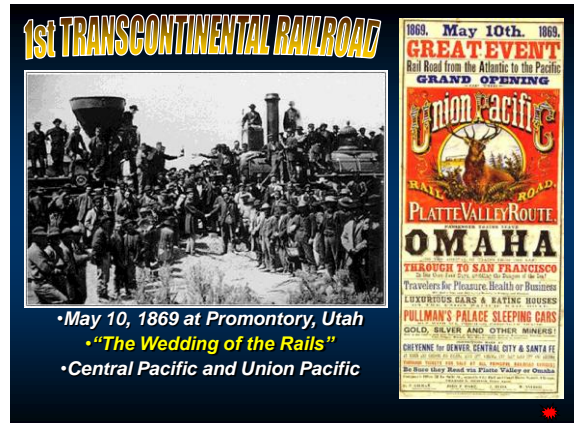
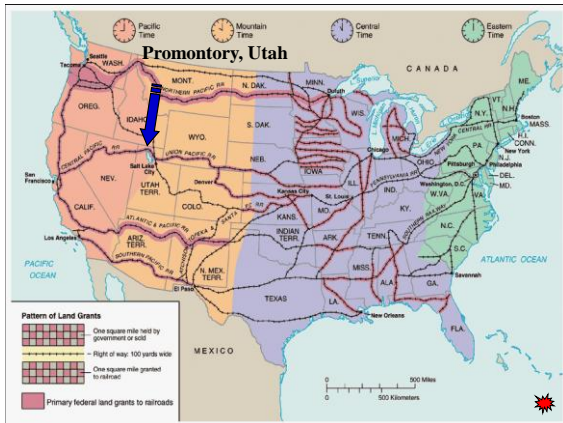
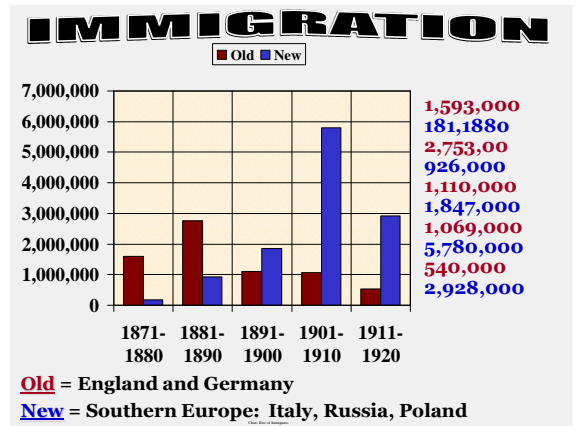




Figure 17.2 Index of U.S. Manufacturing Production, 1864–1914





RAILROAD INDUSTRY

- What helped the railroad industry prosper?
 - Bessemer Process
 - Westinghouse Air Brakes
 - Steel Rails
 - Standard Gauge

KEY INVENTIONS BETWEEN 1860 TO 1900

- Elevator—1852
- Bessemer Process—1852
- Sewing Machine—1853
- Dynamite—1867
- Typewriter—1868
- Levi Blue Jeans/Basketball—1873
- Telephone—1876
- Phonograph—1878
- Light bulb and cash register—1879
- Zipper—1883
- Gasoline automobile and skyscraper—1885
- New York City—first city to have electricity—1890
- Radio—1895
- Subway—1897
- X-ray—1900



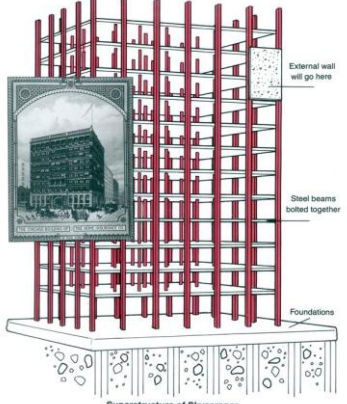








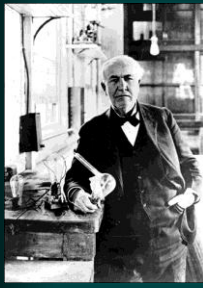

Between 1800 to 1900, US Govt. issued 500,000 patents



❖With the Bessemer Process and Carnegie steel, Skyscrapers revolutionized the building industry.....

❖Major city skylines would be dotted with this new type of building as the 1900's begin.

Thomas Alva Edison

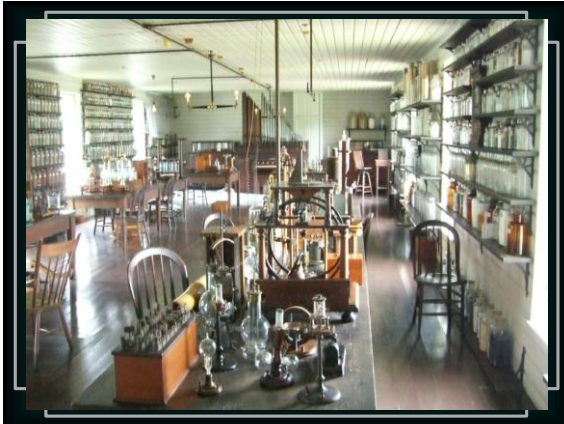
"Wizard of Menlo Park"

"Wizard of Menlo Park"

Edison Inventions helped to shape modern society

- More than 1,000 inventions patented
 - Light bulb
 - Phonograph
 - Incandescent electric lamp
- Starter for automobiles that eliminated hand crank
 - Batteries
 - Perfected stock ticker
- New York City first city to powered by electricity
 - The motion picture camera and projector
 - First used "hello" as phone greeting
- Helped Alexander G. Bell with the telephone





The Light Bulb



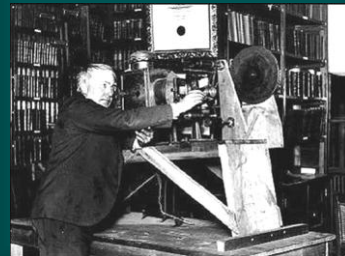
The Phonograph (1877)



The Ediphone or Dictaphone



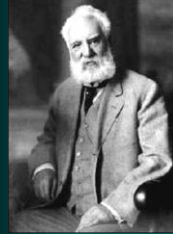
The Motion Picture Camera



Edison the Innovator

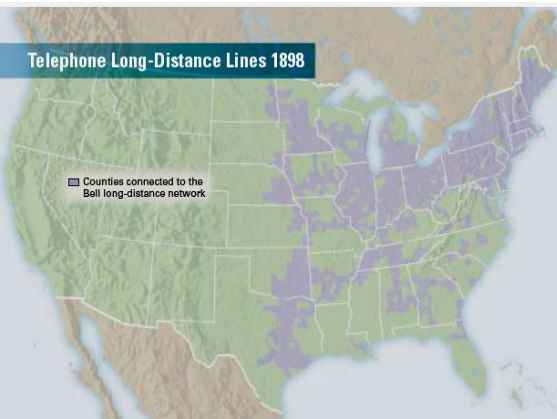
- Industries Started:
 - Electric Light and Power
 - Sound Recording
 - Motion Pictures
- Industries to which he made major contributions:
 - Telecommunications
 - Battery
 - Chemical
 - Cement
 - Mining
- Corporate Research and Development Labs

Alexander Graham Bell

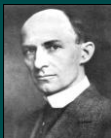


Telephone (1876)

Telephone Long-Distance Lines 1898



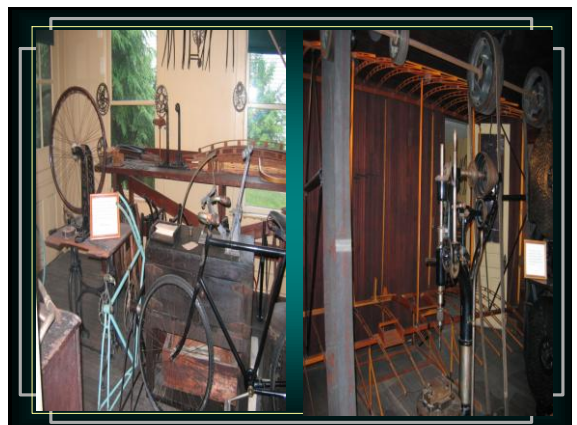
The Airplane

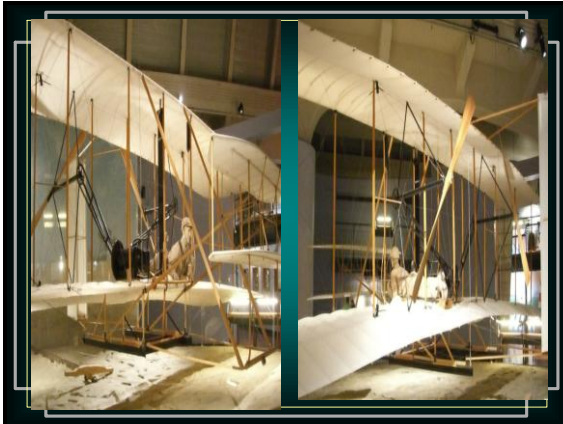


Wilbur Wright



Orville Wright





Model T Automobile



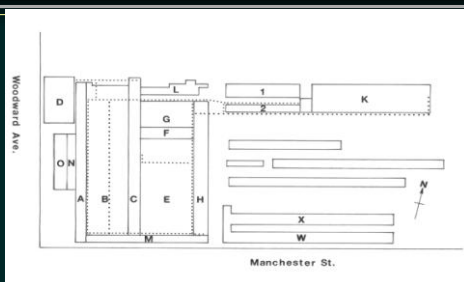
Henry Ford



Ford Model T prototype, 1908

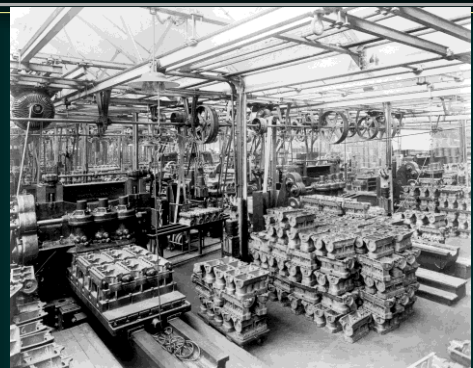


Ford Highland Park Plant, Building A under construction, 1909

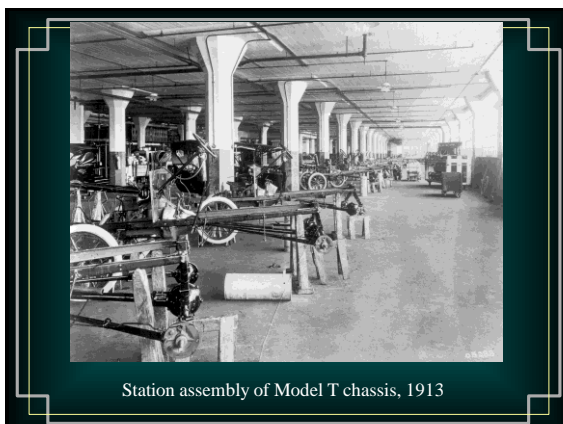
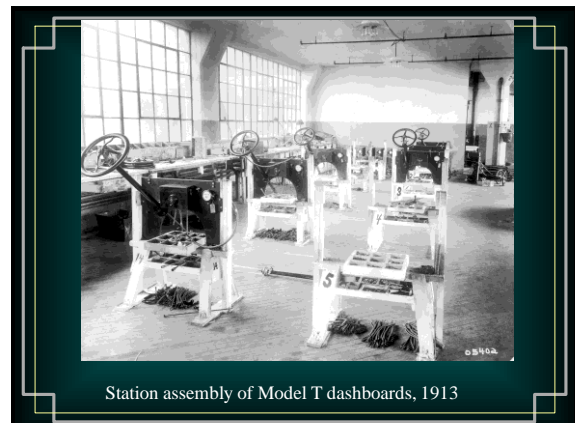
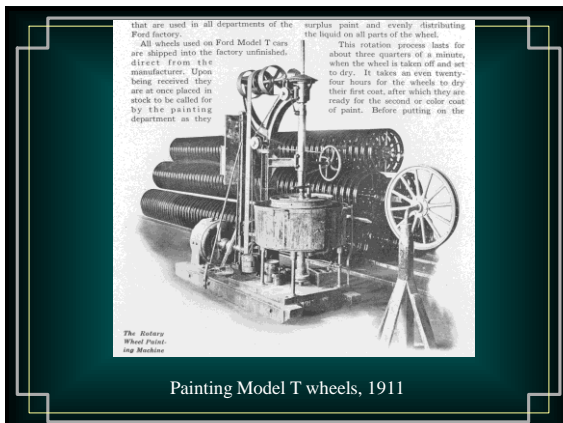
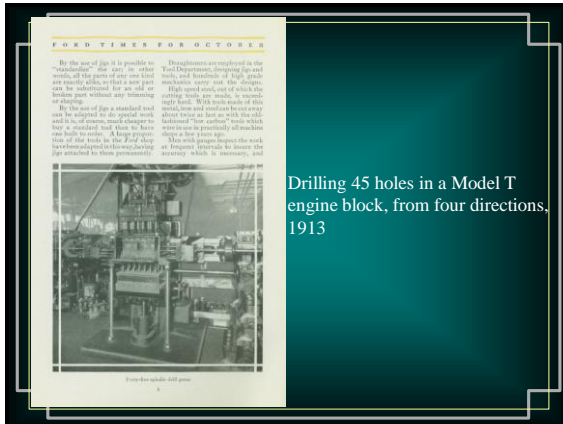


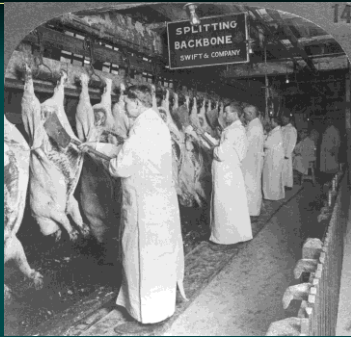
Plan of Ford Highland Park Plant, 1914

- A, M, and H are four story factory buildings
- B and E are one story machine shops
- C and F are glass-roofed crane ways
- K, I, and 2 are foundry buildings
- Dotted line is the monorail conveyor system



Machining the bottom of Model T cylinder blocks, 1913





Disassembly line for hogs, 1915

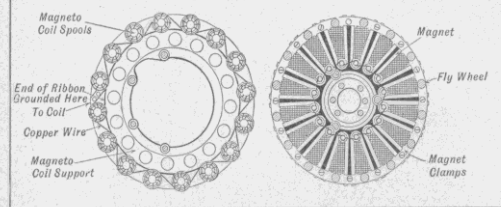


Fig. 21.—Views Showing Construction of Stationary Magneto Coil Carrying Member at Left and Rotary Magnet Carrier that Also Acts as the Motor Flywheel at Right.

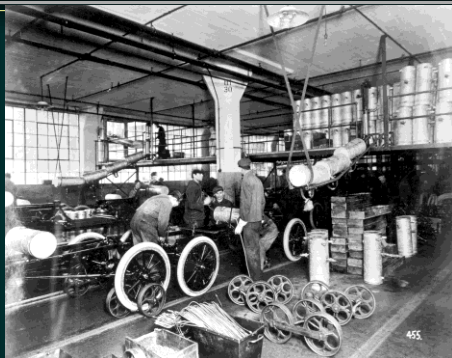
Model T flywheel magneto



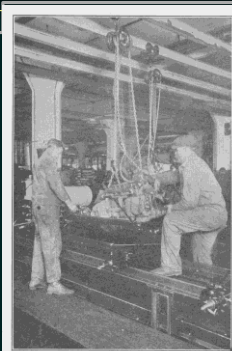
Assembly line for putting magnets on Model T flywheels, 1913



Assembly line for Model T dashboards, 1914

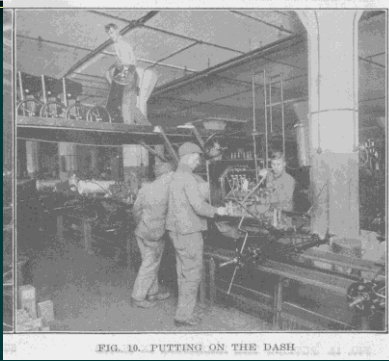


Model T chassis assembly line, installing gas tanks, 1914

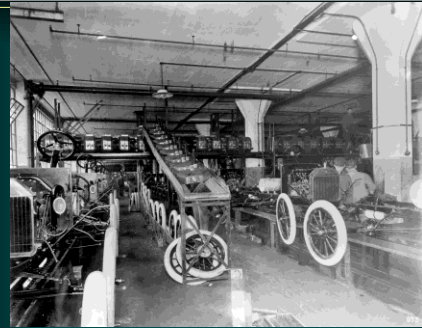


Lowering Motor to Place on Chassis
Looking to southwest; shows overhead chain-hold rails

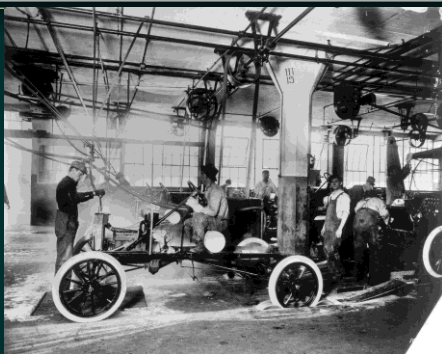
Model T chassis assembly line
Installing engines, 1913



Model T chassis assembly line, installing dashboards, 1914



Model T chassis assembly line, installing wheels and radiators, 1914



Model T chassis assembly line, starting the engine, 1914



Assembly line installation of tops on Model T bodies, 1915



Job seekers outside Highland Park Plant Building M, after the announcement of the \$5 Day.

NEW STORES

BETWEEN 1860 TO 1900

- Specialty stores—sold single line of goods
- Department stores—combined specialty stores
- Chain stores—stores with branches in cities
- Mail catalog stores
- New ways to advertise

Montgomery Wards, J.C. Penney, Macy's, Sears and Roebuck and Woolworths



LAISSEZ FAIRE

An economic belief supported by the U.S. that opposes the government regulating business.

- ❖ In the late 1800's businesses operated without much government regulation. This is known as laissez-faire economics.
- ❖ Laissez-faire means 'allow to be' or the government stays out of a person's business in French.
- ❖ Laissez faire supports our economic system of capitalism

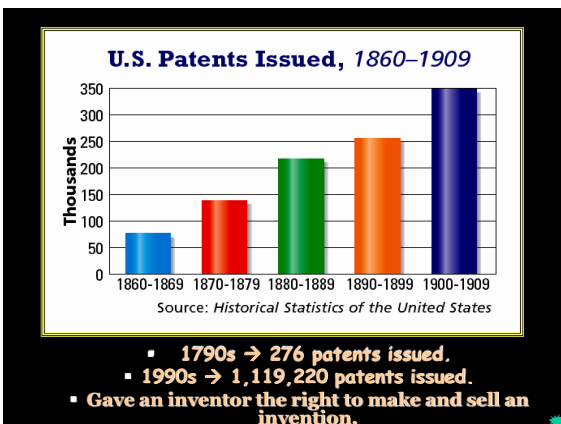
New Business Culture

1. **Laissez Faire** --> the ideology of the Industrial Age.
 - ⇒ Individuals should compete freely in the marketplace.
 - ⇒ Own their own business and use their skills to better our culture and make profit for themselves.
 - ⇒ The market was not man-made or invented and no room for government in the market.
 - ⇒ Government should allow for natural competition for the betterment of our society.

CAPITALISM

Economic system characterized by private property ownership

- ❖ Individuals and companies compete for their own economic gain (Profit)
- ❖ Capitalists determine the prices of goods and services.
- ❖ Production and distribution are privately or corporately owned.
- ❖ Reinvestment of profits
- ❖ Supports laissez faire and the "free enterprise" system



SOCIALISM

Economic system based on cooperation rather than competition

- ❖ Many Americans opposed capitalism and believed a socialistic economy would better suit the US because some capitalists were corrupt.
- ❖ Believes in government ownership of business and capital (money, natural resources)
- ❖ Government controls production, sets wages, prices and distributes the goods. No profit or competition.
- ❖ Opposite of laissez faire and capitalism

US GOVERNMENT ASSISTS INDUSTRY

MORRILL TARIFF ACT, 1862

To protect and encourage American industry, Congress passed this tariff after the South seceded from the Union.

NATIONAL BANKING SYSTEM, 1863

To stimulate the economy and set up a banking system, Congress passed this act which was a significant step towards a unified, national banking system until replaced by the Federal Reserve in 1913.

MORRILL ACT, 1862

To promote education, Congress provided grants of public lands to the states for support of education. "Land-grant colleges"

LAND GRANTS TO RAILROADS

US Govt. donated land to railroad companies to encourage growth of this mode of transportation. US Govt. donated approx. 160 million acres of land.....

BUSINESS ORGANIZATIONS

• **Corporation:** form of business consisting of a group of people authorized by law to act as a single person and with the ability to sell shares of stock to raise "capital"

• **Shareholders or stockholders:** investors who invest their money into a corporation who each receive a share of ownership in proportion to the amount they invested

• if the corporation makes a profit---than investor gets a "**dividend**" or a share of the profit.

• **Limited liability:** Important aspect of a corporation is limited liability. Shareholders have the right to participate in the profits, through dividends and/or the appreciation of stock, but are not held liable for the company's debts.

• "Risk is spread over the **shareholders** so if the company goes bankrupt, the loss is not so devastating"

PROPRIETORSHIP

FORMATION	Individual or person decides to operate a business
OWNERSHIP	Individual
CONTROL AND MANAGEMENT	By owner or persons delegated by the proprietor
NET PROFITS LOSSES	Profits to owner Losses absorbed by owner UNLIMITED LIABILITY

PARTNERSHIP

FORMATION	By agreement between associates (partners)
OWNERSHIP	Jointly by two or more individuals; or by terms of partnership agreement
CONTROL AND MANAGEMENT	By partners or persons they delegate
NET PROFITS LOSSES	Shared according to partnership agreement UNLIMITED LIABILITY

CORPORATION

FORMATION	Organized by associates and legalized through state charter
OWNERSHIP	Stockholders, according to number of shares
CONTROL AND MANAGEMENT	Through Board of Directors, elected by the stockholders (usually one vote per share of stock held)
NET PROFITS AND LOSSES	Dividends: to stockholders = profits Loss: only the amount invested by stockholders according to number of shares LIMITED LIABILITY

BUSINESS ORGANIZATIONS

Trusts or Monopoly

• Companies in related fields combine under the direction of a single board of trustees.

• Shareholders had no say.

• Outlawed today.

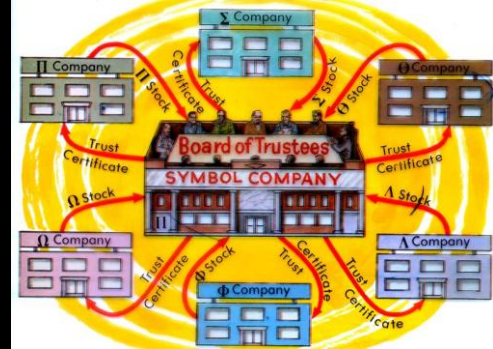
TRUSTS AND MONOPOLIES

BIGGER IS BETTER

A **trust or monopoly** controls an entire industry

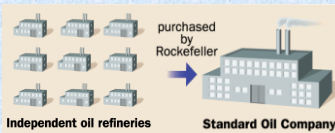
- make product cheaper
- lower prices to customer

MONOPOLIES AND TRUSTS

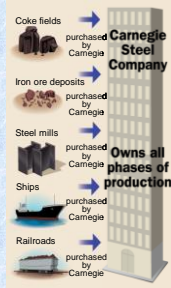


VERTICAL AND HORIZONTAL INTEGRATION

Vertical Integration
You control all phases of production from the raw material to the finished product



Horizontal Integration
Buy out your competition until you have control of a single area of industry



MONOPOLY

Modern Day Example of Vertical Integration

- Ford Motor company
 - What goes in an automobile?
 - Why is it an advantage for a company to own/control all production?



Vertical Integration
You control all phases of production from the raw material to the finished product

Advantages Vertical Integration

- You are always in control of supply of the products you need
- In control of labor cost, land/resources
- Always in control of the cost
- Schedule your production of autos because you are in control of all factors
- Can you give another example of this?

Other Vertical Integrations

- Boeing
- Anheiser-Busch: all grown by own producers
- McDonald's: own cattle ranches
- Oil companies
- AOL Time Warner

Horizontal Integration

- Examples
 - Standard Oil
 - Carnegie Steel
 - Swift & Company: meat producers
 - United Fruit Company: bananas
 - Dole Pineapple

Horizontal Integration
Buy out your competition
until you have control of a
single area of industry

Modern Day Examples of Horizontal Integration

- Microsoft
- PG & E
- Comcast
- Starbucks
- De Beers

