CHAPTER 6: A NEW INDUSTRIAL AGE

LATE 19TH CENTURY AMERICA EXPERIENCED AN INDUSTRIAL BOOM
After the Civil War (1865) the U.S. was still largely agriculture.

By 1920, the U.S. was the leading industrial power in the world.

This enormous growth was due to three factors:
1) Natural Resources
2) Governmental support
3) Urbanization
- In 1859, Edwin Drake used a steam engine to drill for oil.
- This breakthrough started an oil boom in the Midwest and later Texas.
- At first, the process was limited to transforming the oil into kerosene and throwing out the gasoline -- a by-product of the process.
- Later, the gasoline was used for cars.
Oil was not the only valuable natural resource. Coal and iron were plentiful within the U.S. When you removed the carbon from iron, the result was a lighter, more flexible and rust resistant compound – Steel. The Bessemer process did just that (Henry Bessemer & William Kelly).
NEW USES FOR STEEL

- The railroads, with thousands of miles of track, were the biggest customers for steel.
- Other uses emerged: barbed wire, farm equipment, bridge construction (Brooklyn Bridge - 1883), and the first skyscrapers.

BROOKLYN BRIDGE
SPANS 1595 FEET IN NYC
INVENTIONS SPUR INDUSTRY
1876- Thomas Alva Edison established the world’s first research lab in New Jersey.

There Edison perfected the incandescent light bulb in 1880.

Later he invented an entire system for producing and distributing electricity.

By 1890, electricity powered numerous machines.
Christopher Sholes invented the typewriter in 1867.

His invention forever affected office work and paperwork.

It also opened many new jobs for women.

1870: Women made up less than 5% of workforce
1910: They made up 40%
Another important invention of the late 19th century was the telephone. Alexander Graham Bell and Thomas Watson unveiled their invention in 1876.
SECTION 2: THE AGE OF THE RAILROADS

- The growth and consolidation of the railroad industry influenced many facets of American life.
- However, the unchecked power of the railroad companies led to widespread abuses and then reforms.
By 1869, tracks had been laid across the continent (Golden Spike - Utah)

Immigrants from China and Ireland and out-of-work Civil War vets provided most of the difficult labor

Thousands lost their lives and tens of thousands were injured laying track
Before 1883, each community still operated on its own time.

For example: Noon in Boston was 12 minutes later than noon in New York City.

Indiana had dozens of different times.

No standard time reference.
In 1869, to remedy this problem, Professor C.F. Dowd proposed dividing the earth into 24 time zones.

The U.S. would be divided into 4 zones: the eastern, Central, Mountain, and Pacific.

1883 – Railroads synchronized their watches across U.S.

1884 – International Conference adopts zones.
THE WORLD IS DIVIDED INTO 24 TIME ZONES
THE UNITED STATES IS DIVIDED INTO 4 TIME ZONES
The rapid growth of the railroad industry influenced the iron, coal, steel, lumber, and glass businesses as they tried to keep up with the railroads' demand for materials.

The spread of the railroads also led to the growth of towns, new markets, and opportunity for profiteers.
RAILROADS LED TO GROWTH OF CITIES

- Many of today’s major cities owe their legacy to the railroad
- Chicago, Minneapolis, Denver, and Seattle all grew up thanks to the railroad

“My Kind of Town”
In 1880, George Pullman built a factory for manufacturing sleepers and other railroad cars in Illinois.

The nearby town Pullman built for his employees was modeled after early industrial European towns.

Pullman workers felt his puritanical town was too strict.

When he lowered wages but not rent — it led to a violent strike in 1894.
CREDIT MOBILIER SCANDAL

- **Stockholders** of Union Pacific Railroad formed a construction company in 1864.
- Stockholders then gave contracts to the company to lay track at 3 times the actual costs and pocketed the difference.
- They donated shares of the stock to 20 Republican members of Congress in 1867.

**POSTER FOR BOGUS CONSTRUCTION COMPANY**
Farmers were especially affected by corruption in the railroad industry.

Grangers (a farmers organization) protested land deals, price fixing, and charging different rates to different customers.

Granger Laws were then passed protecting farmers.

States were given regulation control of railroads by the Courts.

Grangers put a stop to railroad corruption.
In 1887, the Federal government re-established their control over railroad activities.

Congress passed the Interstate Commerce Act and established a 5-member Interstate Commerce Commission (ICC).

The ICC struggled to gain power until 1906.

1887 – CONGRESS PASSED THE ICA
SECTION 3: BIG BUSINESS AND LABOR

- Andrew Carnegie was one of the first industrial moguls.
- He entered the steel industry in 1873.
- By 1899, the Carnegie Steel Company manufactured more steel than all the factories in Great Britain combined.
Carnegie initiated many new business practices such as:

- Searching for ways to make better products more cheaply
- Accounting systems to track expenses
- Attracting quality people by offering them stock & benefits

ANDREW CARNEGIE
1835 - 1919
Carnegie’s Vertical Integration

- Carnegie attempted to control as much of the steel industry as possible
- How? Vertical integration; he bought out his suppliers (coal fields, iron mines, ore freighters, and rail lines) in order to control materials and transportation
Carnegie Steel Co. - Vertical Integration of Steel

Mesabi Iron Range

Railroads

Duluth, MN - to Cleveland and Gary, IN
Lake Superior Steamship Lines
Railroad Rolling Stock & Engines

Anthracite Coal Mines

J. Edgar Thompson Plant
- Bessemer/Kelly Process
- Rolling Mills
Homestead Plant

Henry C. Frick
Tennessee Iron & Coal Co.
Additionally, Carnegie bought up the competition through friendly and hostile takeovers.

This is known as Horizontal Integration; buying companies that produce similar products – in this case other steel companies.
Mergers could result in a monopoly (Trust)

A monopoly is complete control over an industry

An example of consolidation: In 1870, Rockefeller Standard Oil Company owned 2% of the country’s crude oil

By 1880 – it controlled 90% of U.S. crude oil
SOCIAL DARWINISM

The philosophy known as Social Darwinism has its origins in Darwin’s theory of evolution. Darwin theorized that some individuals in a species flourish and pass their traits on while others do not. Social Darwinists (like Herbert Spencer) believed riches was a sign of God’s favor, and being poor was a sign of inferiority and laziness.
ROBBER BARONS

- Alarmed at the cut-throat tactics of industrialists, critics began to call them “Robber Barons”
- Famous “Robber Barons” included Carnegie, Rockefeller, Vanderbilt, Stanford, and J.P. Morgan
ROBBER BARONS WERE GENEROUS, TOO

- Despite being labeled as greedy barons, rich industrialists did have a generous side.
- When very rich people give away lots of money it is called “Philanthropy.”

ROCKEFELLER CHAPEL – UNIVERSITY OF CHICAGO
In 1890, the Sherman Anti-Trust Act made it illegal to form a monopoly (Trust).

Prosecuting companies under the Act was not easy – a business would simply reorganize into single companies to avoid prosecution.

Seven of eight cases brought before the Supreme Court were thrown out.
(REAL TRUST)
Workers routinely worked 6 or 7 days a week, had no vacations, no sick leave, and no compensation for injuries.

Injuries were common – In 1882, an average of 675 workers were killed PER WEEK on the job.
LABOR UNIONS EMERGE

- As conditions for laborers worsened, workers realized they needed to organize.
- The first large-scale national organization of workers was the National Labor Union in 1866.
- The Colored National Labor Union followed.
Craft Unions were unions of workers in a skilled trade

Samuel Gompers led the Cigar Makers’ International Union to join with other craft unions in 1886

Gompers became president of the American Federation of Labor (AFL)

He focused on collective bargaining to improve conditions, wages and hours
Some unions were formed with workers within a specific industry

- Eugene Debs attempted this Industrial Union with the railway workers

- In 1894, the new union won a strike for higher wages and at its peak had 150,000 members
Some unionists (including Debs) turned to a socialism – an economic and political system based on government control of business and property and an equal distribution of wealth among all citizens.

The International Workers of the World (IWW) or Wobblies, was one such socialist union.
STRIKES TURN VIOLENT

- Several strikes turned deadly in the late 19th century as workers and owners clashed
- The Great Strike of 1877: Workers for the Baltimore and Ohio Railroad struck to protest wage cuts
- Other rail workers across the country struck in sympathy
- Federal troops were called in to end the strike
Labor leaders continued to push for change – and on May 4, 1886 3,000 people gathered at Chicago’s Haymarket Square to protest police treatment of striking workers.

- A bomb exploded near the police line – killing 7 cops and several workers.
- Radicals were rounded up and executed for the crime.
THE HOMESTEAD STRIKE

- Even Andrew Carnegie could not escape a workers strike.
- Conditions and wages were not satisfactory in his Steel plant in Pennsylvania and workers struck in 1892.
- Carnegie hired Pinkerton Detectives to guard the plant and allow scabs to work.
- Detectives and strikers clashed – 3 detectives and 9 strikers died.
- The National guard restored order – workers returned to work.
After the Pullman Company laid off thousands of workers and cut wages, the workers went on strike in the spring of 1894.

Eugene Debs (American Railroad Union) tried to settle dispute which turned violent.

Pullman hired scabs and fired the strikers – Federal troops were brought in.

Debs was jailed.
Although women were barred from most unions, they did organize behind powerful leaders such as Mary Harris Jones. She organized the United Mine Workers of America. Mine workers gave her the nickname, “Mother Jones.” Pauline Newman organized the International Ladies Garment Workers Union at the age of 16.
EMPLOYERS FIGHT UNIONS

- The more powerful the unions became, the more employers came to fear them.
- Employers often forbade union meetings and refused to recognize unions.
- Employers forced new workers to sign “Yellow Dog Contracts,” swearing that they would never join a union.
- Despite those efforts, the AFL had over 2 million members by 1914.