Industrial America A Nation Transformed
1860 - 1910

1. The Western Crossroads 1860 - 1910
2. The Second Industrial Revolution – 1865 - 1905
3. The Transformation of American Society – 1865 - 1910

• Hey Mikey Boylan!
• What Kyle Williams?
• “Look at this class. Boy, do they got it Easy!”
Yeah, “Kyle I wish I could read!”

This looks like Josh Codis
The Second Industrial Revolution

1865 - 1905

1. The Age of Innovation
2. The Rise of Big Business
3. Labor Strives To Organize

- During the first half of the 1800’s, the United States population expanded rapidly westward.
- Cause of this growth was fueled by immigration, industrialization, and the economic opportunities of the frontier.
- Significance - industrialization led to poor working conditions that led workers to organize unions and improve daily lives.
• Can you believe I failed one thousand times before I invented the light bulb?!
• The Wizard of Menlo Park

Thomas Edison
1. The Age of Innovation

- Following the years of the Civil War, the United States experienced a wave of scientific discoveries and inventions. She also experienced a surge of industrial growth.

- The First Industrial Revolution
  - Coal and steam made possible the first industrial revolution in the United States.
  - Coal-fed steam engines powered factories and these factories in turn produced goods that generated economic growth.
Industrial Innovation

In the late 1800’s, an abundance of steel helped spur the second period of industrialization.

The Bessemer Process - created in 1850, Henry Bessemer in Great Britain, a method of steel making that burned off the impurities in molten iron with a blast of hot air.

Allowed for practical use of steel and more affordable.

Because of this process 1865-15,000 tons of steel to 1919 - 28 million tons of steel.
Refined Oil

- The development of a process to refine oil also affected the industrial period.
- This process to refine oil could then be used for fuel to turn into kerosene, which could be burned in lamps to produce light or used as fuel.
- In 1859, Edwin Drake used a steam engine to drill for oil near Titusville, Pennsylvania.
- “Drake’s Folly,” as it was called, turned out to be quite significant. By the 1880’s, oil wells were located all over Pennsylvania and West Virginia and production topped 25 million barrels of oil.

Edwin Drake

- Innovations in steel and oil industries also affected the transportation industry.
Picture of an oil well
Edwin Drake, wearing a top hat, visits his oil well near Titusville Pa.
The Age of Transportation

- New technologies and the “age of inventions” resulted in a massive expansion of railroads and laid the groundwork for the automobile and airplanes.
- The developments in transportation were crucial to bring Americans closer to one another as well as to the development of the West.

• Not yet!
The Railroads

- The availability of cheap steal, due to the Bessemer process, had a significant impact on the railroad industry.
- In 1869, the transcontinental railroad was completed when the Union Pacific and the Central Pacific joined to make a single rail line from Nebraska to the Pacific Ocean.
- George Westinghouse developed an air-compressed brake, which made the locomotives safer.
The horseless carriage

- About 1770, the forerunner of the automobile was the horseless carriage. Not very successful due to the cost.
- By 1876, Nikolaus A. Otto invented the first internal combustion engine powered by gasoline. Within twenty years, Charles and J. Frank Duryea built the first practical motorcar in the United States.
- The wealthy class was the only class at the time that could afford the horseless carriage.

Nikolaus A. Otto

Charles and J. Frank Duryea
THEN

NOW
Airplanes

- The internal combustion also led to **advances in flight.**
- **Orville and Wilbur Wright** of Dayton, Ohio, developed one of the first **working airplanes.**
I can see my house from here!
Communication

• The advancements in communication also furthered the growth of American industry.

  Americans did not have cell phones back then; how did they live!!!
The Telegraph

**Morse Code Alphabet**

<table>
<thead>
<tr>
<th>Letter</th>
<th>Code</th>
<th>Morse Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>.</td>
<td>.-.</td>
</tr>
<tr>
<td>B</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>C</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>D</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td>.-.</td>
</tr>
<tr>
<td>F</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>G</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>H</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>I</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>J</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>K</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>L</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>M</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>N</td>
<td>.</td>
<td>.-.</td>
</tr>
<tr>
<td>O</td>
<td>---</td>
<td>.-.</td>
</tr>
<tr>
<td>P</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>Q</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>R</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>S</td>
<td>...</td>
<td>.-.</td>
</tr>
<tr>
<td>T</td>
<td>-</td>
<td>.-.</td>
</tr>
<tr>
<td>U</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>V</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>W</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>X</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>Y</td>
<td>--</td>
<td>.-.</td>
</tr>
<tr>
<td>Z</td>
<td>--</td>
<td>.-.</td>
</tr>
</tbody>
</table>

**Samuel F.B. Morse developed the telegraph**, which was a means of communicating using wires with electricity.

- By 1866, **Western Union**, the leading telegraph company, had more than 2,000 telegraph offices.

**Samuel F.B. Morse**

```
What hath God wrought?
```

```
/---/.. .../.-/ / . . /.-/. .-. // --./.-.-/-. .-. // .-.//---/.-./-. ./. ./. /-. .-. //
```

```
/---/.. .../.-/ / . . /.-/. .-. // --./.-.-/-. ./. ./. /-. .-. //
```

**What hath God wrought?**
The Telephone

- Alexander Graham Bell, in 1876, introduced the talking telegraph or telephone.
- By the end of the 1800's, more than one million telephones had been installed and Bell Telephone Company eventually became American Telephone and Telegraph AT&T, one of the largest and longest lasting monopolies.
Appointments may be made and conversations held, giving all the advantages of a personal interview.

500 MILES AND RETURN IN 5 MINUTES

LONG DISTANCE CABINET SOUND-PROOF BOOTH
INSURING PRIVACY AND QUIET.

PUBLIC PAY STATIONS
Equipped with these have been established at all principal points, and are indicated by the SIGN OF THE BLUE BELL.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

MAIL IS QUICK; TELEGRAPH IS QUICKER; BUT LONG DISTANCE IS INSTANTANEOUS TELEPHONE AND YOU DON'T HAVE TO WAIT FOR AN ANSWER.

NEW YORK BOSTON BUFFALO WASHINGTON
Christopher Sholes invented the typewriter in 1867.

The invention of the typewriter also had an impact on industries.
Thomas Edison and Menlo Park

- Thomas Edison and his fellow researchers made significant discoveries in the telegraph, electricity, light bulbs, phonographs, and early motion-picture cameras.
- He opened a workshop in Menlo Park, New Jersey where he assembled a team of researchers and by 1931, Edison and his team had over 1,000 patents.
2. The Rise of Big Business

• “Eureka! We have found it. Here was something new to all of us, for none of us had ever received anything but from toil.”

• Andrew Carnegie, The Andrew Carnegie Reader

• As a young man, he invested in Adams Express and soon began investing in railroad and iron industries.

• Made him a very wealthy man!
Capitalism

• Capitalism—an economic system in which private business ran most industries, and competition determines how much goods cost and workers are paid.

• Over the course of the late 1800’s, businessmen set out to gain economic wealth by building industries by taking advantage of the era’s new technological advances.

• During the Second Industrial Revolution, Horatio Alger published several novels that reflected the American ideal of self-reliant individualism (HARD WORK!!!)

• Free enterprise is an economic system in which businesses were let free from government regulation.
Communism

- Karl Marx, a German philosopher believed in a political system that proposed that individual ownership of property should not be allowed.
- Property and means of production are owned by everyone (government) in the community.
Social Darwinism

- Charles Darwin’s biological theory of natural selection and evolution and the newly political theory of social Darwinism.

Charles Darwin’s theory - followed the natural law of "survival of the fittest" (the top of the food chain - humans)

Social Darwinism - Herbert Spencer follows this biological theory and applies it to politics. The “fittest” people, businesses, or nations would rise to positions of wealth and the “unfit” would fail.
The Birth of the Corporation

- In the late 1800’s, the face of American business changed dramatically.
- Business leaders turned to corporations.
  - Corporations are organizations in which members raise money by selling shares of stock in the company.
  - Stockholders—those who buy shares—receive a percentage of the corporation’s profits, known as dividends.
The Stock Market

• Public ownership of corporations and trading of stock introduced another source of income in the stock market.

• Stock brokers such as Jay Gould earned millions trading stock. (Gould 77 million in trading railroad stock)
Trusts

- Some companies, or corporations, formed trusts.
  - Trusts are when companies turn control of their stock to a common board of trustees.
  - If a trust gains an exclusive control of an industry, a company holds a monopoly, or complete control over the price and quality of a product.
Andrew Carnegie

- Steel leader Andrew Carnegie, born in Scotland, immigrated to the United States in 1848 at the age of 12.
- In his twenties, he began to invest in stock in numerous ventures in transportation and communications. These early ventures provided the funding for him to invest in the steel industry.
U.S. Steel Industry

- Carnegie entered the *iron and steel business* in the early 1860’s.
Vertical Integration

- Vertical integration - the principal of acquiring companies that provided the materials and services upon which his enterprises depended.
- In 1899, Carnegie organized all of his companies into the Carnegie Steel Company.
- In 1901, Carnegie sold his company to banker J.P. Morgan for nearly $500 million. Carnegie retired as the world’s richest man.
The Gospel of Wealth

- Carnegie was rich! There is no doubt. However, he was quite virtuous.
- Through his philosophy of the “Gospel of Wealth,” Carnegie insisted that the rich had a moral obligation to manage their wealth in a way that benefited all members of society.
- He donated more than 350 million to charity.
"The surplus wealth of the few shall become in the best sense the property of the many, because administered for the common good."

Andrew Carnegie
John D. Rockefeller and Standard Oil

- In 1863, after being quite profitable in the wholesale food business, tycoon John D. Rockefeller entered the growing oil industry and eventually founded Standard Oil.
- The oil refining industry during its early years was composed of several small, competitive companies.
- John D. Rockefeller set out to gain control of the industry.
Horizontal Integration

- He too used vertical integration and acquired all companies that were necessary for the oil companies.
- He also practiced horizontal integration which was one company's control of other companies producing the same product.
  - By 1880, Standard Oil Company controlled 90% of the oil industry; however, like Carnegie, he donated more than $80 million to the University of Chicago and approximately $550 million to philanthropic causes.
The Railroad Giants

- Other entrepreneurs, such as Cornelius Vanderbilt, George Westinghouse, and George Pullman, built large fortunes by capitalizing on the booming railroad industry.
Cornelius Vanderbilt

- A pioneer of the railroad industry
- Gained control of the New York Central Railroad and extended his railroad system by purchasing many other smaller lines.
- By his death in 1877, he controlled more than 4,500 miles of track and his personal fortune was set at a net worth of $100 million.
Now then Jim—no jockeying you know!

Let 'em rip Commodore—but don't stop to water or you'll be beat.
George Westinghouse

• In 1823, George Westinghouse established the Westinghouse Air Brake Company.
• His air brake was an important safety feature for the railroad industry and after a period of five years, more than 7,000 passenger cars were equipped with the compressed-air brake.
George Pullman

- The **Luxury of long distance rail**
- One very successful railroad giant was George Pullman, who sought to make long-distance rail travel more comfortable.
- His factory built sleeping cars, dining cars, and luxurious cars for wealthy passengers.
Mass Marketing

- New methods in marketing to sell company products were created.
- This eventually led to the department store.

1860 - 1910
Market Products

• With the dramatic increase of manufacturing in the United States, companies developed new ways of persuading people to consume their product.
  - “Standard Oil” set the standard for the oil industry.
  - Phoebe Snow on the Delaware and Lackawanna Railroad.

• Advertisement through magazines, newspapers and billboards encouraged consumers to buy their products.
Phoebe says
And Phoebe knows
That smoke and cinders
Spoil good Clothes
'Tis thus a pleasure
And Delight
To take the Road
Of Anthracite
The first department stores

• In cities new types of stores, such as Macys, Wanamakers, Marshall Fields, and the most famous chain store, Woolworths, became the first department stores.
• These stores targeted women.
3. The Organization of Labor

- “It is true, that wealth has been greatly increased . . . but these gains are not general. In them the lowest class do not share . . . This association of poverty with progress is the great enigma [mystery].”
  
  - Henry George, Progress and Poverty

Henry George, American Economist
Government and Big Business

- Most often, the government policies concerning business practices favored the industrialists, and not the workers.
- Most opposed government interference in business activities (laissez faire)
The Sherman Anti-Trust

- In 1890, in response to the growing uproar from the public, the government passed the Sherman Anti-Trust act.
- This act outlawed all monopolies and trusts that restrained trade. The proved very difficult to enforce and monopolies continued to grow.
  - By 1890, 10% of the population controlled close to 75% of the nation’s wealth.
Congress of the United States of America:

At the first Session,

Begun and held at the City of Washington on Monday, the second day of December, one thousand eight hundred and eighty-

AN ACT

To protect trade and commerce against unlawful restraints and monopolies.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Sec. 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sec. 2. Every person who shall monopolize, or attempt to monopolize, or combine or conspire, with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sec. 3. Every contract, combination in form of trust or otherwise, or conspiracy, in restraint of trade or commerce among any two or more of the United States, or of the District of Columbia, or of any part thereof, or in restraint of trade or commerce between any such Territory and another, or between any such Territory or Territories and any State or States in the District of Columbia, or with foreign nations, or between the District of Columbia and any State or States or foreign nations, is hereby declared illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sec. 4. The several circuit courts of the United States are hereby
The New Working Class

- By 1900, one third of the nation’s industrial working class was foreign.
- Some northern and Midwestern industries offered work to the thousands of African Americans looking for work, while the South barred African Americans from holding factory jobs.
- The number of women workers doubled between 1870 and 1890, and by 1900, women accounted for 18% of the work force.
- The number of children in the work force increased dramatically as well.

• Working Conditions were horrible for all workers, especially women and children. Most worked ten hour days for less than $10 a week.
THE PROTECTORS OF OUR INDUSTRIES.
Workers called for change as conditions worsened. The National Labor Union was the first nationwide federation of craft and industrial workers organized in 1866, and fell apart in the 1870's. In 1869, Uriah Stephens founded the Knights of Labor, an early successful labor union.

In 1879, under Terence Powderly, an Irish Catholic political machinist, membership increased dramatically, including attracting other workers like women, and eventually African Americans.

Powderly led the Knights of Labor for 14 years, and under his leadership, the union fought for temperance, the eight-hour workday, equal pay for equal work, and an end to child labor.
PREAMBLE

AND

DECLARATION OF PRINCIPLES

OF THE

KNIGHTS OF LABOR

OF AMERICA.

TO THE PUBLIC:

The alarming development and aggressiveness of great capital
izes and corporations, taken together, will inevitably lead to the
persecution and hopeless degradation of the toiling masses.

It is imperative, therefore, we desire to enjoy the full blessings of
life that shall be placed upon unjust accumulation, and the power
for evil of aggregated wealth.

This much-desired object can be accomplished only by the
united efforts of those who obey the divine injunction, "to the
meanest of thy servant thou shalt not bow down." 

Therefore we have formed the Order of Knights of Labor, for
the purpose of organizing and directing the power of the indus-
trial masses, not as a political party, but it is new—not as a
crystallized sentiment and means for the benefit of the whole
people, but it shall be born to mind, when exercising the right
of suffrage, that most of the objects herein set forth can only be
accomplished through legislation, and that it is necessary to all
timber and supporting their rising out of only such can-
didates as will pledge their support to these measures, regardless
of party. But no one shall, however, be compelled to vote with
the majority, and calling upon all who believe in securing "the
greatest good to the greatest number," to join and assist us, we
declare to the world that our aims are:

I. To make industrial and social worth, not wealth, the true
standard of individual and national greatness.

II. To reconcile to the workers the full enjoyment of the wealth
they create, sufficient means in which to develop their intellec-
tual, social and moral faculties; all of the benefits, recreative
and pleasure of amusement; in a word, to enable them to share in
the joys and honors of advancing civilization.

In order to secure these results, we demand at the hands of the
State:

III. The establishment of Bureau of Labor Studies, that
we may arrive at a correct knowledge of the educated, moral
and financial condition of the toiling masses.

IV. That the public funds, the earnings of the people, be re-
served for public needs and the support of libraries or specu-
lative; and that all funds now held for speculative purposes be
made to their full value.

V. The abolition of all laws that do not bear equally upon
capital and labor, and the removal of unjust penalties, de-
lays and discriminations in the administration of justice.

VI. The adoption of measures providing for the health and
safety of those engaged in mining and manufacturing, building
industries, and for informational to those engaged therein for
injuries received through lack of necessary safeguards.

VII. The recognition, by incorporation, of trades' unions, orders
and such other associations as may be organized by the working
masses to improve their condition and protect their rights.

VIII. The enactment of laws to compel corporations to pay their
employees wages, in lawful money, for the labor of the preceding
week, and giving mechanics and laborers a first lien upon the
payment of their labor to the extent of their full wages.

IX. The abolition of the contract system on National, State and
Municipal work.

X. The enactment of laws providing for arbitration between
employers and employees, and to enforce the decision of the
arbitrators.

XI. The prohibition by law of the employment of children
under 15 years of age in workshops, mines and factories.

XII. To prohibit the hiring out of servant labor.

XIII. That a graduated income tax be levied.

And, we demand at the hands of Congress:

XIV. The establishment of a National monetary system, in
which, a circulating medium for necessary purposes shall issue
to the people, without the intervention of banks, that all the
National issues shall be full legal tender in payment of all debts,
public and private; and that the Government shall purchase
or receive any private bank paper or notes on the parting of
interest-bearing bonds, bills of credit or notes that shall
never be issued by the Government, but that, when most
unwise, this emergency shall be met by loans of legal tender, non-interest-
bearing money.

XV. The establishment of National banks, with a system of
improving the currency, which shall be free from all
monopolies and advantages.

XVI. To the importing of foreign labor under contract be
prohibited.

XVII. That, in connection with the post-office, the Government
shall organize financial exchanges, and deposits and facilities for
deposits of the savings of the people in small sums.

XVIII. That the Government shall build possessory, under
purchase, the right of eminent domain, of all telegraphs, tele-
phones and facilities, and under purchase, or by lease or license
be leased to any corporation or companies, for the stretching
of their lines in any part of the United States.

And while making the foregoing demands upon the State and
National Governments, we will endeavor to effect them for our
own laborers.

XIX. To establish cooperative institutions, such as will lead
workers towards the grand system, by the introduction of a co-operative
industrial system.

XX. To secure for both sexes equal pay for equal work.

XXI. To shorten the hours of labor by a general refusal to
work more than eight hours.

XXII. To persuade employers to agree to arbitrate all dif-
ficulties which may arise between them and their employees, in order
that the bonds of sympathy between them may be strengthened
and that strikes may be rendered unnecessary.

If you believe in organization, you are earnestly invited to join with us in securing
these objects. All information on the subject of organization should be sent to the General
Secretary-Treasurer of the Order, who will have an Organizer visit you and assist in fur-
thering the good work.
The Great Upheaval

- In 1877, a great railroad strike occurred which affected the labor movement.
- In July, railroad workers in Martinsburg, Virginia went on strike in reaction to a pay cut.

• President Rutherford B. Hayes sent the military to defend the railroad; this only infuriated the workers more and the strike soon spread to fourteen states.

• Throughout 1886, the nation experienced a year of intense strikes and violent labor confrontations that became known as the Great Upheaval.
The Haymarket Riot

- On May 1, 1886, some 40,000 Chicago workers joined a strike against the McCormick Harvesting Machine Company.
- On May 3, 1886, a confrontation between police and strikers left 2 strikers dead.
- In protest, the workers met at Chicago’s Haymarket Square and when 200 police officers arrived chaos started. A bomb exploded! When the smoke cleared, some 60 officers were wounded. Seven officers and one civilian were dead.
- The police arrested and charged eight men. Four were hanged.
Workers Activism

• Alarmed by the violence of the Great upheaval, many skilled workers broke with the unskilled laborers and joined the American Federation of Labor (AFL).
• The AFL, formed by Samuel Gompers in 1886, organized independent craft unions into a group that worked to advance the interests of skilled workers.
The Homestead Strikes

- In 1892, Industrial workers at Carnegie Steel Company in Homestead, Pennsylvania went on strike to protest wage cuts. A violent clash eventually resulted in 16 deaths.
The Pullman Strikes

- In May 1894, *workers* at the Pullman sleeping-car factory in Pullman, Illinois, went on strike due to lower wages.

- Eugene V. Debs, President of the American Railway Union (ARU) encouraged the strike.

- The government, under the Cleveland administration, ordered an end to the ARU strike, claiming the strikers were committing a federal offense by preventing the delivery of U.S. mail.

- In the end, the Pullman strike had been broken and the ARU destroyed.
Where does President Barack Obama belong?