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**Chapter 20 Notes**

***20-1 Railroads Lead the Way***

**Lesson Summary**

* Railroads grew rapidly during the last half of the 1800s. Many railroad companies combined into very large businesses. The heads of these railroads became known as [railroad baron](http://room228.info/m/mod/glossary/showentry.php?eid=127&displayformat=dictionary)s.
* Railroads carried raw materials, finished products, and crops to market. The growth of railroads also helped other industries like steel, lumber, and coal grow. New technology helped the railroads expand into a nationwide transportation network.
* Large railroad companies used discounts and secret deals to attract customers and drive smaller railroads out of business.
* The impact of the railroad was huge. It helped industry expand into the West and moved people from east to west and from the country to cities. It created new markets.
* Railroads pioneered new ways of managing business, such as having separate shipping, accounting, and service departments.

**People**

**James Hill** - built the Great Northern Railway without government aid, gave seed to farmers and helped them buy equipment

**George Pullman** - designed sleeping cars and for railroads which had berths (beds) and lavatories

**Gustavus Swift** - invented a refrigerated railway car

**Cornelius Vanderbilt** - ruthless railroad baron, consolidated railroads in New York

**George Westinghouse** - developed an air brake that allowed a locomotive engineer to stop all the railroad cars at once

**Key Terms and Concepts**

**consolidation** - the practice of combining different companies into one

**individual** - a single person

**labor** - as a verb - to work hard | as a noun - workers/workforce OR The aggregate of all human physical and mental effort used in creation of goods and services.

**pool** - a method of ending competition used by railroads in the late 1800s. Railroads divided up business in an area and fixed prices at a high level

**railroad baron** - powerful business leader who controlled a major railroad

**rebate** - a discount or return of part of a payment

**standard gauge** - 4 feet, 8.5 inches, the distance between rails agreed upon by all railroad companies

***20-2 Inventions Change Society***

**Lesson Summary**

* Two important inventions changed communication: the [telegraph](http://room228.info/m/mod/glossary/showentry.php?eid=146&displayformat=dictionary), invented by Samuel Morse in 1844; and the  
  telephone, invented by Alexander Graham Bell in 1876. Other important inventions of the period included the  
  typewriter, the adding machine, the Kodak camera, and the vacuum cleaner.
* Thomas Alva Edison invented many devices, including the [phonograph](http://room228.info/m/mod/glossary/showentry.php?eid=135&displayformat=dictionary), the motion picture projector, the storage  
  battery, and the light bulb.
* African American inventors made important contributions to perfecting the light bulb, to railroads technology, and to other industries. Jan E. Matzeliger’s shoe-making machine revolutionized the shoe industry.
* Henry Ford used an [assembly line](http://room228.info/m/mod/glossary/showentry.php?eid=137&displayformat=dictionary) to mass-produce a car called the [Model T](http://room228.info/m/mod/glossary/showentry.php?eid=132&displayformat=dictionary). He wanted to make cars that anyone could afford. Between 1908 and 1926, Ford sold 15 million [Model T](http://room228.info/m/mod/glossary/showentry.php?eid=132&displayformat=dictionary)s.

**People - Inventors and their Inventions**

**Alexander Graham Bell** - telephone

**William Burroughs** - adding machine

**George Eastman** - popularized roll film and photography with his affordable Kodak camera

**Thomas Edison** - phonograph, motion picture camera, and long-lasting, practical electric light bulb

**Cyrus Field** - laid the first transatlantic (across the Atlantic Ocean) telegraph cable

**Henry Ford** - improved the assembly line, mass produced less expensive cars – Model T

**Lewis Howard Latimer** - working in T.A. Edison's lab improved the light bulb

**Jan E. Matzeliger** - shoe stitching machine

**Elijah McCoy** - automatic engine oiler

**Samuel Morse** - telegraph, Morse Code

**Christopher Sholes** - typewriter

**John Thurman** - vacuum cleaner

**George Westinghouse** - air brake, AC electrical power distribution system

**Granville Woods** - multiplex telegraph (device that sent messages between train stations and moving trains), electric egg incubator

**Wilbur and Orville Wright** - airplane

**Key Terms and Concepts**

**telegraph** - device for transmitting and receiving messages over long distances

**transmit** - to send a message by electronic signal; to pass from one person to another

**telegram** - message sent by telegraph

**phonograph** - device for reproducing sounds by use of a needle that follows grooves made on a cylinder or disc (record)

**patent** - license for a new invention

**mechanism** - set of moving or working parts in a machine or other device

**Model T** - first affordable automobile, an early Ford car

**assembly line** - factory method in which work moves past stationary workers who perform a single task

**mass production** - factory production of goods in large quantities usually at a reduced cost

**20-3 An Age of Big Business**

**Lesson Summary**

* Edwin L. Drake drilled for oil in Titusville, Pennsylvania in 1859. His success marked the birth of the petroleum, or oil, industry.
* Businesses combine the [factors of production](http://room228.info/m/mod/glossary/showentry.php?eid=139&displayformat=dictionary) to make products. The [factors of production](http://room228.info/m/mod/glossary/showentry.php?eid=139&displayformat=dictionary) are [land](http://room228.info/m/mod/glossary/showentry.php?eid=156&displayformat=dictionary), [labor](http://room228.info/m/mod/glossary/showentry.php?eid=129&displayformat=dictionary), and[capital](http://room228.info/m/mod/glossary/showentry.php?eid=155&displayformat=dictionary).
* To raise [capital](http://room228.info/m/mod/glossary/showentry.php?eid=155&displayformat=dictionary), companies can form [corporation](http://room228.info/m/mod/glossary/showentry.php?eid=141&displayformat=dictionary)s. [Corporation](http://room228.info/m/mod/glossary/showentry.php?eid=141&displayformat=dictionary)s sell shares—called [stock](http://room228.info/m/mod/glossary/showentry.php?eid=142&displayformat=dictionary)—that represent part ownership of the [corporation](http://room228.info/m/mod/glossary/showentry.php?eid=141&displayformat=dictionary). People who by shares of [stock](http://room228.info/m/mod/glossary/showentry.php?eid=142&displayformat=dictionary) are called [shareholder](http://room228.info/m/mod/glossary/showentry.php?eid=144&displayformat=dictionary)s or [stock](http://room228.info/m/mod/glossary/showentry.php?eid=142&displayformat=dictionary)holder. If a[corporation](http://room228.info/m/mod/glossary/showentry.php?eid=141&displayformat=dictionary) does well, [stock](http://room228.info/m/mod/glossary/showentry.php?eid=142&displayformat=dictionary)holders receive payments called [dividend](http://room228.info/m/mod/glossary/showentry.php?eid=143&displayformat=dictionary)s.
* John D. Rockefeller made a fortune in the oil industry. He combined companies and used horizontal integration to gain total control of the industry. Andrew Carnegie made a fortune in the steel industry. He used [vertical integration](http://room228.info/m/mod/glossary/showentry.php?eid=160&displayformat=dictionary) to become the largest steel producer. Both Rockefeller and Carnegie gave vast sums of money to benefit society.Businesses combine the [factors of production](http://room228.info/m/mod/glossary/showentry.php?eid=139&displayformat=dictionary) to make products. The [factors of production](http://room228.info/m/mod/glossary/showentry.php?eid=139&displayformat=dictionary) are [land](http://room228.info/m/mod/glossary/showentry.php?eid=156&displayformat=dictionary" \o "Glossary: land),[labor](http://room228.info/m/mod/glossary/showentry.php?eid=129&displayformat=dictionary), and [capital](http://room228.info/m/mod/glossary/showentry.php?eid=155&displayformat=dictionary).

**People**

**Edwin L. Drake** - The first person to successfully drill for oil.

**John D. Rockefeller** - Businessman and founder of the Standard Oil Company, an oil monopoly. He later became a philanthropist, providing funds to set up the University of Chicago and the Rockefeller Institute for Medical Research.

**Sir Henry Bessemer** - British industrialist and inventor of the Bessemer process for forging steel.

**Andrew Carnegie** - Scottish-born industrialist and philanthropist. He used the Bessemer process and vertical integration to make a fortune in the steel industry. He later used that fortune to finance the building of schools, hospitals, and libraries

**Key Terms and Concepts**

**factors of production** - land, labor, and capital used to make goods and services

**entrepreneur** - a person who starts a business

**corporation** - legally define organization of people and resources with the purpose of doing business, often owned by shareholders/stockholders

**stock** - shares of ownership a company sells in its business

**shareholder** - a person who invest in a company by buying stock

**dividend** - a stockholder's share of a company's profits, usually a cash payment

**partner** - a person who takes part in an activity with others, especially in the operation of a business

**trust** - a combination of firms or corporations a managed by a single board of trustees formed by a legal agreement, especially to reduce competition

**monopoly** - total (or near total) control of a type of industry by one person or one company

**Bessemer process** - method developed in the 1850s to produce stronger steel at a lower costt

**vertical integration** - practice in which a single manufacturer controls all the steps used to change raw materials into finished products

**trend** - a general direction of events

**merger** - the combining of two or more businesses into one

**consumer** - a person who purchases goods and services for personal use

**Sherman Antitrust Act** - Anti-monopoly U.S. legislation which attempted to increase economic competitiveness. The Sherman Antitrust Act of 1890 made it illegal for companies to seek a monopoly on a product or service, or form cartels.

**free enterprise system** - economic system in which businesses are owned by private citizens who decide what to produce, and what prices to charge