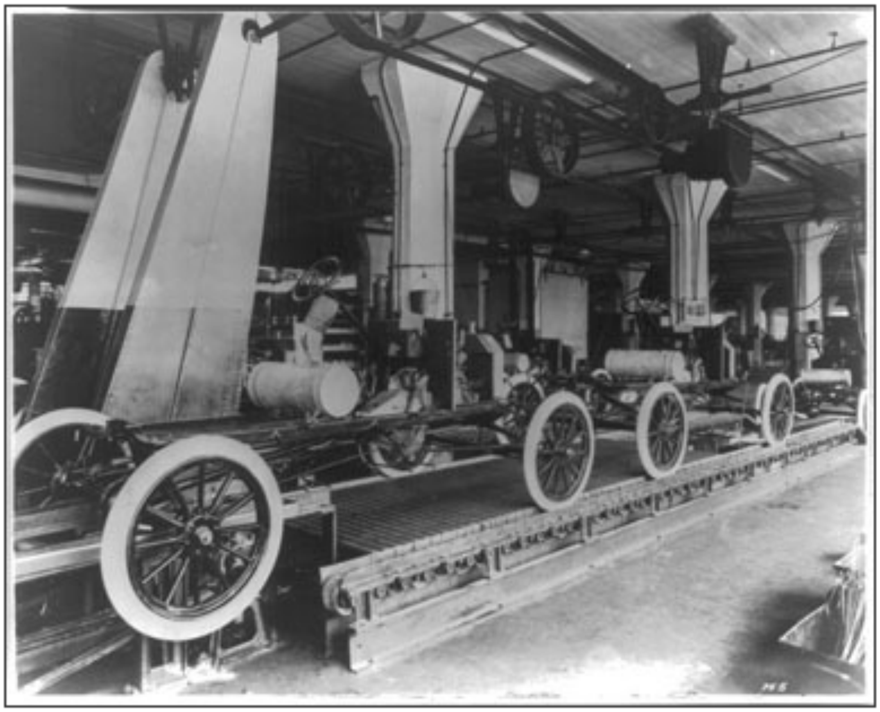
An Explosion of Industrial Growth (HAA)

The growth of technology and the creation of communication and electric power networks helped fuel the expansion of American industry in the late 1800s. Companies that had once served mainly local markets expanded to sell their goods nationwide. **To meet the needs of this growing national market, companies developed new ways of operating.**

The growth of technology and the creation of communication and electric power networks helped fuel the expansion of American industry in the late 1800s. Companies that had once served mainly local markets expanded to sell their goods nationwide. **To meet the needs of this growing national market, companies developed new ways of operating.**



Library of Congress

Men, women, and children operated the new machines that powered the industrial age. Workers often stood at their machines for 10 to 12 hours a day, with few breaks. For reasons of efficiency, they did the same task over and over again. This system boosted productivity, but it made the work dull and exhausting.

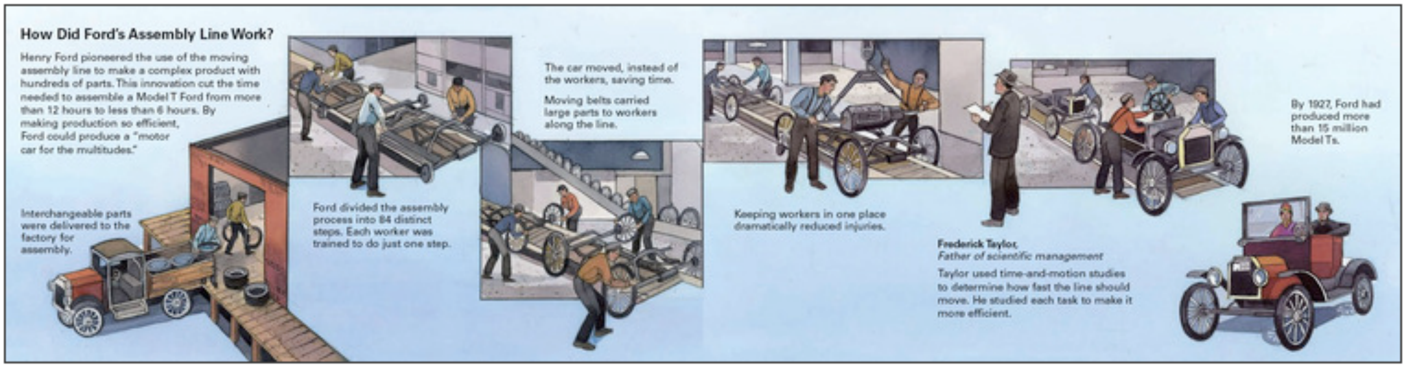
New Ways to Manage Work **Farsighted business owners realized they could profit from serving customers nationwide. But to do this, they had to create systems of mass production that would enable them to supply a much larger market.** The basic elements of this system already existed. By the early 1800s, factories were using interchangeable parts to produce goods in large quantities.

After the Civil War, factory owners improved these methods of mass production. **They built specialized machinery that could produce identical parts for quick assembly into finished products.** They no longer needed skilled artisans to craft individual parts. **Instead, they could use unskilled workers to run the machines and hire supervisors to manage the day-to-day operations.**

Engineers reorganized factory work to increase productivity, dividing up the production process so that each worker did a single task. One engineer, Frederick W. Taylor, used scientific techniques to analyze these tasks. He watched workers and timed them with a stopwatch. Through these time-and-motion studies, he determined the most efficient way to perform each task. He trained workers to work faster by reducing wasted motion. Speed boosted productivity, which increased profits.

Taylor later published his findings in a book called *The Principles of Scientific Management*. The book had a profound effect on industry in the early 1900s. **One person who took it seriously was Henry Ford, who pioneered the moving assembly line to mass-produce automobiles.** In a Ford plant, there was no wasted motion. Workers stood in one place all day, while a conveyor belt brought the work to them. Each worker did one or two small tasks, and then the belt moved the car to the next worker's station. One worker might put bolts in the frame while the next worker tightened them down. The process continued, part by part, until the car rolled off the assembly line, ready to be driven away.

Increased productivity resulted in cheaper goods. But it also meant that a factory could operate with fewer workers. Those who remained had to perform the same dull task all day long, but at a faster pace. Many assembly-line workers felt as though they had become machines. As you will read in Lesson 14, workers often protested for better working conditions.



New Ways to Finance and Organize Businesses Before the Civil War, individual owners ran most businesses. As businesses grew larger, however, their need for the three basic **factors of production** **[factors of production: land, labor, and capital]** —land, labor, and capital—grew as well. Land, which includes resources such as soil, forests, and minerals, was still abundant. Labor was plentiful as well thanks to a steady stream of immigrants into the country during this period. **Capital**, however, was a problem. Capital is any asset that can be used to produce an income. Money, buildings, tools, and machinery are all forms of capital.

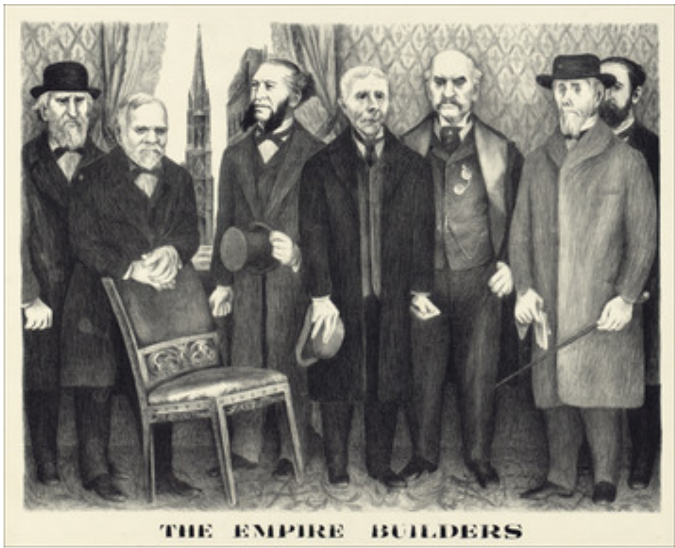
Small business owners did not have all the capital they needed to expand. For this reason, many of them formed corporations [corporation: a company recognized by law to exist independently from its owners, with the ability to own property, borrow money, sue, or be sued] .

A corporation is a company that is recognized by law as existing independently from its owners. A corporation can own property, borrow money, sue, or be sued. People invest in corporations by buying stock, or a share in the ownership of the business. By buying stock, investors became owners of the company. The money they paid for their stock helped to finance the corporation. Wealthy capitalists controlled corporations by buying huge amounts of stock.

As owners of a corporation, stockholders could profit from its success. Unlike the owners of small businesses, however, investors were not liable for a corporation's debts. The most they could lose was the amount they invested. Also, these owners did not run the daily operations. The corporation hired managers, accountants, engineers, and others to keep production going.

Competition among corporations provided consumers with a wide choice of new products, but it caused headaches for business owners. In the battle to sell products, companies slashed prices. Profits fell, debts rose, and many companies went bankrupt. Cutthroat competition threatened to drag down even the best-run companies. As a result, some powerful capitalists decided that to stay in business, they would have to limit competition.

Business owners began devising ways to reduce competition. One method was to buy or bankrupt competitors. John D. Rockefeller had great success with this approach in the oil industry. During the 1860s, he earned a fortune refining oil in Cleveland, Ohio. In 1870, he formed a corporation called Standard Oil. Standard Oil expanded by buying out or merging with other companies. Rockefeller's company also undercut its competitors by making deals with railroads, which agreed to ship its oil at discount prices. The savings on shipping allowed Standard Oil to cut its oil prices. These price cuts forced smaller oil companies to reduce prices too, causing many of them to either be sold to Standard Oil or go bankrupt. Rockefeller told one independent oil refiner, "You can't compete with the Standard . . . If you refuse to sell, it will end in your being crushed."



By 1882, Standard Oil had become a **monopoly** **[monopoly: a company that completely dominates a particular industry]** , a company that completely dominates a particular industry. It controlled 90 percent of the nation's oil production. With its competitors out of the way, Standard Oil could raise its prices and reap great profits.

Another approach to reducing competition was to form business trusts [trust: a set of companies managed by a small group known as trustees, who can prevent companies in the trust from competing with each other] . A trust is a set of companies that are managed by a small group known as trustees. The trustees have the power to prevent companies in the trust from competing with each other.