

Introduction

The term industrial revolution refers to a period in history during which there was a gradual transformation of rural, agricultural-based societies, into industrial, urban societies. Before the industrial revolution, textile and agricultural production was chiefly done manually, at home, but industrial revolution brought about a shift towards machine powered, mass production in factories.¹ This important epoch in human history is rightly labeled “revolution” since it had overarching changes on various cultural, social, economic and political aspects, but as Montagna² notes, the term should not be taken to imply abrupt changes since the “revolution” was rather gradual, transcending two centuries; 18th and 19th century. Although industrial revolution began in Britain, it didn’t take long before other nations caught on to it with Germany and the United States taking the lead and subsequently spreading to Japan and the rest of the world. At the center of this remarkable revolution was the mechanization of textile production, inventions and innovations in iron making, and increases exploitation and use of coal.³ This was paralleled by an increase in trade which was made possible due to improvement in transport systems, particularly with the introduction of better roads and railroad.

Industrial Revolution in America

American industrial revolution had far reaching economic and social consequences. Although industrial revolution has its roots in the UK, it was not going to be so long before the

¹ Montagna, Joseph A, “The Industrial Revolution,” 1981, Accessed 24 February 2012, <http://www.yale.edu/ynhti/curriculum/units/1981/2/81.02.06.x.html>

² Montagna, Joseph A, “The Industrial Revolution,” 1981, Accessed 24 February 2012, <http://www.yale.edu/ynhti/curriculum/units/1981/2/81.02.06.x.html>

³ Beck, Roger. World History: Patterns of Interaction. (Evanston, Illinois: McDougal Littell, 1999).

United States catches on and by the early 1900s, the United States had taken the lead as the most industrialized nation on the planet. This was in spite of Britain's deliberate attempt to control the export of its technologies and skilled personnel. The initial phase of American industrial revolution occurred between 1790s and 1830s according to [ushistory.org](http://www.ushistory.org).⁴ Prior to this, industrial revolution had already begun in the UK but in the American colonies, the advent of industrial revolution lagged behind as a result of the abundance in land and little supply of labor, both of which acted as a disincentive for investment in machine-based production.

The advent of American industrial revolution is usually credited to Samuel Slater. In 1790, Samuel started the first industrial mill in America based on a design model that largely inspired by an existing British model. This gave the textile industry a serious boost by speeding up the process of spinning cotton thread into yarn.⁵

Another important element leading to American industrial revolution was the change from the "outwork system" where different stages of production were outsourced to individuals in their homes, to the "factory system" whereby production was based entirely in factories. According to [ushistory.org](http://www.ushistory.org)⁶, among the pioneers in adopting this operational model was a group of business people referred to as the Boston Associates. These entrepreneurs recruited thousands of farm girls from New England to work in their factories. Their Lowell mill town was opened in early 19th century and the so called "Lowell Girls" were generally preferred since they could be

⁴ [ushistory.org](http://www.ushistory.org), "Economic Growth and the Early Industrial Revolution," Accessed 24 February 2012, <http://www.ushistory.org/us/22a.asp>

⁵ Maddison, Angus. *The World Economy: Historical Statistics*. (Paris: OECD Publishing, 2003).

⁶ [ushistory.org](http://www.ushistory.org), "Economic Growth and the Early Industrial Revolution," Accessed 24 February 2012, <http://www.ushistory.org/us/22a.asp>

paid less than their male counterparts and still enjoy working away from the typically male-dominated farms.⁷

The Embargo Act of 1807 and the subsequent war with Britain in 1812 some of the most important catalysts for American industrial revolution. The embargo has its roots in an incident involving the *Chesapeake*, whereby British troops attacked the ship after being denied the permission to search it. In the process, they seized four Americans and hung one in accusation of desertion. The resultant public outrage and the ensuing embargo act meant poor ties with Britain and probation of imports from other countries. The ultimate outcome was the 1812 war with Britain. At this point it became apparent that America needed to improve its transportation systems and enhance its manufacturing capacity. This led to great emphasis on manufacturing. American industrial revolution involved three key stages during which transportation, electricity production, and finally production systems took center stage.⁸

A notable boost to the transportation systems was the development of the first commercially viable steam boat by Robert Fulton in early 19th century. By mid 1800s, steamships were operating across the Atlantic. An important milestone in transportation was achieved with the creation of Erie Canal which connected the Atlantic Ocean with the great lakes. This was one of the most important factors in making New York an important trading center. The development of railroad was also an important element in American Revolution and railroads connected most cities in the Midwest with the Atlantic Ocean. The ultimate boost in railroad transport was the development of the transcontinental railroad in Utah in the year 1869.

⁷ Maddison, Angus. *The World Economy: Historical Statistics*. (Paris: OECD Publishing, 2003).

⁸ ushistory.org, "Economic Growth and the Early Industrial Revolution," Accessed 24 February 2012, <http://www.ushistory.org/us/22a.asp>

Industrial revolution also gave impetus to agriculture when Cyrus McCormick's reaper was introduced. This made harvesting of grain faster as well as cost effective. This was further augmented by the development of the steel plow by John Deere in the year 1837, consequently increasing the speed with which land was ploughed.

As for communication, the 1844 creation of the telegraph by Samuel F. B. Morse and the subsequent installation across the US with much of the eastern coast covered by mid 19th century.⁹

Impacts of Industrial Revolution

Industrial revolution resulted in many social and economic impacts. To start with, it resulted in great improvements in transportation and communication systems as well as in banking. The average income for the populations started to grow and over the span of the two centuries during which industrial revolution occurred, the average per capita income of the world's population increased by more than 1000 percent. The population grew by more than 600 percent over the same period, a phenomenon attributed to industrial revolution.¹⁰ Industrial revolution led to significant improvement in the standard of living particularly for the middle and upper classes. This coupled with the decreased prices of items as a result of mass production and efficient production systems made previously expensive items that could only be afforded by the wealthy available to middle and working classes.

⁹ Montagna, Joseph A, "The Industrial Revolution," 1981, Accessed 24 February 2012, <http://www.yale.edu/ynhti/curriculum/units/1981/2/81.02.06.x.html>

¹⁰ Maddison, Angus. The World Economy: Historical Statistics. (Paris: OECD Publishing, 2003).

The industrial revolution was marked with widespread shift from an agriculture-based economy to a machine-based one and as more and more people moved to urban areas, the towns and cities experienced an unprecedented growth in population.¹¹ The production capacity also grew tremendously owing to such factors as the introduction of the steam engine which was mainly fuelled by coal, increased utilization of the water wheel in production, and the use of machinery in textile industries. By early 19th century, machines and tools made entirely of metal were being produced and this gave a tremendous impetus to industrial production. The late 1700s marked the beginning of the first industrial revolution, with the second revolution taking place in mid 19th century when steam powered ships were developed in addition to railways, internal combustion engine, and eventually electric power.¹²

As agriculture production techniques advanced during the industrial revolution, there was a remarkable increase in supply of both raw materials for industrial production and food. In industries, more efficient organizational techniques and improvements in technology led to enhanced production, industrial efficiency, and increased profits which in turn fueled the growth of commerce and trade.¹³

The industrial revolution was however not without negative consequences. while this important historical epoch saw a remarkable improvement in living and working conditions for the middle class, which was mainly constituted of professionals, skilled workers and the factory owners, the working class which was mainly comprised of unskilled workers experienced

¹¹ Redford, Arthur. *Labour migration in England, 1800-1850*. (Manchester, UK: Manchester University Press, 1976).

¹² Brown, Lester. *Eco-economy: building an economy for the earth*. (London: Earthscan, 2001).

¹³ Montagna, Joseph A, "The Industrial Revolution," 1981, Accessed 24 February 2012, <http://www.yale.edu/ynhti/curriculum/units/1981/2/81.02.06.x.html>

minimal improvements in their living as well as working conditions. The rapid urbanization that occurred as a result of the industrial revolution rendered the infrastructural developments of most cities unable to cope, leading to massive overcrowding and poor living conditions for the working classes. Inadequate sanitation and disease outbreaks characterized the living conditions in the often dilapidated shelters.¹⁴ The introduction of steam engines made factory conditions with hazardous tasks such as machine cleaning often leading to serious injuries. Moreover, most factory owners sought cheap labor to minimize their production costs and a popular choice for factory workers became women and children as they could work in the factories for low wages and extended hours. The introduction of machinery also made it easy to replace some craftspeople.

Conclusion

Ranking among the most important epochs in world's history, the industrial revolution had far reaching social, economic and political impacts. It marked a shift from a home-based, manual production systems to factory-based, mechanized production systems. It also marked the transition from human power to water and steam power while spearheading a change from agro-based to industry-based economy. Industrial revolution started in Britain but soon spread to United States and other countries and by the onset of the 19th century, America ranked as the world's industrial power. This paper has reviewed the various socio-economic benefits achieved as a result of industrial revolution in America and other nations. We have also looked at various negative effects observed during the revolution ranging from poor living conditions for the

¹⁴ Redford, Arthur. Labour migration in England, 1800-1850. (Manchester, UK: Manchester University Press, 1976).

workers, cheap child and women labor, and widespread pollution among others. All in all, industrial revolution played a greatly significant role in shaping the world we have today.

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