

Industrial Revolution

The Industrial Revolution, otherwise known as the First Industrial Revolution, was a series of innovations in manufacturing processes that transformed rural, agrarian European and American societies into industrialised and urban ones.

This article will give further details about the industrial revolution within the context of the IAS Exam

Where did the Industrial Revolution Begin?

The Industrial Revolution began in Great Britain, and many of the technological innovations were of British origin. Due to its cold damp climate, Britain was ideal for raising sheep which gave it a long history of producing textiles such as wool, linen, cotton etc. Before the industrial revolution, the textile industry was in every sense a 'cottage industry' as the work was performed in smaller workshops and homes by individual spinners, weavers and dyers

With the introduction of machines like the flying shuttle, spinning jenny and power loom, weaving cloth and spinning yarn was made much easier and faster, while at the same time requiring less human labour

The efficient and mechanized means of production could now meet the growing demand for cloth both at home and abroad. Britain's overseas colonies were also a captive market for the goods it produced now. Along with the textile industry, the iron industry adopted some innovations of its own as well.

One of these innovations was the method of smelting iron with coke, a material created by heating coal. This method was cheaper when compared to using charcoal that was traditionally used and produced high-quality material at the same time. The rapidly expanding steel and iron production fulfilled demands created by many wars that Britain fought overseas, such as the Napoleonic Wars (1803-1815) and it helped in the growth of the railway industry.

What was the impact of Steam Power during the Industrial Revolution?

Nothing so vividly describes the impact of the industrial revolution as the invention of machines that harnessed the power of steam.

The first prototype of a modern steam engine was designed by Thomas Newcomen in the early 1700s. He named it as the "atmospheric steam engine" and was originally created for pumping out water from mines.

James Watt, an engineer from Scotland, worked on the steam engine created by Newcomen in the 1760s. By adding a water condenser to make it more efficient, James Watt invented a steam

engine that would be far more efficient than any other models invented so far. Also, his innovation would be used by many industries such as paper and cotton mills, waterworks, canals, ironworks etc.

The demand for coal rose to astronomical heights during this period as most of the machines were powered by these cheap sources of energy. But these demands for coal were themselves met by the machines that helped workers to extract coal from the mines.

Innovations in Transportations During the Industrial Revolution

The Industrial Revolution led to an improvement in Britain's road network, which was substandard before the advent of industrialisation. The arrival of new innovations such as steam-powered locomotives heralded a new era in transportation that saw an efficient movement of freights and people across Britain by 1815. These innovations also allowed to transport goods to overseas markets across the Atlantic Ocean and beyond.

Communications and Banking During the Industrial Revolution.

The later period of the Industrial Revolution saw many advances in long-distance communication. The first telegraphy system was patented by inventors William Cooke and Charles Wheatstone, while Samuel Morse worked on their version of the telegraph in the United States. The telegraph system created by Wheatstone and Cooke would be used for signalling in the railways as it required efficient means of communication due to the speed of the trains in question.

A new factory system that relied on owners and managers came to be during this time period. Along with the first stock exchanges in the 1770s and 1790s in Britain and the United States respectively. Adam Smith, regarded as the 'father of modern economics', published *The Wealth of Nations* where he advocated a system of free-market characterised by individual ownership of methods of production and little to no government interference.

Standard of Living during the Industrial Revolution

For all its technological marvels and breakthroughs, the Industrial Revolution came with a few faults of its own. The rapid industrialisation had led to rapid urbanisation, prompting many to leave the countryside to find work in the cities. This brought significant challenges as the cities now suffered from overcrowding, pollution, appalling levels of sanitation compounded by frequent shortages of clean drinking water.

Although the standard of living improved dramatically for the middle and upper classes, the poor and the working classes had no change in their lot in life. Although mechanization of factories had improved output and production overall, the working conditions had become tedious and at times fraught with danger. The wages paid to these workers were also low, fuelling violent opposition to changes in Britain's industrial landscape.

Impact of the Industrial Revolution

The Industrial Revolution was a watershed moment in human history as every aspect of daily life felt its impact in one way or another. The average income and the growth of the population, in general, saw unprecedented changes. Modern economists are of the opinion that the standard of living of the general population began to change considerably for the first time in history even though it did not see an overall improvement until the beginning of the 20th century.

The Industrial Revolution saw the emergence of modern capitalist economies around the world at this time as the GDP per capita saw an exponential rate of growth around this time. Economic historians regard the Industrial Revolutions as the most important moment in human history since the domestication of animals and plants.