

## 2.5: The Industrial Revolution

### Learning Objectives

1. Understand how the Industrial Revolution affected the progress of management theory.

The Renaissance and its ideals came to England, a backwater power at the time, during the reign of the Tudors (1485–1603) (Bridgen, 2001). It was during this time that the word *management* came into the English language from Italy through translations by John Florio, an Anglo-Italian member of Queen Elizabeth's court (Muldoon & Marin, 2012).

The emergence of British power would spawn the third major advance in management, the **Industrial Revolution**. As the British Empire's power grew, so did opportunities for trade. The 18th century saw the emergence of various international corporations, such as the Hudson's Bay Company and the East India Company, which conducted business globally (Bryce, 1968; Williams, 2015). The Hudson's Bay Company orchestrated the fur trade in Canada, where pelts were produced and shipped to England for trade in any part of the globe.

This further development of trade led to the establishment of the marketplace as a dominant means of organizing the exchange of goods. The market would coordinate the actions and activities of various participants, thus allowing resources to flow to their most efficient uses. One of the major intellectual leaders of this period was the economist and moral philosopher **Adam Smith** (Ross, 2010). In his masterpiece, *The Wealth of Nations*, Smith proposed the idea of specialization and coordination within corporations as a source of economic growth. Specialization and division of labor were Smith's major contributions to management thought (Smith, 1977). The division of labor meant that a worker specialized in performing one task that was part of a larger series of tasks, at the end of which a product would be produced. The idea of specialization of labor had several important outcomes. First, specialization drastically reduced the cost of goods. Second, it drastically reduced the need for training. Instead of learning every aspect of a task, workers needed to learn one portion of it. Third, coordinating all these different tasks required a greater emphasis on management.

Another significant part of the Industrial Revolution involved the development of the steam engine, which played a major role in improving the transportation of goods and raw materials. The steam engine lowered production and transportation costs, thus lowering prices and allowing products to reach more distant markets (Ashton, 1948). These factors played a role in the Industrial Revolution between 1760 and 1900 (Landes, 1999). The Industrial Revolution saw the emergence of the modern corporation, in which work, usually in a factory setting, was specialized and coordinated by managers.

Before the Industrial Revolution, goods and services lacked standardization and were produced at home in small batches (Wren & Bedeian, 2009). The Industrial Revolution saw work shift from family-led home production to factory production. These factories could employ hundreds and even thousands of workers who produced mass batches of standardized goods more cheaply than they could be produced in homes.

Factory sizes ranged from sections of cities and towns to whole cities, such as Lowell, Massachusetts, which consisted primarily of textile mills. As the Industrial Revolution progressed, small factories transformed into larger ones. In 1849, Harvester in Chicago employed 123 workers and was the largest factory in the United States. By the mid-1850s, the McCormick plant employed 250 workers who made 2,500 reapers per year. After the Great Chicago Fire, McCormick built a new plant with 800 workers and sales well above \$1 million. In 1913, Henry Ford's plant in Dearborn employed up to 12,000 workers (Lacey, 1986). As factories grew in size, they provided chances for personnel fulfillment. Not only was the Hawthorne plant in Cicero, Illinois, a place of business, but it also featured sports teams and other social outlets (Hassard, 2012).

The Industrial Revolution shifted from England across the globe and eventually found its way into the United States. The United States saw several notable industrial revolutions from the 1820s until the 1860s. The transportation revolution included the construction of canals and, later, railroads that connected the different parts of the continent. The emergence of a telegraph system allowed for faster communication between various parts of the United States. Previously, it would take weeks to get information from New York to Boston; with the telegraph, it took minutes (Howe, 2008). The United States also saw the emergence of the Market Revolution. Previously to the Market Revolution, the U.S. economy had been based on small, self-subsistent yeoman farmers who would produce mostly homemade batches. Around 1830, easy credit and improved transportation established a broad Market Revolution. This spawned various corporations that needed managers to coordinate various company offices (Bendickson, Muldoon, Liguori, & Davis, 2016).

After the period of the American Civil War, which ended in 1865, society witnessed the emergence of gigantic corporations that spanned the continent and factories that were like small cities (Bendickson, et al., 2016). Various problems emerged due to the change in production (similar to some of the issues we face today with the change from a manufacturing economy to an information economy). For example, how do you motivate workers? When families had control of their labor, it was easy to motivate workers because if family members did not produce, the family would not survive (Bendickson, et al., 2016). Yet, in the factory, workers could avoid work or even destroy machines if they disliked management's ideas. Each worker did the job differently, workers seemed to be selected without regard to whether they were suited for a particular job, management seemed to be whimsical, and there was little standardization of equipment.

Because production quantity remained unknown to both management and the worker, management did not explain how they determined what should be produced. Workers believed management determined what should be produced in haphazard ways (Wren & Bedeian, 2009). Workers believed that if too much were produced, management would eliminate workers because they believed there was a finite amount of work in the world. Workers would control production by punishing those workers who produced too much. For example, if a worker produced too much, his equipment would be damaged, or his coworkers would brutalize him. Methods of production were similarly haphazard. For example, if you learned how to shovel coal or cut iron, you learned multiple ways to perform the job, which did little for efficiency. Due to managerial inefficiency, various reformers in engineering urged for the establishment of management as a distinct field of study so that some order and logic could be brought to bear on how work was performed. Although this period witnessed enormous technological changes, management remained lagging (Wren, 2005).

### ? Concept Check

1. Why was Adam Smith's specialization of labor so important?
2. What was the economic and managerial legacy of the Industrial Revolution? What were the challenges?

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