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# Technology and Society: A Historical Prospective

**Abhishek Tiwari**

Mahatma Gandhi Kashi Vidyapith, Varanasi-221002, Uttar Pradesh, India

## Abstract

*The 1st Industrial revolution was the initial point when both increase of Gross Domestic Product per capita and population took place at the same time. There are some specific lessons to be learned from history of society and technological developments on how to gauge policies for nurturing successful technological advances even when the process of technological development has changed significantly over the period of time. These changes are appropriate and relevant to individuals, industries and society. In current paper the historical prospective of social and technological development is discussed.*

***Key Words: Development, Economy, History, Society, Technology***

## INTRODUCTION

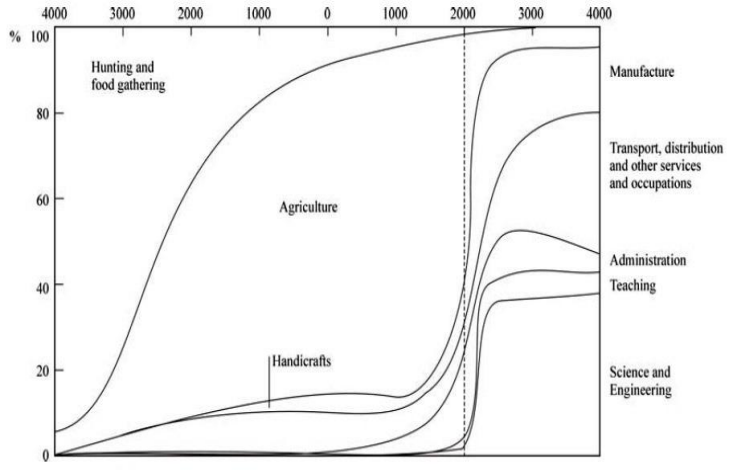
The technological developments have played an important role in advancement of mankind. First industrial revolution has a significant role in it. Nevertheless, it is not that before first industrial revolution technological developments do not take place. However, it is certain that technological advancements before first industrial revolution did not impact all aspects of society significantly. After the European industrial revolution in 18th century, the agrarian society moved to industrialization. This led to the substitution of machines for human skill and inanimate force for human and animal power, gives rise to a shift from manmade handicraft to machine-made manufacture. This process gave birth to the modern economy [1].

## THE INITIAL PHASE

The most significant change took place in cotton industry which was self-sustainable. It was different to previous small scale developments where the developments were nullified by increase in population and keeping income in Malthusian Trap. Britain was able to manage the population growth of up to 1.5 percent per year, unlike before 1700, where population growth above 0.5 resulted in real wages to fall. Simultaneously, Britain became the richest European economy. Secondly, Britain went through a period of rapid change in structure of employment. The change was towards much urbanized and industrialized labor force than in any other comparatively advanced country [2].

Majority of new technologies are broadly inferior at the beginning in comparison to the older technologies. They needed to be replaced and were only competitive in a small range of specialized operations. Subsequent developments that take place over time enabled new technologies to ultimately dominate. The steam engine of James Watt in 1765 was at the time roughly engineered piston, which was used mainly in the mines for pumping water. It was not a substitute for extensively used water wheel. It was after the innovations by John Wilkinson in 1776 and William Murdock in1781 that the steam engines were useful for converting vertical motion into rotary force. Only after these inventions the steam engine became widely useful source of force and power [3].

**Figure 1**: Changes in occupation in the past and future




Courtesy: Freeman, Soete, 1997: 4 [4]

The concentration of technology and technological changes are commonly attributing to the manufacturing industry. The technological change in agriculture was also important. The agricultural productivity in Britain in 18th century increased but

comparatively very less to the industry. Historians even point out that mobility of labor and capital, essential to growth of industry, were made possible due to economic and social developments in agriculture. In the countries getting industrialized today, especially in Asia, even though industrial sector has increased production more rapidly than agriculture, output in agriculture has a steady rise and incomes in the farmers have increased as well. Successful land reforms in Korea and Taiwan, unlike Latin American countries, was a very significant factor in the subsequent growth and development performance [4]. However, agriculture as an occupation is likely to lose the role it had in last 2000 years, and even before (Fig. 1).

**THE MIDDLE PHASE**

During the 18th and 19th centuries, cotton manufacturers were combining sets of recent and old technologies. This amalgamation typically included steam powered spinning in factories with large-scale employment of local handloom weavers and a mixture of powered and domestic hand weaving, long after the powered technology became available. The amalgamation of technology was due to risk spreading, problems involved with new technologies, and the cheap labor supply of women and children.

For a shorter period of time, the traditional sector, and not the other way around bolstered the modern sector. The structural changes occurred in this period were largely due to the capability of agriculture to quickly decrease its share of the labor force. Thus more labor was available for industry.

In addition, exploitation of international comparative advantage in a narrow range of goods was another significant point [5]. Even though industrial transformation was not very much developed and involved in other industries as in cotton, it can be thought that it did result to differing experiences and social relations. Many inventions in organization and use of labor were common to all industries. Further, industrial revolution was not merely sum of social and economic changes added up, but rather more than total sum of measurable parts [6].

The historical events of cluster of technological advances during the industrial revolution, especially in cotton, cannot be explained in an endogenous innovation framework. Innovations associated with the industrial revolution should be seen as macroinventions [7]. It is suggested that these are exogenous, unpredictable shocks that gives rise to advances in respective sectors. The wave of these macroinventions in turn gives rise to learning opportunities. However, these learning possibilities are vanished over the period of time [8].

**THE MODERN PHASE**

In last 30 decades there has been a revolution in computing, information technology and communications. All indications are that technological development and use of information technology will continue at a speedy pace. Accompanying and supporting the dramatic increases in the use and power of recent information technologies has been the decreasing cost of communications as a result of technological improvements and increased competitiveness both. As per Moore's law the processing power of microchips is doubled every one and half year. These developments present large number of significant opportunities. Now a days, innovations in information technology are having wide range across numerous domains and subdomains of society. The policy makers are acting on issues involving intellectual property rights, privacy protection, economic productivity, and access to information. Selections made now will have long-lasting consequences, and care must be taken to their social and economic impacts.

Another most important and significant outcomes of the progress of information technology seem to be electronic commerce over the Internet, a new way of conducting business. Though it is very new concept but may radically alter economic activities and the society. Already, it has extended as such a large sector. The retail trade might expand to areas such as education and health services like never before. It implies the seamless application of information and communication technology along the entire value chain of a business that is conducted electronically. The internet banking has to play inevitably significant role in such models of business.

One the other hand study under a title of the 'Advantages and Disadvantages of Modern Technologies Studying the negative effects on the health of the individual' pointed out that in the case of addiction to the use of the internet, this will lead to a loss of self -control, the neglect of personal status, poor

relations and communication in the social environment. The study confirmed that the risk of technological addictions such as internet are increasing among people who enjoy free access to it, as a case of university students [10]. There is an urgent need to understand the disadvantages of the use of modern technological techniques in various facets of life. Wasting time, the spread of incorrect, unauthenticated, viral information and spreading lies through these techniques are among the most common shortcomings that our communities face due to the use of these technologies. Sometimes, one can see a certain kind of sarcasm of the ultimate divine and religion and see the spread of religious stories as well as incorrect beliefs come out as a result of these technologies [11].

## CONCLUSION

From the historical point of view, we can perceive major importance of technology for growth and development and present levels of development. One of the components that contributed to fast growth of both European countries and successful East Asian countries is social capability which was capable to accept the technology when it was available for transfer. In such circumstances technology has played major role in growth and development. The technological advancements have brought the society far ahead.

**CONFLICT OF INTEREST:** None

## REFERENCES

[1] Landes DS (2003). The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present, second edition, Cambridge University Press.

[2] Crafts N (1998). Forging Ahead and Falling behind: The Rise and Relative Decline of the First Industrial Nation. J Econo Persp. 12(2): 193-210.

[3] Young A (1993). Invention and Bounded Learning by Doing. J of Pol Econ. 101(3): 443-472.

[4] Freeman C, Soete L (1997). The Economics of Industrial Innovation, third edition, MIT Press, Cambridge, Massachusetts.

[5] Hoppit J (1990). Counting the Industrial Revolution, Econ Hist Rev, New Series. 43(2): 173-93.

[6] Berg M, Hudson P (1992). Rehabilitating the Industrial Revolution, Econ Hist Rev, New Series. 45(1): 24-50.

[7] Mokyr J (1990). The Lever of Riches: Technological Creativity and Economic Progress, Oxford University Press, Oxford-New York.

[8] Crafts NF R, Mills TC (1997). Endogenous Innovation, Trend Growth, and the British Industrial Revolution: Reply to Greasley and Oxley. J Econ Hist. 57(4): 950-56.

[9] Konsbruck RL (2009). Impacts of Information Technology on Society in the New Century||, Route de Chavannes, Switzerland. Weblink: http://www.zurich. ibm .com/pdf/news/Konsbruck.pdf (Accessed on 15.07.2016)

[10] Al Yousef (2006). Modern technologies advantages and disadvantages of a study of the negative effects on the health of the individual. The Book of the nation Qatar.112, twenty sixth year, the first edition.

[11] Younes MB, Zoubi SA (2015). The Impact of Technologies on Society: A Review. IOSR J Humani Soci Sci. 20(2): 82-86

[12] Khulaifi M (2002). the impact of the Internet in the community: a field study. Alam Al Koteb, 22(5): 469-502.