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# The Review: The Contemporary Era's Technological Advancements and the Current Economic Crisis

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## ABSTRACT

The importance of the fresh perspectives on the technological advancement is emphasised in the essay. It created a fresh understanding of technological innovation in contemporary society (from 1600 AD). Based on advancements in informatics and telecommunications, the most recent fifth generation is just about to come to end. The current economic crisis (2023) must also be viewed as the disaster of the innovation cycle's conclusion. A post-informational technology revolution that could begin around 2030 might be able to defeat it.

**Keywords:** Economic Crisis, innovation, invention, technological revolution, technological progress.

## I. INTRODUCTION

The word "information revolution," which became popular from 1960 to 1980, emphasised the extent to which computers and information technology had permeated society and the economy. This revolution was once thought to represent a profound shift in social structure comparable to the early nineteenth-century Industrial Revolution. Since 1980, the term "post-industrial society" has been used to describe the society that has emerged as a result of this transformation, owing to the influence of American sociology professor Daniel Bell (born 1919)3. Because of the influence of Heidi and Alvin Toffler, the terms third generation society4, super-industrial society, and information society became commonplace. In accordance with their concept.

The coal and steam age (1780-1840), enabled by the first generation of the industrial revolution, was the first of the cycles identified by Kondratieff and later by Schumpeter and their contemporaries27. This was followed by the railroad and mass production eras (1840-1890), the second industrial revolution, and the era of electricity (1890-1940), which began with the so-called technical revolution. Theorists later included the age of electronics and microelectronics (1940-80), which began with the so-called scientific-technological revolution, as a fourth generation. The information and telecommunications revolution28, which began around 1980, should be considered the catalyst for the current era.

## II. STAGES OF HUMAN DEVELOPMENT

It seems sense to divide human growth into four stages for the reasons outlined above:

- Typical agrarian society.
- Today's societyThe following phenomena29 can be used to describe our current modern society.
- The advancement of the natural sciences, the use of science in technology.

- Development of contemporary governments.
- Capitalism
- Industrialism
- Slavicism (freedom from religious concepts in politics, economics and science).
- improvement of education.
- Economic expansion and development
- Development of democracy
- Wealthy society
- Liberalism

## III. TECHNOLOGICAL INNOVATION

The distinction between inventions and innovations should be explained first: The term "innovation" refers to the economic (and social) aspects of any novelty, whereas "invention" refers to the technological and scientific aspects of any novelty. The novelty (new discoveries or new patents) is socially and economically relevant when it is in a form that can be used in industry and social life and society is ready to use it (in this moment they become innovations).The frequency and radicality of technological advancements do not follow a consistent pattern over time. Revolutionary innovations in modern society tend to occur in generations rather than continuously. 38 Each of these generations has an invention phase.

Because most discoveries and reforms are motivated by a desire to improve something, solve a problem, outperform a competitor, increase productivity, or perform a task more efficiently, among other things, this acceleration and slowing of technical growth is the result. However, because they are interdependent, it is necessary to carry out more inventions at nearly the same time during the innovation phase (a spinning machine and a weaving machine or a personal computer and an internet). A "chain of innovations" is something we can talk about. This system and the chronology of the idea of technological innovation generations provided in this article have some similarities. Freeman pioneered the "computerised economy" in the 1960s and 1970s (during a "shadow phase"), but the true boom didn't begin until a few years later. This is most likely due to his enthusiasm for the potential of this new industry. He also misunderstood the nature of the 1800-1815 crisis, stagnation, and economic issues, leading him to divide the Industrial Revolution into two generations, 1 and 2. However, non-technological and non-economic factors, such as the Napoleonic Wars and the fact that the then-existing modern capitalist economy was in its infancy, contributed to this stagnation.

| | Technological revolution | Period of technological revolution | Length of the whole generation of technological innovations | The leading sectors |
|---|---|---|---|---|
| 1. | Financial-agricultural revolution | 1600–1740 | 180years | Finance agriculture, trade |
| 2. | Industrial revolution | 1780–1840 | 100years | textile, iron, coal, railways, channels |
| 3. | Technical revolution | 1880–1920 | 60years | chemistry electro technical industry, machinery |

| | | | | |
|---|---|---|---|---|
| 4. | Scientific-technical revolution | 1940–1970 | 45years | air-industry, nuclear industry astronautics synthetic materials, oil industry cybernetics |
| 5. | Information and telecommunications revolution | 1985–2000 | 30years? | Telecommunications cybernetics informatics internet |

## IV. THE REVOLUTION IN FINANCE AND AGRICULTURE

Few people are familiar with the industrial revolution or the subsequent revolutions. The steam engine, railroads, telegraphs, mass production, and other innovations were born during the industrial revolution. The technological revolution, also known as the "second industrial revolution," gave birth to the radio, automobile, aeroplane, electrical devices, and modern chemical industry.Nuclear energy, electronics, space travel, and other innovations are the results of the scientific and technological revolution. We now have the internet, mobile phones, satellite broadcasting, thanks to the information and communications revolution. The agricultural revolution, which served as a precursor to the industrial revolution, is still in its infancy, but knowledge of its significance is growing slowly. At the end of the seventeenth century, the activity began in Flanders and Holland, but eventually spread to Britain.

The changes in trade and financing were also strongly related to the agricultural revolution. The "financial revolution" has been used to characterise this phenomenon. In the seventeenth century, Holland was where the modern approach to managing money and finances first appeared. It entailed separating household management from business management. Reliance on metal currency started to decrease. The acceptance of the legality of collecting interest on loans and credit coincided with the development of banking and its fundamental tools and practises. Credit began to be regarded as a source of capital (rather than loans for consumption).

## V. THE REVOLUTION IN INFORMATION TECHNOLOGY

An easy and appealing reminder of this upcoming surge of innovation and modernisation can be found in the information society, or even better, the information technology revolution. There will probably still be time to find a better name. It would be helpful to make predictions about the fields of science and technology that will grow most rapidly during this anticipated generation of innovation and provide the best returns on investments:

The pharmaceutical, biotechnological, and biomedical sciences are likely to advance the most because of genetic engineering, cloning, new medications, and the possibility of direct connections between machines and living organisms, which will allow for the modification and improvement of the characteristics of living things, including people.

The growth of biotechnology, which uses living organisms in the production process, and nanotechnology, which allows for the molecular manipulation of objects, is fundamentally altering how we think about both medical treatment and industrial production.

An increased focus will be placed on numerous environmentally friendly alternatives to the current production methods.

Alternative fuels will supplement and, recently, replace traditional fuels (diesel, gasoline) (hydrogen and fuels made from agricultural produce and vegetable waste). Of course, this won't be any "cheap" fuel. For instance, switching to hydrogen and oxygen as the primary fuel for transportation will result in higher power usage for their generation from water. Although the hydrogen engine has already been developed.

Nonetheless, the globalisation is probably the key factor explaining why industrial robots are (and will be) less common than anticipated in the 1970s and 1980s (Japan being the exception). To this day, it is still less expensive to relocate less efficient and polluting production processes from the USA and Europe to Asia, South America, and former socialist countries, or to hire less expensive labour from underdeveloped nations (immigrants), Yet, every technological advancement in the past has altered the relative positions of nations in the global economy102, and the freedom to introduce robotics into mass production may be a factor in the possible "peripheralization" of the Western economy.

This imagined technological revolution in the future could be referred to as the biological-hydrogen revolution.

## VI. EFFECTS OF THE LATEST TECHNOLOGICAL BREAKTHROUGH GENERATION

As with every technological revolution, there will be significant social, political, and economic ramifications. It might result in a decline in the significance of oil as a factor in world politics and economy. As developing nations, China and India may continue to consume heavily, at least in the industrialised Western states. Concerns are especially strong about procedures and methods that could lead to specific changes in human nature, such as extending human life, enhancing traits, or developing new channels of communication. We are currently unable to fully comprehend the potential breadth of social and economic exploitation that this could lead to right now.

Instead of stifling scientific and technological progress in the name of preserving the status quo or clinging to antiquated ideologies, it is preferable to accept some degree of social change, even apparent crises, and come to terms with them through social transformation.There is a risk that the post-informational technological revolution will begin but will be temporarily slowed by artificial legal and political measures because potential rapid advancement will occur in morally and politically sensitive areas.There is also genuine concern that Western nations will be unable to maintain industrial production, with social tensions serving as the primary impediment to their adoption of new robotics-based industrial production techniques.

## VII. AN OUTLOOK FOR THE FUTURE

The biomedical-hydrogen revolution would be an appropriate name for the next generation (sixth) of technological advancements, which are expected to begin between 2015 and 2020. However, technological advancements may be so rapid that this technological revolution will not even last 15 to 20 years, and its application phase will be completed by 2035. Furthermore, a subsequent generation of inventions, in this case the seventh, could begin after 2035-2040.The current economic downturn should be viewed as the end of the fifth generation of technological innovation, which began around 1985 with the information and telecommunications revolution (or as the end of one of Kondratieff's economic "long generations").

The lesson for their national government is clear: if their long-term goal is to rank among the most developed countries (or to remain in this group), they should focus not only on cutting-edge technology from the recent past (the automobile industry) or the present (infrastructure technology), but also on technologies from the future: nanotechnology, biomedical sciences, transhumanism, biotechnology, the pharmaceutical industry, and alternative energy. They should take advantage of this opportunity. Any technological innovation can be viewed as a transfer of power and an opportunity for outsiders to overcome technical limitations105. The countries now have a much better chance of improving their standing in the global economy..

## VIII. CONCLUSION

New technologies improve the efficiency of usage of existing natural (and human) sources, is meaningful long-term economic growth without additional sources from "outside" feasible. The rate of this advancement varies, though. There are times when new ideas advance quickly, and other times when innovation and new inventions are more focused on practical applications. These historical eras can be divided into five generations of technical invention, each with two stages: the initial technological revolution and the next stage of application.

The financial and agricultural revolution was the first of these technical revolutions, though its significance is still not fully appreciated. In economic and technical history, the earlier technological revolutions are well recognised. As of 2008, we are in the application phase of the fifth generation of technology, which came after the Information and Telecommunications Revolution (1985-2000).The sixth generation, which would bring about a technological revolution, may begin around 2015 and end quite quickly (in around 20–25 years?).The fields of biological sciences, nuclear technology, hydrogen engineering, and possibly robots will advance at the fastest rates, according to expectations. The 7th generation following 2035–2040 and the generations that follow (8th, 9th etc.).The best advice for governments looking to get out of the current crisis is to encourage scientific and technological advancements in order to hasten the emergence of the sixth generation of post informational technology.

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