

# The Digital Revolution of Artificial Intelligence: Beneficial Economic Creative Destruction or Systemic Dehumanization

By [Prof Rodrigue Tremblay](#)

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Theme: [Global Economy](#), [History](#), [Intelligence](#), [Poverty & Social Inequality](#)

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***"The opening up of new markets, foreign or domestic, and the organizational development... incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. That process of creative destruction is the essential fact about capitalism."*** —**Joseph Schumpeter** (1883-1950), American economist and political thinker of Austrian origin, in his book *Capitalism, Socialism and Democracy*, 1942.

***"Every change is a menace to stability. That's another reason why we're so chary of applying new inventions. Every discovery in pure science is potentially subversive; even science must sometimes be treated as a possible enemy. Yes, even science."*** —**Aldous Huxley** (1894-1963), British author of the 1932 futuristic novel *Brave New World*, ch.16.

***"Technological progress has merely provided us with more efficient means for going backwards."*** —**Aldous Huxley** (1894-1963), British author, in his essay 'Adonis and the Alphabet', 1956.

***"Our entire much-praised technological progress, and civilization generally, could be compared to an axe in the hand of a pathological criminal."*** —**Albert Einstein** (1879-1955), German-born theoretical physicist, 1917.

***"Artificial Intelligence (AI) is probably the most important thing humanity has ever worked on. I think of it as something more profound than electricity or fire."*** —**Sundar Picha** (1972- ), chief executive officer (CEO) of Alphabet Inc. and of its subsidiary Google, in 2018.

## Introduction

The digital revolution of [Artificial Intelligence](#) (AI), currently evolving very rapidly, is a technological innovation that uses complex computer programs and sophisticated [mathematical algorithms](#). These robotic systems and AI-based models, powered by [AI chips](#) and using super computers, can automate repetitive tasks, produce texts and quickly process vast quantities of data, in complementarity with humans.

However, beyond the economic benefits that would result, there is the threat of a gradual [replacement](#) of human beings by intelligent robots, in a number of functions and activities that lend themselves to such a substitution.

Such technological advances have great potential to profoundly upend national economies, businesses and societies in decades to come, when new capital investments replace older obsolete capital investments, and some categories of workers would be replaced by intelligent machines that require more specialized workers.

This could even possibly lead to a dystopian '[Brave New World](#)', if autonomous brain-machines, in the next futuristic era, are capable of self-improvement and are able to think by themselves, and possibly, could even learn to program other brainy machines, with hardly any human input.

## The Global Impact of Industrial Revolutions

All technological inventions produce positive advances but can also be accompanied by various disruptions and negative effects.

For example, the invention of the knife, which can be used to cut bread; but it also enables one to cut someone's throat. Likewise, the invention of [dynamite](#) and explosives helped the mining industry, but it also made wars deadlier and increased the destructive power of terrorists tenfold.

The same is true of the discovery of the [fission of the atom](#), which led to the development of [nuclear energy](#). This invention made it possible to produce electricity; it also made it possible to build atomic bombs and destroy entire [cities](#) and their inhabitants.

It is difficult to know precisely, in advance, what purpose a new technology will serve, for good or for evil, for economic progress or for human regression.

## Questions Raised by Artificial Intelligence (AI)

As with any new technology, the AI applications today and their generalization in the future will undoubtedly create winners and losers, and not only in the economic field, but also in politics, geopolitics, social affairs, biology, in arts and even in military conflicts. It is therefore important to assess whether the winners will be more numerous than the losers, or whether it will be rather the opposite, with a small number of successful operators and a large number of expendables.

For instance, what will be the consequences of Nvidia's AI systems or of the pre-programmed conversational robots, such as those of ChatGPT (Open AI), Copilot (Microsoft) or Gemini (Google)? Will they improve the standard of living and the quality of life of the greatest number, or will they allow some to get rich, but render entire categories of workers

obsolete and impoverished? In such case, they could end up increasing [income and wealth disparities](#).

Indeed, each new industrial revolution in the past made some successful capitalist pioneers ultra rich. For instance, there was a period in the United States, in the late 19th century, called the [era of the Robber Barons](#). It was a time characterized by rich monopolists (Carnegie, Rockefeller, Vanderbilt, Mellon, etc.), in the industries of steel, oil, railroads or finance, who crushed competitors, rigged markets, and corrupted governments.

At the political and geopolitical levels, is it possible nowadays that some malicious oligarchies could use such digital machines to better monitor and control people and to more easily launch wars in the future?

All of this is far from being of purely theoretical concerns. The U.S. [Pentagon](#) is already planning to use intelligent robots and drones, controlled by Artificial Intelligence, to wage the [wars](#) of the future.

## **The Short and Medium Term and Longer Term Economic Effects of AI and the Four Industrial Revolutions Since 1760**

In economics, the notions of short-term (1-4 years), medium-term (4-9 years) and long-term (10 years or more) can vary, depending on the economic and financial sectors. For the economy as a whole, it is possible to refer to short, medium and longer term [economic business cycles](#). For example, many years passed between the invention of the first giant computer, as large as a building, in 1946, and the innovation of the portable computer on the computer market, in 1977, and then the arrival of Apple's Macintosh computers, in 1998.

The [first industrial revolution](#) (1760-1870) began in the mid-18th century in Britain, in the textile industry. For the first time in history, overall production and consumption in a country could grow faster than population, thanks to the productivity gains that technological innovations and production techniques made possible.

The discoveries of new sources of energy, such as those coming from gas and oil, in addition to that of coal, as well as electricity, were at the center of the [second industrial revolution](#) (1870-1914). This led to innovations in means of transport (railway, steamboat, automobile and airplane). Increased industrialization then caused a demographic migration from the countryside to the cities, which accentuated the phenomenon of [urbanization](#), resulting in the creation of large cities and mega-metropolises with high population density.

The [third industrial revolution](#) (1930-2010) is characterized by the innovation of nuclear energy and the advent of the information age, mainly during the second part of the 20th century. It was made possible by the invention of the microprocessor and by the creation of the first computers, followed by the innovation of the [Internet](#), satellites and wireless communication.

As for the ongoing [fourth industrial revolution](#) (arising from applications of Artificial Intelligence, an expression first introduced in [2011](#), at a conference held in Germany to design a new industrial policy for that country based on high technology strategies), it would be wise to distinguish an initial period of shock and transition, and a longer period of gradual acceptance and maturity, which can extend over several decades, even a century or more.

## **A Difficult Transition of Layoffs, in the Short and Medium Term, for Workers in the Tertiary Sector Most Threatened by Digitalization and Automation**

Already, institutions such as the International Monetary Fund (IMF) and the Goldman Sachs investment bank, among others, have attempted to quantify the net effect that applications of Artificial Intelligence will have on different categories of workers. For the [IMF](#), 40% of jobs in the world could be affected, in one way or another, by the development of AI. These will mainly be jobs in the tertiary service sector, which risk being replaced, or affected to varying degrees, by intelligent robots. Indeed, we can classify jobs likely to be affected in one way or another by AI systems in three categories:

- 1- jobs potentially substituted or replaced, (such as support or secretarial jobs in banks, insurance companies, accounting offices, libraries, etc.);
- 2- jobs not threatened by AI because they are performed either outdoors or because they require physical activity ( e.g. carpenter, plumber, electrician, painter, roofer, hairdresser, etc.);
- 3- the vast majority of jobs will be influenced to a certain degree by AI, particularly in finance, education, health, medicine, engineering, administration, cybernetics, video games, etc.

For example, in a study published in March 2023, Goldman Sachs estimated how much Artificial Intelligence could influence employment for the entire American economy. Their conclusion was that AI could replace 7% of current jobs, mainly jobs of office and white-collar workers, in years to come. However, the majority of jobs, 63% of the total, can be expected to be complementary to AI, would benefit from productivity gains and could even increase in importance. On the other hand, some 30% of jobs, mainly manual jobs, would hardly or not at all be affected by AI.

## **The Role of Politics, Supervision and Regulation of Applications of Artificial Intelligence (AI)**

The Artificial Intelligence revolution can undoubtedly both replace and create jobs, and, by increasing labor productivity, create wealth. However, this risks causing some upheaval in certain labor markets and resulting in significant layoffs of workers in some industries.

This is why governments, responsible for the general interest, must ensure that there are no major economic and social excesses and adapt educational programs to the qualifications required in the future. They must also ensure that workers potentially penalized by layoffs are compensated and that the new wealth thus generated can benefit society as a whole, and not just a handful of operators. This will not be an easy task because there is international competition between countries to monopolize the beneficial impacts of the new technologies.

Currently, the countries that are at the forefront of regulating Artificial Intelligence technologies and AI systems are the European Union, China, the United States and the United Kingdom. The EU has put forward a preliminary regulatory and digital strategy framework called the [AI Act](#). The objective is to identify acceptable and unacceptable risks that will arise from the applications of new digital technologies. Likewise, in June 2022, the

Canadian federal government introduced the [Artificial Intelligence and Data Act](#) (LIAD) as part of bill C-27, i.e. the Digital Charter Implementation Act of 2022. The purpose is to guide AI innovation in a positive direction and to encourage a responsible adoption of AI technologies by Canadians and Canadian businesses.

## Conclusions

Does the advent of the Artificial Intelligence (AI) revolution herald an extraordinarily promising breakthrough for humanity, or does it rather carry a risk of great confusion and civilizational regression?

Indeed, many questions come to mind: will humans master the various Artificial Intelligence systems so that they serve not only the private economic and industrial interests behind their applications, but also that of displaced workers and the common interest? Is it possible that these systems will become so pervasive and so powerful that they could end up becoming forces of control, dehumanization and enslavement for large numbers of people?

A first conclusion is that no one can definitely answer these questions with precision and with full knowledge of the facts. And if we ever do get the answers, it may be too late. Consequently, everything will depend on the uses that we make of this new technology.

The digital revolution of Artificial Intelligence therefore raises more questions than it gives answers, as it is a technology that is expected to evolve and find new applications, good or bad, over time.

A second conclusion is that countries and economies that fall behind in adopting the AI technology could experience economic difficulties in the years and decades to come. Even those economies in the forefront of the new industrial revolution could expect an increase in incomes and wealth disparities.

A third conclusion is that the innovation of intelligent robots driven by Artificial Intelligence certainly opens up a new field for gains in labor productivity through creative destruction, in a certain number of professions and industries. However, it is rightly a cause for concern, as it could also facilitate cheating, falsification, confusion and dehumanization of human beings in many areas.

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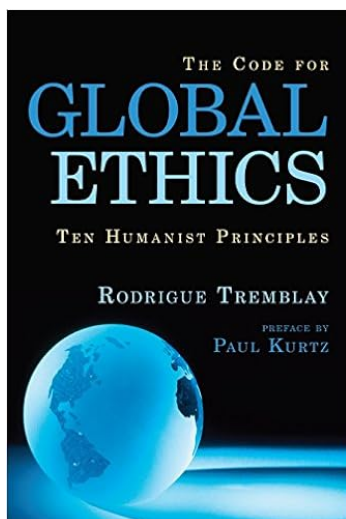
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## The Code for Global Ethics: Ten Humanist Principles

by [Rodrigue Tremblay](#), Preface by [Paul Kurtz](#)

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Humanists have long contended that morality is a strictly human concern and should be independent of religious creeds and dogma. This principle was clearly articulated in the two Humanist Manifestos issued in the mid-twentieth century and in Humanist Manifesto 2000, which appeared at the beginning of the twenty-first century. Now this code for global ethics further elaborates ten humanist principles designed for a world community that is growing ever closer together. In the face of the obvious challenges to international stability—from nuclear proliferation, environmental degradation, economic turmoil, and reactionary and sometimes violent religious movements—a code based on the “natural dignity and inherent worth of all human beings” is needed more than ever. In separate chapters the author delves into the issues surrounding these ten humanist principles: preserving individual dignity and equality, respecting life and property, tolerance, sharing, preventing domination of others, eliminating superstition, conserving the natural environment, resolving differences cooperatively without resort to violence or war, political and economic democracy, and providing for universal education. This forward-looking, optimistic, and eminently reasonable discussion of humanist ideals makes an important contribution to laying the foundations for a just and peaceable global community.

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