
| RESEARCH ARTICLE

Impact of Artificial Intelligence on Business and Society

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| ABSTRACT

The advent of highly advanced AI and robotics has the potential to completely alter the course of human history. Life, work, and leisure as we know it will be turned upside down. Some people believe this might usher in a golden era of wealth, leisure, and scientific discovery. There is growing social discontent as people worry about losing their employment, their privacy, and their independence. People, businesses, and whole countries will all feel the effects. Competitive advantage will accrue to those countries and companies that are at the forefront of change. However, they should also be cognizant of the need to address the worries of workers, customers, and residents.

| KEYWORDS

Artificial Intelligence; business; society; industrialization; competitive advantage; industrial revolution

| ARTICLE INFORMATION

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1. Introduction

Elon Musk, CEO of Tesla, unveiled the Tesla Bot, a 5'8", 125-pound humanoid robot, on August 19, 2021, at the company's Artificial Intelligence (AI) event. The objective is to make this robot commercially accessible within the next several years to deal with monotonous, repetitive, and risky chores such as grocery shopping or disposing of hazardous items. Musk said during the event that this had far-reaching implications for the economy and that labor would eventually be voluntary (Kay, 2021). Accelerating progress in robotics and AI has the potential to bring about profound societal shifts, on par with or perhaps exceeding those brought about by the industrial revolution. The degree to which businesses and governments reap the benefits of these innovations depends on how people react to them.

Most people on Earth were either subsistence farmers or hunter-gatherers until the 1700s, meaning they grew just enough food to feed themselves and their families and had very little left over for trade or sale. The vast majority of their possessions were products of their own industry. Everything they used or owned was made inside their own communities, with the possible exception of a few goods obtained via trade. All those generations before them had lived similarly, in little farming settlements.

The Industrial Revolution in the late 1700s in Britain ushered in the modern era, which ushered in profound changes worldwide. To combat the issue of mines being flooded, an English ironmonger and Baptist minister named Thomas Newcomen developed the steam engine in 1712. (White, 2009). In comparison to the inefficient pumps that had been utilized up until that point, his innovative coal-powered machine could be used to operate a water pump that accomplished the work of 20 horses and pumped water out of mines several hundred feet. Although the original cost gains were small, they quickly ballooned as technology advanced (Clark & Jacks, 2006).

It has been hypothesized from studies that the health, behavior, and values of millions of individuals are still influenced by the industrialization of the 19th century. Researchers from the fields of psychology, history, and economic geography examined the possibility that residents in some areas of the United Kingdom and the United States are more prone to neuroticism and report

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lower levels of life satisfaction than those in other areas. People's prior job experience in fields including coal mining, textile production, and metal fabrication was considered. The results of the study demonstrated that the psychological effects of a region's past industries might last for up to two centuries. Even after those industries have shrunk in size, this remains true. It was also shown how the socialization process facilitates the transmission of parental traits to offspring. It was hypothesized that jobs with low levels of autonomy and repetition might have a long-term impact on employees' values by discouraging the cultivation of critical thinking abilities, which in turn can permeate families and communities. Community institutions like schools also play an important role in shaping and transmitting individuals' personalities and ethos (Obschonka, 2018). This research provides more evidence that the historical experience of the industrial revolution has molded values, which in turn would impact the political leanings of individuals living in the 21st century and their perspective on modern advancements such as AI.

2. Labor and Employment

It is safe to infer that blue collar laborers in the United States are presently not particularly fond of robots and artificial intelligence. Some families' ancestors had it tough due to the industrial revolution's widespread unemployment and difficult working conditions. In the previous three decades, blue collar workers have suffered a decrease in both employment and income due to causes including the proliferation of automation and robots, the movement of manufacturing to countries with lower wages, and the increase in illegal immigration. They wouldn't appreciate the timesaving benefits of cutting-edge electronics. The public's view of firms that employ cutting-edge technology can vary as a consequence. The historical experience, as well as the experience with the more recent introductions of labor-saving devices and technology, are likely to be reflected in the political and social viewpoints. However, despite the fact that a substantial section of the public may not be excited, there is an understanding among businesses and governments that those who do not keep up with technological innovations might be left behind.

3. Innovation

For the countries that followed Britain's example in industrialization in the 18th and 19th centuries, there was more than just a financial incentive to do so. It was also recognized that a country's susceptibility to and subjugation by foreign powers would increase if its military failed to keep up with technical developments. The arrival of Commodore Matthew Perry in Tokyo Bay in 1853 with massive steam-powered gunships, which the Japanese had never seen before, was a display of naval strength that eventually led to the opening of commerce with Japan. As presented to the emperor, Perry delivered a functioning model of steam powered railway and a telegraph (U.S. Department of State Archive n.d). Previously, Japan maintained an isolationist stance, saw Westerners as barbarians, and engaged in extremely limited commerce, of which the United States was left out. Japan quickly industrialized after sending its best academics, engineers, and scientists to Europe to learn at a time when China was being divided by European colonial powers. By 1872 they completed their first railway, which stretched from Tokyo to Yokohama. It had been widely held as a truism that a European state could never be beaten by an Asian country or any other force outside of Europe until 1905 when the Japanese won the Russo-Japanese War with their modern fleet. This underlined the necessity of understanding new technologies for a nation's economic and military prowess.

4. Country Factors

What are the qualities of a country that would enable it to industrialize effectively and enjoy the kind of economic development necessary to provide its population the opportunity to raise their quality of living and get sufficient food, housing, education, and healthcare? Does a country have these traits that would make it successful in the era of artificial intelligence, automation, and robotics? The rule of law, protection of private property (including intellectual property), free enterprise, and an educated and skilled labor force are all factors in the success of any country. Culture is something that must also be taken into account. Secularism is a feature of most of the countries that are regarded to be part of the modern, developed world. Religious activity has been more separated from daily life in the West and Japan, yet some people still do so. The role of religion in contemporary cultures is limited to that of a venue for observance of holidays, festivals, and rituals like weddings and burials. Many Westerners celebrate Christmas and other holidays by attending parties and exchanging gifts without giving much consideration to the religious significance of these celebrations.

This stands in stark contrast to the widespread influence of religion in many developing countries. Strong religious beliefs may inspire blind adherence to authority and aversion to change, which can impede progress, especially technical and economic growth. It may also make it harder to examine fresh ideas and discourage critical thought. Americans follow a version of Protestant Christianity that emphasizes the value of hard labor, frugality, and challenging authority, in contrast to the more secular European culture. Protestant churches have a history of people reading and interpreting the Bible on their own, which extends to other parts of life. Such ideals may encourage economic and social growth by being more receptive to new ideas. While Catholics do make up 23 percent of Americans, as opposed to 43 percent being Protestant, the U.S. polls have indicated that American Catholics' beliefs do not vary significantly from Protestants (Lipka, 2016). They attend church services, but they don't pay much attention to pronouncements from Rome or from local priests that can run counter to what they already believe. This is in direct contrast to the conduct of more traditional Christians who reside in largely Catholic areas, such as in South America. People in the world's poorest nations tend to have more conventional religious views, which might lead them to the conclusion that it is futile to try to

enhance one's life here and now since a better life awaits you after death. To highlight the spiritual and the hereafter might be a method to deal with the terrible truths of life. But this also makes it less likely that someone will take immediate steps to better their situation. While the focus so far has been on Christianity, it should be noted that the same holds true for adherents of other faiths. All of these problems seem to have the same root cause: resistance to change based on established beliefs.

It should be mentioned that living in a totalitarian or authoritarian state may also have comparable effects on its residents. In some respects, this is similar to the kind of atmosphere created by the ideals and standards enforced on members of particularly traditional or conservative religious organizations. Freedom of expression, open conversation, and constructive criticism are all undermined when individuals are taught that they must constantly bow to authority figures, leading to a state that cannot provide the same basic amenities to its residents that people in more developed countries take for granted. These issues would be made far worse by a government-run economy that discourages private investment and eliminates market competition. North Korea, one of the world's poorest countries, is a good illustration of this since it does not protect its citizens' freedom to own property or their intellectual creations. In stark contrast is South Korea, where innovative firms like Samsung have helped develop one of the world's most prosperous and dynamic economies. Despite the fact that North and South Koreans share the same language, history, and culture, the two halves of this split country have very different economies and living standards. While the population of South Korea is twice that of North Korea, its GDP is more than fifty times that of its northern counterpart (Yoon, 2021).

The majority of the 25 countries with a per capita GDP of at least \$40,000 as of 2019 are European countries that industrialized after the United Kingdom in the 18th and 19th centuries. Japan and former British colonies such as Singapore, Hong Kong, the United States, Canada, Australia, and New Zealand are also included in this group (MGM Research, 2019). When it comes to economics, technology, and military might, countries that industrialized first have a leg up on their competitors. These benefits have persisted to the present day.

About 15% of the world's population resides in developed countries, which account for about half of the world's 200 nations or quasi-independent territories. One example of a middle-income country that has recently been industrialized and seen a rapid economic expansion is Thailand. Based on 2019 GDP per capita estimates, it ranks 85 globally. The GDP per capita of the 25 poorest countries is between \$275 and \$943. Compared to their 1700 counterparts, British residents in the year 2000 had access to 15 times more food, clothes, shelter, and education. In the United States, the standard of living increased by a factor of 22 between 1820 and 2000. (McCloskey, 2008).

The modern world is the result of the changes brought about by the industrial revolution in business, economy, and social structure. Like the industrial revolution, breakthroughs in robotics and artificial intelligence (AI) are reshaping the world in ways that might be even more dramatic and disruptive. And just as the earliest industrializing countries gained economic, technical, and military advantages that they currently enjoy in the 21st century, we may anticipate that the nations and corporations who lead in the creation and deployment of robots and AI will likewise have a competitive edge, one that might endure for decades or even centuries.

5. Fourth Industrial Revolution

The contemporary era is often referred to as the fourth industrial revolution. First, we have explored how the introduction of the steam engine and other developments like steam-powered ships, railways, and automated industry ushered in an era of rapid economic growth and technological advancement between the mid-1700s and the mid-1800s. The second happened in the late 19th century and the early 20th, and it was characterized by the rise of mass production techniques like Henry Ford's assembly line and the widespread use of electricity in industry. The third began in the latter decades of the twentieth century with the widespread use of personal computers and the World Wide Web. The advancement of machine learning is speeding up during the current fourth industrial revolution. This also includes autonomous machines that are able to communicate with one another. It is possible that by the year 2100, robots and AI created during the fourth industrial revolution will exceed the capabilities of the human brain, resulting in both new possibilities and societal turmoil (Schwab, 2016).

To put it simply, robots are machines that can do jobs that were formerly done by people and even certain domesticated animals but which are now routinely performed by the robots themselves. The usage of robots in factories dates back many decades. Machines that have been programmed with artificial intelligence are able to reason, learn, and interact with people and other machines. As a simple illustration of AI, consider a recommendation engine like the one used by Amazon. It monitors your buying habits in order to build a profile of your tastes and preferences and then makes suggestions based on that profile. A medical research gadget that can connect with and exchange data with other similar devices across the world is an example of a more sophisticated kind of artificial intelligence that might lead to the development of novel and more effective methods of illness treatment. AI's ultimate goal is to achieve human-level intelligence, if not exceed it. Networks of artificial intelligence in the commercial sector, government agencies, and academic institutions throughout the globe may collaborate on projects, share information, and make substantial advances in a wide range of subjects if given the opportunity.

The capabilities of both are incorporated into AI-powered robots. Such gadgets are transportable, equipped with audio and visual sensors, and capable of recognizing both spoken and written language. They have the ability to reason, acquire knowledge, and have basic discussions. Valkyrie, a 6-foot-2, 300-pound humanoid robot built by NASA for use in future space flights, is a well-known example of this (Young, 2017). Humanoid robots are meant to have bodies that are similar to those of people so that they can more easily interact with and utilize equipment and gadgets created for humans.

6. Existing Uses of AI

In a 2021 survey conducted by McKinsey on 1,843 people representing a wide variety of locations, industries, firm sizes, functional specializations, and tenures, 56% of the respondents claimed that at least one of their business functions had been replaced by AI. According to the findings, the use of AI has expanded the greatest among enterprises based in rising economies such as China, the Middle East, and North Africa. Across geographies, Indian enterprises have the greatest adoption rates, closely followed by those in the Asia-Pacific region. When it comes to using AI in the corporate world, the most typical applications are in the fields of service operations, product/ service development, and sales and marketing. The most significant growth in the usage of AI is in marketing budget allocation and expenditure effectiveness, with service-operations optimization, AI-based product improvement, and contact-center automation being the top three use cases. Additionally, the findings point to an increasing effect of AI on financial performance. AI now accounts for 27% of respondents' EBIT, compared to 22% in the prior study, who said that at least 5% of their EBIT was related to technology (McKinsey Global Survey, 2021).

AI success is becoming the norm rather than the exception. A 2022 survey of 1,000 US businesses and AI-involved executives by PwC concluded that the majority of organizations working with AI report positive outcomes, including scalable proofs of concept, active use cases, and broad usage of AI-enabled processes. Some businesses, however, stand out from the crowd. Their AI use is significantly more likely to be advanced, and they are more likely to be delivering worthwhile commercial goals, such as a working AI model and a strong return on investment. Instead of concentrating on one objective before moving on to the next, these firms are developing AI in three areas simultaneously: business transformation, improved decision-making, and updated systems and procedures. Over 36% of the "AI leaders" in the survey are using this comprehensive approach and enjoying the benefits (PwC, 2022).

For example, Amazon has used hundreds of robots in its warehouses since 2012. Recently, the company launched more sophisticated models that can move freely between different areas of the warehouse. They are capable of navigating the plant on their own, transporting items from one area to another, and obeying personnel's directions. Workers will be able to focus more on higher-level duties since newer robots will handle the menial ones, as was revealed (Boyle, 2021). Although some have claimed that robots and AI might replace up to 40% of all employment (Gallo, 2019), Amazon has taken steps to reassure workers and the public that the company's habit of adopting new technology to enhance productivity and decrease costs would not have a detrimental effect on the number of people it recruits and keeps. Amazon claims it has added over a million new jobs since it began utilizing robots in 2012 and that people are now able to concentrate on other tasks while experiencing less risk of harm (Boyle, 2021). While this is noteworthy, it is important to remember that numerous businesses, like Sears and J.C. Penney, have been forced to reduce their footprint or close entirely as a consequence of Amazon's success (Meyersohn, 2021). It is debatable whether or not Jeff Bezos's massive recruiting efforts have made up for the thousands of positions lost at Amazon over the years. A service sector already dominated by Amazon, where 40 percent of online sales are done, had a significant uptick in online buying during the covid 19 pandemic of 2020 and 2021.

Amazon has also launched a convenience store called Amazon Go, which employs cutting-edge technology to do away with cashiers and checkout queues. Again, we see sensors and other components of self-driving vehicle technology being adapted for use in new contexts (Amazon Go, 2020). Amazon has claimed that there is never any waiting in line for consumers who shop at its physical locations. You don't even have to use the self-checkout scanners, which are standard in many modern retail establishments. To get access to the shop, just install a little app on your mobile device. Sensors track what you remove and even if you return an item. Without having to scan anything or pull out your phone, your card will be automatically charged when you leave. With intentions to develop hundreds more locations, the first shop debuted in 2018, and as of 2021, there were 30 locations around the United States.

Large retailers like Target and Walmart have widely used self-checkout. Customers at select fast food outlets may now place orders and make payments using giant iPad-looking kiosks. While not nearly as sophisticated as Amazon Go's system, this might significantly reduce the need for cashiers. There were 3.34 million cashiers at supermarkets, fast food restaurants, and other retail establishments in the United States in 2018. Because of the widespread use of new technologies, cashiers may soon find themselves without gainful employment in a stagnant economy. The loss of many retail salespeople is a real possibility. In 2018, 4.76 million Americans were employed as salesmen, according to the U.S. Bureau of Labor Statistics (DataUSA, 2018).

For small-to-medium-sized enterprises, AI has been found to help protect them from risks caused by COVID-19. The use of AI applications in marketing, sales, communication, forecasts, pricing, cash flow, false reviews, cybersecurity, recruiting, and legal services has helped to reduce SMEs' commercial risks posed by the COVID-19 epidemic (ScienceDaily, 2022).

Not only have businesses of all sizes benefited from AI, but so have nations and societies. COVID-19 indeed has shown us that AI is indispensable for the well-being of societies and nations. The COVID-19 pandemic has impacted virtually everyone on this planet. In an extensive survey of how AI has been used to fight the pandemic, the researchers found that in 46 studies, AI was used for assisting diagnosis of Covid, 14 studies used AI to predict hospital admissions, 9 studies projected infection rates and cases, 8 studies suggested potentially safe and effective drugs, and 1 study recommended vaccine targets that could potentially create Covid vaccines (Wang et al., 2021).

7. The Future

There were 5.4 million people working in the transportation business in 2018, although this number is predicted to drop significantly as a result of technological advancements. One research estimates that 70% of truck drivers in the United States and the European Union might be out of work if autonomous cars become widespread in the next decade (International Transport Forum, 2017).

In the next several years, people in Asia, Europe, and the United States may be able to purchase self-driving vehicles from major automakers. Companies like Uber and Lyft may be the primary market for self-driving cars as they remove drivers to save expenses. However, as the public becomes more used to the technology and the price of the vehicles drops, it is likely that these vehicles may become the norm (Hicks & Fitzsimmons, 2019). Nonetheless, customers' first worry when thinking about autonomous vehicles is safety. When asked about their biggest reservations about driverless cars, respondents cited safety concerns and the possibility of technological failures as their top two worries. In the second place, at 16%, was the issue of price (PC Magazine, n.d.).

Airbus and Boeing, two of the world's largest aircraft manufacturers, are both developing autonomous aircraft that they want to market alongside conventional passenger jets. Major airlines are considering testing out autonomous planes, and implementation might begin within the next two years. Human pilots may soon be obsolete. Having unmanned air force aircraft would provide the military greater flexibility and advantages in high-risk missions; therefore, there are military uses as well (Bennett, 2017).

Additional medical research and services, scientific and technical advancements, virtual colleagues, managerial decision making, data analysis for use by business and government (including domestic and international security, military operations, and the assistance or entire administration of local and/or national governments) are all possible future uses of artificial intelligence. It's reasonable to be concerned that such a future may put people out of work, invade their privacy, and lead to policy decisions over which they have no say in the government. The choice is between moving ahead on a route with unknown outcomes and falling behind. Organizations and governments' commercial, economic, and military standings will be affected by the public opinion of what jobs may be regarded as appropriate for AI or whether it would be ethical to enable AI to take on such responsibilities as we continue to explore the uncharted ground.

Here are some interesting AI statistics for 2022 and beyond:

- By 2027, the value of the worldwide AI market is predicted to be \$267 billion.
- A 33.2 percent yearly growth rate in AI is anticipated between 2020 and 2027.
- By 2030, AI is predicted to add \$15.7 trillion to the global economy, or a 26% rise in GDP.
- The Asia-Pacific area will have the greatest compound annual growth rate between 2018 and 2025.
- By 2030, China will own a 26.1% market share worldwide, making it the leader in AI technology.
- By 2025, the growth of AI will result in the loss of 85 million jobs and the creation of 97 million new ones.
- By 2023, there will be 8 billion voice assistants in use, up from the current figure of over 3 billion.
- By 2025, the AI sector will generate \$126 billion in annual revenue.
- The top three most critical hurdles firms encounter when contemplating the use of AI are staff skills (56%), fear of the unknown (42%), and determining a starting point (26%).

(Jovanovic, 2022; Todorov, 2021)

8. Implications and Conclusion

Robots and AI will become more pervasive in business, and daily life as technology advances and people come to rely more and more on machines to carry out duties that were traditionally handled by humans. In today's fast-paced business environment, which is undergoing dramatic changes as a consequence of these advancements, knowing how the public sees the morality of robots and AI is crucial. Workers and clients alike fall under this group. The development of AI and robots might be stifled if workers were to hold the view that their use is unethical. Having a negative impression of a company's technical practices or employee treatment might turn customers off regarding the company's goods and services. As an example, some consumers have

stopped patronizing firms they believe are not doing enough to protect the environment, so a similar trend may develop here. Concerns about privacy breaches and unauthorized data collection may deter consumers from purchasing AI-powered consumer robots and home gadgets. If some people decide that using robots and AI goes against their values or interests, it might have an impact on businesses.

A limitation of this study is the lack of empirical data to show how the public perceives the use of AI in business and society. Future research should, therefore, involve empirical investigations into the issues discussed in this study. In addition, management must conduct more studies (such as focus groups) to learn about public and employee problems, act to resolve those concerns, and then utilize public relations initiatives to update the public and employees on the status of those initiatives.

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