

Impact of Career Growth in Industries due to Artificial Intelligence

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Abstract

Industry is becoming increasingly digitalized. Major advances have been made in digital technology. More powerful hardware and software technology are being used continuously to improve computing power and data transmission. Technology, globalization, knowledge and competition have globally intensified the need for highly skilled workforces. Today, intelligent software solutions can use data generated by a factory to identify trends and patterns that can in turn be used to make manufacturing processes more efficient and reduce their energy consumption. The present study aims at analysing and predicting the impact of artificial intelligence on organisations and thereby on career growth. The primary objective of the study is to comment on the readiness of organisations to meet the challenges of the emerging revolution in industry and measures that can be adopted to develop skilled manpower in the disciplines concerned.

Keywords: *Artificial Intelligence, Career Growth, Automation, Algorithms, Planning, Reasoning, Problem solving, Machine Learning*

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I. Introduction

Artificial intelligence (AI) is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied developing systems endowed with the intellectual processes characteristic of humans such as the ability to reason, discover meaning, generalize, or to learn from past experience.

The promising potential of artificial intelligence is being realized in multiple businesses and industries. Industrial organizations are experimenting with modern technologies to maximize their efficiency and revenue. It is anticipated that the introduction of artificial intelligence (AI) into industry will overcome limitations and maximize profit.

The utilization of artificial intelligence has proved beneficial in several industrial sectors such as healthcare, manufacturing, retail, and agriculture. The introduction of AI across industries is expected to be a game changer. The development of AI has led to the rise of various applications. Enable informed decision-making process through machine learning, algorithms, past trend and the best possible outcome through corrective measures that range from precision drilling to automated inspections to maximize the benefits across the industries. Implementation of AI can improve the efficiency of various operations and It is likely that the adoption AI will significantly increase across the industrial sector.

With every invention, automation has taken a step forward in the role it plays in manufacturing today. Many manufacturers already rely heavily on robotics to complete significant components of their production cycle and manufacturing is set to be one of the sectors most affected by digitalisation in the next few years. New technologies are continually developed through time. According to Meghan Brown posted on May 15, 2018, he had quoted the skill gap across Manufacturing sector will face a huge shortfall of graduate engineers every year. At the same time there is a fear that the rise of AI and automation in the form of intelligent robots will cause catastrophic job losses. How AI and its development will impact manufacturing organizations is an urgent question.

In the digital world that we now live in, every day we hear more about the technological advances that will impact our lives in the future. None more so than Artificial Intelligence (AI) supporting, supplementing, or as some believe, replacing humans in the workforce. With AI providing robots with greater degrees of learning ability and sensitivity when it comes to touch, robots will be able to take over more assembly and movement-dependent activities on the manufacturing floor. For example, BMW's self-driving Smart Transport Robot travels the manufacturing floor sending out communication on any critical situation that it observes. While advancements being made in AI are exciting, the consensus within the manufacturing sector appears to be that the effect on its workforce could put millions of people out of work.

In the long run, we will witness certain roles and jobs becoming less and less relevant, and finally obsolete. But, it is also possible that AI will play a supportive role to humans endeavour, with the potential to empower the human being to perform better at handling complex and critical situations requiring judgment and creative thinking. In parallel, numerous new roles and specialties could emerge. For example, there could be a need for highly skilled professionals to oversee, manage or coordinate the training of complex AI systems in order to ensure their integrity, security, objectivity, and proper use.

II. Literature Review:

Frontier Economics has been commissioned by the Royal Society (RS) and British Academy (BA-2018), was one of the largest economic consultancies in Europe, functioning since 1999. Frontier regularly advises private and public sector clients on issues of technology, innovation, economic growth, and industrial policy. to produce a review of evidence on the potential impact of Artificial Intelligence (AI) on work in the near and medium term – up to 2030. The report reviews evidence from a wide a range of disciplines to inform the discussion on the impact of AI on work. The report draws insights from earlier periods of technological change and the more recent evidence on the impact of digital technology. The review had given inputs related to the potential consequences of AI for the future work, and also analyses have been made with a focus on the frameworks to specifically understand the impact on the labour market, adoption of computers and other types of digital technology and industrial automation, and theoretical models considering the future impact of AI on employment and wages.

Frontier Economics literature suggests that industrial automation may not lead to declining employment in the areas that are most affected. However, evidence on the wages impact due to automation is less clear. Moreover, there is evidence of a negative impact of automation specifically on employment and earnings of workers most directly substituted by industrial robots predominantly the low-educated and middle-educated worker in manufacturing industries.

Employment and earnings losses for workers directly affected by automation may be more likely in the case of industrial robots compared to other forms of automation. There is some variation in findings across studies. According to Acemoglu and Restrepo (2017) find a negative impact of robots on both employment and earnings in most affected areas such as the routine jobs across the industries. In contrast, Graetz and Michaels (2018), found that robot adoption leads to an increase in mean hourly wages and a decrease in the share of hours worked by low-educated workers. Dauth (2017), find that robot adoption in Germany is linked with small increases in local employment, as the fall in manufacturing employment is more than compensated by increasing employment in service industries. Graetz and Michaels (2018), suggest that these differences in findings may be explained by the different geographical location of the two studies: The United States and Germany. Bloom, Sadun and Van Reenen (2012) postulate that differences in managerial attitudes and organizational structures could explain these differences. The study indicates that the firms in the United States are more aggressive than European counterparts in promoting and rewarding high performing workers and removing underperforming workers. They also argue that the nature of public policy and the decline of unions are more pronounced in the United States than in many European countries and that this could explain why robots are linked to a decrease in overall employment in the United States but not elsewhere.

III. Methodology

- Study is descriptive in nature and Proposed sampling method is Multistage Random Sampling.
- The sample location is confined to Bangalore comprises of industry includes Healthcare and Automobile.
- Researcher is plan to collect the primary data from the sample with the help of the structured questionnaire.
- Sample respondent from the concerned industry will be selected with the establishing the criteria of the company.
- The respondents must have an experience of 5 years and above and the total employees in the organization should be 200 and above. These 2 criteria satisfy the stages of sample selection.

- On the basis of the total population of the selected industry, the researcher will adopt the tool using Krejcie & Morgan (1970) for an effective method to determine the sample size.
- The activity comprises of 10 samples from an organization with minimum five years of experience and starting from the Managerial to the CXO level and the total population would be 50.
- The structured questionnaire will consist of 3 parts – industrial profile, official profile and 3rd part of the questionnaire pertaining to the title of the research.
- Attributes selected for the title will be arrived based on the research gap, identified by the researcher with the support of the past literature review.

IV. Findings

From the literature review the researcher has derived the following findings on impact of career growth and emerging industrial revolution in manufacturing industries. With the help of these findings, the researcher has drawn the right research gap for the present study and same was used for questionnaire preparation and in the sampling unit.

Automation (4.0) is increasingly proliferating in every aspect of our lives, whether its robots building the cars we drive or artificial intelligence systems driving the vehicles for us. With the rise of autonomous systems, the big concern for many people is how their jobs will be impacted.

Job seeker should have analytical thinking ability and skills to solve problems in a commercial and efficient manner. Technical skills to design, maintain and repair technology and software programs are highly recommended. If you aspire to withstand the competition in the industry, the individual should possess an educational background in science, with mathematics, technology, logic, and engineering, as subjects at graduation level.

The effect of automation on jobs really depends on the occupation. Automation could replace more than half of mining jobs in the next decade. The mining industry is already using automated loaders and tunnel-boring systems, and is testing fully autonomous long-distance trains to carry materials from the mine to a port, eliminating the need for workers to do these tasks.

Truck, taxi, and delivery drivers also need to worry about artificial Intelligence, Automation, and the Economy. Automated vehicle technology could threaten or alter 2.2 to 3.1 million of these jobs in the United States, which means 80 percent to 100 percent of these positions will be eliminated, affecting some 1.7 million truck drivers alone. On-demand car services, like Uber, likely will rely entirely on self-driving cars in the future, the report adds.

And those looking for jobs at a factory need to have computer skills now. 15 percent of the 10,000 applicants, with ninth-grade level reading, writing, and math skills, according to The New York Times. The article also advice that the company also has trouble filling its factory positions, because building and fixing tractors and grain harvesters now requires advanced math and comprehension skills.

Those working physical labor jobs are not the only ones who should be concerned. Software capable of analyzing large volumes of legal documents is expected to drastically reduce the number of paralegals (Law.com article). And as such software programs advance, people with other occupations, like accountants, could become easily replaced.

V. Future Work

1. Digitization will have a permanent effect on our living and working environment. This development offers the full range of opportunities for the industrial sector to expand its leading global position.
2. New digital business models will expand the existing product and service portfolio in order to ensure future growth in sales. The implementation of the Industrial Internet represents a multi-year transformation process for the majority of companies, resulting in significant changes to their value chains.
3. Fourth Industrial Revolution is the trend towards automation and data exchange in manufacturing technologies and processes which include cyber-physical systems (CPS), IoT, industrial internet of things, cloud computing, cognitive computing, and artificial intelligence. Employee skillset need to be upgraded at par with the technology.
4. The term Industry 5.0 has been introduced to the research areas need to be considered as next industrial revolution. It is more systematic transformation that includes impact on civil society, governance and structures, and human identity in addition to solely economic and manufacturing ramifications.
5. Artificial intelligence improves and factory robots assume more human-like capabilities, the interaction between computers, robots and human workers will ultimately become more meaningful and mutually enlightening.
6. By adopting complex virtual learning techniques, a wide range of physical and cognitive tasks are being managed today with a high level of efficiency and accuracy. With artificial intelligence advancing all the way through machine learning will continue to impact or to disrupt not only business but human lives as well. If

the machines get better at their act and achieve things beyond human level, then there is a remarkable challenge to find whether machines will be a threat to jobs and eventually diminish employment opportunities in the industries. Some trepidation even led to people wondering if artificial intelligence will eventually control us.

7. Lauding the benefits of AI and with proper ethical policy frameworks in place for the AI automated machines, the future of automation is being expected to make life better. There could be a role reversal for human resources after AI is utilized to its full potential. For instance, the basic programming jobs may cease to exist but new positions like that of data scientists will emerge.

VI. Conclusions:

It is a natural witness that certain roles and jobs becoming less relevant over a period of time, and finally obsolete. Moving forward, Artificial Intelligence will have a supportive role to humans—empowering the human factor to perform better in handling complex and critical situations which require judgement and creative thinking. Also, there would be numerous roles and specialties with focus on technology and science. There will be need for highly skilled professionals to manage or to coordinate the training of complex Artificial Intelligence systems in order to ensure the integrity and security.

Digitalization has major implications for Industrial markets. Assessing the digitalization impact will be crucial for developing policies that promote efficient labour markets for the benefit of workers, employers and societies.

Hence Industrial Revolution (IR) 4.0, by make use of Artificial intelligence might bring efficiency and productivity for daily tasks, but it will also be the main problem for the unemployment worldwide in the future. To overcome this offensive competitive market, law and ethics need to be applied on AI, to prevent an outbreak where the job market can suffer from. Therefore, regulation by the government needs to be done or a merge between human and machine can make it possible for humans to monitor the autonomous machines. Besides, the regulations and laws, the humans do not need to worry about their future job market for now. Because, artificial intelligence is still not able to implement human characteristics, emotions and awareness into a machine level that can disrupt the job market.

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