

Impact of AI on future employment

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Abstract

Technological innovations and development have made Artificial Intelligence as one of the World's widely thriving technology that will have a major impact on future including the labour markets and the work or role they are currently performing. Key workforce of the future will be based upon AI and Automation that will lead to a drastic change in employment.

In upcoming years many jobs in different sectors will get automated, yet several jobs are there that will require humanitarian efforts and wisdom. Jobs that are repetitive and time consuming will be done by AI robotics and automation, for example: Manufacturing, IT sector, etc. Jobs that require human intervention and thinking ability will be still carried out as it's functioning recently, for example: Healthcare specialists, Investigators etc.

Industrial 4.0 revolution which mainly represents convergence of various technologies. AI technologies plays an important role in Industry 4.0 solutions, to enable smarter machines that uplifts productivity and can take other tasks like self-monitoring and diagnosis autonomously.

AI may eliminate many jobs due to replacement of labour works by machines and automation, but it will also build opportunities for new employment positions for AI to function accurately and managing the interface between humans and technology.

Key Words: Artificial Intelligence, Industry 4.0, Jobs, Digital transformations, Survey Results.

1. Introduction

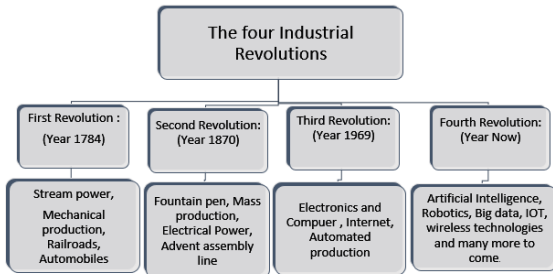
The drastic implementation of AI worldwide has raised a concern of taking of manual jobs by Intelligent machines or automation. AI breakthroughs like (Smart assistants, IBM Watson, AlphaGo, Self-driving cars, Proactive healthcare management systems and many more) attract public attention. Due to rapid progress in AI credence's related to AI will take over large areas of workforce has come into consideration, which will cause unemployment in various fields.

But, just how warranted are these concerns? Past history and the most recent studies tell us about, how AI based automation will affect our jobs and the future of society? And in specifically, will the impact of AI-based automation be any more consequential than that of non-AI based automation enabled by computers and robotics in the past?

After all, modern and present advancements in moreover intelligent robotics to perform physical labour and AI software to perform mental labour follow a long line of technological developments via automation beginning from the first industrial revolution. While many foresee that recent AI technologies to affect society in drastically in different ways than technological developments in the past, evidence supports the contrary.

According to a McKinsey Global Institute researcher predicts that in upcoming years by 2055 fifty percentage of the total work activities could be automated, while robots and machines will usurp some jobs, most humans will take new roles as automation boosts productivity.

Digital transformations in four Industrial revolutions:



The First Industrial Revolution: begin in year 1750 and lasted till 1800, used water and steam power to mechanize production.

The Second Industrial Revolution: begin in year 1850 and lasted till 1900, used electric power to create mass production.

The Third industrial revolution: begin in year 1900 and lasted till 1950, brought semiconductors, mainframe computing, personal computing, and the Internet—the digital revolution.

Now a Fourth Industrial Revolution: begin in year 2000, and still in progress is building on the Third, the digital revolution that has been occurring since the middle of the last century.

Fourth Industrial Revolution or Industry 4.0 implies to a new phase in the Industrial Revolution that heavily focuses on automation, interconnectivity, machine learning, and real-time data which will be a conflux of various technologies that will reduce manual and repetitive works and will boost productivity.

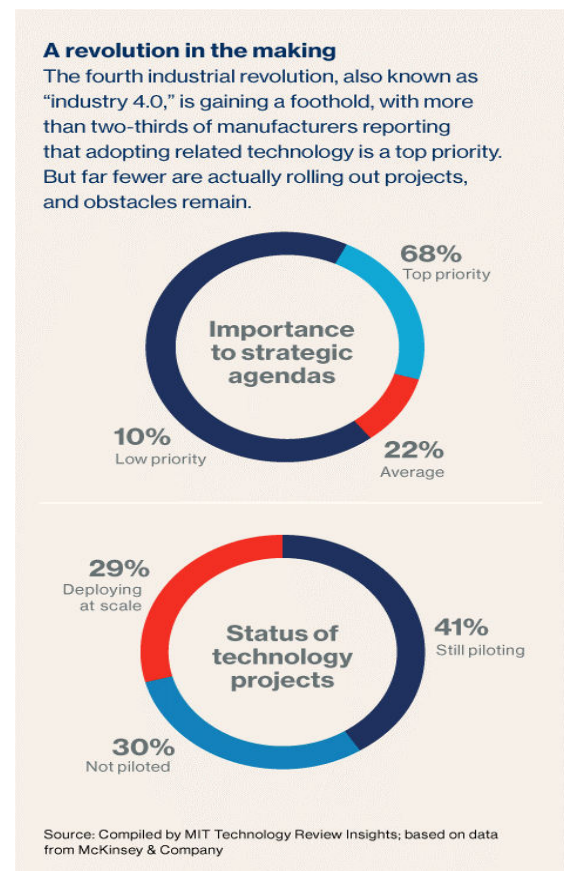
According to MIT technology review New technologies can optimize the way people work. These innovations can improve overall business processes, when

implemented thoughtfully. Those changes are accepted as part of progress.

Industry 4.0 revolution isn't particularly about the things that collect data. As with the other technological reinforcements in previous upheavals, it's what we do with them. According to Andrew Dugan, Chief technology officer at technology company Lumen says, by using artificial intelligence (AI) and machine learning to analyse data collections, people can cope and solve tough problems.

Also AI can be beneficial for several factors like – avoiding errors, 24*7 availability, Rapidness in performing tasks, no downtime or breaks, and many more.

Some drawback factors of AI can be – High implementation costs, causing unemployment, lacking out of box thinking.



2. Methods and Materials Implementation

Research approach:

Conducted survey of peoples using online form for their awareness and thinking about AI related approach and how AI can it impact our jobs and livelihood.

People participated in this survey and have shared their feedbacks.

3. Data, Analysis and Results

After creating data collection form, I have provided it to various peoples and collected data on their thinking approach related to what transformations will be observed on future jobs due to AI technologies.

Questionnaire:

- ✓ Before taking this survey, are you aware about artificial Intelligence?
- ✓ According to you how many years will it take to get half (50%) of the manual activities be automated worldwide?
- ✓ In which sector major transformation will be observed due to AI in upcoming years?
- ✓ Do you think will the labour or manual works will be replaced by machines and automation?
- ✓ Will AI build new job opportunities?
- ✓ Which job/business will be mostly affected by AI?
- ✓ Will you accept AI as a part of society?
- ✓ What can be advantages and disadvantages of using AI at work place?

These are some questionnaire from the survey that has been helpful for me for finding out the results for how AI can cause impact on future employment.

4. Survey Result

Q: Before taking this survey, are you aware about artificial Intelligence?

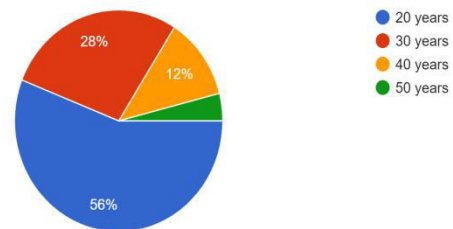
When people were asked are they aware about AI, most of people were aware.

As per the below chart out of 100%, 94% of peoples are aware and only 6% are still not aware of this technology.

Various age group people responded to this question and it was satisfactory to know that many of them are clearly aware about AI and its functionality.

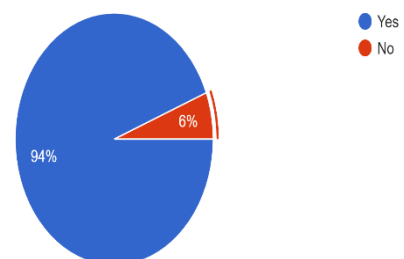
Q: According to you how many years will it take to get half (50%) of the manual activities be automated worldwide?

People shared their opinions on this and most of them i.e. 56% thought it will take just 20 years to get half of the manual work automated worldwide.



Rest 28% think it will take 30 years to implement it, and others think it will take 40 to 50 years to get half of the labour work to be automated.

As stated by reports in BBC News: Robots 'to replace 20 million factory jobs'



Almost 20 million manufacturing jobs overall around the world could be replaced by robots by the year 2030, claimed analysis firm of Oxford Economics.

Superseded persons from those jobs are more likely to find that comparable roles in the services sector have also been squeezed out by automation, the firm said.

Nevertheless, increasing automation will also boost jobs and focus on economic growth, it included.

Every new industrial robot wipes around 1.6 manufacturing jobs, the firm added, with the least-skilled regions are in possibility of being more affected.

Regions where most of the people have lower skills, which direct to have weaker economies and higher unemployment rates anyhow, they are much more vulnerable to the loss of jobs due to robots, Oxford Economics said.

Moreover, workers who move out of manufacturing, are prone towards getting new jobs in construction, transport, maintenance, and office and administration work that in turn are susceptible to automation, it added.

Q: In which sector major transformation will be observed due to AI in upcoming years?

There were choices provided for various sectors to people for choosing most of the transformations according to them.

According to the below graph people think most of the transformation will be almost observed in all of the areas of business.

Most of them thought it will majorly be implemented in Education, IT Industries and Manufacturing about 58%, 56% and 54% respectively.

Other than this it will also focus on Banking and Finance and Healthcare about 44% and 42% respectively.

For Agriculture and Fashion occupations people thought it will be 24% and 8% implementation according to the survey.

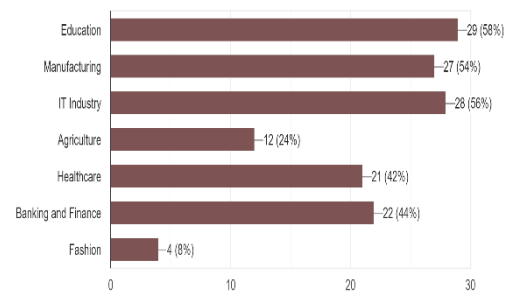
Alexey Sapozhnikov, co-founder and CTO of Tel Aviv Israel-based prooV points out that while virtually every industry is embracing AI, it's the sectors that are stymied by well-worn processes and regulations, such as healthcare and government that are likely to straggle in AI adoption. As stated by Food and Drug Administration's stringent policies encompassing AI diagnosis software for developing complex proposals towards cybersecurity challenges for government, these processes can cause a huge stumbling block for the firms or organizations. Propitiously, many of the companies are realizing the importance of catching up to Artificial Intelligence technology, lest that they be left behind," he said. So what industries are using AI technology, and what ones are likely to be disrupted by it.

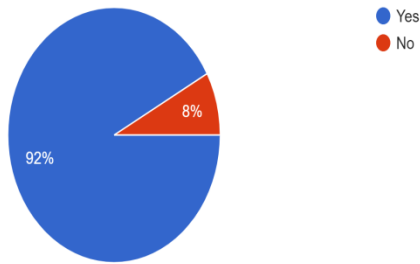
Below mentioned are the 11 industries that are already experiencing disruption.

Customer Experience, Energy and Mining, Agriculture, Manufacturing, Intellectual property, IT Service Management, Call centers, Healthcare, Technical Support, Retail, Software Development.

Q: Do you think will the labour or manual works will be replaced by machines and automation?

According to people's opinion most of them thought 'Yes' Labour and Manualworks will be replaced by Automation almost 92%, and rest 8% still think it won't be replaced.





A McKinsey Global Institute report from the year January 2016, forecasts that there is a net loss of 5.1 million jobs globally between 2015 and 2020.

Also AI have limitations when it comes to performing humanistic tasks that are creative, personal, and compassionate these are the jobs safe from displacement for many years from now.

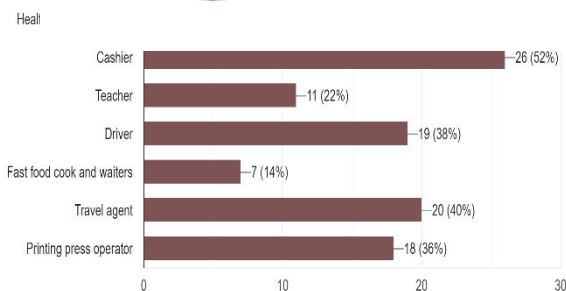
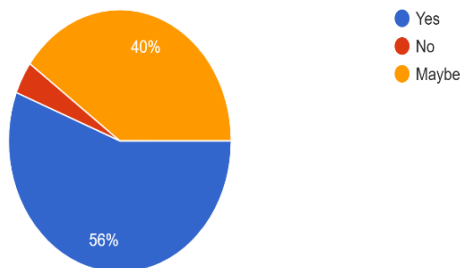
Other than this Healthcare professionals 26%, Teacher 22%, Fast food cook and Waiters 14%, it will be affected by AI.

According to researchers 8 Jobs that Will Be Replaced by Robots Soon:

- Store Clerk (Courtesy Simbe Robotics)
- Data Analyst (Getty Images)
- Fast-Food Worker (Courtesy Miso Robotics)
- Truck Drivers (Courtesy Uber)
- Livery Drivers (Courtesy Waymo)
- Deliverymen (Courtesy Starship)
- Security Guard (Courtesy SMP Robotics)
- Front-Line Soldiers (Courtesy QinetiQ)

Q: Will you accept AI as a part of society?

Almost 56% of peoples responded ‘Yes’ they will accept AI as a part of society.



Q: Which job/business will be mostly affected by AI?

According to the graph most 52% people think the role of Cashiers will be mostly affected, also jobs of Travel agent 40%, Drivers 38% and Printingpress operators 36% will be replaced by AI.

Rest 40% answered as ‘Maybe’ depending upon the situation and very less almost 10% responded as ‘NO’ they won’t accept AI as a part of society.

5. Conclusion

Due to Artificial Intelligence concerns related to loss of jobs are raised and surely most of the manual, repetitive and time consuming jobs will be replaced by machines and technology, but in the same way AI will also build new job opportunities as already seen in part three Industrial revolutions labour works was replaced but new works and profession has been also raised.

AI is key to some of the most successful companies in history in terms of market capitalization, they include - Microsoft Apple, Alphabet and Amazon. With the collaboration of information and communication technology (ICT) more generally, AI has transformed the methodologies and it's ease by which people from all over the globe can obtain knowledge and information, credit, and other benefits of present global society. Such access has helped to bring about tremendous reduction of global inequality and uttermost poverty, for example by allowing farmers to know fair prices, the best crops, and granting them access to accurate weather predictions.

Also there are many reasons why AI will create more jobs than it takes, for example: Demand for man-machine Hybrid Teams, AI's role in marketing and sales, AI and Digital Assistants, AI in Gaming, Healthcare, Education, Maintenance, AI Facilitator Roles, and many more.

Every Individual should be adaptive towards changes and transformations which will not only be favourable to our personal growth but also growth and development towards mankind and society.

6. Acknowledgement

It gives me a great pleasure to present my research paper on "Impact of AI on future employment". I would like to express my sincere gratitude to all teachers who helped me throughout the research and provided proper guidance.

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