

A Study On Artificial Intelligence - Its Positive Impact And Challenges In Today's World

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ABSTRACT:

Artificial Intelligence (AI) started with mythology, stories and sayback of artificial beings endowed with intelligence or inner senses by master craftsmen. The seeds of modern AI were planted by classical philosophers who attempted to describe the process of human thinking as the mechanical manipulation of symbols. The idea behind it inspired a handful of scientists to seriously discuss the possibility of constructing an electronic brain. AI the ability of a computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes, humanized characters like reasoning and many as such. Since machines have been able to perform certain specialized tasks better than humans for centuries, certain tasks which required human intelligence can now easily be done by computers, so machine learning algorithms that accomplish these tasks effectively will likely be considered as Artificial Intelligence.

This paper attempts to highlight the positive impact, the challenges and the application of Artificial Intelligence in various fields like Space exploration, Medical Sciences and Healthcare, Weather and Climate Modeling and Robotics etc. and also to know the contributions of AI towards the society at large. AI and Machine Learning will transform the world and bring a significant change to every aspect of human life.

KEY WORDS: Artificial Intelligence, Robots, Human Intelligence etc.

INTRODUCTION:

AI provides opportunities to reinvent business models alter the work culture, performance improvements and enhancement of human capabilities. It offers transformational potential across sectors and industries, ranging from supply chain management to medicine to automobiles. The heightened interest in AI to transform economies is reflected in the scale of global spending where there is no consensus on what defines AI or what distinguishes it from other digital technologies. AI requires extensive and sophisticated computation, hence decreasing cost in computer hardware and dedicated AI chip designs is making it much more feasible and thus attractive to organizations. The past few decades have seen tremendous advancements in some of the underlying AI methods such as current and conventional neural networks, many of which have been made open-source and thus available to everyone. The expansion of cloud-based services related to AI has also made it much more attainable for organizations would otherwise be hesitant.

How AI is changing our World to a better one

Man has long feared the rise of the machine – his own creation becoming smarter and more intelligent than he. But while artificial intelligence and machine learning are rapidly changing our world and powering the Fourth Industrial Revolution, humanity need not fret.

Bridging Language Divides: Be it a new language and text or speech translation AI-powered language tools bridge social and cultural divides in our workplaces, classrooms and everyday lives. Digital translation services may not be perfect instead offer a means of understanding.

Transforming Government: With least paperwork, real time response and more efficient bureaucracy AI can drastically change public administration helping the public servants in analyzing complex cases, to come up with better solutions, and in truly understanding the future of autonomous systems.

Creating Art: Computational creativity is variable transforming the nature of art. Software, more than a tool, is becoming a creative collaborator, merging computer scientist with artist.

Cyber Security: AI can protect data more systematically and affordably by keeping people safer from terrorism or even smaller-scale identity theft.

Contributions of Artificial Intelligence towards Society:

A technology like artificial intelligence (AI) is useful only as long as it makes some sort of substantial contribution to society. Although the government may contribute to a technology that it sees as useful for military or other purposes for a short time, long-term technological health relies on the support of the investor.

Devising the active human foot: Prosthetics are big money. They cost a fortune to make and are a necessary item for anyone missing a limb who wants to have a decent quality of life. Many prosthetics rely on passive technology, which means that they provide no feedback and don't automatically adjust their functionality to accommodate personal needs. All that has changed in recent years as scientists have created active prosthetics that can simulate the actions of real limbs and automatically adjust to the person using them and you can find active technology in all sorts of prosthetics today, including knees, arms, and hands.

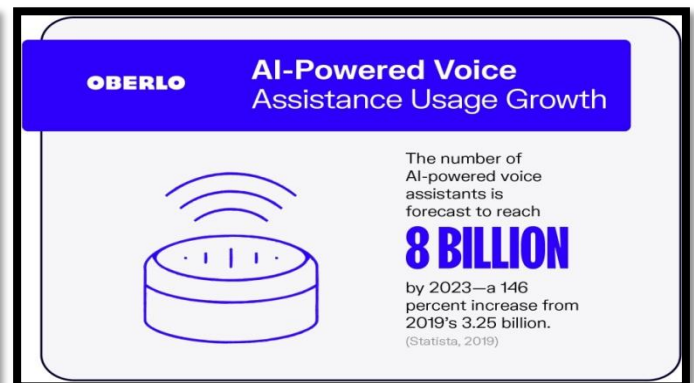
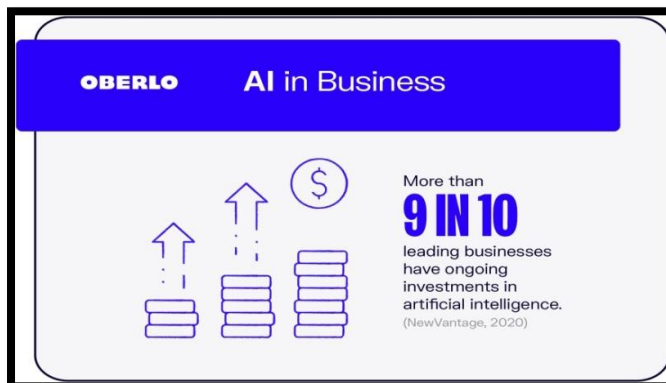
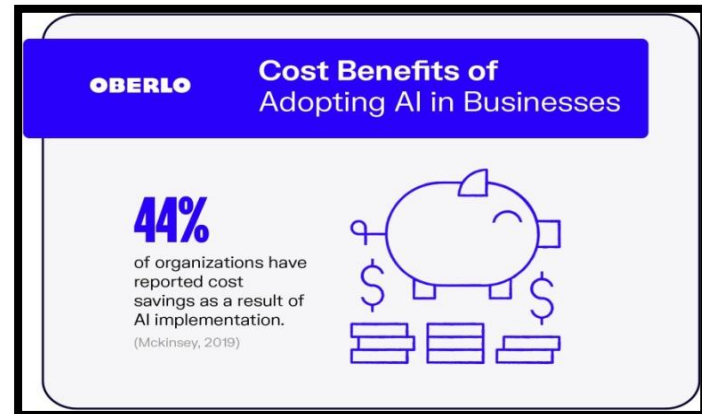
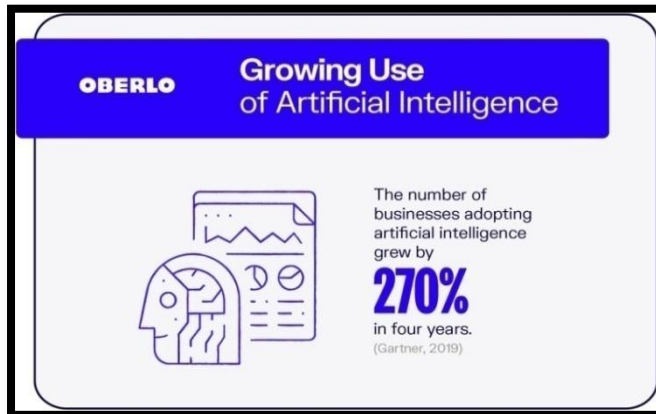
Performing constant monitoring: Medical monitoring can help patients receive care quicker after a major incident and even predict when a patient will have a major incident, such as a heart attack. Most of these devices, especially those that are predictive in nature, rely on an AI of some sort to perform the work. The remote monitoring of heart patients saves considerable medical costs.

Administering medications: Sick people who forget to take their medications, cost the medical establishment huge amounts of money. By combining technologies that rely on an AI, one can track how people take their medications. Alongside, the AI can help people remember when to take medications, which ones to take, and how much to use. When mingled with monitoring, even people with special monitoring needs can obtain the right dose of their medications.

Seeing what can't be seen: Human vision doesn't see the broad spectrum of light that actually exists in nature. And even with augmentation, humans struggle to think at a very small scale or a very large scale. Biases keep humans from seeing the unexpected. Sometimes a random pattern actually has structure, but humans can't see it. An AI can see what humans can't see and then act upon it. For example, when looking for stresses in metal, an AI can see the potential for fatigue and act upon it. The cost savings can be monumental when dealing with items such as waveguides, which are used for radio transmission.

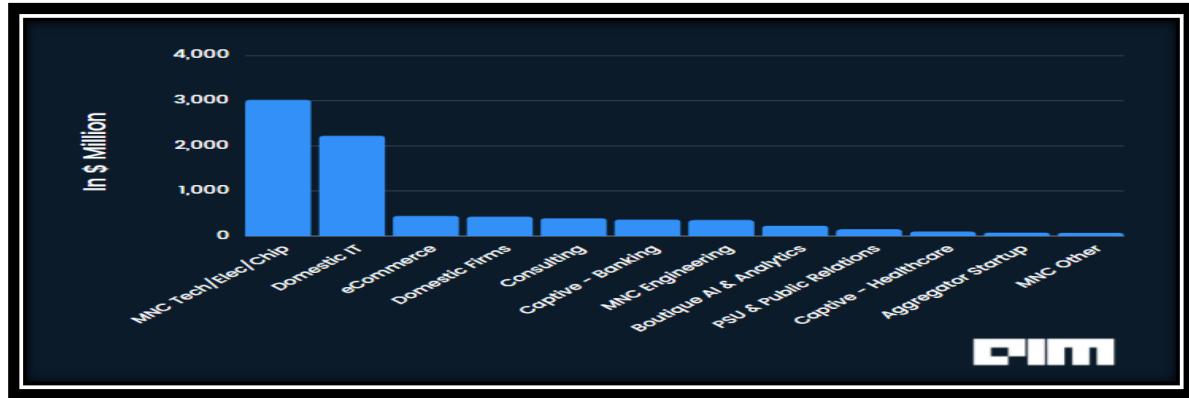
Positive Impact:

Artificial Intelligence (AI) is one of the fastest-growing and popular data-driven technologies being used all around the world. From governments and large organizations to small online businesses, artificial intelligence is being used by multiple entities across the world.



State Of Artificial Intelligence in India 2021

- **Artificial Intelligence Market Size by Company Type:**



The Artificial Intelligence market size in India covers the companies providing Artificial Intelligence services from the Indian geography, regardless of the geographical market and type of industry the services are provided to. The Artificial Intelligence market in India is valued at **\$7.8 Bn**. In terms of Company Type, the broad-based MNC IT, Technology, and Electronics category has the highest share of the AI market at **38.8%** in percentage share and **\$3012.4 Mn** in terms of Market Value.

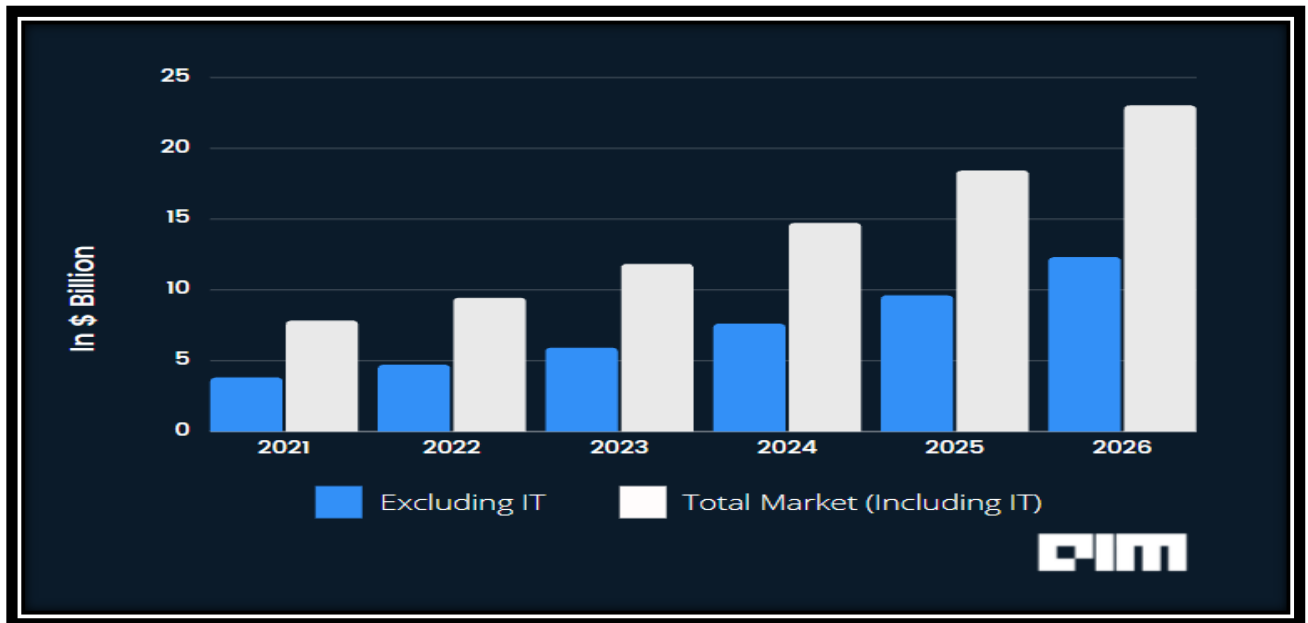
The enterprises that fall under this category include:

MNC IT Services firms, such as Accenture, IBM, and Capgemini, among others, which provide AI services, as part of the larger Digital and Data Science service offerings, to their international and domestic clients.

Software Technology firms, such as Microsoft, Google, SAP, Oracle and AWS, among others – Microsoft as it had last year, has the largest AI operations in India across this sub-category.

MNC Hardware Technology, Networking Equipment, and MNC Telecom firms including Dell, Cisco, Juniper, Nokia, Verizon, and AT&T, among others.

Electronics and High-end Semi-conductor firms, such as Samsung, Intel, Qualcomm, and AMD among others, which develop AI technologies for Smart Phones, Processing Units, Chips, Memory Devices, Servers, Data Centres, and other sensor-driven technologies.



● **Artificial Intelligence Market Forecast:**

The Artificial Intelligence market is currently valued at **\$7.8 Bn**. The market has been represented in 2 formats – the first format excludes the contribution of IT services to the AI domain, and the second includes the contribution of IT services to the AI domain. Hence, the current valuation of the AI market, excluding the contribution of IT services across AI, is **\$3.8 Bn**, and including the contribution of IT services across AI is **\$7.8 Bn**. This demarcation has been done as the AI industry is maturing at varying rates across industries and segments. Nonetheless, the pace of growth is higher than the growth in 2019-2021. The growth for 2020-2021 was higher than the growth predicted last year – this was despite the recessionary effects caused by the unfortunate pandemic.

The projections of the market are as follows:

- ✚ In **2022**, the entire AI market would value at **\$9.4 Bn**. The market excluding IT services will value **\$4.7 Bn**.
- ✚ From 2022 to 2026, the CAGR for the entire AI market is expected at **27.5%**, taking the valuation of the entire AI market to **\$23 Bn** by **2026**. Similarly, the market for the AI domain excluding IT services is expected be **22.5%** valuing the AI market (excluding IT) in **2025** at **\$12.3 Bn**.
- ✚ These growth rates are significantly higher than the growth rates of **9%** predicted last year.

Benefits of AI:

Artificial Intelligence is one of the emerging technologies which tries to simulate human reasoning in AI systems “Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions, and concepts, solve kinds of problems now reserved for humans, and improve themselves.”

Reduction in Human Error: The phrase “human error” refers to human made mistakes from time to time. Computers, however, do not make these mistakes if they are programmed properly. With Artificial intelligence, the decisions are taken from the previously gathered information applying a certain set of algorithms. So errors are reduced and the chance of reaching accuracy with a greater degree of precision is a possibility.

Takes risks instead of Humans: This is one of the biggest advantages of Artificial intelligence. We can overcome many risky limitations of humans by developing an AI Robot which in turn can do the risky things for us. Let it be going to mars, defuse a bomb, explore the deepest parts of oceans, mining for coal and oil, it can be used effectively in any kind of natural or man-made disasters.

Available 24x7: An Average human works for 4–6 hours a day excluding the breaks. Humans are built in such a way to get some time out for refreshing themselves and get ready for a new day of work and they even have weekly off to stay intact with their work-life and personal life. But using AI we can make machines work 24x7 without any breaks and they don’t even get bored, unlike humans.

Faster Decisions: Using AI alongside other technologies we can make machines take decisions faster than a human and carry out actions quicker. While taking a decision human will analyze many factors both emotionally and practically but AI-powered machine works on what it is programmed and delivers the results in a faster way.

Daily Applications: Daily applications such as Apple’s Siri, Window’s Cortana, Google’s OK Google are frequently used in our daily routine whether it is for searching a location, taking a selfie, making a phone call, replying to a mail and many more.

New Inventions: AI is powering many inventions in almost every domain which will help humans solve the majority of complex problems. Recently doctors can predict breast cancer in the woman at earlier stages using advanced AI-based technologies.

Risks of AI:

High Costs of Creation: As AI is updating every day the hardware and software need to get updated with time to meet the latest requirements. Machines need repairing and maintenance which need plenty of costs. It's creation requires huge costs as they are very complex machines.

Making Humans Lazy: AI is making humans lazy with its applications automating the majority of the work. Humans tend to get addicted to these inventions which can cause a problem to future generations.

Unemployment: As AI is replacing the majority of the repetitive tasks and other works with robots, human interference is becoming less which will cause a major problem in the employment standards. Every organization is looking to replace the minimum qualified individuals with AI robots which can do similar work with more efficiency.

No Emotions: There is no doubt that machines are much better when it comes to working efficiently but they cannot replace the human connection that makes the team. Machines cannot develop a bond with humans which is an essential attribute when comes to Team Management.

Lacking Out of Box Thinking: Machines can perform only those tasks which they are designed or programmed to do, anything out of that they tend to crash or give irrelevant outputs which could be a major backdrop.

Challenges:

Computing is not that Advanced: Machine Learning and deep learning techniques that seem most beneficial require a series of calculations to make very quickly. It clearly indicates that these AI techniques utilize a lot of processing power. AI has been in the expert discussion for a long time. And always it came out that there is not enough power to implement these AI techniques.

Fewer people support: AI implementation does not have enough use cases in the market. And without it, no organization would be interested to invest money in AI-based projects. It clearly means that there have been comparatively few organizations interested in putting money into the development of AI-based products.

Data Privacy and security: Most of the AI applications are based on massive volumes of data to learn and make intelligent decisions. Machine learning systems depend on the data which is often sensitive and personal in nature. These systems learn from the data and improve themselves. Due to this systematic learning, these ML systems can become prone to data breach and identity theft.

Data Scarcity: It is the fact that organizations have access to more data in the present time than ever before. However, datasets that are applicable to AI applications to learn are really rare. However, the most powerful AI machines are those that are trained on supervised learning.

Conclusion:

Artificial Intelligence and Machine Learning are products of both science and myth. The idea that machines could think and perform tasks just as humans do is thousands of years old. The cognitive truths expressed in AI and Machine Learning systems are not new either. We should accept that there is a tendency to approach all important innovations which we impose anxieties and hopes about what constitutes a good or happy world. But the potential of AI and machine intelligence for good does not lie exclusively, or even primarily, within its technologies. It lies mainly in its users.

At the end, we have been in this research through the contributions of AI, applications of AI, positive impact, state of AI in India 2021, and the benefits, risks and challenges of AI. There are a lot more to learn about AI and its rapidly growing applications in our life. It is believed to be wise to adapt to this changing world and acquire skills related to Artificial Intelligence and technology. Just like AI learns and develops, we should too - to make this world a better place.

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