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Emerging trends of Artificial Intelligence: A Conceptual Study

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Abstract:

On the one hand where the whole world is concerned for sustainable developmentand use of available resources keeping in mind for future generations, on the contrary the World of technology is emerging with great pace and contributing towards the paperless environment which is ultimately moving one step ahead towards sustainable goals. With these emerging enhancements and faster adoption of the tech world in day to day lives, creating a new way of working environment for mankind leads to a fostering of Artificial Intelligence (AI) too in various fields. AI is the smart machines/robots having the ability to perform multiple tasks, develop self learning software applications that imitate thetraits of the human mind for performing several cognitive functions like reasoning, problem solving system, planning, sensory perception etc. AI is not only improving science, but also various approaches of life like business, education, healthcare and many more and this all together developing an economy. With this approach AI is ingrained everywhere becoming the need of an hour and hence keeping in view the different aspects of AI, the study is exemplified on the emerging trends of AI as well as its future scope in the development of aneconomy.

Keywords: *Artificial intelligence, Conversational AI, Business efficiency and Economicdevelopment.*

Introduction:

The concept of AI was first coined by John McCarthy (Dartmouth College) in 1956. Cognitive scientist Marvin Minsky (Harvard University) was optimistic about the technology's future. The 1974-1980 saw government funding in the field drop, a period known as "AI Winter", when several criticised progress in the world. However, the fervor was received afterwards in the 1980's and in 1997, IBM's Deep Blue began the first computer to beat a Russian Grandmaster, making history. From 2011 as of now (modern tech world) AI has taken every bit of progressive aspects in every field. From assistants such as Amazon's Alexa to the internet predicting what consumer may likely to buy next, AI has developed to bethe 'a kind of human brain'. Although AI is

recreating the human brain, it is impossible to recreate human consciousness. In the world of computer science, AI has been a progressive invention and a new development to the whole mankind.

AI includes various fields like deep learning, neural networks, statistics, machine learning etc which is evidenting to be successful in numerous domains like security, robotics, voice recognition, research, transportation, training, education and many more. It passes through various stages of planning, reasoning, analysing data, prediction of outcomes and acting accordingly. It has been a turning point notonly in these fields but also plays a keen role in bringing a new era in the economy of a country. AI is making the planet a better and trouble- free place. Large names such as Facebook, Google and Amazon are increasing structures and tools and contributing them inthe shape of open-source AI tools. Some of the tools used are: Tensor Flow, Caffe, Google ML Kit etc. Hence, AI is proving to reduce random obstacles, old age activities with its advanced technology as well as decreased cycle time for lengthy processes. With such regularity in application and recognisability for future generations, AI has become an important part to learn, develop and grow as it is rightly said technology is development.

Literature Review:

According to John McCarthy (2004)," It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methodsthat are biologically observable."However, decades before this definition, the birth of artificial intelligence was denoted by Alan Turing's seminal work," Computing Machinery and Intelligence", which was published in 1950. In this particular paper, Turing asks the following question," Can machines think?" From there, he offers a test, now famously known as the "Turing Test", where a human interrogator would try to distinguish between a computer andhuman text response. While this test has undergone much scrutiny since it's publication, it remains an important part of the history of AI as well as an ongoing concept within philosophy as it utilizes ideas around linguistics. Artificial Intelligence, also known as an interdisciplinary science, imitates human capabilities and intellectual behaviour. The application of AI theory and technology is also progressing. Many AI tools and components such as neural networks, deep learning, intelligent decision making systems and fuzzy sets, have been used in various fields. Among them, the use of AI in the field of human resource management is yet to be explored." In the 21st century artificial intelligence has become an important area of research in virtually all fields: engineering, science, education, medicine, business, accounting, finance, marketing, economics, stock market and law, among others ((Halal (2003), Masnikosa (1998), Metaxiotis et al.(2003), Raynor (2000), Stefanuk and Zhozhikashvili (2002),Tay

and Ho(1992) and Wongpinunwatana et al.(2000)). "The field ofAI has grown tremendously to the extent that tracking proliferation of studies becomes difficult task."(Amnite and Knoblock (2001), Balazinski et al.(2002), Cristani (1999) and Gouache (2003)).

Objective of the study:

- To understand the concept of AI in present context.
- To study the emerging trends of AI associated with it.
- To recommend measures to its acceptability and implementation in different fields.

Research Methodology:

Nature of study: It is a descriptive study as it studies the concept of AI in present context.

Type of study: It is a conceptual study.

Sources of Data: Full-scale literature review of various available journals, articles, websiteshas been used based on secondary sources of data.

Emerging AI trends:

The year 2020-21 was filled with multiple challenges. Despite the disruptions, the COVID-19 pandemic also served as a great opportunity for organizations to leverage technology. From ensuring the safety of employees while working remotely to improving business functions, the industry survived multiple digital touchpoints. As organizations continue to pivot and adopt new technologies, future looks like a year's filled with opportunities for technology trends. some of them are:

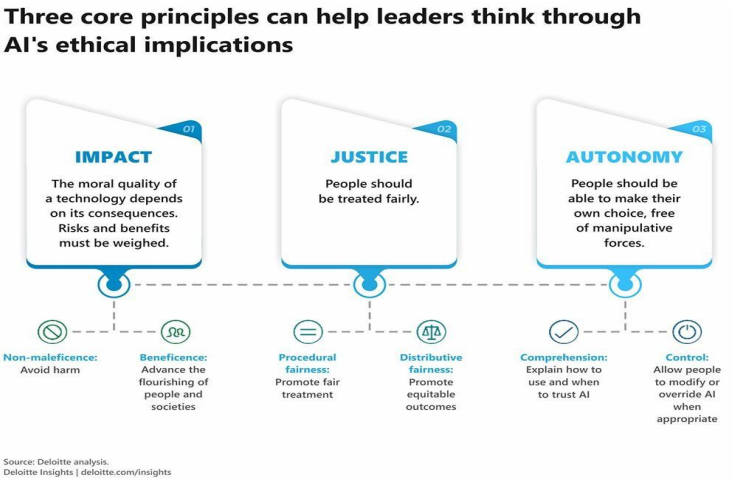
1. **Conversational AI:**

Conversational AI such as chatbots, virtual personal assistants are becoming the mainstreamfor business. With AI on the rise, organizations hope to expand their businesses effectively. Through conversational AI following are expected to be achieved in future:

- AI will boost 95 percent of customer interaction by 2025. *Source: Servion.*
- Voice assistants to triple in usage from 2.5 billion in 2018 to 8 billion by 2023. *Source: Juniper Research.*

2. **Ethical AI:**

Ethical AI is chief among the list of emerging technology trends. This is one aspect computer scientists and AI engineers have been trying to figure out since the 1970s. AI ethics help determine right and wrong. Missing out on ethical AI might increase regulatory, legal and reputational risks, thus, leading to product development inefficiency, inability to use data for training AI models, and wastes resources. Organizations need to be able to distinguish right from wrong. This is one of the major reasons why companies have started including ethical standards, policies to reduce the risksof AI.



3. The Fusion of AI and IoT:

The blend of AI and IoT enables an organization to reach greater heights by providing intelligent decision making, customer delight, accurate prediction, identification of costsavings, and increased operational efficiency. When merged, AI and IoT offer a uniquesolution with the potential to digitally transform businesses.

- A report by Business Insider predicts that by 2025, companies are likely to invest upto USD 15 trillion in IoT.
- According to McKinsey Global Institute, the potential economic impact caused byIoT
- will range between USD 4 trillion and USD 11 trillion by 2025.

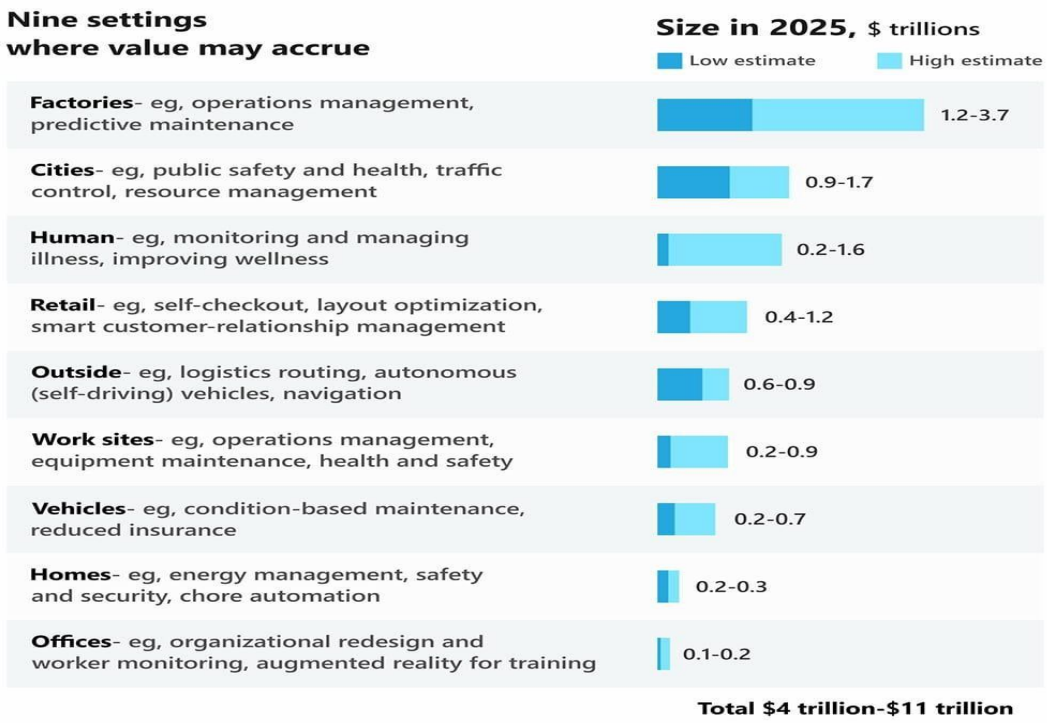


Image source: McKinsey

Alexa, Siri, Google Maps, and Netflix are powerful examples indicating that AIoT exists.

4. **AI in Cybersecurity:**

   Organizations are banking on AI to help identify threats. Around 69 percent of organizations believe adopting AI becomes all-persuasive to respond to cyberattacks and threats. Technologies like AI and machine learning have become critical tools for companies to fix unwanted system vulnerabilities. With inevitable threats coming from cybercriminals, organizations must become vigilant and not let their guard down.

- **Threat hunting:** AI easily improves threat hunting by adopting behaviour analysis.
- **Managing vulnerabilities:** AI techniques simplifies vulnerability management capabilities that organization face daily. AI help organizations detect anomalies on servers or even analyze the user behaviour before the attack could take place.

  Network security: AI boosts network security by closely studying the pattern of network traffic. Google, IBM, Juniper Networks and Balbix are companies that have enforced good practices of AI in Cybersecurity.

5. **Quantum AI:**

   Industry leaders in the quantum space such as IBM, Azure, Microsoft, and Google are making breakthroughs currently and will continue to grow in future. Both private investors and governments across the world have extensively started investing huge sums of money into quantum research and development. Further, a surveys predicts that the enterprise quantum market worldwide will grow to USD 5.85(approx) billion by 2025.

Conclusion:

This paper concludes that AI has been growing rapidly in every sense of organization whether private or government sector. The impact of AI emerging with new trends anddevelopment in each sector of society such as banking, education, transportation, stockmarket, ITs, healthcare etc. The organisation is developing with AI implementation and adoption and hence with this the society develops and perhaps an economy develops too. Future Researchers can also conduct research on various approaches of AI as this paper limits the trends only, so future researchers can look into the challenges faced with the potential trends in the aspects of developing countries like India. Researchers can also workas comparative study on ease of functional activities before and after the adoption of AI.

Hence AI and it's incredible contribution in every field is making a difference in the world.

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