

Original Article**Why Is Everything Becoming AI?****Aman Girishchandra Gupta**Assistant Professor, Hirwal Education Trust College of Science
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**Abstract**

Artificial Intelligence (AI) has evolved from an academic research topic to an integral part of the technological fabric that pervades every aspect of modern society. In the last decade or so, advances in Machine Learning, Deep Learning, Cloud Computing, and the availability of data have accelerated the pace at which AI technologies are being incorporated into economic systems, governments, and societies around the globe. AI technologies are now being used in medical diagnosis, financial forecasting, autonomous vehicles, personalized learning systems, cybersecurity, and military technologies. The purpose of this research paper is to investigate what structural factors accounted for the rapid global development and acceptance of artificial intelligence (AI). In this paper, we use qualitative secondary research methods to compile information from academic literature, institutional reports, and industry analyses published from 2015 through 2025. Our findings indicate that multiple major forces are causing significant increases in both the development and acceptance of AI worldwide, including: 1) Rapid increases in data; 2) Significant Improvement in computing resources; 3) Economic Incentives; 4) International Technology competition; and 5) Significant improvements in ML algorithms. This indicates that AI is gradually becoming an infrastructural layer similar to those of transformative technologies such as electricity, internet, and cloud computing. It's not just a system of technology; it's an all-purpose kind of system that has many useful things to do. For example: making us more productive, helping us to make better decisions, and allowing us to fully automate difficult thinking tasks improving efficiency and effectiveness. On top of this, there are multiple ways that AI creates new ethical, economic, and governance issues. It is also crucial to comprehend why AI is becoming ubiquitous in order to help various stakeholders in different institutions, including governments and businesses, cope with the change in a digitally automated economy. As a conclusion, it is worth noting the significance of having a proper governance structure in ensuring that the advantages of having AI are equitably spread in society.

Keywords: Artificial Intelligence (AI), Machine Learning, Deep Learning, Automation, Cognitive Labor, Digital Transformation, Cloud Computing, Data Network Effects, AI Adoption, Computing Infrastructure, Venture Capital, Technological Innovation, Global Competition, AI Governance, Digital Economy.

Introduction

During history, technological advancements have been a key driver in altering many of our fundamental institutions such as economic systems and social structures. Technological innovations throughout history have reshaped the way in which societies produce goods, communicate information, and organize labor. Over the last several hundred years from the industrial revolution through the digital era, society has been continuously redesigned through technological advancements. The current transformative technology of the 21st century that will shape the future structure of the world's economies is Artificial Intelligence (AI).

Artificial Intelligence refers to the ability of machines to carry out tasks that generally need human intellect, such as the ability to learn, reason, perceive, and make decisions. Current AI systems primarily use machine learning algorithms that analyze extensive data sets in order for the system to identify patterns, create predictions, and facilitate the execution of complicated activities (Russell and Norvig 2021). AI systems transitioned from being cutting-edge experimental research in a laboratory setting over the last decade to becoming commonplace commercial applications through which organizations spanning the globe are using AI to optimize their operations, drive down costs, and improve their ability to make accurate decisions. For example, hospitals are using AI to identify illnesses within the imaging scans of patients, banks and other financial institutions are using AI to identify fraudulent transactions, and online service providers deliver customized experiences to their users through the use of AI-powered recommendation engines.

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However, the rapid expansion of AI poses an important question: what is the reason behind the integration of AI technology into almost every technological field and industry? There are several structural changes that have taken place within the international digital economy that have fueled the expansion of AI technology. These include the prevalence of digital data, high-performance computing technology, and the creation of cloud technology infrastructure. Concurrently, the high level of competition among corporations and governments has fueled the expansion of AI technology innovation.

The integration of AI technology into almost every technological field and industry points to the fact that AI technology may represent a general-purpose technology, like electricity or the internet.

In order to understand the expansion of AI technology within society, several reasons make the subject important. First, AI technology requires a set of regulatory policies that can ensure the ethical use of AI technology within society. Second, understanding AI technology is important to businesses to remain competitive within the international economy. Finally, understanding AI technology is important to educational institutions to remain relevant.

This study seeks to examine the major structural reasons behind the expansion of AI technology within society.

Literature Review

Academic literature has begun to be written about the evolution of Artificial Intelligence and its effects on society. Scholars from many different disciplines including computer science, economics, and public policy have examined what caused AI to evolve so rapidly around the world. Current literature indicates that one of the main causes of the rapid evolution of AI is machine learning breakthroughs. There has been tremendous breakthrough in the field of deep learning architectures that has improved the capabilities of machines to sense their environment. Neural networks can now perform better than humans in recognizing images and classifying patterns (Goodfellow, Bengio, & Courville, 2016). This has improved the practical applications of AI.

Another major reason behind the rapid evolution of AI is the explosive growth of digital data that has been witnessed over the past decade. Digital ecosystems today produce tremendous amounts of data through the use of smartphones, social media sites, and online transactions. According to data science experts, the volume of digital data produced globally has been increasing exponentially over the past decade (Kelleher & Tierney, 2018).

AI systems use huge volumes of data to train their machines to learn from experience. According to research studies, the adoption of AI technology can improve the productivity of both private and public organizations. According to the McKinsey Global Institute (2023), the adoption of AI technology can contribute trillions of dollars to the global GDP through the improvement of operational efficiency and decision-making processes through the automation of tasks that are repetitive in nature. Organizations that have adopted various AI technologies have enjoyed various competitive advantages through the improvement of their productivity.

Geopolitical competition has also driven the investment in AI technology (in addition to the factors mentioned above). This is because various governments consider AI a strategic technology that will have a long-term impact on the development of their nations. In the past, the major economic powers such as the USA, China, and most of the EU member states have adopted a National AI Strategy to support the R&D of this technology (World Economic Forum, 2024). Another key component of the expansion of AI industries, as cited by the literature reviewed, includes venture capital and private investments. This is because investors are attracted to new and emerging technology-based startups, and there are ample funds available through venture capital firms. This helps to hasten the rate of innovation and facilitate the deployment of AI technologies into various industries. In conclusion, the factors cited by the literature reviewed on the expansion of AI industries are influenced by factors of technological capabilities, economic incentives, and political competition.

Methodology

This study adopted a qualitative approach in finding factors of growth in AI using qualitative secondary data. Secondary data is collected through existing published sources of information, unlike collecting data through surveys and experimentation. Academic journals, institution publications, and industry journals were collected from various databases in examining some of the prominent themes related to AI adoption.

Some of these databases include:

- Google Scholar
- IEEE Xplore
- JSTOR
- OECD publications
- World Economic Forum reports
- McKinsey Global Institute analyses

To ensure the relevance of this research in relation to current technological advancements, only publications from 2015 to 2025 were considered. Data Analysis, Data collected through various sources were subjected to thematic analysis, a qualitative research methodology where patterns are identified in a set of collected data. Some of the prominent themes were categorized in line with their relevance to technological, economic, and political factors. There were three major steps in this research methodology:

1. Source Collection – Collection of authentic sources related to the development of AI from academic/institutional publications.
2. Data Coding – Collection of data on some of the prominent explanations related to the adoption of AI.
3. Theme Categorization – Categorization of related data into the prominent structural drivers.

This research methodology does not include the analysis of statistical data; however, it provides a comprehensive overview of the prominent factors related to the development of AI.

Findings and Discussion

The following are some of the major drivers of the current and near-future development of AI technologies, including:

1. Automation of Cognitive Labor

The availability of AI technologies to automate "cognitive labor" has been one of the more significant drivers of the growth of AI technologies across different industries.

Historically, automation technologies have primarily focused on the transition from manual labor to the use of machinery (and/or industrial robots) as a means of replacing human workers, AI has taken this approach one step further by automating tasks that require intellectual ability.

Examples of this kind of cognitive task automation include the use of AI technologies to monitor the health of a stock market, recognize certain types of medical diagnoses by analyzing medical images, and prevent/monitor (detect) cyber threats in real-time. As such, AI technologies have essentially been able to provide increased efficiency and reduced time-to-market (for producing goods/services).

Because of this, organizations looking for ways to increase their productivity and decrease their overall business costs are increasingly viewing the automation of cognitive labor as a viable solution for achieving these objectives.

2. Data Network Effects

Data Network Effects are a crucial component contributing to AI adoption; as organizations implement AI systems, data from operational activities are collected at large amounts. In turn, this data is utilized for developing machine learning models and improving algorithm performance and accuracy. As more data becomes available, so too will further utilization/implementation of an AI system.

The cycle repeats itself by creating a self-reinforcing loop where continually improving data will lead to improved algorithms and the benefits from using AI systems. Therefore, larger tech companies are much better-positioned than smaller companies due to the amount of user data that is generated on their platforms, allowing for much stronger AI models to be created versus a smaller competitor.

3. Advances in Computing Infrastructure

Advances in computing infrastructure have allowed for the creation of today's advanced AI Systems. Because substantial amounts of computing resources are needed to develop complex machine learning models, the high cost of computing infrastructure has limited the development of AI systems to those large research institutions capable of procuring such expensive computing systems. With the introduction of cloud computing, the ability for any enterprise to access high-performance computing resources has greatly expanded the ability to develop AI systems. Through the large number of cloud providers that provide not only computing resources, but also pre-built machine learning applications, businesses can now easily create AI applications. The democratization of AI infrastructure and applications has allowed for unprecedented innovation across many different industries.

Figure 1: AI Adoption by Industry Sector

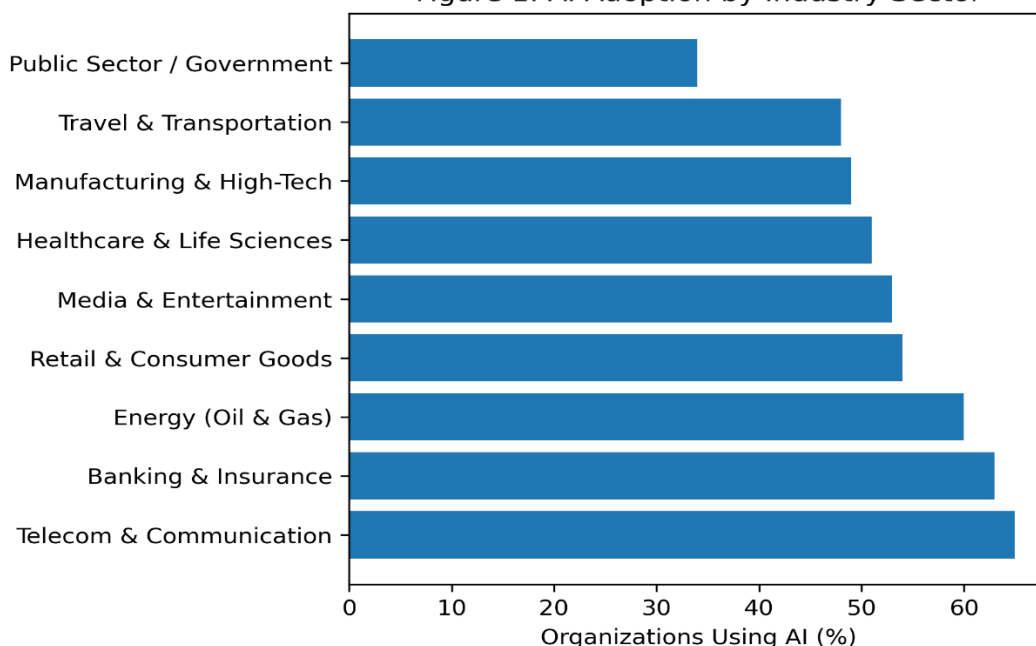


Figure 1: AI Adoption by Industry Sector (SQ Magazine. (2025). *AI adoption statistics by industry.* <https://sqmagazine.co.uk/ai-usage-statistics/>)

Figure 1 shows the distribution of AI adoption across major industries. Technology-driven sectors such as telecommunications, finance, and energy demonstrate the highest adoption levels due to the availability of large digital datasets and strong incentives for automation.

4. Venture Capital and Startup Innovation

The AI sector is growing at an unprecedented pace partly because of increased funding from venture capitalists who see this as an attractive high-growth market opportunity. Venture capitalist money flows into many different types of AI startups developing new applications for industries like healthcare, robotics, fintech and NLP.

Startups are critical to converting academic research into commercial products that can reach the marketplace. They are the ones experimenting with the latest AI technology and pushing that technology in new directions.

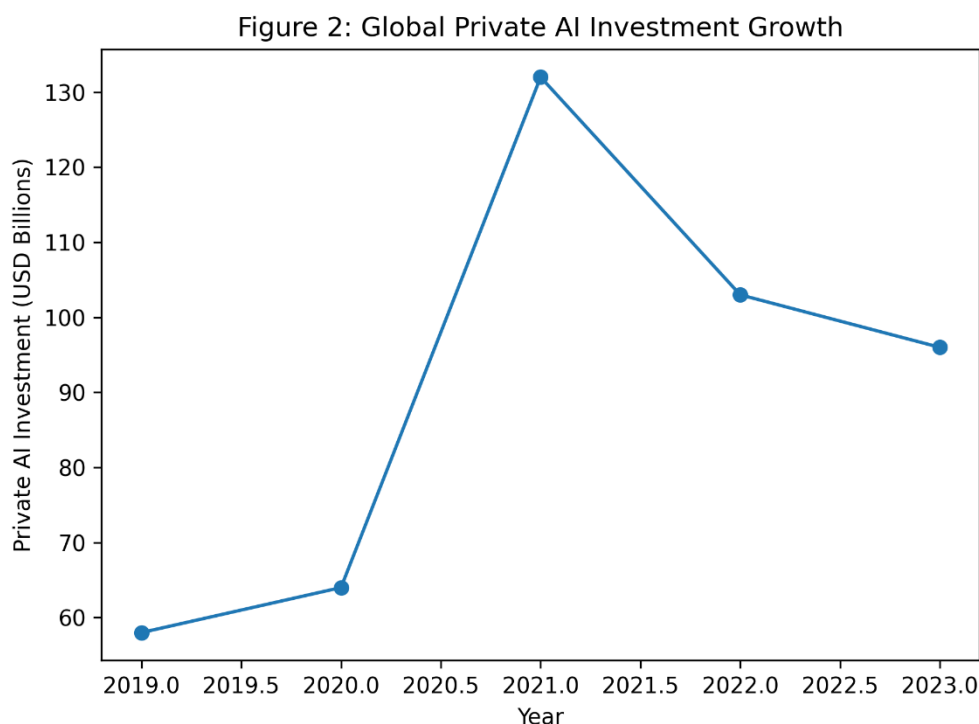


Figure 2: Global Private AI Investment Growth (2019–2023) (Gitnux. (2026). *Artificial intelligence industry statistics and market growth*. <https://gitnux.org/top-ai-industry-statistics/>)

Figure 2 illustrates the rapid growth of global investment in artificial intelligence technologies. Increased venture capital funding has played a major role in accelerating AI research, innovation, and commercialization worldwide.

5. Global Technological Competition

Geopolitical competition has also played a significant role in increasing efforts among the world's nations to develop advanced AI-based systems. Governments all over the world now understand that, whether for business, military or overall technological influence/balance, AI capabilities will enhance a nation's (based upon its own AI development and deployment of those AI systems) ability to compete economically, militarily and through global technology leadership.

Countries like the U.S. and China have made significant investments in AI research and development, talent acquisition and infrastructure development. Additionally, both nations are utilizing national strategies for AI that are focused on building a strong innovation ecosystem in each country while, at the same time, maintaining technological superiority in order to be viewed as the world leader in AI technology.

This global competition is continuing to help accelerate developing and implementing AI systems.

Conclusion

The rapid emergence of Artificial Intelligence is currently one of the primary factors creating an environment where AI technologies are being rapidly developed into critical infrastructure for modern-day economies and societies. The widespread implementation of AI is due to many structural forces throughout the combination of various technological advancements, rather than one large-scale advancement in technology. In this analysis conducted for this report, a detailed examination of the expansion of AI technologies will reveal some of the most significant features leading to this growth. These include: (1) automation of cognitive labor; (2) exponential growth in digitized data; (3) enhancements in computing technologies; (4) strong economic incentives; (5) substantial venture capital investment; and (6) geopolitical pressures.

As AI systems will continue to change, they are also likely to change the way organizations operate, how governments operate, and how individuals utilize digital technologies. The expansion of AI technologies does raise many ethical/societal issues such as: algorithmic bias; privacy; displacement of workers; and concentration of technological power; and requires appropriate action for appropriate governance.

Future research should create responsible frameworks for the use of AI which balance ethical issues against the need for innovation. Likewise, there should also be collaboration between policymakers and educational institutions to ensure that workers are prepared with the necessary skills to compete in a globally competitive economy driven by AI technologies. AI continues to

create a significant impact in many technology areas and that suggests AI is becoming an underlying basis of the digital economy similar in nature to electricity, the internet, and cloud computing.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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