KPMG

The AI Outlook

The role of AI in shaping tomorrow's world

July 2025

kpmg.com/in

KPMG. Make the Difference.

Foreword

We stand on the cusp of a technological revolution - Artificial Intelligence (AI) is redefining the way we work, live, and innovate. The transformative impact of AI is no longer a distant promise –it is a tangible force driving efficiencies, fostering innovation, and reshaping industries across the globe. This comprehensive report delves into the multifaceted role AI plays in shaping our world today, while also navigating the challenges and ethical considerations it brings.

Over the past few years, we have witnessed unprecedented advancements in AI, from Generative AI (GenAI) tools enabling creative expression a couple of years back to Agentic AI systems that are capable of autonomous decision-making more recently. These technologies are not merely enhancing existing workflows; they are charting new paths for industries to thrive. The potential for AI to contribute trillions to global GDP underscores its role as a cornerstone of economic growth. This report also highlights the role of AI in addressing global challenges and advancing Sustainable Development Goals (SDGs). From combating climate change to reducing inequality, AI's potential to drive positive societal impact is vast.

Yet, with great power comes great responsibility. As AI integrates deeper into our lives, we must confront its dual-edged nature. While it offers immense opportunities, it also poses challenges, including job displacement, data privacy concerns, and the perpetuation of biases. Ethical AI is not just a lofty ideal but a critical imperative.

For policymakers, business leaders, and technologists, this report offers critical considerations as they mull over decisions with respect to AI. The pages that follow promise to be an illuminating journey into the world of AI—its achievements, its challenges, and its boundless potential. We invite you to explore, engage, and envision the possibilities that lie ahead.

Purushothaman KG
Partner and Head
Technology Transformation
KPMG in India

Adil Vazifdar
Partner and Head
Digital Platforms
KPMG in India

Sankara T Subramanian
Partner and COO
Digital Platforms
KPMG in India

Table of contents

01
Introduction

Artificial Intelligence (AI) has transcended the realm of emerging technology to become an omnipresent force shaping the future of life, work, and society. No longer confined to back-end processes or experimental pilots, AI is now embedded in core workflows, customer experiences, and decision-making ecosystems across industries. As its transformative potential continues to unfold, AI is redefining how value is created, how services are delivered, and how human potential is augmented. Forward-looking organisation's today are harnessing AI not merely as a tool, but as a strategic catalyst—its influence is poised to reshape the competitive landscape and unlock a new era of human-machine collaboration at scale.

In a survey conducted by the India Leadership Council (ILC) by The Times Group, in collaboration with KPMG in India, we found that most companies view AI not just as a tool for enhancing short- term gains, but as a transformative force that will reshape industries. Organisation's view AI as a catalyst for innovation—one that will drive the emergence of new business models and redefine strategic priorities over the long term.

What is the primary objective of AI adoption in your organisation?

- Driving operational efficiency — **48%**
- Enhancing customer experience — **24%**
- Innovating products & services — **16%**
- Gaining competitive advantage — **4%**
- Reducing costs — **4%**
- Other — **4%**

Source: India Leadership Council (ILC) by The Times Group – Survey on AI 2024

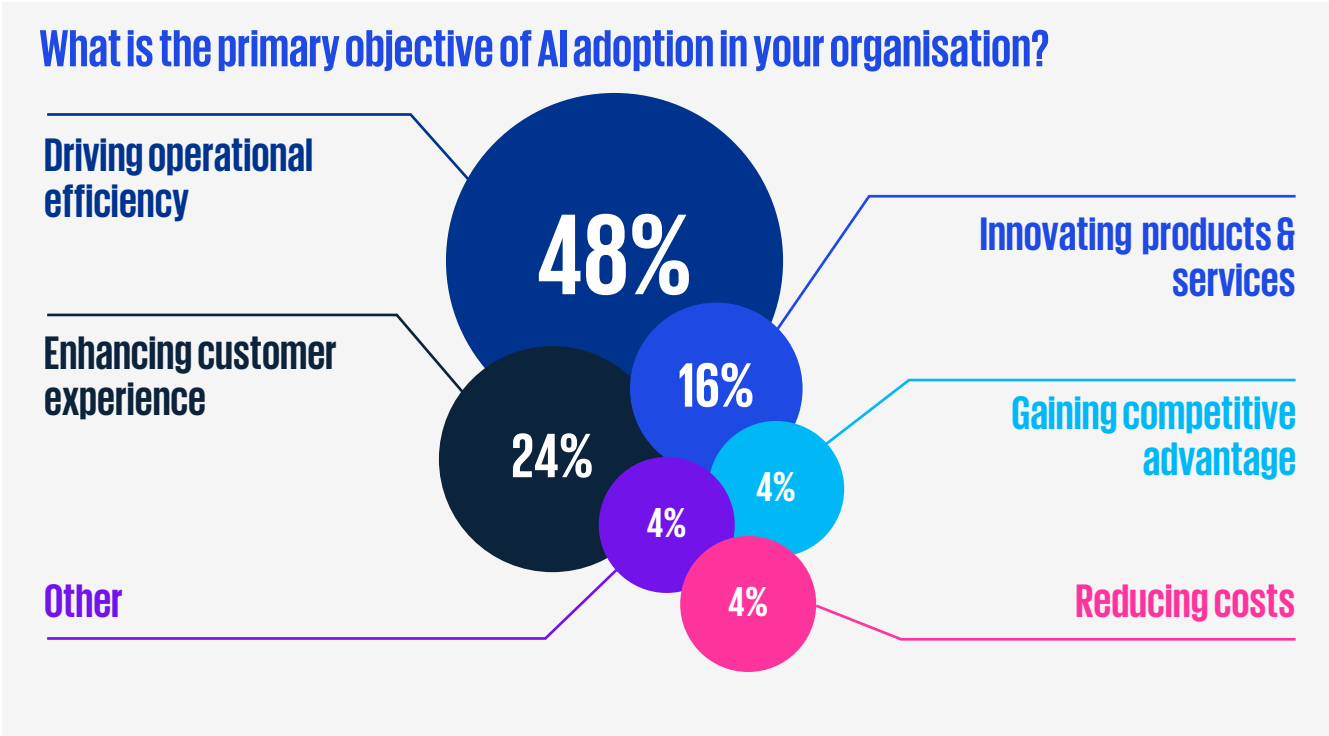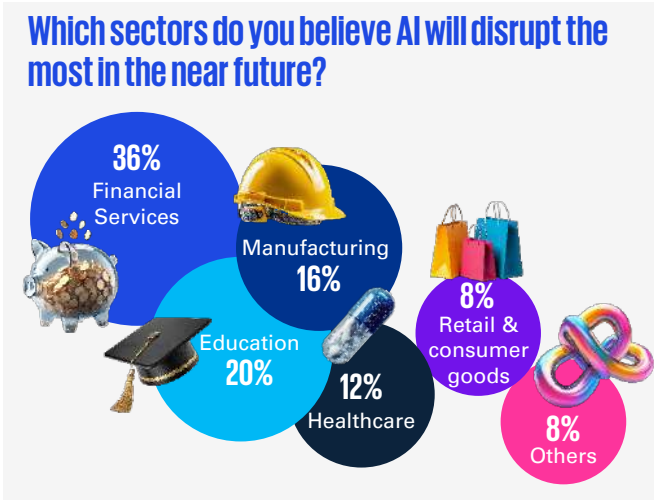| Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | Methodology | Acknowledgements |

Recent developments in Generative AI (GenAI) have further accelerated this transformation. While GenAI tools released in 2023 and 2024 were already huge strides for the AI development community, newer alternatives coming from different parts of the world in 2025, are going to make GenAI even more accessible and affordable.

Another recent development that has taken the AI world by storm is Agentic AI. Agentic AI with its capacity to autonomously make decisions and execute complex workflows, represents a significant leap forward in AI's potential. These systems can enable businesses to automate intricate processes, adapt dynamically to new challenges, and even collaborate with human teams in decision-making tasks.

Industries other than technology sector are also adopting Artificial intelligence and are reaping the benefits. For frontrunners among corporates, AI is no longer just a part of their strategy dossier that discusses possible use cases. It is being applied and scaled in their day-to-day operations to price better, increase sales, reduce costs, improve speed and quality, and increase customer outreach.

For instance, in the pharmaceutical and healthcare industry AI is driving accelerated drug discovery, improving the efficiency of clinical trials, and helping create personalised treatment plans. AI models today are also predicting protein structures and significantly advancing our understanding of diseases. In banking and finance, AI is enhancing customer service through chatbots, improving fraud detection, and streamlining regulatory compliance. AI's possibilities on education includes personalised learning experiences for students, personalised teaching feedback for teachers, virtual tutors, and automated grading systems, making education more accessible, tailored to individual needs and free from judgement. In the manufacturing sector, AI is optimising production processes, predicting maintenance needs, and improving supply chain efficiency.

Which sectors do you believe AI will disrupt the most in the near future?

- 36% Financial Services
- Manufacturing 16%
- Education 20%
- 12% Healthcare
- 8% Retail & consumer goods
- 8% Others

Source: India Leadership Council (ILC) by The Times Group- Survey on AI 2024

The overall economy is also experiencing the profound effects of AI. It is estimated that AI could contribute trillions of dollars to global GDP by enhancing productivity and creating new economic opportunities. However, this rapid adoption of AI also brings concerns. The societal impact of AI is a double-edged sword. On the positive side, AI can lead to significant advancements in healthcare, education, industrial efficiency, and environmental sustainability. On the flip side, there are concerns about job displacement, privacy issues, and the potential for AI to perpetuate biases and discrimination.

Ethical AI is a critical consideration in this context. High-profile cases of biased, discriminatory, or manipulative AI use have in a way raised questions about the trustworthiness of AI systems. Hence, ensuring that AI is developed and used responsibly is essential to maintaining public trust. This involves addressing issues such as transparency, accountability, and fairness in AI algorithms and applications. The ILC survey also finds that more than three-fourths of all respondents, believe that aligning their enterprise AI strategies with ethical AI principles is crucial.

Realising the potential benefits of AI, and achieving a return on investment, requires a clear and sustained focus on maintaining the public's trust. To drive adoption, people need to be confident that AI is being developed and used in a responsible and trustworthy manner. As we continue to integrate AI into our lives, it is crucial to balance innovation with ethical considerations to shape a future where AI benefits all of society.

This report aims to provide a comprehensive analysis of the current state of Artificial Intelligence (AI), its potential to drive innovation, and its implications across various aspects.

The objective of the report is to:

Explore the transformative potential of AI in key industries

such as healthcare, finance, education, and manufacturing. This includes examining how AI is revolutionising these sectors in terms of innovation, efficiency, better outcomes for current and new benefactors, among others.

Assess the role of AI in achieving Sustainable Development Goals (SDGs).

AI has the potential to significantly contribute to the SDGs by improving healthcare outcomes, enhancing educational access, promoting sustainable industrial practices, and fostering economic growth. The report will evaluate how AI can be leveraged to address global challenges such as poverty, inequality, and climate change, among others.

Analyse the ethical, legal, and societal challenges associated with AI adoption

This involves discussing the current concerns about data privacy, algorithmic bias, and the potential for job displacement. It will also touch upon the legal frameworks under discussion and frameworks, which are needed to regulate AI use and ensure it aligns with societal values and human rights.

Provide actionable insights for policymakers, business leaders, and technologists to harness AI's potential while mitigating risks.

This includes recommendations on developing ethical AI guidelines, investing in AI research and development, and creating policies that promote responsible AI use. Lastly, the report will offer strategies for balancing innovation with ethical considerations to help ensure that AI benefits society.
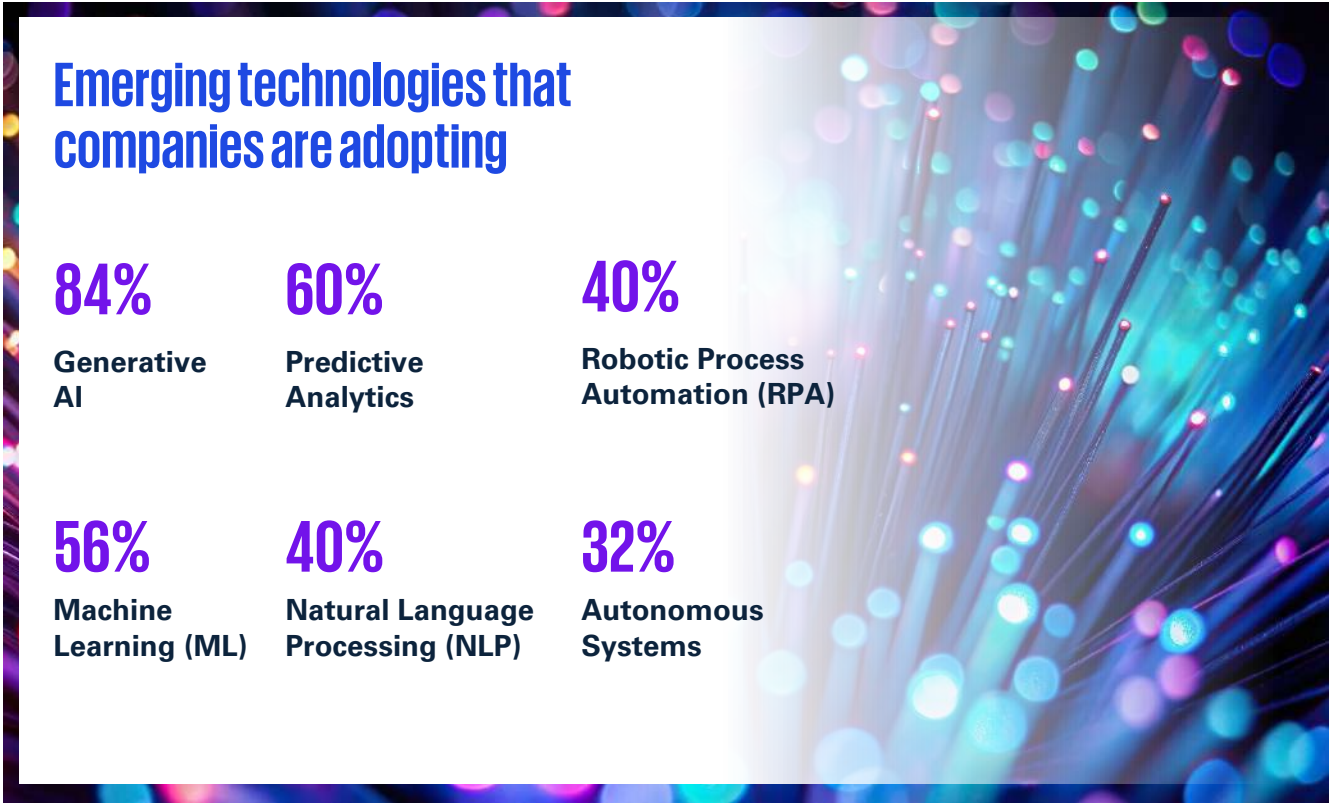
02

AI technology landscape

Core Technologies Driving AI

As discussions around Artificial Intelligence (AI) become increasingly prevalent, the term is often used in a broad and sometimes imprecise manner. A clear understanding of the various technologies encompassed within AI that companies are adopting, is essential, given their significant impact on both industry and everyday life. Below are some of the key AI technologies, that companies are increasingly adopting.

Emerging technologies that companies are adopting

84%
Generative AI

60%
Predictive Analytics

40%
Robotic Process Automation (RPA)

56%
Machine Learning (ML)

40%
Natural Language Processing (NLP)

32%
Autonomous Systems

Source: India Leadership Council (ILC) by The Times Group- Survey on AI 2024

Chronicling AI Advancements
Then to Now – The AI Journey

The journey of artificial intelligence (AI) since the 2010s has been nothing short of revolutionary. At the start of that decade, AI was primarily focused on narrow applications, such as image recognition and natural language processing. The breakthrough moment came in 2012 when a Convolutional Neural Network (CNN) set new benchmarks in the ImageNet competition, demonstrating AI's potential to rival human intelligence in image recognition tasks. This in turn spurred the use of CNNs and neural networks for computer vision problems and every year from then on, the accuracy of winning models at the ImageNet competition kept improving, so much so, that after 2017 the ImageNet competition was cancelled, as it was no longer considered the benchmark for Computer Vision accuracy.

However, it was not just deep neural networks, which were a big finding of this turning point of 2012. The winning team used two top of the line Graphics Processing Units (GPUs) instead of Central Processing Unit (CPUs), which allowed them to train the model much faster than would have been possible with CPUs. This success not only demonstrated the power of deep learning but also highlighted the importance of hardware advancements in AI research. This breakthrough paved the way for the development of even more sophisticated models and hardware and set the stage for the AI revolution that followed.

The field of computer vision today has seen remarkable progress. Generative Adversarial Networks (GANs) have become a cornerstone of computer vision, enabling the creation of realistic images and data augmentation. Meanwhile, Vision Transformers (ViTs) have revolutionised image analysis, offering superior performance in object detection and segmentation.

As the decade progressed AI research flourished with significant contributions from major technology giants and academic institutions. One of these technology giants developed AI programmes capable of defeating world champion Go players[1], while a leading social media giant advanced NLP and computer vision-enabling text- to- speech and speech- to- text translation in over 1000 languages[2],[3].

---

1. AlphaGo, Wikipedia, February 14 ,2025, March 05, 2025
2. Celebrating 10 years of FAIR: A decade of advancing the state-of-the-art through open research, Meta, Joelle Pineau- VP, AI Research,

November 30, 2023, March 05, 2025
3. No Language Left Behind, Meta, March 05, 2025

The advent of a Large Language Model based chatbot tool in late 2022 marked another pivotal moment in AI's evolution. The tool demonstrated the ability to generate human-like text, transforming how people interacted with AI. It could write essays, answer questions, and even create poetry, making AI accessible to a broader audience. This breakthrough needless to say has spurred a wave of innovation, with companies and researchers not only improving AI's capabilities, but also constantly exploring new applications.

By January 2023, the aforementioned chatbot had become what was then the fastest-growing consumer software application in history, gaining over 100 million users in two months and contributing to the growth of its parent company. This chatbot's release spurred the release of competing products, including from various tech giants and open-source communities.

In December 2024, the world took note of another chatbot, this time from a Chinese AI lab. This chatbot based on models, built using reinforcement learning and a mixture-of-experts system, outperformed many of the world's top AI models at a fraction of the cost. This development furthers the democratisation of AI research, as the Chinese lab made the model public and available for anyone to download and make their own version of a highly efficient LLM[4].

While Large Language Models have demonstrated what AI can do and how much closer we are to Artificial general intelligence, researchers, are also working on making AI more efficient by developing smaller language models that perform as well as larger ones.

For example, a new model from a leading technology company, with just 2.7 billion parameters, matches outperforms models up to 25 times larger[5]. These smaller models are quicker to train, run more efficiently, and are more environmentally friendly.

Hardware innovations have also played a crucial role in supporting AI's growth and will continue to play that role. A leading world class university's work on ultra-fast protonic programmable resistors has enabled analogue deep learning, significantly reducing the energy required for AI computations. These resistors operate by propelling protons through solids at unprecedented speeds, enabling them to process data up to 1 million times faster than the synapses in the human brain[6].

A legacy technology giant, founded in the late 19th century, is driving advancements in AI hardware through analogue in-memory and neuromorphic computing. Its analogue chips have been shown to outperform GPUs in running advanced Mixture of Experts (MoE) models.[7] Complementing this, a leading global university's development of computational RAM (CRAM) marks a breakthrough in reducing energy consumption for AI applications[8].

Together, these innovations are shaping a more dynamic and sustainable AI landscape focused on smaller, more efficient models, affordable solutions, and energy-efficient hardware. As AI continues to evolve, collaboration among technology companies, academic institutions, and startups is expected to accelerate progress and expand real-world impact. While the last decade was defined by breakthroughs in AI science, experts believe the next will be driven by its application reshaping industries and everyday life.

---

4. What DeepSeek Means for Open-Source AI, IEEE spectrum, MATHEW S. SMITH, January 31, 2025, March 05, 2025

5. The surprising power of small language models, Microsoft, Mojan Javaheripi, December 12, 2023, March 05, 2025

6. New hardware offers faster computation for artificial intelligence, with much less energy, MIT News, Adam Zewe, July 28, 2022, March 05, 2025

03

Sectoral impact

For businesses, embracing AI is becoming increasingly essential. As per KPMG International's AI Quarterly Pulse Survey 2025, a majority of CXOs feel that AI will fundamentally change the nature of their business over the one-to-two-year horizon (56 per cent in the next year and 67 per cent in the next two years). Additionally, 68 per cent of leaders will look to invest between USD50-USD250 million in GenAI over the next 12 months, up from 45 per cent in Q1 of 2024[9]. While numerous technology companies have started offering tailored AI solutions to address the unique needs of various sectors, many traditional companies in these sectors are also building such technology in-house. These developments are making substantial positive impact in fields such as healthcare, education, energy, industrial manufacturing, agriculture, consumer goods, automotive and finance. The next section delves into four of these industries, showcasing some innovative and some typical use cases.

9. KPMG International's AI Quarterly Pulse Survey: 2025 is the year of agentic AI, KPMG in the U.S., November 7- December 9, 2024, March 05, 2025

Artificial Intelligence:
A Game-Changer in Healthcare

Imagine a world where doctors can predict illnesses before symptoms even appear, where surgeries are performed with pinpoint precision, and where personalised treatment plans are crafted just for you. This is not a scene from a futuristic movie, but is the reality being shaped by Artificial Intelligence (AI) in healthcare today. As AI weaves its way into the fabric of medical practice, it brings with it a wave of innovations that are transforming patient care. From diagnosing diseases with remarkable accuracy to offering round-the-clock virtual health assistance, AI is not just a tool, but a game-changer. The following paragraphs delve into the fascinating journey of AI in healthcare, exploring the groundbreaking innovations and the profound impacts already being realised.

AI-driven diagnostic tools

AI-driven diagnostic tools leverage machine learning algorithms to analyse medical data, such as imaging scans, pathology slides, and genetic information. These tools can identify patterns and anomalies that may be missed by human eyes, leading to more accurate and timely diagnoses.

For example, a medical technology company introduced AI assistance through the AI-Rad Companion Chest CT to streamline the process of aneurysm follow-up assessments. The use of AI resulted in a notable reduction of more than 35 per cent in inter-reader variability when measuring the diameter of aortic aneurysms in CT scan follow-ups.

This indicates improved consistency and accuracy in measurements, potentially reducing diagnostic discrepancies. The AI-Rad Companion Chest CT reduced the radiologist's reporting time for aortic aneurysm follow-up assessments by 63 per cent, decreasing it from more than 13 minutes to less than five minutes. This efficiency improvement led to quicker treatment decisions and enhanced patient care.[10][11]

Today AI-powered diagnostic tools can help pathologists accurately identify prostatic adenocarcinoma regions and classify malignant and benign tumour areas in biopsy tissue. AI identifies patterns and anomalies in imaging data that may be overlooked by the human eye, leading to more accurate and thorough diagnoses. AI-driven diagnostics provide timely diagnostic services in underserved areas and enable efficiency improvements, enhancing the patient experience and overall public health management.[12]

10. Realizing the value of AI in MedTech within Asia Pacific, KPMG International, September 2024, March 05, 2025
11. Artificial intelligence assistance improves reporting efficiency of thoracic aortic aneurysm CT follow-up, National Library of Medicine, J. Rueckela -muenchen.de · P. Reidlera · N. Finka,b · J. Sperlc · T. Geyera · M.P. Fabritiusa · J. Rickea · M. Ingrischa · B.O. Sabela, January 2021, March 05, 2025
12. QAi Prostate – Qritive, Qritive, March 05, 2025

| Introduction | AI technology landscape | **Sectoral Impact** | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | Methodology | Acknowledgements |

Personalised medicine

Personalised medicine uses AI to tailor medical treatment to individual patients based on their genetic makeup, lifestyle, and environmental factors. AI algorithms analyse vast amounts of data to identify the most effective treatments for specific patient profiles. This approach can help provide therapies that are specifically tailored to each patient's unique needs. Personalised medicine represents a shift from the one-size-fits-all model to a more precise and individualised approach to healthcare.

Robotic surgeries

Robotic surgeries involve the use of AI-powered robotic systems to assist surgeons during complex procedures. These systems can provide enhanced precision, flexibility, and control, allowing for less invasive surgeries with smaller incisions, reduced blood loss, and help with faster recovery times. AI algorithms guide the robotic instruments, ensuring accurate movements and reducing the risk of human error. Today, robotic surgeries have revolutionised fields such as orthopaedics, cardiology, and neurosurgery, improving surgical outcomes and patient safety.[13]

Virtual health assistants

AI-powered virtual health assistants—spanning chatbots and voice-enabled platforms—are transforming healthcare delivery by providing personalised, real-time support through advanced natural language processing (NLP). From symptom triage to appointment scheduling, these tools enhance patient experience while addressing systemic inefficiencies. By automating routine tasks, they ease provider burden, optimise resources, and improve access—especially in underserved settings. As health systems embrace digital and value-based care models, virtual assistants offer a scalable pathway to greater efficiency, equity, and resilience.

---

13. The Da Vinci Technology: Pioneering a New Era in Medical Imaging and Patient Care, Open Medscience, March 06, 2025
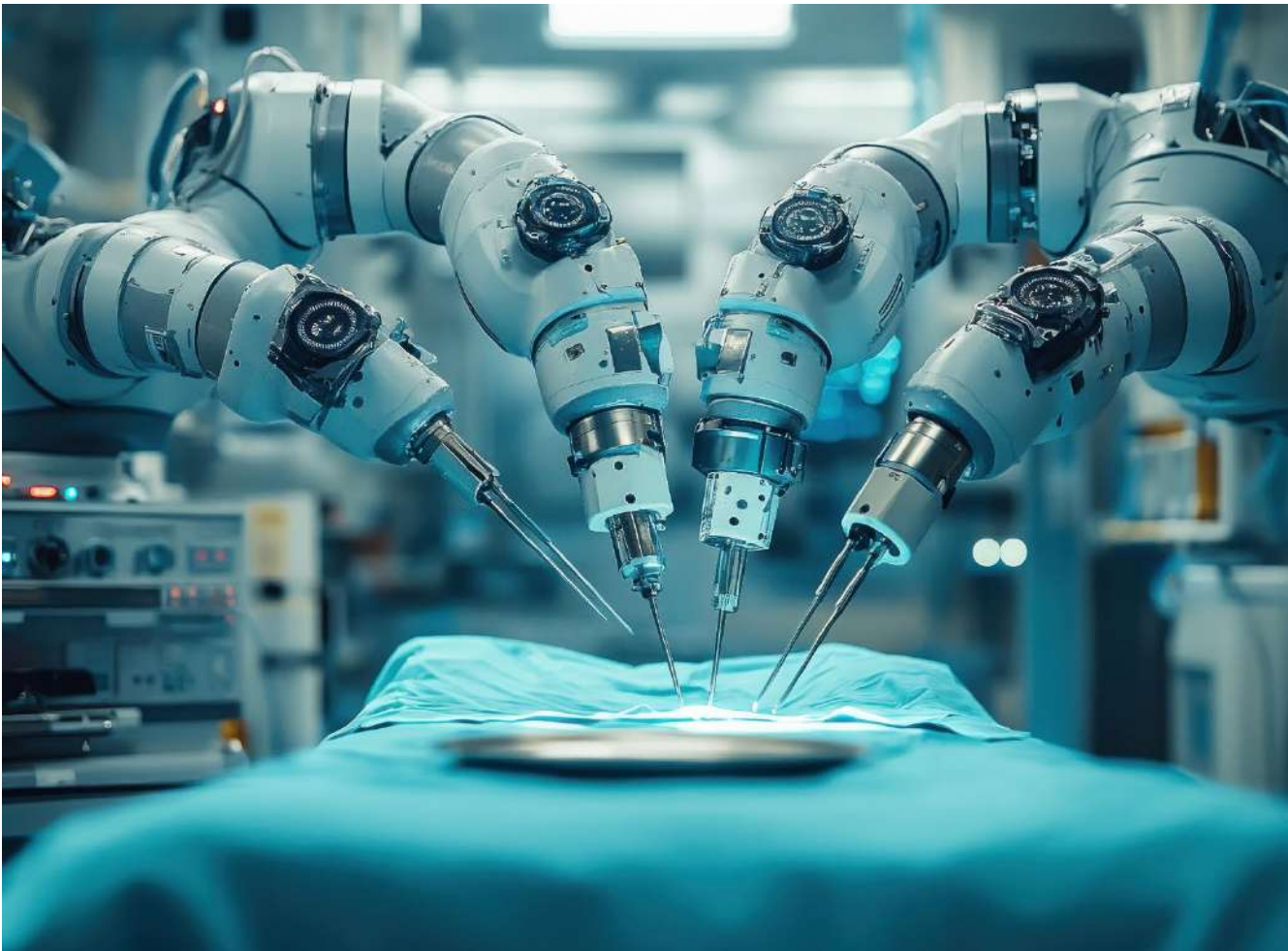
Predictive health analytics

Predictive health analytics uses AI to analyse historical and real-time health data to predict future health outcomes and risks. By identifying patterns and trends, AI algorithms can forecast the likelihood of disease development, hospital readmissions, and other health events. This predictive capability enables healthcare providers to implement preventive measures, optimise treatment plans, and allocate resources more effectively, thereby supporting proactive healthcare management and aiding in improving patient outcomes.

AI in Epidemiology

AI in Epidemiology involves the use of machine learning and data analytics to track and predict the spread of infectious diseases. AI algorithms analyse data from various sources, such as social media, travel patterns, and healthcare records, to identify outbreaks and assess their potential impact. This information could help public health officials implement timely interventions, allocate resources, and develop strategies to contain the spread of diseases. AI-driven epidemiology could enhance the ability to respond to public health threats and protect populations.

Other notable applications:

A leading med-tech company has created a system that

integrates AI into implantable cardioverter defibrillators (ICDs) to monitor heart failure. AI algorithms analyse multiple physiological signals to detect changes indicative of worsening heart conditions. Clinicians receive alerts, enabling early intervention and personalised patient management, thereby improving heart failure outcomes through proactive healthcare strategies.

AI systems for hospital inventory management

AI systems can now used to predictively manage hospital inventory. By analysing usage patterns, patient inflow, and other relevant data, AI can forecast the demand for medical supplies, medications, and equipment. This capability could help hospitals maintain optimal stock levels, reduce wastage, and ensure critical supplies are available when needed.

Polyphonic digital ecosystem – A large med-tech company today has a portfolio of digital solutions for the Operating Room (OR), including Polyphonic digital ecosystems, that use AI algorithms during procedures practically in real time to share surgical videos with residents and peers, offering valuable post-case analysis. The extensive data gathered from surgical procedures can be analysed to uncover behaviours, strategies, and movements that influence outcomes—both positive and negative—leading to enhanced experiences for patients, doctors, and healthcare facilities.

Overall, the impact of AI in healthcare could be immense. Be it in improved patient care, enhanced diagnostic accuracy, personalised treatment plans, predictive analytics for disease prevention, or support for healthcare providers. AI-driven tools can also lead to earlier and more accurate diagnoses, reducing the burden of disease and improving patient outcomes. Personalised medicine is another key area wherein treatments can be tailored to individual needs, maximising therapeutic benefits. Lastly, AI could play a huge role in alleviating administrative burdens in healthcare, by allowing for increased focus on patient care.

Ushering in financial safety and efficiency in Finance through AI

In the bustling world of finance, where every second counts and every decision can have monumental consequences, the advent of Artificial Intelligence (AI) has been nothing short of revolutionary. In the BFSI sector, AI is enabling companies to make financial transactions faster and more secure, make customer service personalised yet efficient, and predict market trends with unprecedented accuracy. In fact, according to the KPMG 2024 Banking CEO Outlook 2024, 81 per cent of the banking sector CEOs see GenAI as a top investment priority despite ongoing economic uncertainty. What is interesting to note is that this number is significantly higher than the 61 per cent of banking executives who affirmed AI and machine learning as a top priority in the KPMG Global Tech Report 2023.

Let's delve into more details and illustrations of how AI is transforming this industry, exploring the innovations and their profound impacts on the sector.

AI-driven fraud detection and prevention

Fraud detection and prevention are critical areas where AI has made significant strides. AI-powered algorithms can analyse transaction data to detect unusual patterns or suspicious activities in real-time. These algorithms can identify potential fraudsters and alert institutions to take immediate action, saving money and protecting the reputation of the institution.

For example, a leading payment card services corporation uses AI to monitor transactions for fraudulent activities, significantly reducing the incidence of fraud.

Similarly, a leading financial technology company operating an online payments system in a majority of countries, employs AI to analyse millions of transactions daily, allowing for identification and prevention of fraudulent activities with high accuracy[14]. Majority of the companies across the sector today have started using AI for fraud detection and prevention. These technologies not only safeguard financial assets, but also build trust among customers, who feel more secure knowing their transactions are protected.

14. PayPal uses AI for seamless payment and fraud detection, Tech Wire Asia, Dashveenjit Kaur, November 13, 2023, March 06, 2025

Customer service and virtual assistants

AI-driven chatbots and virtual assistants are transforming customer engagement across the BFSI sector. By delivering instant, personalised responses to queries, supporting routine transactions, and offering tailored financial advice, these tools significantly enhance customer experience while lowering operational costs.

Available 24/7, virtual assistants ensure continuous, high-quality service streamlining interactions and reducing dependency on human support. A case in point: a leading global bank's virtual assistant now handles tasks ranging from balance checks to payments, demonstrating how AI can seamlessly integrate into core banking operations. As the financial services sector evolves, these AI solutions are becoming central to scalable, customer-centric service delivery.

Credit scoring, risk assessment

AI programmes can analyse a wide range of data, including social media activity and online behaviour, to assess an individual's credit worthiness. This enables institutions to make more accurate lending decisions and reduce the risk of default.

For example, there are technology products that use machine learning to analyse traditional and non-traditional data sources to assess credit risk, allowing for more inclusive lending practices that could democratise access to credit, thereby allowing more people to qualify for loans and improving financial inclusion.

Algorithmic trading and AI driven investment

Algorithmic trading involves the use of AI-powered trading algorithms to execute trades at lightning speed, making it possible to react to market changes in real-time. These algorithms can analyse historical data and news feeds to make informed trading decisions, by maximising returns and minimising risks. Many leading investment banking companies today use AI algorithms, to optimise trading strategies and improve trading performance.[15]

AI in regulatory compliance

The BFSI sector faces stringent regulatory requirements. AI can help institutions stay compliant by automating data analysis and reporting. It can help monitor transactions for suspicious activities and generate compliance reports more efficiently than manual processes.[16, 17] AI in regulatory compliance could help reduce the burden on financial institutions, allowing them to focus on their core operations, while ensuring adherence to regulatory standards.

---

15. Harnessing the Power of AI to Enhance Investment Decision-Making, Goldman Sachs, Hania Schmidt, Joseph Kogan, December 2, 2024, March 06, 2025

16. Transaction Monitoring Software, NICE Actimize, March 06, 2025

17. AI & Machine Learning for Regulatory Compliance, Akkio, Julia Dunlea, January 4, 2024, March 06, 2025

18. AI Regulation in Financial Services: US House Report, National Law review, Graham H. Ryan, January 30, 2025, March 06, 2025

19. Lemonade sets world record with 2-second AI insurance claim, AI Magazine, By Ilkhan Ozsevim, June 14, 2023, March 06, 2025

AI in insurance underwriting

AI is also transforming the insurance industry by improving the accuracy and efficiency of underwriting processes. AI algorithms can analyse vast amounts of data to assess risk and determine premiums more accurately.

For example, we have seen companies use AI to underwrite policies and process claims quickly, providing a seamless customer experience[18, 19] The impact of AI in insurance underwriting could be significant, as it improves the accuracy of risk assessments, leading to fairer premiums, better customer satisfaction and reduced time for assessments.

AI in wealth management and financial planning

AI is also making waves in wealth management by providing personalised investment advice and portfolio management. Today, AI-driven robo-advisors can analyse market trends and individual financial goals to offer tailored investment strategies.

For example, an international investment management firm, integrated AI to improve its wealth management offerings. They launched, an AI-driven robo-advisor platform, that uses AI algorithms to evaluate clients' financial circumstances, objectives, and risk tolerance. It autonomously designs and manages diversified portfolios, adjusting investments according to market trends and individual preferences.[20]

Similarly, a fintech company which specialises in robo-advisory services, is harnessing AI to automate and improve their financial planning offerings and also analyse various factors, such as income, expenses, and long-term goals, to craft personalised financial plans. The platform continuously adjusts to market fluctuations, automatically rebalancing portfolios to maximise returns and manage risks.[21] AI in wealth management and financial planning democratises access to high-quality investment advice, allowing more people to benefit from professional financial planning. It also reduces the cost of scaling the wealth management business for the companies pursuing growth in the area.

The impact of AI in the finance and BFSI sector has been transformative, leading to improved operational efficiency, enhanced customer experiences, and innovative financial products and services. AI-driven tools have significantly advanced fraud detection, enabling faster and more accurate identification of fraudulent activities. This has resulted in reduced financial losses and heightened security. Personalised banking services and virtual assistants have revolutionised customer engagement, leading to higher satisfaction and loyalty. Predictive analytics and algorithmic trading have optimised investment strategies, ensuring better returns and risk management. Furthermore, AI-powered compliance solutions have streamlined regulatory processes, reducing the burden on financial institutions. As we stand on the brink of a new era in finance, the transformative power of AI is becoming increasingly evident. From enhancing fraud detection and customer service to revolutionising trading and financial planning, AI is at the early stages of reshaping the banking and financial services sector, with immense potential to drive innovation and improve outcomes for both institutions and customers.

---

20. State of the education report for India, 2022: artificial intelligence in education; here, there and everywhere, UNESCO, 2022, March 06, 2025

21. Using Artificial Intelligence to Understand Why Students are Struggling, Stanford University HAI, Edmund L. Andrews, July 12, 2021, March 06, 2025

Making education more accessible through AI

Since the rise of the internet, digital adoption in education has grown steadily which was accelerated exponentially by the COVID-19 pandemic. Schools and universities worldwide rapidly transitioned to online learning; a model still used during climate disruptions and other emergencies.

Meanwhile, the explosion of digital content from MOOCs to informal learning on social media—has democratised access to knowledge across both developed and emerging economies.

Personalised education and tutoring

Artificial intelligence is now reshaping education by enabling hyper personalised learning experiences. For instance, a major Indian education board has integrated AI-powered tools that adapt to individual learning styles, provide instant feedback, and help students progress at their own pace. Such tools act as patient, intelligent tutors, guiding learners through complex concepts without offering direct answers.

AI literacy is becoming foundational for students preparing for an AI-driven job market. Government initiatives, such as the Atal Innovation Mission, along with public-private collaborations, are embedding AI into school curricula. However, the benefits of AI in education must be equitably distributed. Addressing access gaps particularly for girls and marginalised communities is essential to ensure inclusive and effective learning for all.

AI is also enhancing teaching in itself. Educators and institutions can now use AI to tailor instruction, streamline assessments, and manage administrative tasks, thereby boosting efficiency and outcomes at scale.

As education systems embrace digital and hybrid models, AI will be instrumental in building more resilient, equitable, and future-ready learning ecosystems.

The more recent arrival of GenAI onto the technology scene has only further exploded the universe of possibilities – some of which we will explore below.

Enhanced engagement and interaction

Virtual classrooms and collaborative learning platforms overcome physical barriers of location and time zones, while assistive technologies like live captioning and translation empower learners of all backgrounds and abilities. Together, these advancements create enriched and inclusive educational experiences for learners at all levels.

Automation, efficiency, scale, and reach

Broader benefits of applying AI in education cover the areas of automation, efficiency, scale, and reach. Automation reduces the workload for educators by handling administrative tasks

| Introduction | AI technology landscape | **Sectoral Impact** | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | Methodology | Acknowledgements |

like grading and scheduling, allowing them to focus more on teaching and student interaction. Efficiency is improved through data analysis, which helps optimise resource allocation and identify students needing additional support. AI also enables educational institutions to scale their offerings to a larger audience and providing personalised learning experiences to thousands of students simultaneously. It also enhances access to education by removing geographical and language barriers, allowing quality learning to reach students in isolated and underprivileged regions. These advancements significantly improve the educational experience for both learners and educators.

Case in point, is how a researcher from a global university developed an AI programme to assist students in self-paced digital learning. The programme predicted when students were likely to get stuck and provided relevant solutions, helping many students with limited human intervention – which is the key to deploying such solutions at scale.

Search and deep research

GenAI is revolutionising the field of research by significantly enhancing the ability to search, discover, and synthesise information. This technology enables both laypersons and experts to perform deep research on various topics, collate diverse viewpoints, and succinctly summarise findings with proper citations. By utilising advanced generative models, AI can recognize patterns in data and create new, relevant content, making the research process faster and more efficient.

This emerging application of GenAI promises to transform traditional research workflows, reducing the effort and time required to gather and analyse information. Prominent Ivy League institutions are actively exploring the possibilities of GenAI in academic research, recognising its potential to elevate scholarship and enhance the presentation of research findings.

Overreliance on AI tools in education could diminish the critical role of human interaction, which is vital for fostering social and emotional growth. Concerns have also arisen regarding the increasing use of digital technologies in early education, with the long-term effects still being largely unexplored. Furthermore, the risk of "hallucinations" in gen AI—instances where AI responses may be inaccurate or not grounded in facts—poses a potential challenge to the quality and accuracy of AI-assisted learning activities that students engage in.

Distorted and inaccurate representation of historical facts or their interpretation, propagation of stereotypes and biases from training data of models, or errors and omissions that are the result of inherent limitations of the AI tools, may all pose new challenges to educators and learners alike.

As this technology continues to evolve, it holds the potential to democratise access to high-quality research tools, making deep research more accessible and impactful for a broader audience.

While these promising applications paint an optimistic picture of the future, the path towards progress is also rife with risks and potential downsides that need to be acknowledged and addressed. Some of these risks reflect concerns found in other areas, such as data security, privacy, bias, and fairness. They also emphasize the increased accountability of educators and policymakers, as these challenges influence the younger generation worldwide and hold significant implications for the future of humanity and the planet.

Bringing in operational efficiency in the manufacturing sector

Artificial Intelligence is revolutionising global manufacturing, and India stands ready to harness its potential, driving economic growth and bolstering its position on the world stage. By automating processes, optimising supply chains, and improving quality control, AI is driving efficiency and innovation across key industries like automotive, textiles, and pharmaceuticals. AI is revolutionising industries by automating workflows, streamlining supply chains, and enhancing quality assurance, fostering efficiency and innovation in sectors such as automotive, textiles, and pharmaceuticals. We explore the current state, trends, and strategic interventions for India in this AI-driven world

India's manufacturing sector is a cornerstone of its economy, contributing around 15 per cent to the country's GDP[22] and employing nearly 20 million people[23].

As India aims to become a leading global industrial manufacturing hub, our exports have seen a substantial rise in post-COVID years. Sectors such as automotive, industrial machinery, electronics, textiles, chemicals, and pharmaceuticals are expected to contribute significantly to this growth over the years. Globally, Industry 4.0 has emerged as a top strategic priority for manufacturing industry leaders. Also known as the Fourth Industrial Revolution, Industry 4.0 represents the digital transformation of the manufacturing industry – leveraging advanced technologies such as the Internet of Things (IoT), cloud computing, artificial intelligence (AI), and machine learning, to create smart factories and enhance productivity, flexibility, and agility.
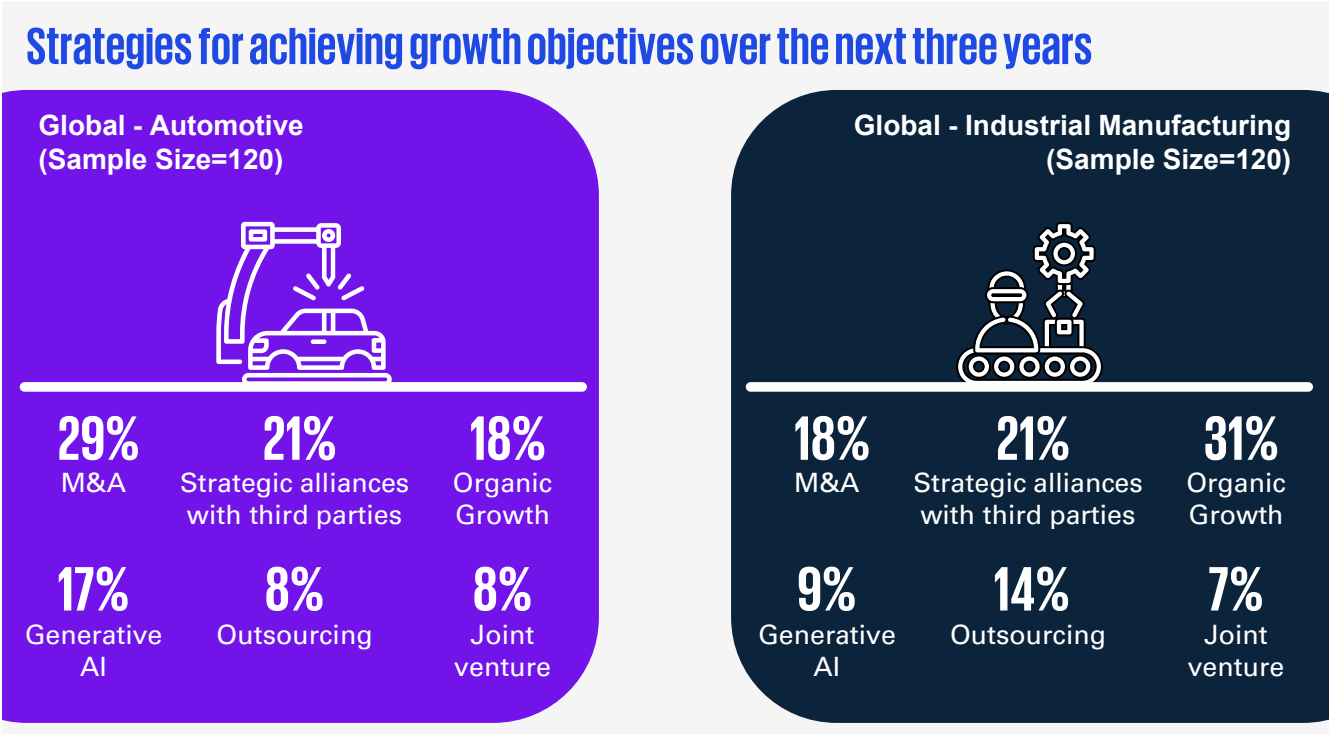
22. Manufacturing, value added (% of GDP) - India, World bank group, March 06, 2025
23. Annual Survey of Industries (ASI) Results for 2022-23, Ministry of Statistics & Programme Implementation, September 30, 2024, March 07, 2025

In Industry 4.0, manufacturers integrate new technologies into their production facilities and operations. This includes the use of advanced sensors, embedded software, and robotics to collect and analyse data, enabling better decision-making and real-time visibility of manufacturing assets. Further, the concepts and technologies can be applied across various industrial sectors, that includes discrete and process manufacturing, oil and gas, and mining. Given all these levers for growth and efficiency depend centrally on data, analytics, and actionable insights – it is no wonder that harnessing the power of Artificial Intelligence and Machine Learning has been among the key investment areas in many industry surveys.

According to KPMG 2024 Industrial Manufacturing and Automotive CEO Outlook GenAI has rapidly emerged as a top-of-the-mind strategic lever for growth among CXOs – finding place among traditional strategies like organic growth, Mergers and Acquisitions, alliances, and joint ventures. It is widely anticipated to bring about significant impacts in the area of productivity improvements through automation, enhanced capabilities, and innovation.[24]

Strategies for achieving growth objectives over the next three years

Global - Automotive (Sample Size=120)

| **29%** M&A | **21%** Strategic alliances with third parties | **18%** Organic Growth |
| **17%** Generative AI | **8%** Outsourcing | **8%** Joint venture |

Global - Industrial Manufacturing (Sample Size=120)

| **18%** M&A | **21%** Strategic alliances with third parties | **31%** Organic Growth |
| **9%** Generative AI | **14%** Outsourcing | **7%** Joint venture |

Source: KPMG 2024 Automotive and Industrial Manufacturing CEO Outlook

24. KPMG 2024 Industrial Manufacturing and Automotive CEO Outlook, KPMG, Dr. Andreas Ries, Jonathon Gill, March 07, 2025

One industry where we see a significant impact of AI in manufacturing is the textile sector. In the textile sector, AI promises to radically reduce the cost and complexity of testing fabric density. While traditional methods require heavy physical machinery and manual processes to measure the gsm (grams per square meter) for a given production run of fabric, the innovative approach promises to provide comparable results using only high-resolution visual scans paired with powerful ML algorithms.[25] Top automobile companies have introduced features such as AI-powered interior camera above the rear-view mirror to enhance cabin safety. This camera monitors drivers' eyes to detect drowsiness and prevent accidents. Utilising neural network technology, it analyses road images for object detection and depth estimation. Cars today come with features like Advanced Driver Assistance Systems (ADAS) that is a combination of sensors and AI based signal processing algorithms that enhance road, driver and passenger safety.[26] Closer to home, automotive manufacturers in India are using digital twin technology, genAI, and other levers to pursue operational efficiency, through accelerated factory planning and automation. India's largest electric scooter maker developed a digital twin platform and claims this helped it attain 20 per cent faster time to market from design to commissioning for its manufacturing operations. A number of prominent IT companies in India are experimenting with digital twins, and a number of prominent IT services partners are building solutions for their automotive clients in this space. By predicting maintenance needs and streamlining production, these manufacturers are boosting productivity and staying competitive in the global market.[27]
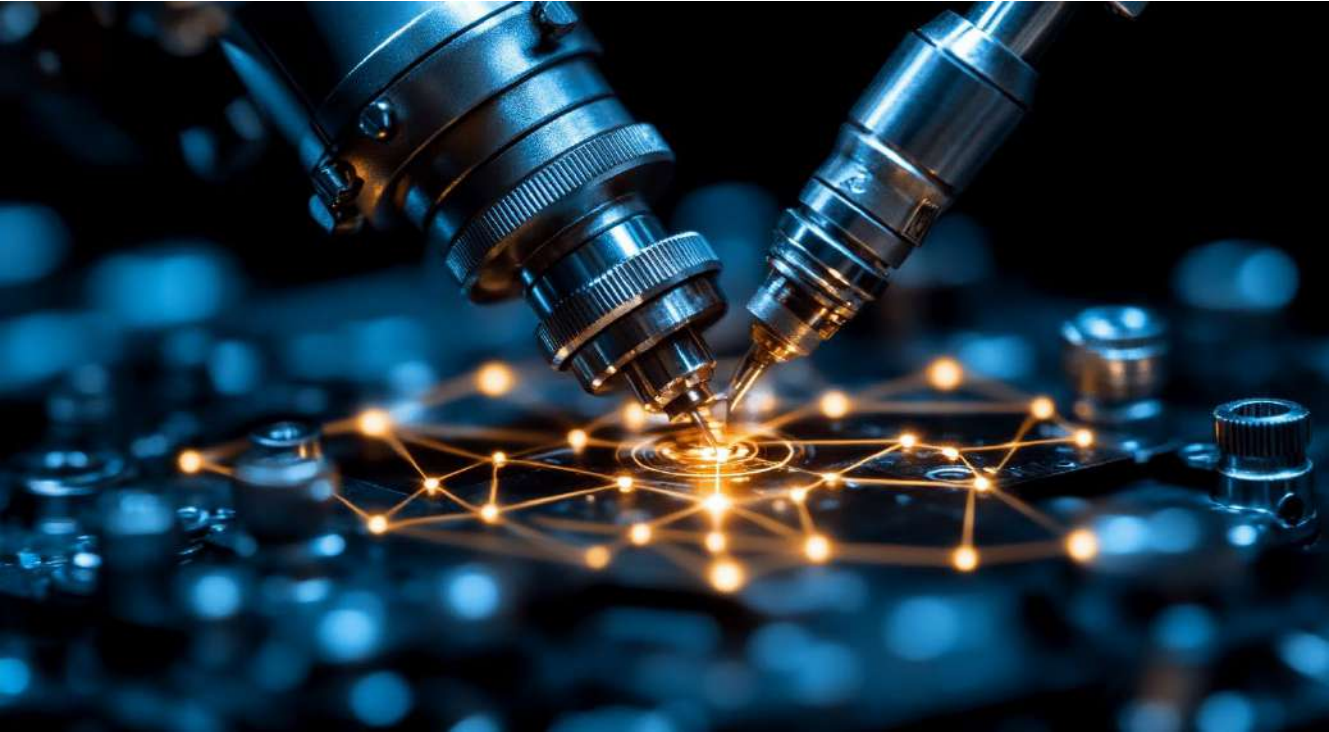
25. Testing to design: How AI is changing the fabric of India's garment industry, The Times of India, Ashni Dhaor, February 14, 2025, March 07, 2025
26. Three Ways AI Is Impacting the Automobile Industry, Forbes, Wendy Gonzalez, April 19, 2022, March 07, 2025
27. India Manufacturers Build Factory Digital Twins with NVIDIA AI and Omniverse, Nvidia, Madison Huang, October 23, 2024, March 07, 2025

Impact of AI on the economic landscape

Artificial Intelligence (AI) is not merely a technological advancement; it is a catalyst fundamentally reshaping the global economic landscape. Its influence extends across job markets, innovation ecosystems, and international economic structures.

This chapter explores the multifaceted economic implications of AI, focusing on its impact on employment, entrepreneurship, and the restructuring of global economies.

Job markets and workforce dynamics

Displacement vs. job creation

The integration of AI into various industries has sparked a dual narrative: it both displaces traditional roles and creates new opportunities in technology-driven sectors.

- **Job displacement:** AI's ability to automate routine tasks threatens certain job categories. For instance, roles in data entry, customer service, and manufacturing are increasingly susceptible to automation, leading to concerns about unemployment and economic inequality. Studies suggest that a significant percentage of jobs are at risk of automation, necessitating proactive measures to address potential displacement[28]

- **Job Creation:** Conversely, AI generates new employment opportunities, particularly in technology-driven sectors. The demand for AI specialists, data scientists, and roles centred around AI system maintenance and oversight has surged. Moreover, AI's ability to enhance productivity can lead to the creation of jobs that were previously non-existent, fostering economic growth and diversification.[29]

Reskilling and upskilling strategies

To navigate the evolving job landscape, reskilling and upskilling have become imperative.

- **Educational initiatives:** Institutions are revamping curricula to include AI literacy, coding, and data analysis, equipping the workforce with relevant skills. Online platforms and universities offer specialised programmes to bridge the skills gap, ensuring that workers remain competitive in an AI-driven economy

28. Impact of AI on Job Market and Employment Opportunities, University of San Diego, March 07, 2025
29. The impact of AI-powered automation on workforce dynamics and job roles, TechTarget, Manoj Kumar, October 28, 2024, March 07, 2025

- **Corporate training programmes:** Companies are investing in employee development, providing training sessions and workshops focused on AI competencies. This investment not only enhances employee capabilities but also boosts organisational innovation and adaptability.[30]

Bridging economic divides

AI's impact on economic disparities is a subject of ongoing debate.

- **Widening gaps:** There is a concern that AI could exacerbate existing economic inequalities. As high-skilled workers benefit from AI integration, low-skilled workers may face job displacement without adequate support systems, leading to increased economic polarisation[31]. For example, call centre operators are at risk of job losses as GenAI advances to improve customer service through AI. The recent layoff of 600 customer support staff from a prominent food delivery company in India is testimony to such changes[32]

- **Bridging divides:** Alternatively, AI has the potential to democratise access to information and services, particularly in underserved regions. AI-driven solutions can enhance education, healthcare, and financial services, contributing to economic inclusion and upliftment.

Innovation and entrepreneurship

AI startups and venture capital trends

The AI sector has witnessed a proliferation of startups, attracting substantial venture capital investments.

- **Startup ecosystem:** Entrepreneurs leverage AI to develop innovative solutions across various domains, from healthcare diagnostics to financial analytics. This surge in AI-driven startups fosters a competitive environment, accelerating technological advancements and market diversification[33]

- **Investment dynamics:** Venture capital firms are increasingly focusing on AI ventures, recognizing their potential for high returns. This influx of capital not only supports startup growth but also stimulates research and development in cutting-edge AI technologies. In 2024, private AI investment in the U.S. surged to $109.1 billion, reflecting a strong commitment to advancing AI technologies. Generative AI, in particular, experienced remarkable growth, securing $33.9 billion in global private funding—a significant 18.7% increase.[34]

30. How Artificial Intelligence Is Transforming the Job Market: A Guide to Adaptation and Career Transformation, Forbes, Adrian Stelmach, January 10, 2025, March 07, 2025
31. Technological unemployment, Wikipedia, March 6, 2025, March 07, 2025
32. "Zomato lays off 600 customer support employees without notice and citing these reasons", Times of India, TOI Tech Desk, April 01, 2025, May 06 2025
33. How generative AI is changing entrepreneurship, MIT Sloan, Sara Brown, January 17, 2024, March 07, 2025
34. The AI Index 2025 Annual Report, AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Nestor Maslej, Loredana Fattorini, Raymond Perrault, Yolanda Gil, Vanessa Parli, Njenga Kariuki, Emily Capstick, Anka Reuel, Erik Brynjolfsson, John Etchemendy, Katrina Ligett, Terah Lyons, James Manyika, Juan Carlos Niebles, Yoav Shoham, Russell Wald, Tobi Walsh, Armin Hamrah, Lapo Santarlasci, Julia Betts Lotufo, Alexandra Rome, Andrew Shi, Sukrut Oak, April 2025, May 06 2025

Collaborations among academic institutions, industry players, and government bodies are pivotal for driving AI innovation.

- **Research partnerships:** Joint research initiatives facilitate the translation of academic discoveries into practical applications, bridging the gap between theory and practice. These partnerships enhance the development of AI technologies that are both innovative and market-ready[35]

- **Policy frameworks:** Governments play a crucial role by establishing policies that encourage AI research and development. Supportive regulations, funding programmes, and infrastructure development are essential components that enable a thriving AI ecosystem. US, China and UK are at the forefront of these collaborations amongst the Government, academic institutions and industry players with investments and policy support for AI development.[36]

Global economic landscape

AI competitiveness among nations

The race for AI supremacy has become a focal point of national strategies, influencing global economic dynamics.

- **Investment in R&D:** Countries are allocating significant resources towards AI research and development, aiming to position themselves as leaders in the field. This investment is evident in national AI strategies, funding for AI projects, and the establishment of dedicated research institutions. For example, countries like the USA have made strategic moves for focused investments in AI in terms of policies such as

the National AI Initiative Act[37] and the executive order called "removing barriers to American AI innovation"[38], that aims to foster innovation in AI by removing government control in areas that hamper innovation.

- **Talent acquisition:** Attracting and retaining AI talent is a priority for nations seeking to enhance their competitive edge. Educational programmes, favourable immigration policies, and incentives for AI professionals are strategies employed to build a robust AI workforce.[39]

35. Artificial Intelligence and Big Data in Entrepreneurship: A New Era Has Begun, arXiv, Martin Obschonka, David B. Audretsch, June 3, 2019, March 07, 2025
36. Top 10 Countries Leading in AI Research & Technology in 2025, Techopedia, Tim Keary, October 28, 2024, May 06 2025
37. National Artificial Intelligence Initiative Act of 2020,
38. Removing barriers to American AI innovation, Fact Sheets, The White House, January 23, 2025, May 06, 2025

39. Artificial Intelligence and the Future of Work, National Academies, National Academies of Sciences, Engineering, and Medicine; Division on Engineering and Physical Sciences; Division of Behavioral and Social Sciences and Education; Computer Science and Telecommunications Board; Board on Human-Systems Integration; Committee on Automation and the U.S. Workforce, 2024, March 07, 2025

| Introduction | AI technology landscape | **Sectoral Impact** | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | Methodology | Acknowledgements |

Intellectual property and international trade

AI's integration into the global economy raises pertinent issues related to trade and intellectual property.

- **Trade dynamics:** AI-driven automation can alter comparative advantages among nations, influencing trade patterns. Countries may need to adapt their trade policies to reflect the changing landscape, considering the impact of AI on manufacturing and service sectors[40]

- **Intellectual property rights:** The proliferation of AI technologies necessitates robust intellectual property frameworks to protect innovations. Balancing the protection of creators' rights with the promotion of open innovation is a complex yet critical endeavour.[41]

In conclusion, AI's influence on the economy will continue to be increasingly profound and multifaceted, encompassing transformative effects on employment, innovation, and global economy. It is imperative that all stakeholders– policymakers, business leaders, educators, investors, and global citizens pay keen attention to these trends and take decisive steps to navigate the future. We examine some of these imperatives in the following section.

In conclusion, AI's influence on the economy will continue to be increasingly profound and multifaceted, encompassing transformative effects on employment, innovation, and global economy. It is imperative that all stakeholders– policymakers, business leaders, educators, investors, and global citizens pay keen attention to these trends and take decisive steps to navigate the future. We examine some of these imperatives in the following section.

40. Four ways DeepSeek could change everything, Reuters, Taosha Wang, February 12, 2025, March 07, 2025
41. Artificial Intelligence in the Service of Entrepreneurial Finance: Knowledge Structure and the Foundational Algorithmic Paradigm, arXiv, Robert Kudelić, Tamara Šmaguc, Sherry Robinson, November 22, 2023, March 07, 2025

04

Ethical, legal, and societal implications

Over the last few years, significant concerns have emerged regarding AI's bias and fairness. AI systems most often learn from labelled historical data, which can contain biases that are then perpetuated by algorithms. This can lead to unfair treatment of certain groups, particularly in critical areas like hiring, law enforcement, and healthcare. Additionally, the vast amounts of data collected by AI systems pose serious privacy and data security risks, necessitating robust measures to protect individuals' information. The societal implications of AI can extend to changes in human interaction and habit forming, cultural shifts, and global inequality, highlighting the need for a balanced approach to AI development and deployment.

On the legal front, the pace of technological advancement and its applications has outstripped the development of regulatory frameworks. Issues such as intellectual property rights for AI-generated content, liability for AI-driven decisions, and compliance with data protection laws present complex challenges. Policymakers and legal experts are actively grappling with how to adapt existing laws and develop new regulations, to address these concerns effectively. As we navigate the complexities of AI, it is crucial to consider its ethical, legal, and societal implications to ensure that this powerful technology benefits all of humanity.

Ethical concerns around AI

1. **Bias and fairness –** AI systems often learn from historical data, which can contain inherent biases. These biases are then perpetuated by the algorithms, leading to unfair outcomes.

   The consequences of biased AI are profound, especially in key areas such as hiring, law enforcement, and healthcare. In hiring, biased algorithms can result in discriminatory practices that deny qualified candidates opportunities based on gender, race, or other protected characteristics. In law enforcement, biased AI can result in unfair targeting of minority communities, exacerbating existing social inequalities. In healthcare, AI systems trained on non-representative data can lead to misdiagnoses.

   To reduce bias, it is essential to use diverse and representative datasets. Regular audits and bias testing help identify and mitigate biases before they cause harm. Implementing fairness algorithms and promoting transparency in AI decision-making processes are also crucial steps.

   There is growing awareness among companies and institutions developing AI about its ethical challenges. Many are proactively embedding safeguards to avoid past mistakes.

For example, some leading technology companies have embedded ethical considerations into its AI development process from the ground up.

Through its Responsible AI Standard principles, these companies ensure that their AI technologies respect human rights and operate safely. These companies form active committees that monitor AI's impact, ensuring that ethical guidelines are followed at every stage[42]

---

42. Why Racial Bias is Prevalent in Facial Recognition Technology, JOLT Digest, Beth Findley, November 03, 2020, March 07, 2025

2. **Privacy and data security –** AI systems rely on vast amounts of data to function effectively. This data often includes sensitive personal information, raising significant privacy concerns. The collection and use of such data without proper consent can lead to unauthorised surveillance and data exploitation.

The risks associated with data breaches and unauthorised data usage are also substantial.

For example, AI systems used in healthcare can inadvertently expose patients' medical records, leading to privacy violations.

With increased awareness there now is significant focus on enhancing data security and privacy through robust measures such as encryption and strict data governance policies. Data governance encompasses the policies, processes, roles, responsibilities, and technologies designed to ensure that accurate, complete, and high-quality data is accessible to the appropriate entities. Key focus areas include data availability, usability, consistency, integrity, security, and compliance with standards. This practice also involves setting up processes for effective data management across the organization, ensuring accountability for poor data quality, and enabling the entire enterprise to utilize its data effectively. There is a strong push to ensure that data collection practices are transparent and that individuals have control over their personal information. Governments and institutions are also stepping in to regulate AI data practices. The European Union's General Data Protection Regulation (GDPR) sets stringent guidelines for data protection, ensuring that AI systems comply with privacy standards.[43]

3. **Accountability and transparency –** One significant challenge with AI is the "black box" problem, where the decision-making processes are not transparent. This lack of transparency makes it difficult to understand how decisions are made, leading to issues of accountability. Determining who is responsible for AI-driven decisions is complex. Should it be the developers, the organisations deploying the AI, or the AI system itself? Such ambiguity creates challenges in assigning responsibility when harm occurs. Companies are increasingly recognising the need for greater transparency in AI implementation. To improve transparency, the development of explainable AI is crucial. The aim is to make AI decision-making processes understandable to humans, thereby fostering trust and accountability. Regular audits and robust documentation of AI systems can also help bring in more explainability and ensure that AI operates transparently and ethically.

The stakeholders including private companies, academic and public institutions and governments are actively addressing the ethical implications of AI. Companies are investing in bias detection and mitigation tools, enhancing data security measures, and developing transparent AI systems. Institutions are conducting research to understand and mitigate AI biases, while governments are implementing regulations to ensure ethical AI deployment.

---

43. Data protection under GDPR, Your Europe, March 3, 2025, March 07, 2025

Legal implications of AI

The ethical concerns around AI lead us directly into the legality around the various aspects of AI and the need for laws, if the current legal frameworks do not have answers to the questions that AI poses today.

1. **Liability and regulation** – Determining liability for AI errors is a significant legal challenge. When an AI system makes a mistake, such as a misdiagnosis in healthcare or a malfunction in an autonomous vehicle, it is difficult to pinpoint responsibility. Traditional legal principles of liability, which rely on human intent and negligence, are hard to apply to AI systems. This complexity is compounded by the involvement of multiple parties, including technology developers, application developers and implementors of technology, manufacturers of equipment powered by AI, and even the users. Moreover, current AI regulations vary widely across jurisdictions. The European Union's General Data Protection Regulation (GDPR) and the proposed AI Act aim to hold developers and users accountable for AI outcomes, emphasising transparency, accountability, and human oversight. In the United States, AI regulation is more fragmented, with state-level laws like the California Consumer Privacy Act (CCPA) addressing specific aspects of AI governance.

To ensure safe and ethical AI deployment, regulations should establish clear liability frameworks, promote transparency in AI decision-making, and require regular audits of AI systems.

For example, the EU AI Act proposes a risk-based approach, classifying AI systems based on their potential harm and imposing stricter requirements on high-risk applications.

Such regulations can help mitigate risks while encouraging responsible AI innovation.[44]

2. **Data protection laws** – AI systems must comply with data protection laws such as the GDPR, which sets stringent guidelines for processing personal data. Compliance is essential to protect individuals' privacy and maintain public trust in AI technologies. The GDPR requires organisations to implement data protection by design and by default, conduct impact assessments, and ensure data minimisation.

Enforcing data protection laws on AI systems presents unique challenges. AI's ability to process vast amounts of data, including personal information, complicates adherence to principles such as purpose limitation and data minimisation. Moreover, the "black box" nature of many AI systems makes it difficult to ensure transparency and accountability.

44. High-Risk AI Systems Under the EU AI Act, EU AI Act, Holistic AI Team, July 10, 2024, March 07, 2025

To improve compliance and enforcement, organisations should adopt robust data governance frameworks that include regular audits and enhanced transparency measures. Collaboration between data protection authorities and AI developers can help create guidelines that balance innovation with privacy protection.

For example, the French data protection authority Commission Nationale de l'Informatique et des Libertés (CNIL) recommendations for AI and GDPR compliance provides practical solutions for informing individuals about data use and facilitating the exercise of their rights.[45]

3. **Intellectual property rights –** One of the most pressing legal challenges is the copyright and ownership of AI-generated works. Traditionally, copyright protection is reserved for works of human authorship. However, AI systems can create content such as music, art, and literature, raising questions about who owns these creations. For instance, the U.S. Copyright Office has stated that works created entirely by AI, without human input, are not eligible for copyright protection.[46] However, Indian and UK copyright laws allow copyrightability to such works to persons that caused the work to be created or who made the arrangements for such work to be created.[47]

The legal implications of AI are multifaceted and evolving. Other than IPP, Data Protection and Liability, topics like workplace surveillance using AI, consumer protection from deceptive AI based marketing techniques, AI based habit forming content consumption, product liability due to AI enabled products such as smart home systems and autonomous vehicles, anti-competitive market dynamics, autonomous weapons are getting discussed keeping in mind the various scenarios that emerge due the use of AI.

45. AI system development: CNIL's recommendations to comply with the GDPR, CNIL, June 07, 2024, March 07, 2025
46. The Copyright Office's Latest Guidance on AI and Copyrightability, National Law Review, Samuel Cohen, Tiana Garbett of Sheppard, Mullin, Richter & Hampton LLP, March 11, 2025, March 07, 2025
47. Artificial Intelligence Lacks Personhood To Become The Author Of An Intellectual Property, Rajiv Sharma, Ninad Mitta, September 22, 2023, March 07, 2025

Societal impact of AI

Artificial Intelligence is transforming various aspects of our society, bringing both opportunities and challenges. As we discuss the economic effects, social dynamics, and global implications of AI, we should identify ways in which we can overcome these challenges posed by AI without looking to thwart development.

1. **Economic impact –** AI has the potential to automate many tasks, leading to job displacement across several sectors. Clerical, administrative, and repetitive roles are particularly vulnerable.

   For example, the introduction of AI-driven chatbots and automated customer service systems has reduced the need for human operators as companies scale their customer service operations.

   Human customer service agents now intervene only when AI cannot resolve an issue. As AI improves further, the need for human customer service agents will reduce, leading to loss of such roles and possibly loss of jobs for people who are not able to pick up other skills.

   Podcasts, talk shows, speeches, TV news segments, and op-ed articles frequently discuss how AI adoption is exacerbating economic inequality. High-skilled workers who can leverage AI to enhance their productivity could benefit while low-skilled workers may face job losses. This disparity could widen the gap between different socio-economic groups.

   To mitigate the negative economic impacts of AI, several strategies can be implemented.

Reskilling programmes can help workers transition to roles that require unique human skills, such as creativity and emotional intelligence. Governments and institutions can also consider implementing universal basic income (UBI) to provide financial support to those affected by job displacement. Additionally, large corporations around the globe have initiated reskilling programmes to help employees adapt to the changing job market, enabling them to switch roles within the company rather than facing layoffs.

2. **Social dynamics –** AI is reshaping social interactions and relationships. AI-powered social media algorithms influence the content we see, potentially creating echo chambers and reducing exposure to diverse viewpoints These algorithms are also designed to keep users engaged on their platforms, encouraging prolonged content consumption, thereby making consumers habitual to consuming content for longer and longer periods. With people consumed in their phones and digital devices through the day, there is a significant threat to the current social dynamics. Although, these technologies can enhance convenience, they may also reduce face-to-face interactions and weaken social bonds.

   On the other hand, the widespread adoption of AI is driving substantial cultural changes. AI technologies are democratising access to information and enabling new forms of creativity and expression.

For example, AI-generated art and music are gaining popularity, challenging traditional notions of authenticity and value. However, these cultural shifts also raise ethical questions about the authenticity and value of AI-generated content.

To ensure ethical AI use in social contexts, clear guidelines need to be established. For instance, AI algorithms used in social media should be transparent about how they curate content and avoid amplifying harmful or misleading information. In addition, regulations should address features such as recommendations and autoplay or auto-serve features, companies and institutions need to prioritise ethical considerations in AI development and deployment to foster trust, social cohesion and reduce social media content consumption beyond a certain point.

3. **Global Implications –** AI has the potential to widen global inequality by benefiting countries with advanced technological infrastructure while leaving developing nations behind. High-income countries are better equipped to harness AI's benefits, further increasing economic disparities.

For example, the United States and China are leading in AI research and development, while many low-income countries lack the resources to compete.

International cooperation is crucial to address AI's global implications. Collaborative efforts can establish common standards and guidelines for ethical AI development. Initiatives like the Global Partnership on AI (GPAI) aim to promote responsible AI use and ensure that its benefits are shared worldwide. By fostering international collaboration, countries can work together to mitigate risks and maximise AI's benefits.

The societal implications of AI will continue to evolve. Policymakers, companies, and institutions must remain vigilant and proactive in addressing AI's ethical challenges. Companies may need to go beyond profitability motives and prioritise fairness, transparency, and accountability to ensure that AI contributes to a more equitable and inclusive society. Ongoing research and dialogue will be essential to navigate the complex landscape of AI and its societal impacts.

It is heartening to see that discussions about the ethics, legal, and societal ramifications of AI have raised awareness, prompting several companies and governments to develop ethical and responsible AI frameworks, laws, and guidelines. However, nuances and exceptions remain.

For example, the US President Donald Trump issued a new executive order titled "Removing Barriers to American Leadership in Artificial Intelligence"[48] in January 2025.

This order prioritises innovation and national competitiveness over the responsible AI principles emphasised by the previous administration. It revokes President Biden's October 2023 executive order that focused on safe, secure, and trustworthy AI development. Trump's order seeks to remove barriers that were perceived to hinder AI innovation and impose excessive government control.[49] This shift has sparked discussions about the potential long-term impact of AI. One important thread of discussion is the distinction between AI safety and responsible AI where scientists and academics of AI believe that the conversations should be around responsible use and application of AI rather than AI safety which as a term pre-supposes that a technology can be safe or unsafe, when inherently the technology is neither safe nor unsafe. These discussions are bound to continue and help shape policy around AI and its applications to make them safer without impeding research.

48. Removing Barriers to American Leadership in Artificial Intelligence, The White House, January 23, 2025, March 07, 2025
49. Trump Alters AI Policy with New Executive Order, National Law Review, Guy Brenner, Jonathan P. Slowik, Margo R. Richard, April 02, 2025, March 07, 2025

05

Overview of United Nations' Sustainable Development Goals

Introduction	AI technology landscape	Sectoral impact	Ethical, legal, and societal implications	**Overview of United Nations' Sustainable Development Goals**
What we learnt from the India Leadership Council Survey	Strategic recommendations	Conclusion	Methodology	Acknowledgements

The United Nations Sustainable Development Goals (SDGs) are a set of 17 ambitious objectives established in 2015 as part of the 2030 Agenda for Sustainable Development. Adopted by all UN Member States, these goals aim to address the most pressing global challenges and ensure a sustainable, equitable future for all. The SDGs encompass
a wide range of issues, including poverty, hunger, health, education, gender equality, clean water and sanitation, affordable and clean energy, economic growth, industry and innovation, reduced inequalities, sustainable cities, responsible consumption and production, climate action, life below water, life on land, peace and justice, and partnerships for the goals.

Each goal is accompanied by specific targets and indicators to measure progress, providing a comprehensive framework for action. The SDGs are designed to be interconnected, recognising that progress in one area often depends on advancements in others.

For example, achieving good health and well-being (SDG 3) is closely linked to reducing poverty (SDG 1) and ensuring clean water and sanitation (SDG 6). The overarching vision is to create a world where all people can thrive, the planet is protected, and prosperity is shared.

Do you see AI as an enabler for your organizations sustainability goals?

28%
Yes, but in a limited way

20%
No, AI is not a factor in our sustainability plans

44%
Yes, AI will significantly contribute to sustainability

8%
Unsure

Source: India Leadership Council (ILC) by The Times Group- Survey on AI 2024

| Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | **Overview of United Nations' Sustainable Development Goals** |

| What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | Methodology | Acknowledgements |

Artificial Intelligence (AI) is emerging as a powerful tool in the quest to achieve the SDGs, offering innovative solutions to complex global challenges. Its ability to analyse vast amounts of data, identify patterns, and make rapid predictions is transforming various sectors and driving progress toward sustainable development. While AI technology can help in, the involvement of UN bodies and governments and their subsequent actions on factors such as low education levels, lack of workplace skills and unaffordable food and resources in identified areas and communities can help in tackling poverty.[50]

AI is enhancing diagnostics, personalised medicine, and epidemic prediction. AI algorithms can analyse medical images to detect diseases early, recommend tailored treatment plans, and forecast the spread of infectious diseases, thereby improving overall health outcomes and saving lives.

Urban living is being transformed by AI through smart city initiatives (SDG 11). AI-driven systems can manage traffic flow to reduce congestion, optimise waste collection, and improve disaster response, making cities more sustainable and resilient. Additionally, AI is aiding climate action (SDG 13) by predicting climate patterns, tracking greenhouse gas emissions, and supporting disaster response efforts.

AI's potential to drive progress toward the SDGs is immense. By harnessing the power of AI, governments, academic institutions, NGOs, and local communities are developing innovative solutions to some of the world's most pressing challenges—from poverty and hunger to health and education. As we continue to advance AI technologies, it is crucial to ensure that they are used ethically and equitably, so that their benefits are shared by all and contribute to a sustainable and inclusive future.

While there are 17 goals that the UN has listed and AI has significant potential to impact all 17 SDGs, in this section we will limit ourselves to talk about three of the SDGs and how AI is helping in each of these.

Climate Action [SDG 13]

The SDG 13 is a call to take urgent action to combat climate change and its impacts. AI offers innovative applications, such as optimising logistics to reduce CO_2 emissions by determining the least carbon-intensive routes for freight transportation.[51] This optimisation is significant, considering that transport contributes approximately one-fifth of global CO_2 emissions, with road freight accounting for nearly 30 per cent of transport-related emissions.[52]

Moreover, AI can be utilised to measure CO_2 emissions and provide greater visibility into the causes and effects of climate change for governments. This technology enables more effective monitoring of climate impact and supports informed decision-making. For example, the Climate TRACE coalition leverages AI to examine satellite imagery and various data sources, enabling the creation of independent emissions inventories across different sectors.[53] This capability allows governments to track emissions accurately and implement targeted climate policies. Additionally, the Green Horizon project employs big data analytics to predict air pollution levels and identify sources of emissions, aiding cities like Beijing in their efforts to improve air quality and reduce carbon footprints.[54]

50. How Charities are Fighting Poverty With AI, The Borgen Project, Noura Matalqa, February 5, 2023, March 07, 2025
51. The Environmental Imperative: How AI is Reshaping Sustainable Logistics, RTS Labs, March 15, 2024, March 07, 2025
52. Cars, planes, trains: where do CO_2 emissions from transport come from, Our World in Data, Hannah Ritchie, October 6, 2020, March 08, 2025
53. Climate change and machine learning - the good, bad, and unknown, MIT Sloan, Beth Stackpole, February 10, 2025, March 08, 2025
54. BM Research Launches Project "Green Horizon" to Help China Deliver on Ambitious Energy and Environmental Goals, PR Newswire, IBM Corporation, July 07, 2014, March 08, 2025

AI also enhances weather forecasting capabilities, enabling governments and organisations to better prepare for adverse climate events and support regions in managing such catastrophes. For instance, during Super Cyclone 'Amphan' in May 2020, AI played a crucial role in disaster management in India and Bangladesh, significantly improving response and mitigation efforts. The United Nations World Food Programme (UNWFP) utilised AI to predict the number and type of food and non-food items required during the disaster. This AI-driven approach enabled the WFP to mobilise resources efficiently, ensuring that aid reached the affected populations promptly.

Furthermore, AI was used to analyse satellite imagery and other data sources to assess "the cyclone's impact on land use and land cover in the Sundarban Biosphere Reserve. This analysis provided valuable insights into the extent of the damage and helped local authorities plan effective recovery and rehabilitation efforts.[55]

AI is increasingly being used to map and understand the melting behaviour of icebergs —a crucial factor in studying climate change and its impacts on global sea levels. Several research institutions and organisations[56] are at the forefront of such work, leveraging AI to gain deeper insights into the dynamics of ice melt. The primary purpose of using AI in iceberg melting research is to improve the accuracy and efficiency of monitoring and predicting ice melt. Traditional methods for studying ice melt are often time-consuming and limited in scope; AI, on the other hand, can process large datasets quickly and identify patterns that may not be apparent through manual analysis. By understanding the melting behaviours of icebergs, researchers can assess climate change impact on polar regions, predict sea-level rise and enhance early warning systems for communities vulnerable to sea-level rise and related hazards.

While AI is generally a force for good, its role in climate action can sometimes seem paradoxical. Running AI models with enormous data storage and computing requirements necessitates the construction of more data centres, which rely on both renewable and non-renewable energy sources. Consequently, data centres indirectly contribute significantly to greenhouse gas emissions. In 2022, Organization for Economic Co-operation and Development [OECD] stated that the electricity consumption of data centres across the globe was 460 Terawatts which is slightly less than the entire country of France [471 Terawatts] and significantly more than Saudi Arabia [371 Terawatts]. It is estimated that by 2026 this will rise to [1,050 Terawatts] which is estimated to be more than Japan's annual consumption in 2026.[57] In such a scenario the only path forward is using more advanced and energy efficient hardware and more optimised models.

55. Modeling of impact assessment of super cyclone Amphan with machine learning algorithms in Sundarban Biosphere Reserve-India, Springer Nature Link, Tania Nasrin, Mohd Ramiz, Md Nawaj Sarif, Mohd Hashim, Masood Ahsan Siddiqui, Lubna Siddiqui, Sk Mohibul & Sakshi Mankotia, April 01, 2023, March 08, 2025

56. Ice modelling group, Niels Bohr Institute - University of Copenhagen, Christine Hvidberg, Aslak Grinsted and Dorthe Dahl-Jensen, March 08, 2025
57. Generative AI's environmental impact, MIT News, Adam Zewe, January 17, 2025, March 08, 2025

Sustainable cities and communities [SDG 11]

The global population is steadily growing, and more people are migrating to urban areas. To ensure survivability and prosperity for everyone, it is essential to develop modern, sustainable cities. The SDG 11 is a call to action to "make cities and human settlements inclusive, safe, resilient and sustainable".

AI has the capability to significantly improve urban environments by fostering environmental sustainability through better energy management and space utilisation. For instance, Amsterdam uses AI to manage its energy grid more efficiently. The city's smart grid integrates AI algorithms to predict energy demand and supply, balancing the load and reducing energy waste. This system allows for real-time adjustments based on consumption patterns, ensuring that energy is used more efficiently and sustainably.[58] An example of smart city planning, and improved space utilisation is how Singapore's Urban Redevelopment Authority (URA) is using data from various sources, including satellite imagery, sensors, and public feedback, to optimise land use and urban planning. URA is working on bringing jobs closer to homes of the citizens to reduce commute and improving public healthcare accessibility for the elderly by identifying which areas have a larger concentration of senior citizens among other initiatives.[59]

Furthermore, AI can enhance urban living by advancing transportation systems. For instance, the city of Phoenix, Arizona has implemented an AI-based traffic management system that uses real-time data to coordinate traffic lights and reduce congestion. This system has led to a 40 per cent decrease in vehicle delay times, significantly improving traffic flow and reducing emissions.[60]

AI is also making urban areas more sustainable through intelligent waste management. In Barcelona, AI-driven waste management optimises collection routes by using smart bins equipped with sensors that monitor fill levels and send real-time data to a central system. AI algorithms then analyse this data to create the most efficient collection routes, reducing fuel consumption and operational costs. This approach has not only improved efficiency but also minimised the environmental impact of waste collection.[61]

Overall, using AI to build smart cities helps reduce social inequality by improving vulnerable communities' access to public services, economic opportunities, personalised education, and enhanced public safety.

58. How smart grids are enabling Amsterdam's energy transition,l Amsterdam, December 05, 2023, March 08, 2025
59. Smart Urban Planning, Smart Nation, March 08, 2025
60. Phoenix trials AI-based autonomous traffic management system, Cities Today, Sarah Wray, August 20, 2020, March 08, 2025
61. How Smart Waste Management is Changing Cities, Tomorrow Bio, July 19, 2023, March 08, 2025
62. How Charities are Fighting Poverty With AI, The Borgen Project, Noura Matalqa, February 05, 2023, March 08, 2025

Zero hunger [SDG 2]

Hunger remains one of the world's leading causes of death, despite our planet's abundant resources The SDG 2 is a call to action to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture".

The World Bank reports that nearly 65 per cent of working adults living in poverty depend on agriculture, highlighting the deep connection between global poverty and the agricultural sector. "Providing aid alone is insufficient; investing in agriculture is crucial because such investments are reportedly four times more effective in reducing poverty than investments in any other economic sector."

Precision farming techniques, powered by AI, enable farmers to monitor crop health, optimise irrigation, and predict yields with greater accuracy. This not only increases food production but also reduces waste and ensures more efficient use of resources.[62]

AI can help anticipate weather changes, pest infestations, and disease outbreaks, allowing farmers to take proactive measures to protect their crops and ensure sustainability.

For instance, a digital agricultural company uses AI to provide insights into weather patterns, soil conditions, and crop health, enabling farmers to adjust planting schedules and optimise resource use to mitigate climate change impacts. This enables farmers to make informed decisions, such as adjusting planting schedules and optimising resource use to mitigate the impacts of climate change.[63]

Data analytics further enhances rural infrastructure through smart irrigation systems, which use weather forecasts and predictive analytics to optimise water usage and ensure that crops

receive the right amount of water at the right time. These systems use weather forecasts and predictive analytics to predict water requirements and deploy water accordingly thereby reducing water usage by up to 25 per cent[64] and increasing crop yields by 20-30 per cent.[65] This water conservation is crucial in areas facing water scarcity.

It's remarkable how AI can contribute to the achievement of SDG 2: Zero Hunger. It can enhance agricultural productivity, build resilient practices, help in improve rural infrastructure and empower farmers worldwide. However, a lot of these initiatives are run at a small scale or are still being experimented with. In other situations, these technologies are developed by large companies for profit leaving a majority of the smaller farmers out of the ambit of the benefits of AI. For us to move towards a hunger free world we need to overcome these challenges fast.

AI is a powerful tool for achieving the UN's Sustainable Development Goals, driving progress in agriculture, healthcare, poverty alleviation, sustainable cities and communities, water and sanitation, and education. To fully realise its potential, small initiatives must be scaled, and governments should adopt best practices from around the world and learn from successful implementations in other regions and replicate these strategies in their own countries, states, and cities. Increased funding by global and governmental institutions for application-oriented research is essential. By fostering a culture of innovation and supporting grassroots initiatives, we can ensure that AI-driven solutions are accessible to all. Only through collective effort and shared knowledge can we truly harness the power of AI to meet the ambitious objectives of the SDGs and create a more equitable and sustainable future.

---

63. The Climate Corporation, Wikipedia, August 29, 2024, March 09, 2025
64. Farmers Don't Have Enough Water. Can AI Help? Entrepreneur, Michael Gilbert, May 21, 2022, March 10, 2025
65. Agriculture Turns to AI, Society of Women Engineers, Seabright McCabe, 2022, March 10, 2025

06

What we learnt

**from the India Leadership
Council Survey**

We've already seen in the previous sections how artificial intelligence (AI) is emerging as a transformative force across sectors. The India Leadership Council Survey, which included 85 per cent of senior leaders such as Managing Directors, CEOs, and Founders, corroborates the fact. The survey seeks to understand the priorities of corporate leadership teams regarding AI adoption. Here's what we found.

GenAI emerges on top!

Generative AI, along with Machine Learning and Predictive Analytics, are the top three emerging technologies at the forefront of the AI revolution. **Over 80 per cent of the surveyed organisations have ventured into Generative AI use cases, highlighting its potential to drive innovation and efficiency.** GenAI is already impacting various functions in a wide variety of tasks including R&D where companies are using it for drafting patent specification. Respondents believe that as LLMs evolve, and new applications emerge GenAI is expected to have an even larger impact on R&D. This aligns with what KPMG GenAI Survey by KPMG in the U.S – 2024 that found – 83 per cent of respondents expect their GenAI investments to increase over the next 3 years, and 78 per cent are confident in the ROI of planned investments.[66]

The primary objective of AI adoption is clear: to drive operational efficiency.

56 per cent of respondents in the India Leadership Council Survey identified driving operational efficiency as their primary goal in the short term. Enhancing customer experience and innovating with AI products and services are also key drivers. While AI use cases span multiple functions, significant focus is placed on AI use cases in the form of proof of concepts POCs, pilot projects and early experimentation across operations, supply chain, product development, sales, marketing, IT, and cybersecurity functions. Most organisations are still in the early stages of AI adoption, with over half (52 per cent) concentrating on pilot

projects and PoCs. These pilot projects are crucial for understanding AI's potential and limitations, enabling organisations to scale successful initiatives.
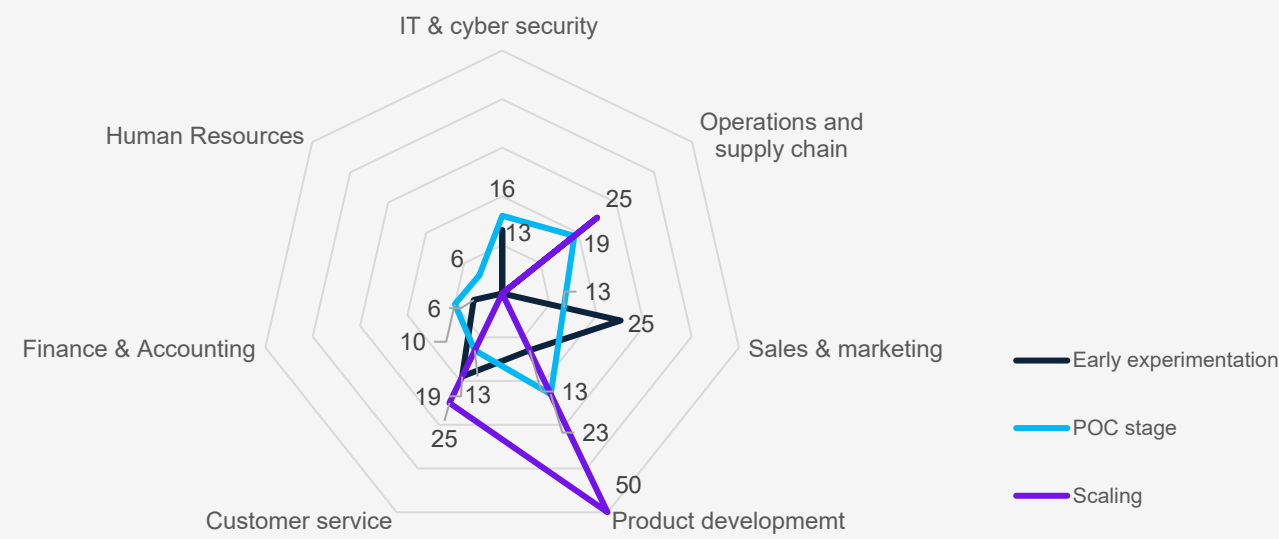
Through the survey, also tried to find out which stage of AI implementation are the respondents in and what are their focus areas. We realised the most companies that are in advanced stages of AI implementation are focusing on integrating AI in product development and operations and supply chain. 50 per cent of the companies that are scaling AI and 23 per cent of the companies that are in the POC stages are focusing on AI for product development. Whereas 25 per cent of the companies that are scaling AI in their enterprise have operations and supply chain as their primary focus area.

---

66. GenAI Survey –2024, KPMG in the U.S. , August 2024, March 10, 2025

Current Stage of AI implementation and focus areas

Source: India Leadership Council (ILC) by The Times Group- Survey on AI 2024

When asked "what impact do you expect AI to have on your industry in the next 3 years", 64 per cent of executives predict an AI-led transformation, reshaping industries and creating new business models.

What impact do you expect AI to have on your industry in the next 3 years

64%
Significant transformation, creating new business models

32%
Incremental improvements in efficiency

4%
Unsure
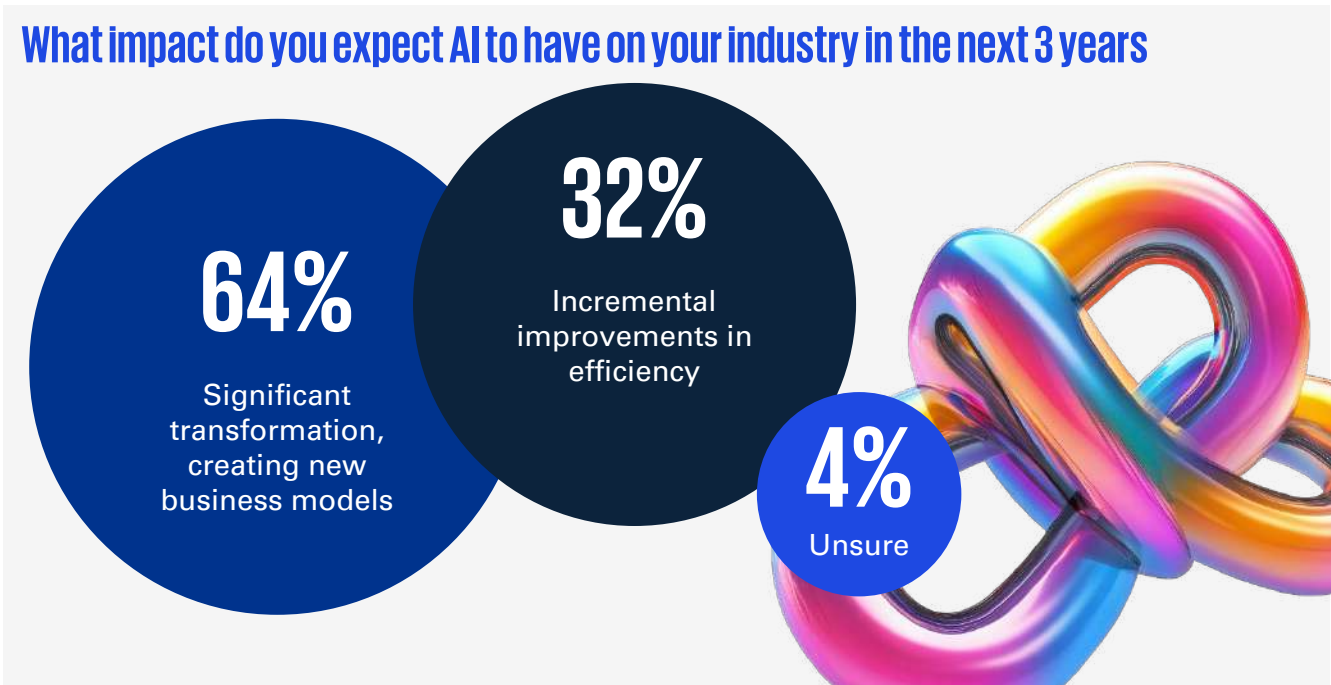
Source: India Leadership Council (ILC) by The Times Group- Survey on AI 2024

Meanwhile 32 per cent believe AI will primarily be leveraged for improved efficiency. The top three sectors expected to see AI-driven disruption soon are the financial services, education, and manufacturing sectors.

Data privacy tops AI adoption concerns: Data privacy and security risks remain a dominant concern for organisations adopting AI – with over 40 per cent respondents citing it as their greatest concern due to vulnerabilities in handling sensitive data. Additionally, 23 per cent of respondents expressed concerns over the lack of in-house AI expertise, while 19 per cent highlighted AI bias and fairness as issues. There is an increasingly optimistic outlook on AI's role for the future workforce. Interestingly, job displacement – is not seen as a prominent concern, suggesting that AI is being viewed as a tool for workforce augmentation rather than replacement.

What is your organization's greatest concern about AI adoption?
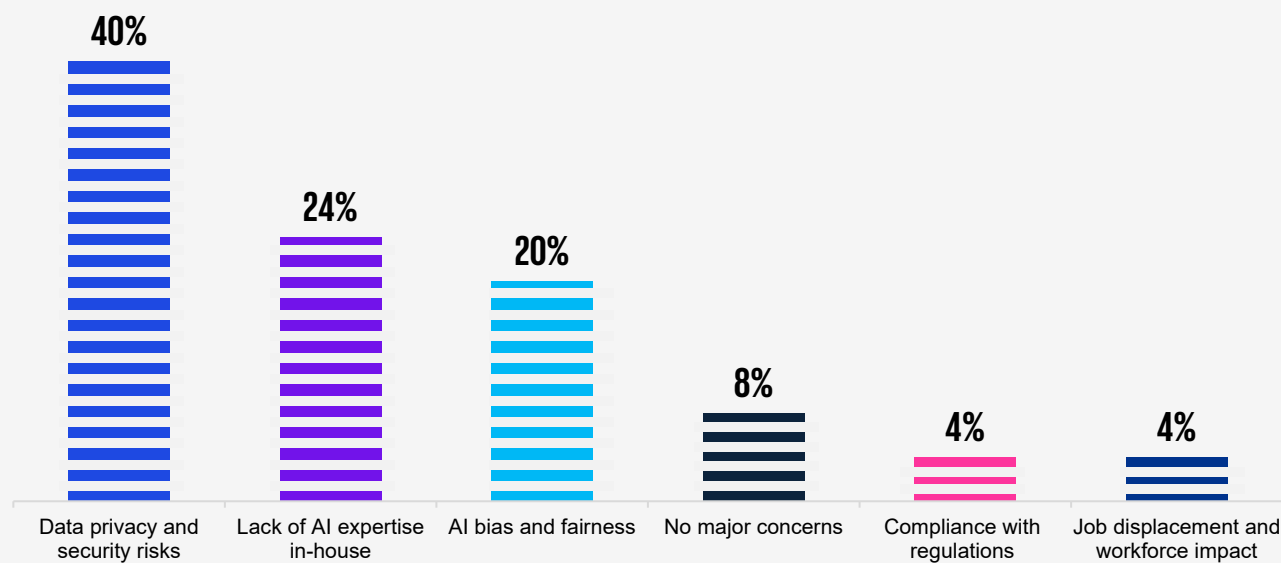
Source: India Leadership Council (ILC) by The Times Group- Survey on AI 2024

Ethical AI principles as a strategic imperative.

A sweeping 76 per cent respondents stated that aligning enterprise AI strategies with ethical AI principles is crucial. Organisations recognise that trust, transparency, fairness, and accountability are fundamental for long-term AI success. Ethical AI is not merely a compliance requirement, rather it must be weaved into the strategy and integrated into every stage of AI development and deployment.

Investing in existing workforce for AI integration.

The leadership of the surveyed corporates believe that upskilling and training the current workforce is the most effective approach to preparing for AI integration [61 per cent]. In contrast, only 15 per cent are looking to collaborate with external AI solution providers or hire AI talent. Today, 54 per cent of surveyed organisations struggle with the lack of internal AI expertise, while 42 per cent cite data quality and availability as a major barrier to AI

adoption. 38 per cent respondents point to unclear ROI, and 19 per cent highlight resistance to change as a persisting and significant challenge. Enterprise adoption, of AI, also faces severe technical hurdles including integration with legacy systems, high costs, and the need for workforce reskilling. Effective change management and robust data governance are crucial, alongside ensuring security and regulatory compliance. Cross-functional collaboration and a well-defined AI strategy with measurable outcomes are essential. Additionally, proprietary data remains an underutilised asset due to concerns about privacy, security, and data quality necessitating strong data governance.

Business impact outweighs cost considerations in AI evaluation.

64 per cent respondents indicated that AI investments are being viewed from a lens of long-term business impact.

Despite ongoing challenges around ROI clarity and integration with legacy systems, cost and operational concerns are no longer major barriers to AI adoption. Only 16 per cent of respondents cited cost-benefit analysis and 8 per cent ease of integration as top evaluation criteria, indicating a strong strategic commitment to AI investment, regardless of short-term complexities.

AI is increasingly seen as a key enabler of sustainability goals. 72 per cent of leaders believe AI will support their sustainability strategies, with 54 per cent expecting improvements in energy efficiency and 50 per cent in carbon footprint management. Others highlight AI's potential to improve sustainable supply chain practices (38 per cent) and reduce waste (27 per cent).

In research and development, AI particularly generative AI, is driving faster innovation cycles by automating repetitive tasks, enhancing diagnostic accuracy, and reducing human error. Business leaders, including CXOs and founders, note that AI improves customer experience, accelerates time-to-market, and empowers teams to focus on high-value problem-solving. AI is fundamentally transforming how products are conceptualised, developed, and refined, especially within enterprise software.

Looking ahead, organisations are leveraging AI to modernise operations, drive efficiency, and create long-term value. Use cases span across delivery operations, talent management, customer experience, time-to-market, and industry-specific

functions from solving environmental challenges in construction, to improving patient outcomes in healthcare, to supporting Net Zero goals in hospitality. Over the next 12–24 months, top priorities include AI-driven product and service innovation (40 per cent), data-led decision-making (28 per cent), and scaling AI across the organisation (20 per cent).

To ensure successful adoption, leaders recommend starting with pilot projects, establishing ethical AI policies, and building dedicated teams for data management and system integration. They emphasise the importance of establishing ethical AI policies and using AI to enhance, not replace, human productivity. Clear digital strategies, a fail-fast mindset, securing structured data, fostering internal and external collaboration, and continuous learning are essential.

An AI-first mindset, combined with continuous education and training, helps integrate innovation into daily operations. Selecting impactful use cases, ensuring a seamless path to production, and maintaining trustworthy AI are essential. Trustworthy, transparent, and bias-free AI systems supported by strong AI governance frameworks and clean, unified data are critical for long-term success.

Organisations that embed AI into their core strategy, with a focus on responsible innovation and cross-functional impact, are well positioned to lead in an AI-driven future.

07

Strategic recommendations

AI has the capacity to bring about remarkable advancements, but its true impact depends on how it is harnessed. While AI can revolutionise education, enhance disaster response, and drive scientific discoveries, it also has the potential to be exploited for surveillance, spread misinformation, and deepen social divides. Therefore, its vital for governments, businesses, and communities to collaborate in ensuring AI is used to benefit society and mitigate potential harms.

While the final goal of all actors converges towards using 'AI for good,' the considerations for each of them is based on the roles they play. For example, governments and policymakers should focus on the macro-picture to foster AI research while ensuring guardrails for safety, equity, and human rights. Similarly, corporates should focus on improving productivity, increasing sales, and maximising profitability without causing social harm or compromising security.

Key considerations

For governments and policymakers:

1. Human rights

   a. Anti-discrimination policies: There must be strict enforcement of policies that prevent discrimination in AI systems. This is expected to ensure that AI algorithms are designed and tested to avoid biases based on race, gender, age, religion, or other protected characteristics

   b. Transparency and accountability: Transparency in AI decision-making processes should be made mandatory. Organisations should disclose how AI systems make decisions. There must be clear guidelines in place that delineate the responsibilities of AI developers, deployers, and users, ensuring accountability for AI-driven decisions and actions. This includes establishing mechanisms for redress in cases of harm or bias.

   c. Data privacy protections: Enacting and enforcing legislation that safeguards personal data, granting individuals control over their information and imposing stringent penalties for breaches is a must. Frameworks like the General Data Protection Regulation (GDPR) and India's Digital Personal Data Protection Act, 2023 (DPDP Act) serve as exemplary models.

   d. Ethical AI guidelines: Developing ethical guidelines for AI development and use is imperative as is promoting principles such as fairness, accountability, and transparency to ensure AI systems respect human rights.

   e. Human oversight: There must be a provision for ensuring human oversight in critical AI applications, such as healthcare and criminal justice. This is expected to ensure that human judgment is involved in decisions that significantly impact individuals' lives.

| Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | **Strategic recommendations** | Conclusion | Methodology | Acknowledgements |

2. AI safety and security

a. **Regulatory frameworks:** Development and enforcement of regulations that mandate safety standards for AI systems should be put in place. This includes guidelines for testing, validation, and continuous monitoring to ensure AI systems operate safely and securely.

b. **Cybersecurity measures:** Implementation of robust cybersecurity protocols to protect AI systems from cyber threats are extremely critical. This includes working towards ensuring encryption, secure data storage, and regular security audits to prevent unauthorised access and data breaches.

c. **Incident response plans:** Development and maintenance of incident response plans to address AI-related security breaches or failures are important. These plans should outline procedures for detecting, reporting, and resolving incidents promptly.

d. **International collaboration:** Collaboration with other countries and international bodies to establish global standards for AI safety and security are also essential. Sharing of best practices and coordinated efforts to address cross-border AI security challenges would be crucial for building a robust and trustworthy AI ecosystem.

3. Skill development and educational programmes

a. **Early education:** Introducing foundational AI concepts early on, emphasising critical thinking and ethical considerations to prepare students for a technology-driven world would benefit them immensely. This includes incorporating AI-related topics into existing subjects and promoting problem-solving skills.

b. **Vocational training and professional development:** Offering accessible programmes that equip individuals with practical AI skills, facilitating career transitions and addressing skill shortages in the AI sector would be key. These programmes should be designed to accommodate diverse learning styles and backgrounds.

c. **Public-Private Partnerships:** Collaborating with private companies to develop and deliver AI training programmes should be considered. Additionally, leveraging industry expertise to create relevant and up-to-date educational content could significantly enhance the learning experience.

d. **Scholarships and grants:** Providing scholarships and grants would be crucial for encouraging students to pursue AI-related studies. This financial support can help underrepresented groups gain access to AI education and training opportunities.

| Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | **Strategic recommendations** | Conclusion | Methodology | Acknowledgements |

4. Fostering research

a. **Research grants:** Allocating funding for AI research through grants and subsidies could encourage development of innovative projects that address societal challenges with advanced AI technologies.

b. **Innovation hubs:** Establishing AI research centres and innovation hubs could foster collaboration between academia, industry, and government thereby providing resources and infrastructure to support cutting-edge research.

c. **Public-private collaborations:** Promoting partnerships between public institutions and private companies to drive AI research could pave the way for facilitating knowledge exchange and resource sharing to accelerate advancements.

d. **International cooperation:** Engaging in international research collaborations are a must to leverage global expertise.

e. **Open Data Initiatives:** Supporting open data initiatives that provide researchers with access to high-quality datasets is key to advancing AI research and development. By fostering a culture of data sharing and collaboration, we can encourage innovative breakthroughs and accelerate progress in the field.

5. Public awareness and engagement

a. **Awareness campaigns:** Launching public awareness campaigns to educate citizens about AI is the first step in being transparent. This could be done using various media channels to disseminate information and highlight the benefits and risks of AI.

b. **Community workshops:** Organising community workshops and seminars to engage the public in discussions about AI is another way to create awareness. It would provide opportunities for citizens to learn about AI technologies and their impact on society.

c. **Public consultations:** Conducting public consultations with industry, to gather inputs on AI policies and regulations would allow for diverse set of views from stakeholders which should include views from marginalised communities, to make the decision-making process inclusive.

d. **Educational resources:** Developing and distributing educational resources on AI such as brochures, interactive platforms, videos, and online courses, to educate and inform the public about AI concepts and applications would be critical to foster trust.

| Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | **Strategic recommendations** | Conclusion | Methodology | Acknowledgements |

For corporates:

1. **Alignment with business objectives –** Corporates should align their AI initiatives in line with the overall business strategy and objectives. This means identifying how AI can drive growth, how it can improve efficiency, and how it can generate a competitive advantage. They should have a clear understanding of how these initiatives will bring value to the organisation and should make sure to track the benefits after implementation. It's essential to prioritise projects on feasibility, return on investment (ROI), and alignment with strategic goals.

2. **Technology infrastructure data management and governance –** Investing in scalable and flexible technology infrastructure is vital to support AI workloads. Corporates should consider appropriate cloud environments and platforms that meet their needs and must consider factors such as ease of integration, scalability, and support for various AI frameworks. Ensuring seamless integration of AI solutions with existing IT systems and business processes is crucial for smooth operations.

   Effective data management and governance are critical for the success of AI initiatives. Companies must ensure high-quality, accurate, and relevant data for AI models by implementing data cleaning, validation, and enrichment processes. Compliance with data privacy regulations, such as GDPR, DPDP (India) and CCPA, would be essential to handle personal data responsibly. Strong data security measures, including encryption and secure data storage, would be necessary to protect sensitive information from breaches and unauthorised access. Clear data governance policies should be established, covering data ownership, access controls, and data lifecycle management, to ensure data is managed consistently and ethically.

c. **Ethical AI and responsible use –** Developing ethical and responsible use of AI should involve the below:

   a. Identifying and mitigating biases in AI models through rigorous testing to ensure fairness and equity in decision-making processes.

   b. Promoting transparency in AI systems including ensuring explainability of AI models and documentation of AI decision making process.

   c. Defining accountability mechanisms to ensure there is a clear chain of responsibility for AI-related decisions.

Establishing ethical guidelines for AI development and deployment would help to ensure that AI applications align with the company's values and societal norms, fostering trust and acceptance among stakeholders.

4. **Talent and skill development –** Having a skilled workforce is essential for successful AI implementation. The paradigm has shifted from a build vs buy model to a build, buy, and borrow model. Since the speed of development of technology is much higher than what it used to be few years earlier, companies should not just rely on hiring external AI talent, they must also consider short-term external expertise in the form of consulting partners experienced in development and application of AI. This needs to be balanced with a continuous push to upskill talent to manage costs and ensure the current staff is not left behind in adoption. Developing training programmes to upskill employees in AI technologies, data science, and machine learning would be crucial.

5. **Innovation and research –** Corporates should consider using AI for Research and development (R&D) to drive innovation and stay ahead of industry trends. Partnering with academic institutions can leverage cutting-edge research and foster innovation through collaboration.

6. **Public-private initiatives –** Partnering with government agencies and non-profits to address societal challenges through AI and leveraging combined resources and expertise for public good can bring with it innovative solutions.

7. **Risk management –** Effective risk management is crucial for mitigating potential risks associated with AI deployment. Corporates should conduct thorough risk assessments from time to time to identify potential risks, including technical, operational, and reputational risks. Developing and implementing mitigation strategies could help address identified risks proactively. Establishing incident response plans could ensure that AI-related issues are addressed promptly and effectively. Using feedback from risk assessments and incidents to continuously improve AI policies and practices would ensure that the organisation remains resilient and adaptable in the face of evolving challenges.

The advancement and integration of artificial intelligence present both transformative opportunities and complex challenges for policymakers, governments, and corporations. For policymakers and governments, it is imperative to establish a robust legal and regulatory framework that balances innovation with ethical considerations. Key priorities include fostering transparency, ensuring accountability, protecting privacy, mitigating biases, and safeguarding against potential misuse of AI technologies. Collaborating with global counterparts to harmonise standards and engaging with diverse stakeholders, including the public, academia, and industry experts, will be crucial to crafting policies that are inclusive and forward-looking.

For corporations, the successful implementation of AI hinges on adopting responsible practices that align with ethical guidelines and legal regulations. Organisations must focus on building transparent AI models, ensuring the diversity of datasets, and conducting rigorous testing to avoid biases. Emphasising employee upskilling, fostering an organisational culture of AI literacy, and prioritising cybersecurity could strengthen trust and adaptability needed for AI-driven innovation. Above all, integrating AI strategies with broader corporate goals and demonstrating a commitment to societal well-being could position businesses as leaders in the AI-driven future.

Ultimately, by addressing these key considerations with care and foresight, governments and businesses can together harness the transformative potential of AI while mitigating its risks, paving the way for a more equitable and sustainable future.

08
Conclusion

As we conclude our exploration into how AI is shaping our world it's evident that AI is more than just a technological advancement. It is a game-changer that's reshaping our world in profound ways. What started as a niche concept has now become an integral part of our everyday lives, influencing countless sectors, and paving the way for a future filled with innovation and progress.

Summary of findings

We began by exploring the AI technology landscape, diving into the principles and applications of Machine Learning, Natural Language Processing (NLP), Generative AI, Computer Vision, and Robotics, among others. These technologies have shown incredible potential, from understanding and generating human language to automating complex tasks. Emerging trends in AI research and development, like new algorithms, continue to push the boundaries of what's been considered possible till now.

AI's sectoral impact is profound. In healthcare, it is revolutionising diagnostics, personalised medicine, healthcare delivery, enhancing patient care and operational efficiency. The finance sector benefits from AI's prowess in risk management, fraud detection, and algorithmic trading. Education is evolving through personalised learning, AI-driven content creation, and streamlined administration. Meanwhile, Manufacturing is leveraging AI for automation, predictive maintenance, and supply chain optimisation, driving productivity and innovation.

Economic Implications of AI

The economic implications of AI are equally significant. AI-driven innovation is fuelling economic growth, creating new markets, and fostering a culture of continuous improvement. However, the technology also brings about shifts in job markets and workforce dynamics. While AI creates new job opportunities, it also displaces certain roles, necessitating a re-evaluation of skills and workforce preparation. The advent of AI demands a workforce adept in new technologies, emphasising the importance of reskilling and upskilling programmes. Moreover, AI's role in bridging or widening economic disparities underscores the need for inclusive and equitable technological integration.

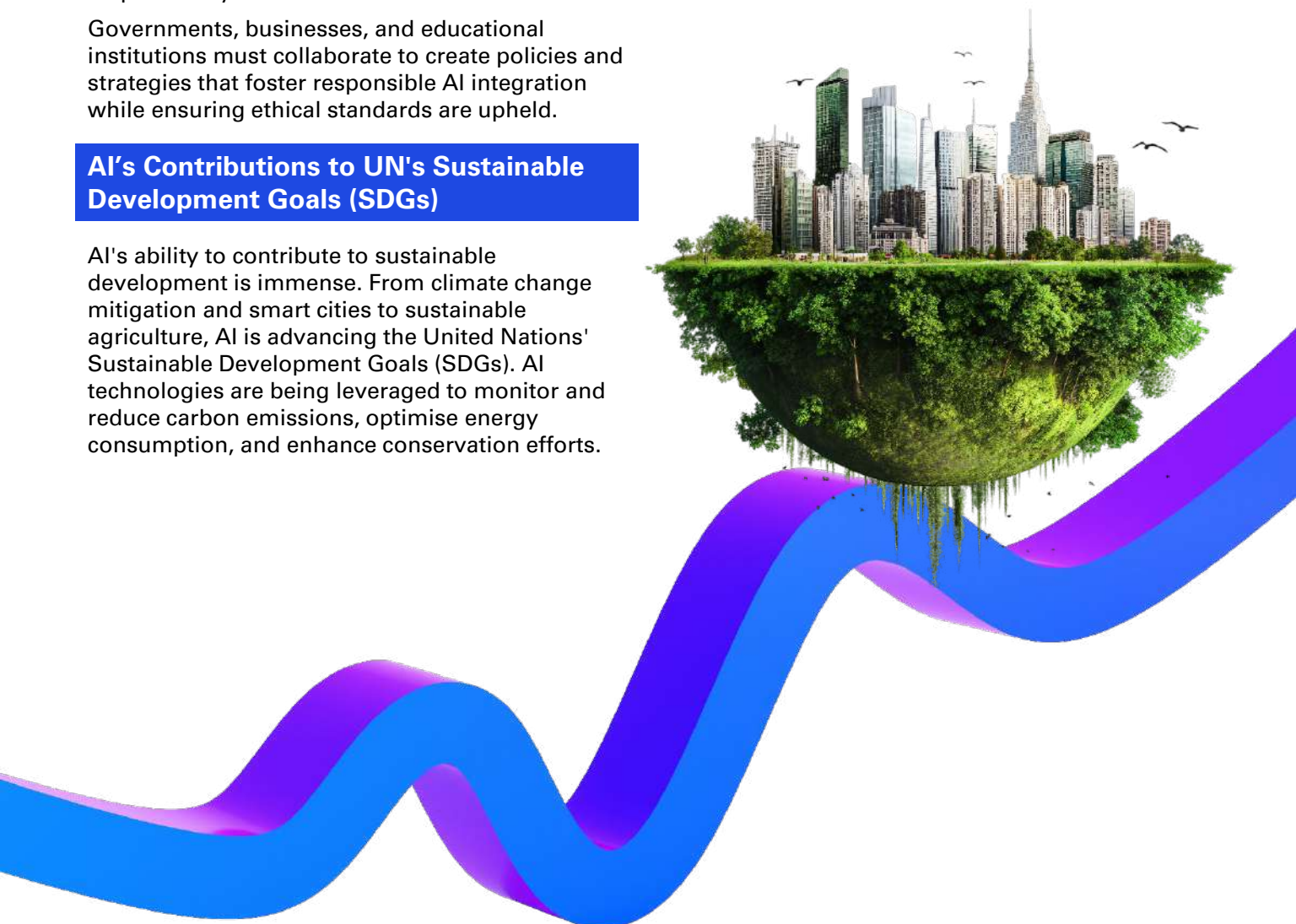## Ethical, Legal, and Societal considerations

Ethical, legal, and societal considerations are paramount in the AI discourse. Addressing algorithmic bias is essential to ensure fairness, transparency, and accountability in AI systems for building trust and ethical practices. Protecting data privacy is another significant concern, requiring strong legal frameworks to manage intellectual property and liability issues. Societal impacts, including social equity and privacy, require a delicate balance between innovation and ethical responsibility.

Governments, businesses, and educational institutions must collaborate to create policies and strategies that foster responsible AI integration while ensuring ethical standards are upheld.

AI's Contributions to UN's Sustainable Development Goals (SDGs)

AI's ability to contribute to sustainable development is immense. From climate change mitigation and smart cities to sustainable agriculture, AI is advancing the United Nations' Sustainable Development Goals (SDGs). AI technologies are being leveraged to monitor and reduce carbon emissions, optimise energy consumption, and enhance conservation efforts.

In smart cities, AI is improving urban living through intelligent transportation systems, efficient waste management, and enhanced public safety. Sustainable agriculture benefits from AI-driven precision farming techniques, boosting crop yields, and reducing resource consumption. Real-world case studies highlight the tangible benefits of AI in promoting environmental sustainability and enhancing urban living.

Future Outlook

The trajectory of AI promises continued innovation and transformation. The future will likely see AI becoming even more integrated into our daily lives, driving advancements in areas we have yet to fully imagine. Specific innovations on the horizon include:

- **Multi-agent systems:** These systems consist of multiple interacting intelligent agents that can work collaboratively to solve complex problems, and enhance decision-making processes in areas such as logistics, traffic management, and disaster response among many others.

- **Neuro-symbolic AI:** This approach combines neural networks with symbolic reasoning, enabling AI systems to understand and manipulate abstract concepts. It aims to bridge the gap between data-driven learning and human-like reasoning, leading to more robust and interpretable AI systems.

- **Artificial General Intelligence (AGI):** AGI refers to AI systems with human-like cognitive abilities, capable of understanding, learning, and applying knowledge across a wide range of tasks.

- **Quantum AI:** By leveraging quantum computing, AI promises to solve problems that are currently intractable for classical computers. This could lead to breakthroughs in fields such as cryptography, materials science, and complex system optimisation.

- **Small language models:** Unlike general purpose LLMs, small language models focus on achieving targeted results with fewer computational resources. By optimising their size and architecture, these models deliver quicker responses, consume less energy, and are easier to deploy across devices like smartphones. Despite their compactness, they are capable of delivering high-quality results for specific tasks, making them an efficient alternative in scenarios where cost and scalability are key concerns.

- **Reinforcement Learning with Human Feedback for GenAI:** Reinforcement Learning with Human Feedback (RLHF) help GenAI models improve accuracy, relevance, and ethical alignment by incorporating user preferences. This iterative process enhances the quality of generated content, making applications like chatbots, content creators, or decision-support systems more precise, adaptive, and user-centric.

These innovations could have profound impacts on society, economy, and daily life. Autonomic and multi-agent systems could enhance efficiency and decision-making across various domains. Neuro-symbolic AI could lead to more interpretable and robust AI systems, bridging the gap between data-driven learning and human-like reasoning. AGI could drive unprecedented levels of automation and efficiency, potentially reshaping industries, and job markets. Quantum AI could unlock new possibilities in solving complex problems. Small language models could make content generation in specific domains more energy and cost efficient and RLHF techniques could significantly enhance the quality of content generated by GenAI apps.

In summary, AI is undeniably transforming the future. Its potential to drive progress, enhance quality of life, and address global challenges is immense. However, realising this potential requires careful navigation of ethical, legal, and societal implications. By embracing AI responsibly and inclusively, we can harness its power to create a future that is not only technologically advanced but also equitable and sustainable.

09

Methodology

| Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals |

| What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | **Methodology** | Acknowledgements |

India Leadership Council (ILC) by The Times Group - Survey on AI 2024

The report is based on a structured survey conducted by the India Leadership Council (ILC) by The Times Group on AI in 2024 among its members, comprising C-suite leaders – CEOs, MDs, founders, and other senior business leaders across key industry verticals. The objective of this report was to capture informed perspectives on the economic, technological and social implications of Artificial Intelligence (AI) in India.

The survey was conducted over a four-week period, utilising a combination of polls, questionnaires and insights from industry decision makers. The survey captured both quantitative data through multiple-choice and Likert-scale questions and qualitative insights through open-ended responses and expert commentaries.

Key focus areas included

- Perception of AI's impact and industry disruption

- Expected changes in employment and skill demands

- Investment trends in AI and related technologies

- Anticipated policy and governance challenges

- Readiness on Indian enterprises to adopt AI solutions.

The collected data was analysed for qualitative inputs and statistical aggregation with secondary research and global benchmarks to ensure accuracy, relevance and contextual integrity.

The report through this methodology provides an understanding of AI's transformative potential from the lens of India's industry leaders and influencers.

10

Acknowledgements

Introduction | AI technology landscape | Sectoral impact | Ethical, legal, and societal implications | Overview of United Nations' Sustainable Development Goals

What we learnt from the India Leadership Council Survey | Strategic recommendations | Conclusion | Methodology | **Acknowledgements**

We would like to express our deepest gratitude to the incredible team for their unwavering commitment and exceptional contributions to this report. Their hard work, collaboration, and dedication have been instrumental in bringing this project to fruition. Thank you for being the driving force behind this success.

KPMG in India

Business Team
- Sankara T Subramanian
- Kunal Chhajer
- Raghuveer Varahagiri
- Ranjana Sudalai
- Rashmi S

Corporate Communications
- Vidya Mohan
- Lakshmi Ramanath

Design and Marketing Compliance
- Pooja Patel
- Angeeta Baweja
- Shveta Pednekar

ET Edge Insights
- Queenie Nair

KPMG in India contacts:

Akhilesh Tuteja
Head – Clients & Markets
T: +91 124 254 9191
E: Atuteja@kpmg.com

Purushothaman KG
Partner and Head,
Technology Transformation
E-purushothaman@Kpmg.Com

Adil Vazifdar,
Partner and Leader,
Digital Platforms,
E: adilvazifdar@kpmg.com

Sankara T Subramanian
Partner and COO,
Digital Platforms,
E: tsubramanian@kpmg.com

kpmg.com/in

ET Edge contacts:

Queenie Nair
Editor-Sustainability
ET Edge Insights
E: c-queenie.nair@timesgroup.com

Access our latest insights on
KPMG Insights Edge

Follow us on:
kpmg.com/in/socialmedia