

Press release

Advance artificial intelligence for growth

Leveraging AI and robotics for India's economic transformation

2018



India well poised for AI-led economic transformation, potential for companies to set up AI-focused innovation centres in India: PwC-Assocham report

Technology undertapped in Financial Services, National Security, Cybersecurity, Environment and in enhancing accessibility for the differently-abled, greater adoption should be incentivised

Global trends

- **Cross-border investments** in AI and robotics have **increased** sharply in recent years. AI has already paved the path towards becoming the backbone of government-sponsored cyber security efforts.
- **Entry barriers** for users and teams new to developing software using AI and ML have **reduced**, with AI products and offerings from technology giants and start-ups is increasing number of open source libraries, application programming interfaces (APIs), and software development kits (SDKs).
- AI's **share within the IT spending budget** is expected to keep **increasing** and corporate **mergers and acquisitions** are also on the **rise**.
- **AI-focused start-ups** are currently **booming** and investor response towards them has been warm. However, with ML becoming a mainstay and the **novelty factor wearing off**, they will have to **further differentiate their products** from the market on dimensions like ease of use, interoperability, robustness and support to be competitive.
- **National security and defence-** AI can be leveraged to protect economic sectors and infrastructure such as airports and power plants that are vulnerable to attacks. Anomalous behaviour detection in individuals and infrastructure disruption prediction (natural/man-made causes) powered by the use of distributed sensors and pattern recognition are examples of AI usage potential in the sector. Along with AI applications in defence, **robots can be used to perform jobs which are unsafe for humans**—such as recovering explosives, detecting mines, space exploration, deep water probes, scouting for hostile territories, etc.
- **Cybersecurity-** AI-enabled cyber security systems rely on historical data of cyberattacks and apply ML to predict and detect similar threats likely to arise in the future. Having automated systems in place for monitoring and detecting risks helps to free up human agents from the time-consuming tasks of having to continually check and categorise these red flags based on their threat level.
- **Accessibility technology for the differently abled-** AI-enabled assistive technology for differently abled individuals is an untapped market in India. AI, in combination with other emerging technologies like 3D printing and IoT, has great potential to fuel widespread availability, affordability and feasibility of innovations in smart prosthetics.
- **Environment-** AI technologies for environmental sciences have not picked up significantly in India yet. The potential here includes AI optimised 'smart' energy grids for power generation, precision manufacturing for reduced waste and emissions, disaster management and recovery, conservation of ecological habitats and disease prevention and outbreak control.

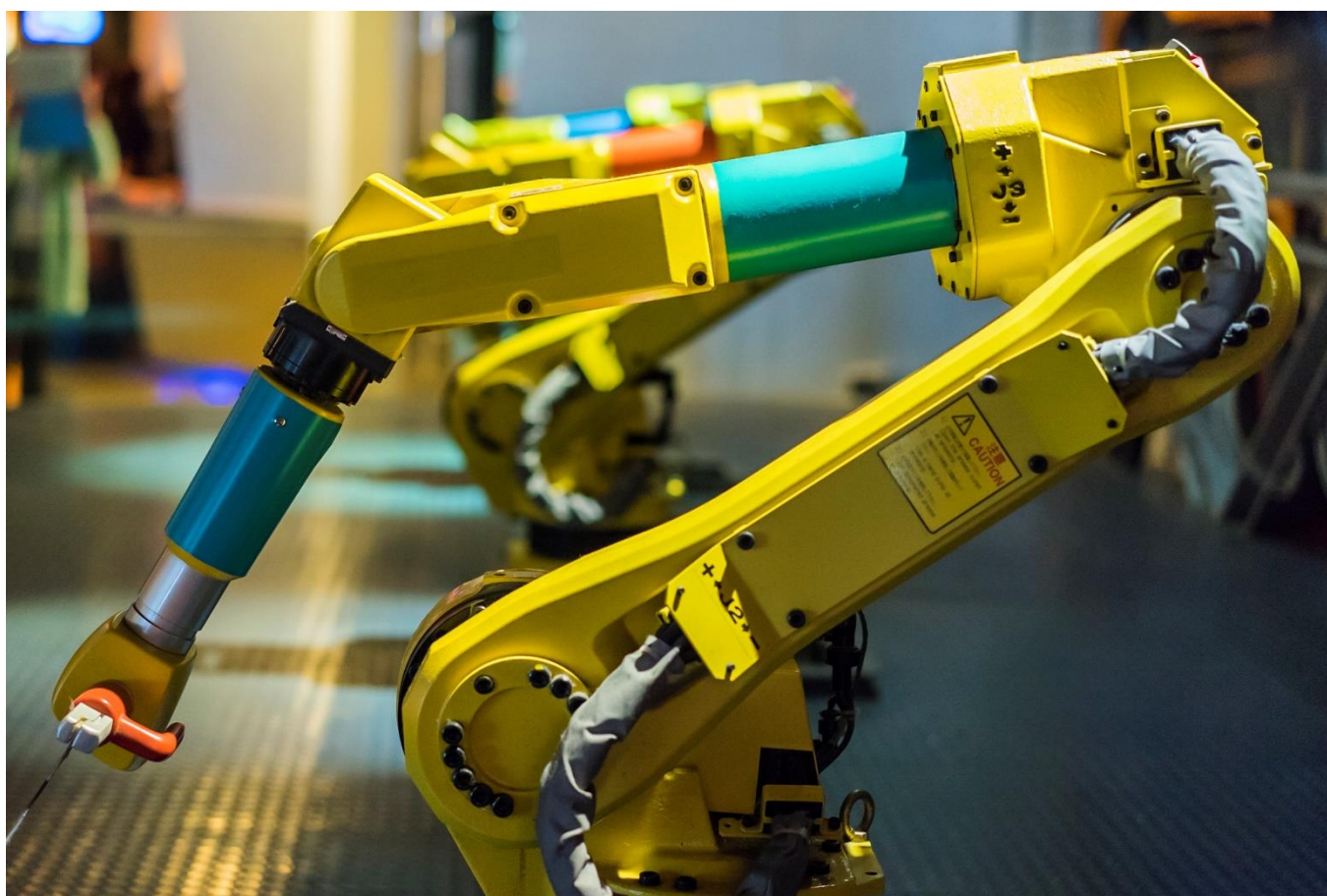
AI adoption in India

- **Potential for companies to set up AI-focused innovation centres in India** with initiatives such as Digital India and Make in India creating a favourable regulatory environment. More than 36% of large financial establishments have already invested in these technologies and around 70% plan to embrace it in the near future.
- **Financial services-** While AI, ML and robotics have a wide range of use cases in financial services, their potential has not been fully realised in India. Establishing data access frameworks and guidelines for open application interfaces from financial institutions will act as an enabler for increased adoption of AI in the sector.

For more sectoral trends, please refer to the report. Click [here](#)

Road Ahead:

- Forming cooperative relationships with some of the frontrunners in AI—such as Japan, the UK, Germany Singapore, Israel and China—to develop solutions that tackle social and economic challenges can aid and accelerate strategy formulation. Setting up centers of excellence supporting inter-disciplinary research across law, medicine, engineering, management and the social sciences, like Japan's national R&D institute, 'Riken',⁷¹ can further AI adoption in India.
- AI systems would need to be made robust against attempts of outcome manipulation whether through contamination of training data or algorithmic tampering. It is also important to form independent audit bodies and ethics panels to screen research proposals, design and develop, and commercialisation and periodic review and maintenance of AI systems.
- It will be important to explicitly define performance standards (and conduct timely evaluations against the same) and document plans of action for scenarios where AI systems operate in a manner deviating from their intended functioning so that anomalies, should they arise, can be identified, responded to and remedied at the earliest.
- Policy planning in AI must be aimed at creating an ecosystem that is supportive of research, innovation and commercialisation of applications. The Central and State Governments could look at providing fiscal and non-fiscal incentives for AI research/deployment.
- Regular cooperation also required between academia and the public and private sectors to find intelligent and innovative ways to increase the efficiency and effectiveness of services delivered to society.





Arnab Basu

Partner and Leader, Technology Consulting, PwC India

AI is the foundational technology for the next phase of innovation and economic development for India. The AI growth trajectory in India has been encouraging, with numerous developments in the field of AI, ML and robotics in India—both institutionally driven as well as more subtle percolations within business processes and consumer lifestyles. Globally, the scope of AI applications is increasingly getting intertwined with the overall digital transformation agenda of businesses and Governments.

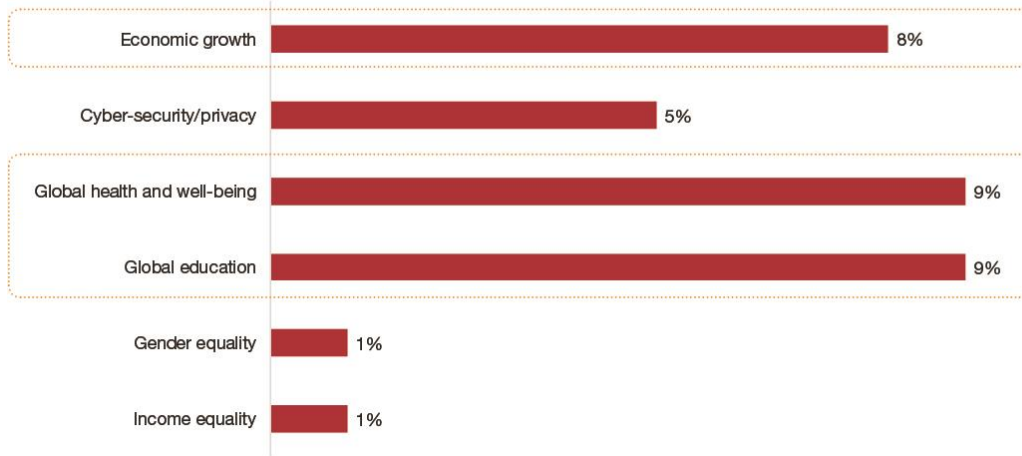


Sudipta Ghosh

Partner and Leader, Data and Analytics, PwC India

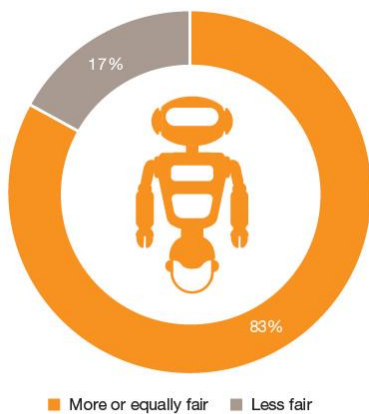
The benefits of AI is now being reaped even in sectors that are traditionally technologically less sophisticated, such as agriculture and public utilities. AI's potential to contribute towards socioeconomic causes like economic growth, health and well-being, and education is well accepted today. The Government too has a favourable attitude towards the use of AI to meet these goals. AI is expected to create new areas of economic opportunity and wealth creation, which will be an ingredient in retaining key sectoral competitiveness and, in turn, jobs. While increased adoption of AI is desirable, it is equally important to develop AI systems that operate in a responsible manner, without adversely affecting individuals or any section of society.

Gap between the percentage of participants who think AI is important for a cause and that businesses and the government will apply AI for the same



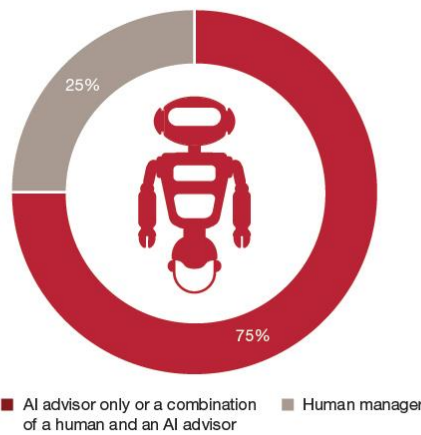
Source: PwC report on 'AI in India – hype or reality?'

How AI advisors are perceived in terms of fairness in giving promotions and raises

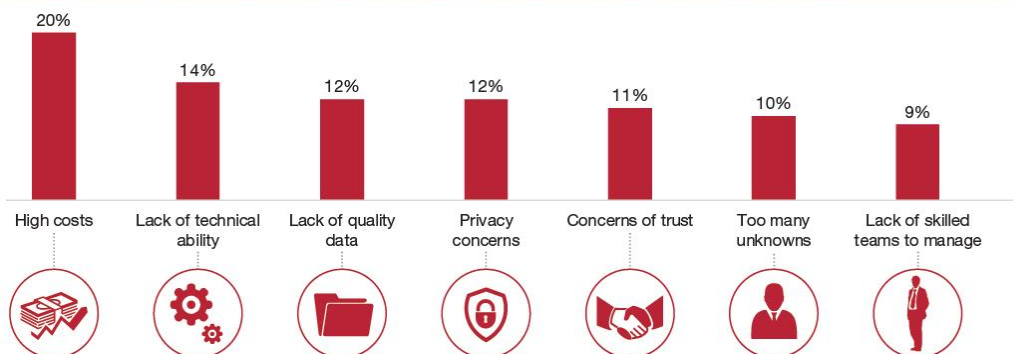


Source: PwC report on 'AI in India – hype or reality?'

If you were up for a promotion against another employee, who would you want to make the decision?



Key barriers to AI integration for businesses



Source: PwC report on 'AI in India – hype or reality?'

Nandini Chatterjee

Chief Communications Officer

nandini.chatterjee@pwc.com

Direct: +91 (124) 4620661

Mamata Borthakur

Manager- Corporate Communications

mamata.borthakur@pwc.com

Direct: +91 (124) 4620706

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