

'Securing Advanced & Critical Tech edge for Viksit Bharat'

Professor Abhay Karandikar, instrumental in shaping India's telecom policy by establishing global 5G/6G standards and steering the nation's strategic vision for 6G adoption, visited BARC to deliver a talk at the popular Trombay Colloquium on 18th August, 2025. Prof. Karandikar is currently serving as Secretary to the Government of India, Department of Science and Technology, Ministry of Science & Technology. Some of the key points of his talk have been excerpted and presented here.

1 India's Global Standing in Advanced Technology...

Over the past decade, India has made remarkable progress in advanced technology and innovation. It currently ranks 39th on the Global Innovation Index, third in research publications, and third in PhD output. The country's startup ecosystem has also seen exponential growth - expanding from 11 unicorns in 2016 to 118 today - placing India third globally, with over 170,000 startups operating nationwide.

2 Focus on Critical Technologies for Vision 2047...

India ranks among the global top five in 45 of the 64 most critical technologies, including drones and robotics, cybersecurity, quantum cryptography, and quantum sensing. China leads in 57 areas, while the US dominates the remaining seven. Advanced composite materials present a significant opportunity for India, which must accelerate progress in this and other domains to achieve Vision 2047. (Source: Findings of Australian Strategic Policy Institute, published in a 2024 report)

3 National Strategy for Tech & Innovation Leadership...

Institutional reforms in tandem with efforts to bridge gaps in critical technological capabilities are being driven by greater private sector participation. Strategic initiatives such as the Anusandhan National Research Foundation - fostering collaborations between varsities and research labs - and the newly launched RDIF mechanism, which is designed to scale up private sector strengths in emerging and sunrise sectors. These are providing strong momentum to this transformation.

4 Future Paradigms...

Under the India AI Mission, the country plans to deploy nearly 30,000 GPUs to strengthen cloud computing infrastructure. India is also advancing in two key areas: Bio-engineering, through bio-foundries, biomanufacturing hubs, and precision bio-therapeutics for a sustainable future; Developing a robust Deep Tech ecosystem. Additionally, with the transition to 6G telecom services, India aims to secure at least 5% of global IPRs.



Professor Abhay Karandikar