

China Talk Series

Topic: Breaching The Glass Ceiling: China's Emergence as a Global Player in Science, Technology and Innovation.

Speaker: Dr V S Ramamurthy

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Key Takeaways

On 10 August 2022, the Centre for East Asian Studies (CEAS), Christ University, in collaboration with the China Studies, Science, Technology and International programme of NIAS, organized a talk on 'Breaching The Glass Ceiling: China's Emergence as a Global Player In Science, Technology and Innovation' by Dr V. S. Ramamurthy, Former Secretary, Department of Science and Technology.

Dr Ramamurthy initiated his discussion by reminiscing when his friends bought the knock-off expensive Parker pens and flaunted them in class six decades back. He enunciated that China, which excelled in knock-off technology, is now growing in innovation.

China is now growing in the Energy sector, which is “the currency of the 21st century and Beyond”, thereby showing the graph where China occupies the first place as a leading producer of coal, hydroelectric, solar energy, and wind energy.

He emphasized how hydroelectric power and coal are naturally available resources, but the other two excelled through the technology countries acquired. He explained how the US is the hub of photovoltaic cell technology, which produces solar energy and Germany, which excels in photovoltaic cell production, has faced a downfall in demand since China took over the market. China made photovoltaic cells with less quality but at a low price which gave them leverage in the market, so much so that Germany purchased them from China.

On China's utilization of rare earth, he elaborated on the importance of making magnets in wind turbines and generating electricity. China occupies 30 percent of the market and possesses 30 percent of the rare earth resources. The US leads in the industry, but due to the demand for environmental compliance, US companies shifted to China for low-value rare earth resources. Currently, 90 percent of low-value rare earth is produced by China. He compared China's dominance in the industry with India and the latter's inability to utilize 15 percent of rare earth availability.

Taking the example of Japan, which requested rare earth resources from India because of the trade restriction with China, New Delhi's capability restricted its resource availability. By comparing India and China, which occupied the same growth rate in the initial time of independence, he substantiated the claims of China's tremendous growth through its policy formation and implementation over the years.

Dr Ramamurthy observed the scientific aspiration which culminated during Mao's period and how it attained the entrepreneurship phase of capitalizing on the products of the laboratory in the mid-1980s. China identified R&D, innovation and entrepreneurship as the ideals of US growth and adopted the model. He talks about the equal prioritization of both defence and non-defence technologies. He listed the fields as Chinese-dominated as they launched satellites and acquired nuclear missiles. He further made a keen observation of the profit that came out of the investments. Through this analysis, he shifted the topic to the new area of Knowledge cultivation.

Most Chinese experts are graduates of US universities. This made the US accuse China of stealing Intellectual Rights. This also gave a base for the graph, which explains the rise of university graduates fourfold, the increase in R&D capacity, which shot up by a factor of two or three.

While comparing the policies of the mid-1980s and late 1990s, he concluded on the importance of education and knowledge creation to the economy.

Dr Ramamurthy touched upon the need to enhance the knowledge base of India by comparing the aspiration to get into IITs and the low passing percentile. Nevertheless, IIT's new distance education and online programs can help people acquire the necessary skills. He ended with the need of the hour, saying, "We are always aware of what we have to do, but we always do less than what we have to do."

Q & A

His speech was followed by questions from scholars that revolved around security, environmental concerns, and the economic capability of India and China. The first question approached the development of China through the dimension of geography and neighborhood. Dr Ramamurthy put forth the argument of science and technological development that goes beyond the neighborhood and geography. When questioned about China occupying the maximum market space, the scope for India to take over the markets, and the challenges of China overstepping India's technological growth, he stressed the power of brains over military advantage.

On the question of China's academic quality and development, the speaker explained the expansion of educational institutions and the trustworthy research they conduct. On the questions on India-China collaboration in Science and Technology and how the 'fair play game' constraint of India is tackled, he answered: "There is nothing as too fair. However, self-interest can change the fairness of the game"

He also discussed the general panic surrounding Chinese and American dominance in the market. The final question was about the comparative advantage of China's lenient environmental compliances over India's. However, he concluded that our secret soft spot is the willingness to compromise where we want.

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