

IEEE-iSES 2024



Turning India into a Product Nation – Challenges and Opportunities

The 10th IEEE International Symposium on Smart Electronic Systems (IEEE-iSES) 2024 at IIIT-Delhi provided a stage for critical discussions on innovative electronics, IoT, and cyber-physical systems. One of the most engaging sessions was the CiPD panel discussion on India's journey toward becoming a global product innovation hub. The discussion explored the challenges and opportunities in intelligent product development, focusing on key aspects like scaling innovations, strengthening manufacturing, and building sustainable ecosystems.

Dr. Anuj Grover, Head, CiPD, IIIT-Delhi, moderated the panel. It featured esteemed speakers, including Prof. PVM Rao (Professor of Mechanical Engineering and Design, IIT Delhi), M. Sundararajan (Founder & MD, Versa Drives), Ramendra S. Baoni (Founder & CEO, Bisquare), and Shishir Gupta (Founder, Oakter Smart Appliances). These industry leaders shared their insights on how India can overcome manufacturing dependence, market challenges, and funding constraints to build a more substantial product ecosystem and position itself as a global innovation hub.

From Prototype to Market: The Real Journey

A key point emphasized by the panelists was that creating a prototype is just the beginning—the real challenge lies in transforming it into a market-ready product. Prof. PVM Rao pointed out that while India has no shortage of technological innovations, there is a need for structured ecosystems to support product development, validation, and large-scale manufacturability. He emphasized that young innovators must have business acumen, scalability strategies, and an understanding of global market dynamics.

Shishir Gupta added that financial sustainability is just as important as innovation. He stressed that many startups struggle because they focus only on technology without a strong business model. To create globally competitive products, Indian innovators must prioritize financial planning, cost efficiency, and consumer demand.

Building a Sustainable Manufacturing Ecosystem

One of the significant challenges highlighted during the discussion was India's reliance on external manufacturing ecosystems, particularly China's well-established production infrastructure. Ramendra S. Baoni explained that while India has made significant strides in software-driven innovation, it still lacks large-scale, high-quality manufacturing capabilities. He emphasized that if India wants to become an actual product nation, it must invest in local production facilities to reduce import dependency.

Panelists agreed that the Indian product ecosystem needs government and industry support to develop local manufacturing capabilities, supply chains, and production expertise. By strengthening these foundational aspects, India can move closer to self-reliance in product innovation.

Consumer Trust and Market Positioning

Another key takeaway from the discussion was the importance of consumer trust and market positioning in product development. M. Sundararajan pointed out that a product's success is not just about its technological capability—it must also be reliable, user-friendly, and valuable to consumers. The panelists stressed that Indian products must compete globally not just in price but in quality and innovation. If India prioritizes quality and customer experience, it will be able to build lasting consumer trust and market competitiveness.

Lessons from China's Ecosystem & Scaling Up

The panelists also discussed China's success in the global manufacturing ecosystem and what India can learn from it. Shishir Gupta pointed out that China has developed highly efficient supply chains, rapid prototyping processes, and scalable manufacturing—allowing companies to create and launch products much faster than in India.

Rather than seeing China as a competitor, panelists suggested that Indian innovators study and learn from their best practices. India can create its niche in the international product market by building better partnerships, leveraging existing global manufacturing strengths, and investing in local ecosystems.