

Dear Engineers,

In Part 1, we followed the Congress into India's nuclear supply chain and out to its coastline. Part 2 turns to the factory floor: how Indian manufacturers move up the aerospace value chain, and how digitalisation and AI are changing what a small plant can attempt.

"Complex societal challenges in Energy, Mobility, and Manufacturing do not fit neatly into single disciplines; they require interconnected engineering collaboration across materials, software, AI, policy, and human-centered design."

Dr. Janis Terpenney

President, ASME



Keynote 2

Mr. Ajit Prabhu:

Engineering a Company Built to Last



"The world as we know it is not discovered. It is engineered."

Engineers are the ones who make the world what it is."

Ajit Prabhu,
CEO, Quest Global

Ajit Prabhu, CEO, Quest Global, presented the blueprint for building a company that can last a century, using the gas turbine as his analogy. Like the turbine at the heart of an engine, the core of a company is its purpose and values, operationalised through efficient management and human resource systems. To survive constant change and disruption, an organisation needs resilient leadership, akin to turbine blades working under sustained heat and pressure. A reliable system for measuring performance and outcomes fosters a culture of accountability. These four components, he said, must work in synchrony to deliver the fifth: maximisation of customer value, which in turn drives growth, profitability and market resilience.

Key Takeaways

- Purpose and values form the core; everything else is built around them
- Systems, not individuals or single technologies, sustain an organisation
 - Customer value is the output the entire machine exists to produce

Plenary snapshot

Aerospace, Defence and Hi-Tech Manufacturing



Indian manufacturing must move beyond licensed manufacturing for the country to achieve technological sovereignty and strategic autonomy. There is an urgent need to transition from basic production to advanced system design and integration.



Air Marshal M Matheswaran (Retd.)

Founder, The Peninsula Foundation

Aero: Hi-Tech

India's aerospace and defence manufacturing sector is expanding rapidly, fueled by an enabling policy framework and budgetary support. Speakers were unanimous on the need to move up the value chain, from Build-to-Print to Build-to-Spec. Making the shift requires investment in applied research, design and development competency, and collaboration with academia for skill development.

There are two pathways into aerospace for MSMEs: new units founded by entrepreneurs, and diversification by existing manufacturers. Opportunities include tooling and manufacturing support, precision engineering, special processing and sheet metal fabrication. To win tier-1 orders, MSMEs need zero-defect quality systems, proactive planning, workforce skills and people.

Key Takeaways

- Move from cost-arbitrage Build-to-Print towards high-value Build-to-Spec
- Entry is possible through new ventures or diversification of existing operations
- Zero-defect systems and timely delivery win contracts from global tier-1 firms

Aerospace Hi-Tech M



Plenary snapshot

Digitalisation and AI: Reshaping India's Manufacturing Future



Digitalization and AI act as the great leveler, enabling smaller manufacturers to compete globally.

Vijay Doddavaram

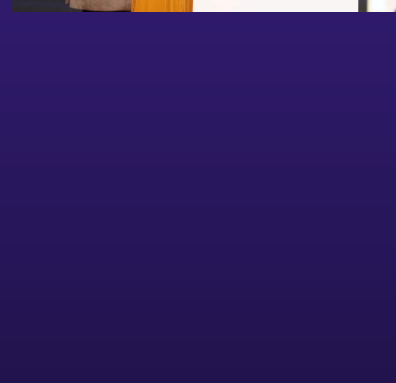
Leader, India Digital Technology Center, Collins Aerospace

Indian industry is moving towards widespread adoption of digital technologies. Setting the strategic context, Vijay Doddavaram, Leader, India Digital Technology Center, Collins Aerospace, said scale is no longer a barrier to innovation, as affordable technology allows small factories to achieve the precision and efficiency of billion-dollar facilities.

The sequencing matters. Businesses should first collect and mine existing data streams, whether trapped in pen-and-paper logbooks or scattered across legacy applications, then implement smaller low-cost systems that prepare the ground for scaling up. Panellists made the case for private 5G architecture insulated from the public internet: by hosting an on-premise core and Radio Access Network, data stays local and factory operations continue even during external outages. Once an organisation reaches maturity in automation, it can add a layer of AI. Where automation delivers process efficiency, AI enables predictive decision-making and adaptive operations.

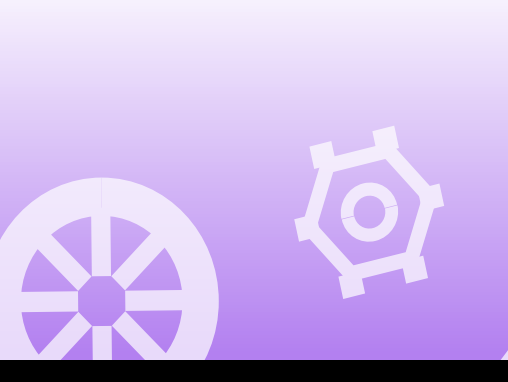
Key Takeaways

- Scale is no longer a barrier to adopting advanced technologies
- Begin with low-cost projects that build continuous data streams, then scale
- AI needs strict guardrails, agent identities and data sovereignty
- Core engineering fundamentals remain the foundation of AI fluency



IMECE India returns next year!

Chennai has set the bar. The work now moves off the stage and into the plants, the laboratories and the classrooms here it actually gets done.



Mr. Thomas Costabile

Executive Director and Chief Executive Officer, ASME
At Chennai Trade Centre

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