



Aequs: Ecosystem Advantage in the Aerospace Sector

The Aerospace and Defence industry is recording significant advancements over the past few years, driven by multiple factors such as high demand from consumers in addition to technological disruption. According to a report by Deloitte, backlog on commercial aircraft orders is at its peak at more than 14,000 aircraft, with about 38,000 aircraft expected to be produced globally over the next 20 years. While original equipment manufacturers (OEMs) expect the suppliers to reduce costs and increase the production rate this in turn is putting pressure on the suppliers. This process will continue as the OEMs focus on expanding their margins. Reports also estimate that by 2025, India is expected to become the “third largest” aviation market with some 478 million passengers flying by 2036. It follows that there could be a demand for more than 2000 new aircraft in India over the next two decades, dominated by single-aisle aircraft.

In line with this, there is a dire need for a new paradigm of manufacturing which can be versatile and flexible so as to increase the intensity and pace of manufacturing. Also, with diversification of the customer base and manufacturing facilities, there is need for a robust supply chain to meet these significant demands. To deal with these challenges, manufacturers should focus on ways to strengthen supply chain management, increasing the efficiency and productivity by implementing latest technologies in their facilities.

Supply chain: resourcefulness is critical

The success of any manufacturing supply chain lies in its resourcefulness. Innovative approaches can reduce the manufacturing costs, use available human resources efficiently, and accelerate timely delivery to effectively meet customer requirements. Manufacturing components in isolated facilities in multiple locations has been a tradition in the sector despite the challenges that comes with it, be it higher costs, time consuming processes, coupled with

huge waste generation in each of the facilities. This is also a high maintenance business.

There is need to integrate all the facilities in one location and have a strong and progressive ecosystem. This process of amalgamating multiple isolated facilities in manufacturing, eases the communication and efficiency among the parties involved - original equipment manufacturers (OEMs), their suppliers and customers.

The objective of such a system is to create a holistic and integrated aerospace ecosystem which enables customers to meet all their requirements at one place to save time, costs and logistics involved in sourcing from multiple locations. To be specific, this helps in cutting down the huge waste generation, speeding up time to market in the process. This vertical integration also helps in building a better network among the stakeholders involved which, in turn, results in better performance and meeting the customer demands.

While sole-sourcing of suppliers involves risk but is a traditional model, multiple-sourcing minimises the occurrence of supply disruption as there are alternate suppliers to source in case of crisis. Sales and operations unit is implemented in various companies to have better connectivity within the supply chain for better-timed decisions and effectiveness. With inclusion of suppliers from lower-cost countries with reasonable technological capabilities, digital disruptions and adoption of newer technologies are leading to a major change in the supply chain management in the sector, driving the adoption of an integrated manufacturing ecosystem.

The way forward

With changes across the sector, there also comes a need to constantly upgrade the workforce with required technical skills and digital knowledge. As more facilities are incorporated to create a modular ecosystem with all the components and their benefits at hand, the challenges are



Aravind Melligeri, Chairman & CEO, Aequs which is one of the fastest growing global aerospace manufacturing ecosystem, headquartered in the Aequs Special Economic Zone in Belagavi (Belgaum) in Karnataka state

being addressed with the adoption of newer technologies. We foresee the industry moving towards embracing the integrated manufacturing ecosystem model, quickly

adopting to newer technological changes to stay agile. This will lead to a quantum jump in efficiency and productivity.

The aerospace industry is entering an era of boundless possibilities and the outlook is positive for all stakeholders involved. As OEMs and the suppliers work to reduce costs and move closer to customers, emerging markets can leverage the same to bring in investments, create quality employment opportunities and meet the needs of their domestic aviation and defence sectors. India's emerging aerospace industry is witnessing the advantages of an integrated ecosystem in states like Karnataka and Telangana, setting an example for other players in the market to identify and adopt this trend. Favorable geopolitical situation and policy amendments are key to the growth of such agile ecosystems and the country has already set its course in that direction.

The bold moves made by private players, together with the government's support to encourage such moves and provide timely access to funds and resources, are taking this sector to new heights in India.

Airbus and Dassault Systèmes in strategic partnership

AIRBUS

Airbus and Dassault Systèmes have signed a five-year Memorandum of Agreement (MOA) to cooperate on the implementation of collaborative 3D design, engineering, manufacturing, simulation and intelligence applications. This will enable Airbus to take a major step forward in its digital transformation and lay the foundation for a new European industrial ecosystem in aviation.

Under the MOA, Airbus will deploy Dassault Systèmes' 3DEXPERIENCE platform, which delivers digital continuity, from design to operations, in a single data model for a unified user experience, making digital design, manufacturing and services (DDMS) a company-wide reality for all Airbus divisions and product lines.

DDMS paves the way for breakthroughs in new product design, operational performance, support and maintenance, customer satisfaction and new business models, as it represents a move from sequential to parallel development processes. Instead of first focusing on product performance, Airbus will be able to co-design and develop the next generation of aircraft with the manufacturing facilities that will produce them, reducing costs and time to market.

"We are not just talking about digitalisation or a 3D experience, we are rethinking the way aircraft are designed and operated, streamlining and speeding up our processes with customer satisfaction in mind," said Guillaume Faury,



President Airbus Commercial Aircraft. "DDMS is a catalyst for change and with it we are building a new model for the European aerospace industry with state of the art technology. Our target is a robust production setup that offers a reduction in product development lead time."



"Nothing exemplifies the intersection of technology, science and art more than aviation. When we reflect on how the industry has evolved to where it is today, it's a blend of technical prowess, digital precision and inspiration," said Bernard Charlès, Vice Chairman and CEO, Dassault Systèmes. "The Aerospace industry has a proven track record of fast transformation, faster than in most industries. It delivers high quality innovation and new services for operations in highly complex and regulated environments. The 3DEXPERIENCE platform will accelerate the digital transformation of Airbus. Airbus can capture insights and expertise from across its ecosystem to deliver new experiences that only the digital world makes possible."