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Aero India Reflects Booming Aerospace & Defence Sector

By R.Chandrakanth

In the past four years, the growth of aerospace and defence sectors have been phenomenal and the Minister of Defence, Nirmala Sitharaman indicated how these two segments offered billion dollar opportunities for original equipment manufacturers; private sector and more specifically the micro, small and medium enterprises.

Inaugurating the 12th edition of Aero India at Yelahanka Air Force Station, amidst a thunderous roar of aircraft, the Minister of Defence, Sitharaman said that there had been significant headway in defence manufacturing and the growth had been phenomenal. She said that from 2014-15 to October 2018, the Ministry had signed 150 contracts amounting to Rs. 1,27,500 crores and during the same period had signed 'acceptance of necessity' for 164 proposals, amounting to Rs. 2,79,950 crores under different categories of 'Make in India' programmes.

The emphasis, she said, would be on 'Make in India' programmes and the Defence Public Sector Undertakings, the Ordnance Factory Boards (OFBs) etc were opening up to the private sector in a big way. The Ordnance Factory Boards and Defence Public Sector Undertakings (DPSUs) had increased their business from Rs. 43,976 crores in 2014-15 to Rs. 58,163 crores in 2017-18, with nearly 40 per cent outsourced to the private sector.

4,000 aircraft produced so far

Talking about the capabilities of India in the aerospace sector, she said India had produced about 4,000 aircraft and there was great possibility for original equipment manufacturers (OEMs) to team up with Indian companies. The defence industrial sector was getting robust and there were 10,000 micro, small and medium enterprises, producing nearly 80 per cent of components, aggregates etc. She said that 424 companies had obtained license for production of various equipments. The cell had facilitated 350 industries while the OFB had notified 275 products for commercialisation by the private sector.

There was considerable inflows under foreign direct investment (FDI), she said and mentioned that between 2014-18, six companies had made investments in aerospace and defence sector to the tune of Rs. 237 crores, 200 crores received through automatic route. The 'Make in India' programme has been making significant contribution to economic growth. "The contribution to aerospace is very high from this part of the country."

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Agility is the key to success in the fourth industrial age

By Aravind Melligeri
Chairman & CEO, Aequs

The digital era we are living in is widely considered to be shaped by the Fourth Industrial revolution. Every preceding revolution was transformative, but the unprecedented pace of change this revolution is effecting can be called disruptive. While the First Industrial Revolution harnessed the power of water and steam to move machines, the Second, in the late 1800s and early 1900s relied on electricity to mass manufacture goods. In the 1980s and 1990s, abetted by electronics and the power of computing, the Third Revolution witnessed largescale automation of production and the ability to churn out goods of the kind and volumes unimaginable a few decades ago. The foundations of the Fourth Industrial Revolution are built on the Third but it amalgamates technology that blurs the lines between the physical, digital, and biological spheres.

In the digital age, it is not the strongest or the biggest but the agile and the most adaptable businesses that thrive and survive. True business leaders and real innovators are those who grasp this ever-changing dynamic and are able the ride the wave of disruption.

In the manufacturing sector, that translates into the ability to be able to make not just multiple products in roughly the same sector, but in diverse categories employing pretty much the same resources—manpower, space, machinery and material. What differentiate the winners from also-rans are flexibility and agility. The Aerospace and Defense (A&D) sector in particular is faced with disruptive forces that have a profound effect on how the industry operates. Technology and automation are revolutionizing production, distribution, consumption and innovation. One such important innovation that has had a sizeable impact is the Flexible Manufacturing System (FMS).

FMS is generally regarded as a method of automation for producing goods that is readily adaptable to changes in the product being manufactured, both in type and quantity. But it is much more than that. It is a means by which we can change our way of life for the better. FMS can create precise customer value through goods of higher quality, in a scale dictated by demand, and with exact precision. By calling for less human effort, less space, time and lesser capital than traditional systems of mass production, FMS offers paradigm changes in efficiency.

FMS technology comes in several forms but, fundamentally it is two or more machining centers linked by a common controller, common load station, and a pallet pool system. An FMS requires highly engineered solutions such that parts can flow through the system with perfect harmony and little-to-no operator intervention. It can economically solve the challenges of machining the relatively high mix, low volume product variety we currently see in A&D manufacturing. FMS's full benefits are attainable only with a complete commitment to flexibility at every level. This yields best results when a production system is under complete control of FMS technology. Being cognizant of the process-product matrix businesses may realize that for an industry it is possible to reach for high flexibility by making innovative technical and organizational efforts. By implementing FMS, manufacturers are able to make products ranging from cars to aviation components on movable pallets rather than on an assembly line. In other words, the process gains in flexibility. The entire system derives more flexibility when it uses multi-skilled operators who have the ability to switch seamlessly from one kind of task to another.

Aequs, for instance, has set up an FMS cell to cater to the high demand of parts by major industry players like Airbus and PAG. It is the first of its kind in India in the aerospace sector that enables Aequs to achieve industry-leading agility. While the concept is simple, FMS cells require more effort upfront to set up but, once established, they are much easier to manage and far more productive than standalone machines, a major shift in machining and engineering technology for manufacturers. Technology will make 100% inspection feasible, enabling faster process adjustment. Computer diagnosis improves estimation of machine failure and makes international coordination and control of manufacturing facilities possible.

In the digital age, where the world is your market, if you are not flexible and agile, you are destined to be consigned to the pages of history. Agility remains the key to sustainability for every organization.