Aerospace and Defence Industries: Offering Further Opportunities

With changing policies and focus of the Central government to indigenise defence equipment, the opportunities for domestic players are gradually increasing. Read on to find out the trends in this sector

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According to the Military Expenditure Database maintained by think tank Stockholm International Peace Research Institute (SIPRI), India is the ninth biggest spender on defence in the world. The Interim Union Budget for 2014-15 allocated ₹ 2290 billion Indian rupees for defence, around 10% more than outlay of ₹ 2040 billion in 2013-2014. With this enhanced allocation, the defence/strategic electronics could become one of the largest sectors in India over the next ten years. It is also likely to grow at an average compound rate (CAGR) of 20-30 per cent. The sector accounts for around 6-7 per cent of the overall Indian electronics market. The *Global Strategic Trends - Out to 2045*, a publication by Britain's Defence Ministry, forecasts the acceleration of India's defence expenditure over the next three decades to rival that of China and the USA.

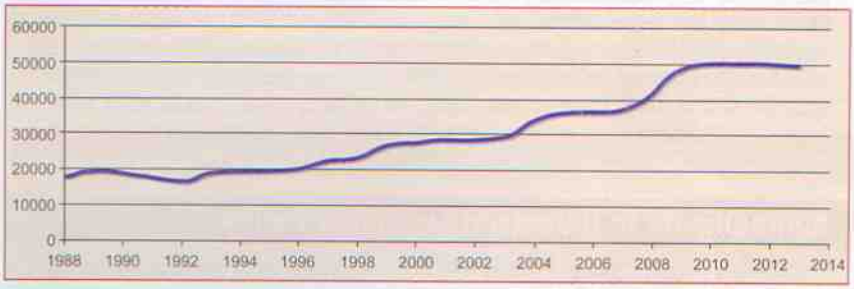

Fig. 1: Chart of Indian defence spending in US$ showing gradual increase (Data sourced from SIPRI)

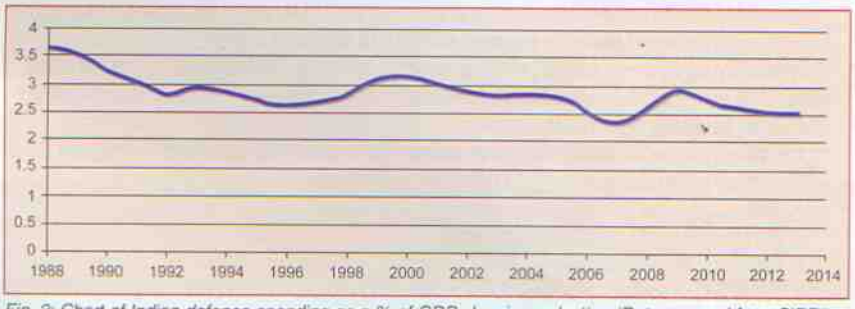

Fig. 2: Chart of Indian defence spending as a % of GDP showing reduction (Data sourced from SIPRI)

Indigenisation and growth of the private sector

Earlier, major defence projects in India were done through collaboration with the Russians and Europeans for products like the Jaguars and Mirages, where nothing much was done here except the assembling of aircraft. India didn't develop indigenous products in this sector except for the Light Combat Aircraft, probably because the volumes were not there.

The government of India (GOI) now welcomes domestic private participation in the fields of research, development and manufacturing in aerospace sector. Private companies have a lot of involvement and play an important role along with PSUs. The big firms, such as Tata, L&T and Mahindra, are aiming to become alternatives to the PSUs. The PSUs subcontract the projects, mainly because of the expertise and manpower available with private players.

The private sector is estimated to have a relatively small share (just 5%) of the defence equipment market as of now. Over 70 per cent of India's defence equipment needs are still met through imports.

The amount spent on India's imports of defence equipment was a massive ₹ 400 billion in 2013. Now that Indian government has stressed on the need for indigenisation in design, private companies in our country can also tap this huge market. Between 2004 and 2013, the government issued licences to 209 Indian companies for manufacturing defence equipment domestically. The pace of granting licences has comparatively increased over the last five years.

Sunil Kottarathil of Mistral Solutions is of the opinion that the vision of indigenisation by the new government will lower dependence on imports, and this would boost Indian industries. The government is expected to invest on new programmes like intelligence, surveillance and reconnaissance technologies, electronic warfare and network-centric warfare technologies. "The focus will be on the ability to know, process and react in real-time to events occurring on the ground, air and sea, which will be a strategic

Growth in civilian aerospace sector

There are several macro and micro factors, such as India's economic growth, driving growth in India's aerospace industry. An Airbus report projects that India will need around 1290 aircraft over the next 20 years. Safety and maintenance concerns of the government and citizens, which lead to push for domestic firms, liberalisation of civil aviation policies, well-educated and specialised talent pool, ability to leverage IT competitiveness, and development of special economic zones are a few among these.

As a support service to the aviation industry, the maintenance, repair and overhaul (MRO) sector is also growing with aerospace and defence (A&D) industry, and would make India a potential global/regional MRO hub. India's MRO segment is estimated to grow at 10% and reach US$ 2.6 billion by 2020.

At the moment, airlines send their planes to Singapore, Paris and Dubai for preventive maintenance as OEMs have not yet set up MROs in India. This is because the volume, or the size of the fleet, is not currently justifiable. "Executing MRO operations is difficult, especially with stocking the parts, regulators' approvals, and hiring and maintaining the skilled workers needed for such a very technically-strong business. The moment there exist 600-650 airplanes flying in India, OEMs will definitely set up in India. MRO, when it happens, will definitely be a big one," adds Chris Rao, vice president of UTAS.

Amendments in Industrial Licensing Policy

The Ministry of Defence has come up with major amendments in the industrial licensing policy with a liberalised list of equipment and products that require industrial licensing in defence sector.

Released by the Commerce and Industry Ministry on 26th June, the new list has over 50% of items removed from the previous mandatory licensing policy.

Previously, all defence-related products required licensing. Furthermore, the items listed under dual use—products that have both military and civilian use—created much confusion in the licensing constraints.

The new framework clearly lists four categories of products specifically designed for military application that will require compulsory licensing:

- Tanks and other armoured vehicles
- Defence aircraft, spacecraft and parts
- Warships of all kinds
- Arms and ammunition and allied items of defence equipment, parts and accessories

Companies that produce items that are not included in the list (such as sub-assemblies, castings, components, night-vision instruments and surveillance gadgets) would not require industrial licensing for defence purpose. The dual-use items are also exempted from licensing, unless specified in the new list.

advantage in conflict (or avoiding conflict)," he adds. The policies have generally changed to giving priority to the Indian vendors for procurement of defence equipment. However, the delay in awarding contracts and tax issues can still be an inhibition.

Meagre contribution from MSMEs

The amended Defence Procurement Procedure policy has enhanced the potential for micro, small and medium enterprises (MSMEs) to be part of the indigenisation drive, and to broaden the research and development base of the country. In spite of this, the contribution of the MSMEs remains meagre. MSMEs still do not have the technology, investment and infrastructure to make complex equipment like guns, tanks or aircraft. They stick to fabrication, painting, limited machining or making small parts. So the direct participation of MSMEs in the defence sector is far-fetched, unless MSMEs work as a group, like one firm doing the machining, another fabrication and yet another assembling, and together creating a complete product. Also, defence contracts take a long time to execute—even two years or more. It becomes difficult for an MSME to wait that long.

"We see an increased role for MSMEs in the defence sector with outsourcing of production by defence public sector undertakings (DPSUs). They work with the big players and, sometimes, they even directly participate in Ministry of Defence tenders, competing with these global players," says Nasser Jariwala of Rohde & Schwarz.

Business opportunities

The increased budget allocations for the armed forces, army's plans to replace old equipment and introduce cutting-edge technology, and the ambitious projects taken up by the research and development teams in the aerospace and defence sector have created immense opportunities in defence sector. The government is planning to create additional opportunities worth US$ 150 billion in defence electronics over the next 10 years, and out of this, over US$ 100 billion would be open to Indian firms. DRDO is developing products for orders worth 160 billion rupees, many of which are nearing the completion stage. Hence, DRDO is looking for

Union Budget 2014-2015: What's in for Defence Sector

The Union Budget for 2014-2015 announced on 11th July and passed in Lok Sabha on 18th July looks favourable for the aerospace and defence sector in the country. Following are the highlights of the liberalised budget:

- Defence allocation pegged to 2,290 billion rupees, which is about 12% more than that of the previous fiscal year.
- FDI cap was raised from 26% to 49% for domestic defence industry. This is expected to attract foreign investment.
- As a part of military modernisation, an additional 50 billion rupees was allocated for tendering and eventual purchase of military equipment for all three services. This includes 10 billion rupees for accelerating the development of railways in border areas.
- Technology Development Fund of 1 billion rupees was set up to aid MSMEs in the development of defence system.
- The GOI has also set aside 10 billion rupees under the 'One Rank One Pension' policy, to address pension disparities of ex-servicemen.

companies that have the capability to supply these to the organisation.

Realising the immense options opening up with modifying government policies and tenders, domestic companies that made only small parts have started developing in-house capabilities. While a large number of foreign companies have already made their presence in this space, Indian giants like Tata Motors, Larsen & Toubro, Bharat Forge and Ashok Leyland are also trying to get established in this domain. The government is committed to cutting down on imports for two reasons – import is expensive, and the products and systems are really strategic in nature.

Many of the PSUs lack the capability to serve this huge demand. For instance, Hindustan Aeronautics Limited (HAL) does not have design capabilities and does licensed production, but only HAL has aerospace capabilities. This creates a lot of space for the private companies to step into.

As already mentioned, the maintenance, repair and overhaul (MRO) for aerospace and defence equipment is a big opportunity for private firms and OEMs. Most major equipment remains in service for two to three decades. Though the potential for MROs is

State initiatives by Karnataka

Almost 70% of aerospace operations are based in Karnataka. Perhaps this is what helped Karnataka to drive itself and become the first in India to come out with an aerospace policy, which was inaugurated by the then defence minister A.K. Antony in 2013. The state plans to attract investment of ₹ 600 billion over the next 10-year period in two phases, i.e., 2013-18 and 2018-2023.

"This policy went off to quick implementation, and was released immediately after the inaugural function. It includes incentives for the aerospace sector, and formation of an aerospace park stretching 938 acres. Presently, not only has it been set up, 47 units have already been allotted in India. Two companies, Wipro and Swiss-German group Starrag, have completed setting up the infrastructure and even started production. Of the remaining 45, five firms have started construction, while the rest 40 are mobilising resources," explained M.N. Vidyashankar, president, India Electronics & Semiconductor Association (IESA).

Currently, there is also a proposal to set up common facilities like Centre of Excellence (CoE), which can train people required by the aerospace sector. To ensure that this doesn't get concentrated in Bengaluru, training is also going to be done in north Karnataka in Hubli.

Supporting organisation

Defence Electronics Manufacturers' Association (DEMA) is an organisation that was formed by 38 small and medium enterprises in and around Pune region that manufacture and/or supply defence-related products. Founded under the leadership of late admiral Mudholkar in 1989, the association now covers defence-related organisations and government departments like the DRDO, defence production units, PSUs in defence (HAL, BEL, etc) and the Directorate General of Service Tax and Directorate General of Quality Assurance.

Government policies relating to A&D sectors

The various policies initiated by the government of India have definitely had their own impact on manufacturing, and the sector as a whole. Dr Akhilesh Saurikhia, advisor, Ernst & Young says, "Indian government is trying to support domestic manufacturing through policy initiatives. Mapping of domestic capacities on supply side at assembly level with that of demand will help boost local manufacturing. Product-specific initiatives will yield better results."

Let's take a look at the policies for this sector:

Industrial Licensing Policy (2012). With the objective of promoting small-scale industries and new entrepreneurs, a compulsory licensing system for manufacturing defence equipment was introduced by government of India under the Industries (Development and Regulation) Act 1951. Any Indian company or partnership can apply for this licence. The application submitted to the Department of Industrial Policy and Promotion (DIPP) would be considered by inter-ministerial committee. Though the process supposedly takes about six months, currently it takes almost a year for approval.

This policy has faced criticisms due to numerous conditions, conflicting objectives (created with an objective of increasing industrial production in the economy, but restricting activities of industrial units like substantial expansion, production of new articles, etc) and poor follow-up. Also, there was little clarity on the definition of the terms 'defence equipment' requiring industrial licence and 'dual-use' items for civil and defence application. The list of defence items for licensing is currently under preparation by a joint committee of the DIPP and the Department of Defence Production (DDP).

Foreign Trade Policy (2009-2014). Foreign Trade Policy (FTP) or Export Import (EXIM) Policy is a set of guidelines and instructions established to govern the import and export of goods in India. An export or import can be made by any person only against an import-export code (IEC) number, unless specifically exempted. Exports and imports are free except where they are specifically regulated by the 8-digit ITC-HS code (Indian Trade Classification based on Harmonised System of Coding). The ITC-HS has two schedules: rules and regulations for importing are provided by Schedule-I and that for exporting by Schedule-II. The drawback here is that the definition of licensing requirements is not clarified, specifically in the case of software exports.

Defence Procurement Procedure (2013). Defence procurement is governed by the Defence Procurement Procedure (DPP), which was first enumerated in 2001, and is being periodically reviewed and revised. The latest policy was released in May 2013. It lays out a transparent procedure for capital acquisitions by the Ministry of Defence, and has significantly liberalised and enlarged the avenues and products for discharging offset obligations.

Defence Offset Policy (2012). Defence offset policy was introduced in 2005 in order to leverage the buying power of the country and to achieve greater self-reliance in defence production. The revised version is effective from August 1, 2012 and specifies that foreign armament companies that get an arms deal of over three billion rupees must reinvest at least 30% of contract amount into India as offsets.

National Cyber Security Policy (2013). Until 2013, India had no cyber security policy. The government of India has started to seriously consider cyber security, which led to the introduction of National Cyber Security Policy on July 2, 2013. The Department of Electronics and Information Technology (DeitY) is working on setting up co-ordination centres to establish both offensive and defensive cyber security capabilities, and these are being very well funded to the extent of ₹ 10 billion over a period of next four years. The government has also decided to recruit 4500 to 5000 experts to be deployed at independent organisations that would take care of India's cyber security infrastructure. With the kind of expertise that private players have, the government would definitely want to use it, and hence "this policy helps a lot of private players," says Sunil Ross of Wind River.

huge, the government still has to sort out the certification issues related to training the required workforce. The Directorate General of Civil Aviation is now in the process of making its certification equivalent to the European Aviation Safety Agency.

Systems integration with outsourced components and sub-systems is a viable business option in A&D segment. About 50% of the manufacturing opportunities will comprise components and sub-systems manufacturing. Major defence contractors are usually integrators who procure components, sub-assemblies and sub-systems from the MSMEs to configure systems as per the parameters prescribed by buyers. Many of the upcoming projects require integration of multiple technologies. Hence, vast opportunities exist for domestic and foreign MSMEs.

In order to develop advanced military products there is a need for high-performance, state-of-the-art test and measurement (T&M) equipment that satisfies military (MIL) standards in the strategic electronics segment. "T&M equipment and solutions for aerospace and defence are based on advanced technology for use in radar installations, electronic warfare, military communications, satellites, guidance, avionics, intelligence, surveillance and beyond," says Gautam Awasthi, general manager of marketing, electronic measurement group, at Agilent Technologies India Pvt Ltd. Hence it is a boost for T&M sector too.

Challenges

Procurement procedures. One major issue faced by domestic companies (including government firms) for getting involved in the A&D sector in our country is the qualification requirements put forth by the GOI towards domestic firms. Local hardware companies face a tough time to join defence projects. The best example is the Network for Spectrum (NFS) project by Department of Telecommunication. The mandatory criterion for bidding eligibility in financial front is a turnover of 25 to 40 billion rupees over the past three years. On the technical side, the companies must have deployed a specified quantum of equipment over a defined period of time.

Both these prerequisites make local companies ineligible even to bid, says Indian industry and business associations including the Confederation of Indian Industry (CII). This is ironic as India has been very keen to promote local electronic device manufacturers in order to save on import bill, and to avoid any possible security threat that may come up when using foreign equipment.

However, as a part of the NFS pro-

ject, Indian Air Force has developed Air Force Network (AFNet) at a cost of 10.77 billion rupees in collaboration with HCL Infosystems Ltd and Bharat Sanchar Nigam Ltd (BSNL). This gives hope for better involvement of domestic firms in the future.

Capital investment. Establishing a firm in strategic electronics industry requires huge capital expenditure during initial years, which is a hurdle for start-ups, small and medium companies. Time delay in approval processes increases the cost further.

Technology. The inherent ecosystem of India doesn't support the fast adoption of cutting-edge technology. Hence, we have to depend on the expensive technologies and machines from abroad.

Slow tender process. The closure of tender cycle in Indian defence contracts sometimes takes too long—about 18 to 24 months. In order to encourage private players' active participation in defence opportunities, this should be kept to within a reasonable 'start-end' period.

Testing. Lack of good test infrastructure for strategic electronics is an issue. Quality labs are limited, which makes them always occupied. The government should set up a number of testing centres.

Tax issues. Duty-free imports and high taxes on indigenous products make the vendors prefer foreign equipment over Indian brands. There is a need for elimination of indirect taxes in defence field.

Ambiguity of policies. Though the government is coming up with policies and tenders to promote A&D industry, many of these do not have a clear framework. For example, in the case of dual-use equipment, there arise issues like whether or not they require an industrial licence. The recently modified industrial licensing policy is expected to solve this matter.

Recommendations of industry

Despite the positive approach of government towards developing A&D industry, we still face many limitations and roadblocks. The following are some of the recommendations of the industry.

Raising FDI. The previously 26% foreign direct investment (FDI) cap was a major turn-down for foreign players to enter this industry. This has been increased to 49% in the latest budget approved on 18th July.

Ecosystem development. The government has to aid the creation of infrastructure and adoption of latest technologies required for manufacturing high-quality components that would cater to domestic as well as foreign markets. They should encourage and provide opportunities for Indian design and manufacturing houses to compete with foreign players. This can be achieved by providing government incentives or preferences, such as waivers in taxes and duties.

Reducing import. Though immediate reduction in imports is quite difficult, channelised imports are important to boost self-reliance in strategic electronics. A clear roadmap should be created for import reduction by the Ministry of Defence, which should be published and audited by the Comptroller and Auditor General (CAG) of India, with aggressive targets for the information and communication technology in education (ICTE) sector.

Investments in components and composite. It is important to invest in and promote components and composites in India. No 'end-use' restriction should be imposed so as to ensure more participation of Indian firms in strategic electronics.

Speed up decision-making: It often takes up to five years to get an industrial licence. The huge delay in granting and renewing of licence, the complex procedures involved and corruption negatively affects the growth of industry, as a lot of extra costs are incurred due to the time overrun. ELCINA association had requested the government to ensure that the decision-making process be made faster, as MNCs are unable to wait for too long.

The future

According to Gautam Awasthi of Agilent, "Globally, aerospace and defence markets are in a growth phase primarily due to investments by countries like India, Russia, China and South East Asia. USA and Europe markets have been consolidating to meet their strategic defence guidance."

Aerospace and defence market is expected to reach US$ 248.2 billion globally by 2018 as per *Aerospace-Defence Electronics-Global Trends, Estimates and Forecasts, 2011 to 2018*. Geographical analysis shows that the highest CAGR of 14.2% is anticipated from Asia-Pacific region during the analysis period, 2011- 2018.

We foresee that electronic warfare will continue its growth and more investment would be made in building a robust communication backbone. Satellite technologies will also trigger growth for the sector. RF surveillance is a growing trend in keeping the country safe. Radars will continue to evolve and within that there will be subsidiary trends like transmitter-receiver modules. ●

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