



The Relevance of a Strong Military Industrial Complex in India

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ABSTRACT

The military-industrial complex (MIC) serves as a synergy between a country's armed forces, its defence industry and related policy-making bodies. India, an emerging nation affected by a range of challenges, border tensions and regional and global influences, has a pressing need for a strong MIC. This paper attempts to explore the strategic, economic and technological imperatives of MIC in India that are required to develop a strong military-industrial complex. India is currently one of the world's largest arms importers, reflecting its historical dependence on foreign suppliers for critical defence technologies. However, this dependence poses risks to national security, especially during conflict or geopolitical disruptions. A strong MIC in the country will not only reduce external dependency but also enable the country to develop indigenous capabilities to suit its defence needs. It also acts as a catalyst for innovation, job creation and technological advancement, benefiting civilian industries. The study examines recent initiatives such as 'Make in India', defence corridors, public-private partnerships and the growing involvement of startups and academia in defence R&D. It also evaluates challenges such as funding limitations and the need for structural reforms. The paper argues that a self-reliant and efficient MIC is critical to safeguard

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India's sovereignty, deter adversaries and promote strategic autonomy in an increasingly multipolar world.

The Historical background of Military Industrial Complex:

The 20th century saw the emergence of the military-industrial complex (MIC), an effective model for characterizing the increasing interconnectedness of a country's defence sector, government policies, and military establishment. The MIC as a formal and institutionalized structure gained importance during and after World War II, despite the fact that countries have traditionally worked with industrial entities to develop weapons and military equipment.

It was in the United States when the term "military-industrial complex" first widely used. In his 1961 farewell speech, President Dwight D. Eisenhower warned the American people about the expanding power of a long-standing military-affiliated arms industry, creating the phrase and warning against its potential to have an excessive impact on democratic institutions and national policy. By the middle of the 20th century, military operations, R&D, and defence industry had become closely related to economic planning and political decision-making. This was reflected in the speech.

The MIC turned as a defining characteristic of both the US and the USSR throughout the Cold War. From nuclear weapons to aerospace systems, these superpowers made significant investments in defence technology, establishing huge organizations that ran with close government backing and support. Rapid technological advancements brought about by Cold War competition eventually permeated civilian sectors including computing, aircraft, and telecommunications. Strong MICs were also established in Europe by nations like Germany, France, and the United Kingdom in order maintain strategic autonomy .The MIC developed under state supervision in China and Russia, emphasizing technological acquisition and mass manufacturing for international equality.

Military Industrial Complex in India:

India's approach to building a military-industrial complex has always been distinct. After gaining independence in 1947, India inherited a limited defence manufacturing base, focused primarily on the production of small arms and ammunition left behind by the British colonial administration. Recognising the need for self-reliance, Prime Minister Jawaharlal Nehru pushed for the establishment of a state-led defence industry. Institutions such as the Defence Research and Development Organisation (DRDO) were

set up in 1958, followed by the strengthening of ordnance factories and the creation of defence public sector undertakings (DPSUs).

Despite these early efforts, India's MIC remained heavily dependent on foreign technology and imports due to limited R&D investment and minimal private sector participation. Wars with China (1962) and Pakistan (1965, 1971, 1999) exposed these weaknesses and led to increased defence imports from countries such as the USSR, France and Israel.

Since the 1990s, India has pursued reforms in response to liberalisation and global strategic shifts. However, it was only in the 2010s that with initiatives such as 'Make in India' and 'Atmanirbhar Bharat', the government began to restructure the MIC to actively promote indigenous defence production, encourage private sector participation and reduce import dependence.

Government Initiatives and Reforms:

To enhance the Military-Industrial Complex (MIC) and lessen India's long-standing reliance on foreign military imports, the government has implemented a number of groundbreaking programs and reforms. The government started the "Make in India" campaign in 2014, putting the defence manufacturing industry at the center, after realizing the strategic importance of independence in defence. The "Aatmanirbhar Bharat Abhiyan" in 2020 came next, which offered domestic military manufacturing a boost by encouraging local skills and lowering dependency on outside sources. The introduction of a Negative Import List, which forbids the purchase of specific defence equipment that may be produced domestically, was a significant improvement under this program. The addition of more than 400 goods to this list as of 2024 encourages domestic manufacturers to close these capacity gaps. In recent budgets, the government has allocated 75% of the defence capital expenditure to Indian enterprises, increasing the funding for capital procurement for domestic vendors.

To improve efficiency, competitiveness, and accountability, the Ordnance Factory Board (OFB) transformed into seven independent defence public sector enterprises (DPSUs) in 2021. This was another historic reform. In addition, two specific Defence Industrial Corridors have been created in Tamil Nadu and Uttar Pradesh, offering defence industry clusters incentives, infrastructure, and a frame work for policies. The Innovations for Defence Excellence (iDEX) initiative was started by the Ministry of Defence to encourage innovation. It provides funding to academic institutions, MSMEs, and startups so they can create next-generation defence technologies. Furthermore, in partnership with private organizations, the Technology Development Fund (TDF) funds research and development for vital defence technology.

Regarding policy, the Defence Acquisition Procedure (DAP) 2020 places a strong emphasis on increased openness, ease of doing business, and the preference for using Indian suppliers for purchases. The procurement and development processes have been further expedited by provisions for strategic alliances, equipment leasing, and indigenization of imported components .

In an effort to draw in international defence firms and introduce cutting-edge technologies, the government has also increased the automatic route's Foreign Direct Investment (FDI) cap in defence production from 49% to 74% when taken as a whole, these programs and changes represent a paradigm change in India's military industry. In addition to meeting the country's security requirements, they seek to establish a cutting-edge, competitive, and self-sufficient military-industrial foundation that will establish India as a major exporter in the international defence market.

Indigenous Defence Production:

India's goal for strategic autonomy and self-reliance is largely supported by its domestic defence industry. India has progressively realized the strategic risk posed by its historical reliance on foreign suppliers for a large share of its military gear, particularly during periods of geopolitical tension or warfare. As a result, building a strong domestic defence industrial sector has been a top priority for each succeeding administration. The manufacturing of a variety of defence systems, such as aircraft, missiles, communications equipment, and small arms, has been made possible by organizations like the Defence Research and Development Organisation (DRDO), which was founded in 1958, and defence public sector undertakings (DPSUs) like Hindustan Aeronautics Limited (HAL), Bharat Electronics Limited (BEL), and ordnance factories. Despite these initiatives, the lack of creativity and the limited participation of the private sector meant that the scale and effectiveness of domestic production remained constrained for decades. Acknowledging these limitations, the Indian government launched historic programs like "Make in India" (2014) and "Atmanirbhar Bharat" (2020) with the goal of revolutionizing the defence industry through the encouragement of domestic manufacturing, public-private partnerships, and the relaxation of regulations governing foreign direct investment (FDI). A strategic change towards indigenization has been indicated by actions like the corporatization of the Ordnance Factory Board, the establishment of defence corridors in Tamil Nadu and Uttar Pradesh, and the implementation of a negative import list that forbids the procurement of specific weapons from outside sources.

Increased competitiveness and technological innovation have resulted from the participation of private businesses and start-ups backed by platforms like Innovations for Defence Excellence (iDEX). Although issues like missed deadlines, cost overruns, and quality control still exist, notable domestic

programs like the Tejas Light Combat Aircraft, Akash Missile System, Arjun Main Battle Tank, and INS Vikrant (India's first indigenous aircraft carrier) demonstrate expanding capabilities. However, the development of domestic defence manufacturing in India shows a clear and planned step toward lowering reliance on imports, creating a defence export market, and reaching long-term self-sufficiency in defence manufacturing all of which are critical to safeguarding India's national interests and enhancing its strategic standing internationally.

Defence Expenditure and Budget Allocation:

A nation's military power and strategic preparedness are greatly influenced by its defence budget and spending. Given a complex security landscape and geopolitical difficulties facing the nation, defence expenditures in India regularly account for one of the greatest shares of the national budget. After the US and China, India is the world's third-largest defence spender, with over ₹6.2 lakh crore (about \$75 billion) set aside for defence in FY 2024–2025. Just around 25–30% of this budget is set aside for capital expenditures, which include the acquisition of new weapons, platforms, and the modernization of current systems. The majority of this budget roughly 55% is devoted to wages, pensions, and administrative expenses. India's capacity to invest in advanced technology and indigenous defence industry is limited by its low capital expenditure. With 75% of the defence capital procurement budget set aside for Indian vendors in 2023–2024, the government has raised capital allocations for domestic procurement in recent years. Despite this encouraging trend, India still faces issues like inefficient use, procurement delays, and the need for improved coordination between financial allocations and long-term strategic planning. It is imperative that India has a balanced, open, and strategically focused defence budget in order to develop a robust, independent military-industrial complex.

The Role of Private Sector and Startups in MIC:

India's Military-Industrial Complex (MIC) is being strengthened by the private sector and entrepreneurs, particularly in light of government programs encouraging independence in defence manufacturing. Public sector initiatives have historically controlled India's defence sector, but legislative changes including the establishment of a negative import list, higher FDI limits, and the liberalization of defence procurement have created new opportunities for private businesses. In the production of defence equipment, including armoured vehicles, missile components, and naval systems, major Indian companies such as Larsen & Toubro, Tata Advanced Systems, Bharat Forge, and Mahindra Defence have become important players. At the same time, defence-oriented businesses are advancing research and development in cutting-edge fields like robotics, AI, drones, and cybersecurity with the help of programs like the

Technology Development Fund (TDF) and Innovations for Defence Excellence (iDEX). These businesses support larger industrial initiatives with their agility, inventiveness, and affordable solutions. Entrepreneurial participation has also been boosted by the establishment of defence industrial corridors and the streamlining of licensing processes. India's MIC is becoming a more competitive, inventive, and self-sufficient ecosystem that could meet both domestic and international military market demands, despite obstacle like extended periods of development.

Major Achievements under MIC in India:

Given below are some significant achievements that demonstrate the growing strength and capability of India's defence ecosystem: -

1. Tejas Light Combat Aircraft (LCA):

One of India's most significant indigenous defence projects, the Tejas LCA, developed by Hindustan Aeronautics Limited (HAL) and Aeronautical Development Agency (ADA), represents a major breakthrough in aerospace engineering. It is a multi-role fighter jet designed for the Indian Air Force (IAF), demonstrating India's capability to design, develop, and produce advanced fighter aircraft.

2. INS Vikrant (IAC-1):

The commissioning of INS Vikrant, India's first indigenously built aircraft carrier, marked a monumental achievement for the Indian Navy and the broader MIC. Built by Cochin Shipyard Limited, it showcases India's shipbuilding capabilities and strengthens its maritime power projection.

3. Akash Surface-to-Air Missile System:

Developed by DRDO in collaboration with Bharat Electronics Limited (BEL) and other partners, the Akash missile system is a fully indigenous air defence system, successfully inducted into both the Indian Army and Air Force. It is a key step towards self-reliance in missile technology.

4. Advanced Towed Artillery Gun System (ATAGS):

Designed by DRDO and manufactured by private partners like Bharat Forge and Tata Advanced Systems, ATAGS is a next-generation artillery gun with superior range and accuracy. It represents successful collaboration between the public and private sectors.

5. PINAKA Multi-Barrel Rocket Launcher:

The Pinaka system, developed by DRDO and produced by Indian firms, is a long-range artillery system that has been inducted into the Indian Army. It has replaced older imported systems and is a prominent export prospect.

6. Unmanned Aerial Vehicles (UAVs) and Drones:

India has made significant progress in indigenous drone technology with platforms like Rustom, Tapas-BH, and private-sector innovations for surveillance, logistics, and tactical roles. Startups supported by iDEX are developing AI-based and swarm drone technologies.

7. BrahMos Supersonic Cruise Missile:

Although a joint venture with Russia, the BrahMos missile produced by BrahMos Aerospace is a successful example of indigenized production and international collaboration. It has been integrated across all Three-armed forces and is a strong export candidate.

Recommendations and the Way Forward:

A multifaceted strategy is required to strengthen India's Military-Industrial Complex (MIC) and attain long-term strategic self-reliance. First, it's critical to speed up the defence procurement procedure. Delays and a lack of transparency frequently restrict the current system. Efficiency and investor trust can be increased by streamlining the Defence Acquisition Procedure (DAP) and guaranteeing time-bound decision-making.

Second, there is an urgent need to improve collaboration between the military, DPSUs, commercial companies, and DRDO. In order to promote cooperation in the design, development, and deployment of military systems, this involves forming integrated project teams and supporting joint ventures. To upgrade India's military capabilities, more money must be spent on research and development, particularly in cutting-edge fields like artificial intelligence, cyberwarfare, quantum computing, and unmanned systems.

Third, there has to be more involvement from startups and the private sector. This can be accomplished by providing long-term contracts, guaranteeing fair competition, and increasing funding through initiatives like the Technology Development Fund and iDEX. To build a strong defence technology workforce, academic partnerships and skill development programs should be encouraged concurrently.

Fourth, the government has to encourage defence exports by signing defence cooperation agreements, streamlining export regulations, and taking part in international defence shows. This increases India's global influence in addition to generating income.

Finally, budget allocations must be guided by strategic planning, emphasizing innovation and capital expenditures over personnel and pensions alone.

Conclusion:

A strong and self-reliant Military-Industrial Complex (MIC) is essential for India to secure its national interests in today's uncertain and rapidly changing geopolitical environment. With rising security challenges along the borders, increasing competition in the Indo-Pacific region, and the constant threat of terrorism and cyber warfare, India cannot afford to remain dependent on foreign countries for its defence needs. A robust MIC helps in not only building a powerful and modern armed force but also in ensuring long-term strategic independence. India has made visible progress in building its own defence industry through initiatives like *Make in India* and *Aatmanirbhar Bharat*. Projects such as the Tejas fighter jet, INS Vikrant, Akash missile system, and Pinaka rocket launcher reflect the country's ability to design and produce advanced defence systems. Government reforms like the creation of defence corridors, corporatization of ordnance factories, promotion of startups through iDEX, and increased capital allocation for indigenous procurement are positive steps toward building a strong MIC.

However, challenges still remain. India needs to improve coordination between public and private sectors, simplify defence procurement processes, and invest more in research and development. The involvement of the private sector and startups must be further encouraged through policy support, fair competition, and financial incentives. Export potential should also be tapped by building globally competitive products and promoting them in international markets. A well-developed MIC not only supports national security but also contributes to the economy by creating jobs, encouraging innovation, and reducing the burden of imports. It can transform India from a defence importer to a defence exporter and enhance its influence in global strategic affairs.

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