10 Years of Make in India
Indian Navy's Strategic Roadmap towards *Atmanirbharta*

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This article examines the Indian Navy's strategic drive towards self-reliance (Atmanirbharta) under the 10-year-old 'Make in India' initiative. The article outlines key policy frameworks such as Draft DAP 2026, increased domestic capital budget allocation and measures undertaken by the Government of India and the Indian Navy in advancing 'Make in India' and 'Atmanirbharta', while identifying and examining the challenges faced and opportunities emerging in the pursuit of defence indigenisation. The article also highlights that it is crucial that we continue our relentless pursuit towards developing superior technologies to enhance our self-reliance and maintain our superiority over our adversaries on land, air and seas. The article ultimately charts a roadmap for complete naval indigenisation by 2047.

Keywords: *Make in India; Atmanirbhar Bharat; Atmanirbharta; Self-reliance; Indian Navy*

Self Reliance leads to happiness, satisfaction and empowerment. Our responsibility to make the 21st Century, the century of India, will be fulfilled by the pledge of Self Reliant India.

– Hon'ble Prime Minister Narendra Modi[1]

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Make in India—Major National Programme

'Make in India' and 'Atmanirbhar Bharat' are major national programmes of the Government of India, designed to facilitate investment, foster innovation, enhance skill development and protect intellectual property in the country.[2] The goal of these initiatives is to make India a key part of the global supply chain by encouraging companies to manufacture and assemble products in India, and to improve business environment whilst opening up new sectors for foreign investment.[3] Launched on 25 September 2014 by Prime Minister Narendra Modi, the 'Make in India' initiative completed 10 years in September 2024. On the occasion, Narendra Modi stated in his blog: 'Today is an occasion to salute each and every one of you who has made this initiative a roaring success. Each of you is a pioneer, visionary and innovator whose tireless efforts have fuelled the success of Make in India.'[4]

Developing cutting-edge technology having defence application needs considerable investment and support from the government. The country has not only been facilitating this through the 'Make in India' initiative but has also prioritised it in the Defence Acquisition Procedure (DAP-2020). Furthermore, the draft DAP 2026 has been circulated by the government in February 2026 in order to obtain comments and suggestions from all stakeholders.[5] The document marks a significant shift towards strengthening 'Make in India' and 'atmanirbharta' in defence procurement and aims to propel jointness, force modernisation, along with scaling the production of defence ecosystem.[6] It is widely acknowledged that India's bureaucratic and regulatory framework has historically been a challenge to ease of doing business, a concern frequently highlighted by industry leaders, investors and defence manufacturers, both domestic and foreign. Complex procedures, multiple layers of approvals and procedural ambiguities have often contributed to delays in project execution and acquisition timelines. Successive governments, recognising these shortcomings, have undertaken many steps to improve the business environment.

It is pertinent to mention here that defence manufacturing is one of the major pillars of 'Make in India'. The Indian Navy, in particular, has been at the forefront of efforts to promote this initiative through numerous incentives and initiatives of the government. Over the past two decades, the Indian Navy, steadfastly championing indigenisation as a strategic imperative for national security, has invested in building platforms through indigenous design, showcasing the country's prowess in shipbuilding and defence manufacturing capacities. In an era where future wars will favour self-reliant

nations, the Indian Navy's strides towards indigenisation stand as a testament to its foresight and resolve.

The article seeks to highlight the key measures undertaken by the Government of India and the Indian Navy in advancing 'Make in India' and *atmanirbharta*, while identifying and examining the challenges faced and opportunities emerging in the pursuit of defence indigenisation.

Future Wars and Technological Self-Reliance

War is one of humanity's constants and there is continuous upgradation of military capability in order to meet the challenges of the new millennium.[7] Future wars will be shaped by technological advancements and are envisaged to be highly lethal, intense, mobile, non-linear, transparent and fought with stand-off and unmanned weapons. These wars will be fought in all known and unknown dimensions of warfare and technological superiority is likely to have a direct impact on their outcome.

It has long been established that some of the most transformative technological innovations in history were initially developed for defence purposes and wartime application. Gunpowder, artillery, high-calibre firearms, explosives, telegraph, morse code, field telephones, radio wireless communication, radar, sonar and microwave systems, all originated for military needs. The jet engine, nuclear power, rocketry, satellites, Global Positioning System (GPS), stealth technology, drones and even the Internet were developed for defence research before entering civilian use.[8] However, in the present era, the character of warfare is undergoing a paradigm shift, driven by emerging and disruptive technologies. Rapid advances in unmanned systems, robotics, autonomous decision making, data processing, analytics and network-centric operations are redefining the battlespace.[9] Artificial Intelligence (AI) now powers autonomous drones, predictive logistics and battlefield decision support systems, whereas quantum technologies promise breakthroughs in secure communications, sensing and computing, which are now considered essential elements of warfare.[10]

The future is also likely to bring forth a growing reliance on stand-off weapons, like hypersonic missiles, glide bombs, loitering munition and autonomous platforms. Some of the latest developments in the field of warfare include futuristic camouflage, ballistic missile defence (BMD), anti-satellite (ASAT) weapons, Magneto Hydrodynamic Explosive Munition (MAHEM), armed robotic systems, laser weapons, Hybrid Insect Micro-Electro-Mechanical System (HI-MEMS), electromagnetic (EM) railgun,

precision-guided munitions (PGMs), drones, combat suits and nano weapons. Therefore, technology in modern warfare can be utilised as a force multiplier and technological self-reliance remains the 'mantra' for shaping the battlefield from stand-off ranges.

Ministry of Defence (MoD) Initiatives—Make in India

The MoD has undertaken a wide spectrum of initiatives to advance 'Make in India' and strengthen *atmanirbharta* in the defence sector. Recognising the strategic risks of excessive dependence on foreign suppliers, the government has consistently promoted indigenisation as a national priority. The objective is not merely economic growth but the creation of a self-reliant defence ecosystem, capable of equipping the defence forces with state-of-the-art weapons, sensors and platforms. Policy reforms, procurement prioritisation for indigenous categories, positive indigenisation lists and enhanced budgetary allocations for domestic capital acquisition reflect this commitment. These initiatives collectively underscore a strategic shift from import dependence to indigenous capability development in support of national security objectives. By aligning procurement policy with industrial growth, the MoD aims to ensure assured supply chains, technological sovereignty and operational readiness.

The DAP plays a major role in the progression of this initiative by the MoD. As per draft DAP-2026, which will primarily be focusing on the next decade, the metric of success will not be just 'Made in India' but 'Owned by India'. The focus will shift from 'Transfer of Technology (ToT)—which often results in dependency on legacy systems—to Co-Development and Intellectual Property (IP) Ownership'.[11] 'Capital Acquisitions would prioritise the retention of source codes, critical design data, and upgrade authority within Indian entities' with an aim to make India the design powerhouse of the world.[12]

The draft document streamlines categories and accelerates acquisition timelines, while encouraging participation by domestic entities through eased financial criteria, long-term procurement visibility and compensation for successful trial vendors. These reforms will collectively reduce import dependence, deepen the domestic defence industrial base and expand opportunities for innovation in the defence sector. Further, the DAP derives its ethos and spirit from 'Atmanirbhar Bharat' and 'Make in India' clarion, which defines India's growth story and the dream to become a US$ 5 trillion economy.[13] The document has been aligned with the vision of the

government for empowering Indian domestic industry through the 'Make in India' initiative with the ultimate aim of turning India into a global manufacturing hub.[14]

As a government policy document, the Draft DAP-2026 rightly projects the intent to streamline procurement categories, accelerate acquisition timelines, ease financial eligibility criteria and provide greater visibility to domestic industry. These measures represent genuine efforts towards improving efficiency and promoting indigenous participation. However, it must also be acknowledged that policy provisions do not always translate into equivalent outcomes on the ground. While reforms over the past decade have yielded measurable progress, industry feedback suggests that bureaucratic hurdles, procedural delays and regulatory complexities continue to persist in varying degrees. The government's intent to simplify processes is evident, but achieving a truly agile and industry-friendly defence acquisition ecosystem remains a work in progress, requiring sustained institutional reforms and effective implementation.

The total defence budget for the armed forces for the financial year (FY) 2026–2027 is Rs 7.85 lakh crore, which is 2 per cent of the gross domestic product (GDP). It is a significant increase of 15.19 per cent over the budgetary estimates for FY 2025–2026. Out of this, allocation towards capital expenditure is Rs 2.19 lakh crore, as against Rs 1.80 lakh crore for last financial year. Further, Rs 1.39 lakh crore has been allocated for procurement from domestic defence industries, which is around 75 per cent of the capital acquisition budget.[15] This represents a major structural reform and a tangible incentive for indigenous defence manufacturers. Such assured budgetary support provides long-term visibility to industry, encourages investment in research and development (R&D), promotes innovation and strengthens domestic manufacturing capabilities. Therefore, while the scale of achievements may warrant objective scrutiny, the policy direction and financial commitment towards nurturing a self-reliant defence industrial ecosystem remain substantial and noteworthy.

India recorded its highest-ever defence production of Rs 1.54 lakh crore in FY 2024–2025 as against Rs 1.27 lakh crore in FY 2023–2024.[16] The government aims to achieve defence manufacturing worth Rs 3 lakh crore by 2029, reinforcing India's role as a global defence manufacturing hub, while boosting economic growth and making the country *atmanirbhar*.[17] Further, the MoD signed a record 193 contracts worth over Rs 2,09,050 crore in 2024–2025, out of which 177 contracts (92 per cent) have been awarded to the domestic industry.[18] Defence exports also hit a record Rs 21,083 crore

in FY 2023–2024, expanding 30 times in a decade, with exports to 100+ countries, which is indicative of the success of 'Make in India' initiative.[19]

Another factor contributing to the remarkable success of the 'Make in India' initiative has been the surge in foreign direct investment (FDI) inflows over the years, which also includes investment in defence sectors, escalating from US$ 36.05 billion in 2013–2014 to US$ 71.28 billion in 2023–2024 and to a record high of US$ 81.04 billion in 2024–2025.[20] Further, one of the main features of the defence budget is the continued emphasis on defence technology from domestic sources and efforts towards building an indigenous industrial base. The enhanced allocation for domestic procurement will be a big boost for the domestic defence industry, which is poised to benefit from new schemes announced as part of the 'Make in India' and 'Atmanirbhar Bharat' programmes to improve India's economic self-reliance.[21]

The 'Make in India' portal, under the Department of Defence Production (DDP), aims to provide a single platform to access any information related to policies/rules and initiatives being taken by the government to promote defence manufacturing.[22] The aim of this initiative is to promote design and manufacture, leading to the production of state-of-the-art sensors and weapon systems for the armed forces.[23] The DDP has also developed another portal, 'Srijan Defence', to promote 'Make in India'.[24] The main objective of the portal is to enable the private sector to be partners in the indigenisation efforts of the Ordnance Factory Board (OFB), the public sector undertakings (PSUs), the defence public sector undertakings (DPSUs), large private industries or micro, small and medium enterprises (MSMEs) and the Service Headquarters (SHQs).[25] The portal is a non-transactional online marketplace, where various government organisations display the items they import or are in the process of importing, along with their quantity and import cost. In addition, those items are displayed on the portal that have been planned/targeted for indigenisation in the coming years.[26]

The Defence Production and Export Promotion Policy (DPEPP) is another new initiative by the government to promote exports in the defence sector, along with indigenous production. The policy aims to increase domestic defence manufacturing base and reduce dependence on imports so as to achieve the target of defence manufacturing of Rs 3 lakh crore by 2029.[27] The Technology Development Fund (TDF), an initiative launched by the government to promote indigenous production of latest systems in defence sector, has also been recently enhanced.[28] The fund aims to provide financial assistance to Indian companies to develop and manufacture critical defence equipment and systems. Further, it aims to promote collaboration

between Indian and foreign companies in order to create a robust defence manufacturing ecosystem in the country.[29]

The 'MoD has also published a list of 780 components and subsystems that will be subject to a phased import ban between December 2023 and December 2028 in order to reduce imports by DPSUs.'[30] The list contains items used in fighter planes, trainer aircraft, helicopters, submarines and tanks. This list follows publication of two similar lists by the government in December 2021 and March 2022.[31] Further, the '5th Positive Indigenisation List' was released by the Raksha Mantri during Naval Innovation and Indigenisation International Seminar, 'Swavlamban–2023', which included highly complex systems, sensors, weapons and ammunition.[32]

To provide information on the technologies required in future to support the nation's growth, the Technology Information, Forecasting and Assessment Council (TIFAC), India's technology think tank under the Department of Science and Technology, released 'Technology Vision 2035', with foreword by Prime Minister Narendra Modi, released on 7 November 2015.[33] This document lays down the tech needs of modern India, and emphasises the requirement for technological independence through adoption and innovation by identification of tech constraints.

Indian Navy Initiatives—Make in India

The Indian Navy, over the last few decades, has rapidly changed from a *buyer's* navy to a *builder's* navy, with active participation of the industry leading to indigenisation of ship/submarine design, construction material, machinery, systems and equipment integration. Its core objective has been to enhance investment, promote innovation and develop infrastructure. The Indian Navy has commissioned an indigenous aircraft carrier, *INS Vikrant*, on 2 September 2022, with almost 76 per cent indigenous content.[34] The maiden trap and launch of indigenous Light Combat aircraft (LCA) Navy from its deck in less than 6 months from its commissioning on 6 February 2023 is a matter of national pride and testimony of Indian Navy's commitment towards indigenisation.[35] Further, a new warship or submarine is being added roughly every 40 days; and the 52 vessels on order are all being constructed in Indian shipyards. This pace is expected to continue as part of the Indian Navy's ambitious plan to become a 200+ ship navy by 2035.[36] All this reflects not only the scale of India's shipbuilding efforts but also a sustained progress of the nation's maritime modernisation and indigenisation goals.[37]

During a press conference held on 2 December 2025, Admiral Dinesh K. Tripathi, the then Chief of the Naval Staff, stated that 'Indian Navy remains committed to becoming an Atmanirbhar Navy by 2047'. Indeed, the Indian Navy has been at the forefront of utilising existing programmes, like Make II, Innovations for Defence Excellence (iDEX), and TDF, as well as *suo moto* proposals to develop weapon, system and equipment by Indian manufacturers.[38]

In order to synergise the efforts of various stakeholders, the Indian Navy has invested considerably in ensuring a sound structural support for indigenisation by creating various organisations, such as the Directorate of Indigenisation (DoI), the Directorate of Armament Procurement and Indigenisation (DAPI) and the Weapon and Electronic Systems Engineering Establishment (WESEE). In 2022, the navy also set up the Centre for Indigenisation and Self-Reliance (CISR), at Coimbatore, with an aim to cohesively steer indigenisation activities under revenue schemes, from conceptualisation to delivery. The Indigenisation Units (IUs) at Visakhapatnam for the Eastern Naval Command and the Andaman and Nicobar Command, and at Mumbai for the Western Naval Command, work under the CISR, which has reached out to and engaged with more than 30 industries to map their capability for specific indigenisation needs.[39] In addition, a Technology Development Acceleration Cell (TDAC) has been created in August 2020 with a charter to interact with the industry and academia.[40]

Swavlamban is the annual innovation and indigenisation seminar conducted by the Indian Navy, in association with the MoD, the DDP, the Defence Innovation Organisation (DIO) and the Society of Indian Defence Manufacturers (SIDM), to showcase innovations by the navy. The *Swavlamban* document, published by the Indian Navy as part of 'Atmanirbharta Abhiyan', was released by the Defence Minister during the launch of the Naval Innovation and Indigenisation Organisation (NIIO) on 13 August 2020.[41] This document puts in place dedicated structures for end-users to interact with academia and industry towards fostering innovation and indigenisation for self-reliance in defence. While the navy already has an impressive track record of indigenisation, the NIIO aims to encourage innovation through enhanced synergy between the Indian Navy–academia–industry triumvirate to enable technology leapfrogging for the navy.[42] The document is thus a commitment by the Indian Navy to transform India into a state-of-the-art manufacturing hub for defence systems.[43]

A landmark initiative under the NIIO has been the launch of SPRINT (Supporting Pole-Vaulting in R&D through Innovations for Defence

Excellence). The SPRINT seeks to achieve the navy's vision of developing at least 75 indigenous technologies/products under the 'Azadi ka Amrit Mahotsav' framework by fostering innovation among start-ups, MSMEs, academia and individual innovators. Through a series of innovation challenges and problem statements, the SPRINT has created a structured mechanism for connecting operational requirements of the Indian Navy with the country's growing innovation ecosystem. The initiative has significantly expanded industry participation in defence innovation and serves as a model for accelerating indigenous capability development in niche and emerging technologies.

The third edition of Swavlamban was held at Bharat Mandapam, New Delhi, on 28–29 October 2024. The major highlight of this event was the flagging off of an autonomous surface craft, *Matangi*, which made its transit from Mumbai to Tuticorin, covering a distance of over 1,500 kms.[44] The 2025 edition of Swavlamban was held at the Manekshaw Centre at New Delhi, on 25–26 November 2025, and included the release of the *Compendium of Technology Challenges and Problem Statements*, unveiling of the *Swavlamban 4.0* document and the *Armament Indigenisation Compendium*.[45]

The 'Technology Perspective and Capability Roadmap' (TPCR) document, formulated by Headquarters Integrated Defence Staff (HQ IDS) in April 2018 with inputs from the Indian Navy, provides the industry an overview of equipment that is envisaged to be inducted into the armed forces up to the late 2020s, with an intention to drive the industry to develop required technologies.[46] This is an unclassified document and is uploaded on the Internet, along with point of contact from the armed forces. Some of the systems/equipment planned to be inducted, including required technologies, are: remotely piloted aircraft; autonomous underwater vehicles/remotely operated vehicles; towed array systems; lasers; EM weapons; robotics; surface-to-surface missiles; mobile missile coastal batteries; enhanced radiation bombs; guided ammunition; electro-optical sensors; supersonic targets; unmanned aircraft systems; and many more equipment and sensors.[47] An updated 'TRCR-2025' document, providing an overview to the industry of equipment that is anticipated to be incorporated by the armed forces till end of 2030s, has been released by the Raksha Mantri during the 'RAN SAMWAD' held at Mhow on 26 August 2025.[48]

The Indian Naval Indigenisation Plan (INIP 2015–2030), formulated by Indian Navy, is a guiding document to enunciate the requirement for developing various advanced systems for naval platforms which are broadly

categorised in the field 'to float, move and fight'.[49] This is an unclassified document, uploaded on the Internet, and includes technologies which are likely to have defence-related applications in future. It includes robotics, AI, nanotechnology, miniaturisation, sensor and data fusion, unmanned systems, hypersonic weapons, information technology and cyberwarfare, space technology, ASAT, precision-guided missiles, directed energy weapons and many more whose indigenous development will significantly enhance naval warfighting capabilities.

The 'Atmanirbhar Indian Naval Aviation Technology Roadmap – 2047', released on 12 February 2025 by the Chief of the Naval Staff, is also an unclassified document and outlines the plan of naval air arm to leverage technological revolution and changing character of warfare, thereby ensuring that the Indian Navy remains a credible force, capable of addressing future maritime security challenges effectively and efficiently. In addition, it aims to expeditiously bridge critical capability gaps through innovation and asymmetric solutions. The roadmap addresses various aspects required to maintain and enhance the effectiveness, capability and strategic depth of naval aviation operations, thus serving as a reference document for innovators to work upon indigenous solutions. The document is expected to serve as a catalyst for the indigenous industry/MSMEs/startups to innovate, indigenise and lay the foundation for a credible atmanirbhar naval aviation industry in the country.[50]

Challenges and Opportunity

The government bears the ultimate responsibility for a country's security.[51] Its ability to equip the armed forces using indigenous industrial and technological capabilities is of great importance, particularly if a conflict were to see disruptions to supply lines and potential sanctions from arms suppliers.[52] Presently, the Indian industry may not be capable of developing state-of-the-art weapons backed by latest technology. Therefore, there may be no option but to import these through time-consuming processes in the short term, with a well-defined indigenisation plan. We need to critically analyse our challenges and opportunities in the field of indigenisation versus import of weapons in the short and long term and formulate a path for future processes, paving the way for technological self-reliance.

Over-reliance on foreign original equipment manufacturers (OEMs) has imposed several restrictions on the exploitation of weapon systems, with risk of sanctions during conflict being a likely scenario. In most cases,

lack of exhaustive knowledge about the imported weapon system, shortage of spares and ammunition and maintenance and life cycle support issues impose restrictions on their optimum utilisation and exploitation. There also exists a huge technological advantage with reputed international firms (M/s Lockheed Martin, M/s Boeing, M/s Raytheon Technologies, M/s General Dynamics, M/s Northrop Grumman, M/s Thales, M/s Israel Aerospace Industries and many more) in their field of expertise, where they have been the leaders for reliable defence equipment for decades. These companies continue to be far ahead in technology absorption and utilisation; therefore, matching their standards of weapons and sensors will be a near-impossible task in the short term. Hence, our commitment to indigenisation needs to be firm and all possible support needs to be provided to the industry for R&D to acquire technology to match up to these renowned international defence manufacture companies in the long term. Industry may not succeed in its first attempt towards indigenisation of latest weapons and there is a need for hand-holding in the near future to make them deliver within finite timelines.

Speaking during the National Quality Enclave on 8 May 2025, Raksha Mantri Rajnath Singh stated that equal emphasis is being laid on quality and quantity in defence production. He termed quality as the government's priority reform agenda, highlighting that since corporatisation of the OFB, DPSUs have become internationally competitive and export oriented. He also 'pointed out that one of the objectives behind the progress of the public sector has been to develop a Healthy Competitive Private Defence Ecosystem, which will strengthen India's security through quality'.[53] He further expressed hope that with coordinated efforts, the Indian defence manufacturing sector can make its mark globally.[54] Highlighting that defence exports had crossed the record figure of about Rs 24,000 crore in FY 2024–2025, he said that the aim is to increase the figure to Rs 50,000 crore by 2029. 'The target is to make India a developed nation and the world's largest defence exporter by 2047.'[55]

Today, as India emerges as a global power due to her economic and military might, it is essential for the country to have a self-reliant and self-sustaining defence industry. It is a foregone conclusion that countries that are self-reliant in defence manufacturing will continue to have combat edge in future warfare. Indigenisation, as an initiative and process, is driven by market forces and government policies, but indigenisation of defence equipment is heavily dependent on the capability and capacity of the domestic

industry, given the high-end technology associated with the modern defence equipment and weapons.[56] Therefore, the role of the indigenous industry in defence manufacturing sector is a reality. The entire industrial might of the country needs to partner to achieve the goal of self-reliance of the defence forces. They should become stakeholders in the plan and provide not only the much-needed technical knowhow, but also bring the concepts and proposed capability to fructification in the form of world-class defence hardware that would serve the needs of SHQs.

Innovations and availability of latest technology are critical for indigenous defence manufacturing, and the final aim of any nation is to attain *atmanirbharta* in this field. Presently, our dependence on foreign manufacturers for high-end technology-related weapons and sensors continues to ensure that our ships are future-ready and have the combat advantage in a fiercely competitive global environment. Therefore, the timelines stated by the Chief of the Naval Staff for the Indian Navy to be totally *atmanirbhar* by 2047 and the prime minster's call for being 'Viksit Bharat' by 2047 are aligned to provide industry sufficient time, coupled with policy initiatives, to ensure self-reliance in defence manufacturing.

Despite defence manufacturing facing specific issues (discussed earlier), there are other impediments that hinder the progress of stated objectives of the 'Make in India' policy. These are as follows:[57]

1. We need to guard against 'Make' in India versus 'Assemble' in India. This aspect gains importance especially for defence manufacturing wherein the major foreign OEMs have a monopoly for the 'state-of-the-art' weapons and sensors. It would be rather impossible for PSUs/DPSUs and private entities to match their products in the near term. However, we need to provide them support in order to be competitive in the near future. Indian entities should be provided targeted support through financial incentives, easier credit access and technological support to help them integrate into global supply chains.
2. One of the primary challenges faced by this initiative is inadequate infrastructure and logistics network, which not only increases costs but also hampers competitiveness of Indian manufacturers in the global market.
3. India's bureaucratic and complex regulatory framework, including cumbersome procedures, slow approvals and ambiguous policies, sometimes creates an unfavourable business environment and is a major hurdle.

4. The availability of skilled and trained manpower is crucial for the success of any defence manufacturing endeavour and this aspect needs careful handling for bridging the skill gap.
5. Rapid technological advancements have transformed the manufacturing landscape globally. However, India is facing challenges in adopting and implementing advanced technologies in its manufacturing processes due to limited funding being allocated for R&D. The lack of access to cutting-edge technologies, limited R&D capabilities and low technology penetration have hindered the competitiveness of Indian manufacturers in defence sector.
6. Access to affordable and adequate finance is crucial for the growth and expansion of defence manufacturing activities. The high cost of borrowing, limited availability of credit and inadequate financial support for our industry have constrained the growth potential of the manufacturing sector as a whole.

Currently, the main challenge for the Indian Navy's is no longer the ability to design and construct ships—the same has been demonstrated through construction of aircraft carriers, destroyers, frigates and nuclear submarines. The real challenge lies in indigenising the high technology required for production of marine engines, propulsion systems, advanced sensors, sonars, electronic warfare suites, conventional submarines, precision-guided munitions, advanced radars, missile seekers, underwater weapons, aircraft, aerospace propulsion, etc. Further, expressions like 'India being future global manufacturing hub' may appear ambitious as on date, but it is intended to reflect the strategic direction and long-term aspirations of government policy rather than India's current standing in global manufacturing.

It may also be noted that comparisons with China should be viewed with caution. China today is a global manufacturing powerhouse across virtually all sectors of industry, having built its industrial ecosystem over several decades through sustained investments, infrastructure development and export-oriented growth. Comparing India's present position with that of China may therefore be somewhat premature, particularly when India is still in the process of expanding its manufacturing base and strengthening its industrial capabilities.

Figure 1 shows the Indian Navy's *atmanirbhar* journey till 2047 and very clearly outlines our present state, what are the gaps, what we need to do, enablers and challenges leading to our desired end-state of achieving total self-reliance in defence manufacturing.



Figure 1 Indian Navy's Atmanirbhar Journey Till 2047
Source: Generated by the author using ChatGPT.

Indigenisation (Make in India) Leading to Self-Reliance (Atmanirbharta)

True self-reliance in defence is no longer a choice but a strategic necessity, enabling India to mitigate risks inherent in foreign dependencies and quickly adapt to emerging threats. This initiative has catalysed a paradigm shift in India's defence manufacturing landscape, fostering self-reliance, enhancing export capabilities and stimulating economic growth. Continued emphasis on policy support, strategic partnerships and investment in R&D will be crucial for sustaining this momentum and achieving long-term objectives in defence indigenisation.

Self-reliance and indigenisation in military equipment are inescapable for a developing country like India, which has a major role to play on the global stage. On the one hand, it demonstrates the country's technological prowess, whilst on the other, it provides an environment for accelerating the country's growth. The available industrial capability of the country, whether it is the PSUs, DPSUs, large private industries, OFB or MSMEs, need to join hands

to achieve the goal of *atmanirbharta* in sourcing weapons and equipment for the armed forces.

India aims to achieve self-reliance in safeguarding its maritime interests through the Indian Navy's indigenisation efforts and the Indian Navy leads India's commitment to progress this initiative with strength and self-sufficiency.[58] The Indian Navy stands as a shining exemplar of this ambitious vision, spearheading indigenisation efforts that enhance India's maritime security and project power across the oceans. Its journey epitomises the spirit of 'Atmanirbhar Bharat', reflecting India's commitment to transforming into a leading global maritime power. Therefore, it is crucial that we continue our relentless pursuit towards developing superior technologies to enhance self-reliance and maintain superiority over our adversaries on land, air and seas. As the Make in India initiative celebrates its tenth anniversary, it stands a testament to the Indian Navy's resolve and determination to its commitment towards achieving total *atmanirbharta* by 2047, the centenary of India's independence.

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