

Modernization of Indian Defence Forces: Challenges & Prospects

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Abstract: *The developments in India's immediate neighbourhood over the past decade have led India to take a close look at her foreign and security policies. There is a widely sensed need for the rapid modernization of the Indian armed forces, which is being reflected in some of the key initiatives that have been taken up by the Indian government so far (such as Make in India), so as to address to the complex security challenges that emanate from its hostile neighbourhood. However, the pace of modernization of the Indian armed forces over the years has been rather slow, and technologically, they are not where they should have been. Indigenous development of modern defence hardware continues to remain a concern and Indian policy aspiration for defence self-sufficiency remains largely elusive. The aim of the research is to highlight how the Indian armed forces are responding to the emerging security scenario in the region and beyond, and to address issues in defence policy making, progress with defence modernization, and military effectiveness. The Indian defence industry suffers from major policy, structural, and cultural challenges that beset a military industrial complex that continues to struggle in terms of delivering modern defence hardware that could have added to the greater Indian defence indigenization and production. Experts see a number of systemic flaws in the Indian defence establishment and civil-military relations, which present major challenges for India's military modernization aspirations. As India's defence requirements are likely to increase in the foreseeable future because of the dynamic security environment, indigenous development of modern defence hardware and technology is likely to remain a top priority. As India is an aspiring great power (and it is believed that great powers have great arms industries), its ability to acquire autarky and self-sufficiency in terms of development of advanced defence hardware and technology to fulfill the requirements of its armed forces would be crucial so as to address to its national security concerns. The study here shall highlight the impediments to India's defence modernization and its likely implications for India's national security.*

1. India's National Security Concerns and Defence Preparedness

India today faces the most complex threats and challenges that range from nuclear to sub-conventional spectrum of conflict. Issues such as unresolved territorial disputes with China and Pakistan, insurgency in Jammu and Kashmir (J&K) and in the North Eastern states, the growing menace of left wing extremism, and the rising threat of urban terrorism has further exacerbated India's security environment.

In the regional security milieu, it has clearly emerged that China poses the most potent military threat to India given the advantages it has over India in nuclear, missile, and military hardware. Moreover, the China-Pakistan nexus and increased strategic engagements between the two have increased the probability that India might face a two-front war in the future.[1]

Therefore, the need for augmenting defence capabilities i.e. land, air, and sea capabilities, is being largely reflected in the Indian policy towards defence modernization today (initiatives such as Make in India[2]) to meet the challenges that emanate from both traditional and non-traditional threats that pose severe threats to India's national security.

India is one of the largest arms importer in the world as indigenous production of technology is one area where India continues to struggle. India's defence preparedness, therefore, remains a question as some of the most crucial requirements in various services of the armed forces have not been fulfilled because of severe deficiencies in the defence industry.

India's land forces lack sophisticated weapons and armory, the navy's submarine fleet has dwindled down to 40 percent of the minimum requirements, and the fighter squadrons are at the level of 60 percent of the mandatory need, which

indeed is a cause of concern considering the slow pace of India's defence modernization.[3] Therefore, when taking into account of the changing nature of threats in the emerging geopolitical scenario (also considering the changing nature of warfare with the rise of non-state actors), India has to focus on building capacity for continuous modernization of the armed forces, while directing it towards achieving the desired capability, which will in turn depend on the analysis of threats.

2. Articulating India's Defence Needs and Requirements

India's defence requirements are likely to be influenced especially by the external factors such as the threats that emanate from two of its primary adversaries i.e. Pakistan and China. Though Pakistan will continue to remain an immediate threat, China will be the major concern as China is more likely to be a medium-term threat for India according to some observers. Therefore, India's defence requirements are likely to be based on capabilities that cater to the larger threat, which would take adequate care of the threat from its more traditional adversary i.e. Pakistan.

As India is much more superior in conventional and strategic capabilities when compared to Pakistan, articulation of India's defence requirements is likely to be influenced by the growing offensive capabilities of China that has been demonstrated over the years, which has created huge debates among the members of the strategic and the academic community on the need for pro-active decision making in terms of streamlining defence acquisition and procurement processes, while also focusing on indigenisation, thereby leading to augmentation of India's overall war deterrence.

Therefore, there is a growing understanding within India's security establishment that Indian defence modernization and capacity building should focus on China. The need of the hour is to change the "understanding" into "URGENCY"

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in order to build comprehensive national capability to counter any threat that arises from China or from the collusive threat of China and Pakistan.

Given India's current deficiencies in the armed forces, there is an imperative for India to focus on development of advanced and sophisticated weapons system for various platforms of combat i.e. land, sea, and air, and ensure necessary integration within the services of the armed forces as well as intelligence organisations to ensure an effective and a viable response to the threats that emanate in the immediate regional security environment. There is a need to make a thorough assessment of the security threats and accordingly articulate the needs of the services of the armed forces and take necessary steps to procure advanced weapons system that in turn will augment India's national power. Before looking into what are India's defence requirements, the next section discusses the challenges that India faces in its defence industry.

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3. Issues in India's Defence Modernization

India faces a whole range of complex challenges in its defence modernization aspirations, which are aimed at containing the threats that it perceives to be having severe implications for its national security. Looking into the current capacities of India's defence industry, it is not hard to say that many observers remain dismissive of the same and have proposed a number of reforms aimed at bolstering India's defence production capabilities thereby achieving self-reliance in building such capabilities, and streamlining India's defence procurement procedures for lesser procedural delays in acquiring advanced weapons system.

As India is one of the largest importers of arms the in the world, its over-dependency over other countries for sophisticated weapons system for the services of the armed forces is likely to negatively affect India's aspirations of becoming a great power as it is widely believed that great powers are supposed to have great arms industries.[4] The challenges that India's defence industry today faces in terms of producing and procuring advanced weapons system to fulfill the requirements of the services of the armed forces are immense, which need critical examination. The issues that India faces today are hereby discussed one by one.

4. Self-Reliance and Enduring Challenges

India's defence industrial policy during the initial years of its independence was guided by the phrase 'self-sufficiency'. This was subsequently modified to 'self-reliance' in defence production, and now it has long been a fundamental goal of indigenous armaments production in India.[5] However, India's heavy dependence on arms imports has been a matter of concern for parliamentarians, oversight agencies, policy makers, and defence analysts.

India's inability to meet its own defence needs through indigenous production (the two flagship programs i.e. Main Battle Tank Arjun and Light Combat Aircraft Tejas are examples where the Indian defence research organisations have gone through several production delays and cost-overruns[6]) is drawing wider concerns over the challenges that the Indian defence industry has been going through in terms of being efficient, productive, and more capable in research and development (R&D) of advanced weapons system and defence technology. The targets that have been set over the years have not been achieved that raises questions on the ability of India's defence industry to produce weapons system and defence technology to meet the requirements of the services of the armed forces.

There is an urgent need for the government to focus on indigenous production of defence hardware and technology by carefully articulating long-term strategic plans to augment India's military power. As India is a rising power with a huge economic base, India has to look beyond the buyer-seller relationship that had almost become a feature of its defence industrial policy, and should instead develop means to produce advanced weapons system and defence technology indigenously.[7]

The policy priority for the Indian defence establishment should be to ensure that India should maximise its indigenous production so that the quantitative requirements of the armed forces are met, while also ensuring quality in varieties of defence equipment and items that should be made available to meet the ever-increasing demand of the services of the armed forces with rapid changes in technology. The need of the hour is to increase budget allocation for defence R&D and utilise the manpower in its defence laboratories to promote research for advances in defence equipment, hardware, and technology.[8] These practical steps would ensure that India meets the demands of the time, and is in continued possession of cutting-edge defence technology as a result of indigenous production by its defence industry.

Decision Making and National Security Strategy

While looking into India's present defence status, there has been a long going debate on what are the impediments to India's defence modernization pace which in turn has been severely affecting India's ability to enhance its defence capabilities. As threats to India's national security are both traditional and non-traditional, effective defence preparedness is the key to secure its national interests, which would depend on the ability to produce and procure advanced sophisticated weapons and high-tech technological devices in order to ensure that the services of the armed forces and their requirements are fulfilled, which would enhance India's war capabilities, naturally augmenting its military power.

The decision making in India on national security and strategic matters have been however projected to be slow and complex because of the hierarchical structure of the decision-making process, which affects India's ability to produce and procure weapons on time, which in turn affects India's defence preparedness. Today, the services of the armed forces are suffering from severe lack of necessary

war-fighting capabilities, which has severe implications for India's national security considering the actual requirements.

India's aspirations of becoming self-reliant in indigenous defence production and also acquiring advanced weapons system faster would, however, depend on the effectiveness of the decision-making at the apex-level while taking into consideration of India's national security interests. Some observers have questioned the efficacy of the established process of decision-making in defence acquisition or during times of crises, which is managed by Cabinet Committee on Security (CCS).[9]

The lack of military inputs in decision-making is considered to be the most significant lacuna. It is also observed that the national security strategy of India suffers from flaws such as the absence of a National Security Doctrine and the absence of a long-term defence planning. Moreover, the need for a Chief of Defence Staff (CDS), a supposedly single point of advice to the CCS on military affairs and defence acquisitions, has been long felt.[10] There are increasing number of opinions on the need for key structural reforms in India's higher defence management and in the national security decision making process, which shall in the long run help improve India's defence R&D, self-reliance in defence production, and civil-military relations.

5. Acquisition and Offset Strategy

To expand India's defence industrial base, India has long relied on its offset policy to engage in transactions with foreign suppliers and promote transfer of technology thereby leading to indigenous defence production. First introduced in 2005, the offset policy has gone through several revisions in the Defence Procurement Policy (DPP) that have been released over the years (the latest one came out in March 2016). The transactions with foreign suppliers are aimed at enhancing the economic, technological, and the industrial capabilities of the India. India, as it is well known, has long relied on licensed production with overseas defence contractors. And as now offset is mandatory, India is likely to benefit from transfer of technology with the rise in the number of offset-agreements as a result of India's increasing defence acquisition budget.[11]

The increase in defence spending has become possible not just because as a result of the tensions in the immediate regional security environment, but also because of its rapid economic growth over the years that has given it a solid economic base. This should play a major role in increasing India's defence offset appetite, which would give it the necessary financial resources to promote indigenous defence production.

However, India's defence offset policy suffers from major challenges that require attention. India's offset policy requires foreign vendors to engage with local defence companies through co-development, co-production, joint ventures, maintenance, and upgrades, but full mergers and acquisitions are not allowed. Therefore, foreign companies are hesitant to invest in a defence industry without having full stakes in the defence production.

Foreign Direct Investment (FDI) in the defence sector is capped at 49 percent, which again is a sore point for many foreign firms, as they believe that investments involve huge financial risks, and therefore, FDI cap in defence should be raised to 74 percent or even 100 percent.[12]

Secondly, the expectation that a foreign vendor will engage in 'complete' transfer of technology to the Indian pattern of the system's subsystems, modules, assemblies, and specific parts/components is too much to ask, given the commitments the offset policy of India demands.

Thirdly, India's offset policy is based on an inflexible doctrine of indigenisation and India's offset policy should be made compatible with the economic dynamism of the global defence industry.

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And finally, other issues in the offset policy should be addressed such as the policy's obligatory nature, objectives that need broadening, and most importantly, the inherent complexities, which need reduction.[13]

Under the current offset policy, India under 'Buy (Global)' would purchase from foreign/Indian seller, and under 'Buy and Make with Transfer of Technology' would acquire defence hardware from foreign sellers which would be followed by co-development and joint-production. The estimated cost of acquisition proposal should be INR 300 crore or more and 'compensation' or offset for the cost of acquisition under the 'Buy (Global)' category would be 30 percent and for foreign exchange component under 'Buy and Make with Transfer of Technology' would be 30 percent.[14]

Foreign firms from major defence hardware exporting countries find such conditions difficult to fulfill as there are literally no incentives, and because of lack of proper monitoring mechanism and issues related to intellectual property rights.[15]

The Ministry of Defence (MOD) released an incomplete version of DPP 2016 on 28 March 2016, which saw the introduction of a new category titled 'Buy (Indian Designed, Developed, and Manufactured)' or Buy (IDDM). For the first time its inception in 2002[16], that means the Indian government has recognised the need for encouraging scientific talent in India and has placed importance on "indigenous design", development, and manufacture.[17] However, critics would argue that it is too early to judge or predict the efficacy of the document as it misses many critical issues and does little to address problems that beset decision-making in the MoD.[18]

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6. What India Needs?

Each of the services of the Indian armed forces today needs urgent modernization to face the complex security challenges that emanate in an increasingly unstable neighbourhood and in a complex strategic regional security environment.[19] The Indian Army, which is one of the largest standing forces in the world, possesses weapons and equipment that are bordering on obsolescence and need to be replaced. The next step should be to acquire network-centric capabilities to optimise army's full potential in defensive and offensive operations.

The critical capabilities that are needed to be enhanced (as Lieutenant General J.P. Singh noted in an interview with Centre for Land and Warfare Studies, New Delhi) are "battlefield transparency, battlefield management systems, night-fighting capability, enhanced firepower, including terminally guided munitions, integrated maneuver capability to include self-propelled artillery, quick reaction surface-to-air missiles, the latest assault engineer equipment, tactical control systems, integral combat aviation support, and network centrality." [20] Also, urgent steps should be taken to enhance the operational capabilities of army aviation, engineers, signal communications, reconnaissance, surveillance, and target acquisition branches in order to improve the army's overall combat potential so that it can face aggression of any magnitude.[21]

India needs to take urgent steps towards extensive naval modernization so as to secure its security interests in the Indian Ocean Region and beyond. India should look to augment its naval power by acquiring capabilities for maritime domain awareness in the area of responsibility, including space-based surveillance, maritime reconnaissance, airborne early warning and control (AEW&C), and unmanned aerial vehicles (UAVs).

The Indian Navy should be equipped with modern capabilities in fields of tactical aviation, anti-submarine warfare (ASW), anti-air/anti-missile, land-attack, mine counter-measures, and electronic warfare. It is equally important to make sure that Indian Navy is integrated by networking of ships, submarines, and airborne platforms via satellites. In the end, the government should commit to self-reliance and indigenisation, with the objectives of harnessing national strengths in ship-building, engineering, electronics, and information technology (IT).[22] The Indian naval modernization though much delayed, has begun to pick up steam as seen from the recent developments where deals worth thousands of crores have been made to expand India's naval fleet and India's naval dominance capabilities.

The Indian Air Force (IAF) is a full-spectrum force equipped with very capable platforms and trained manpower, but the numbers are inadequate for intense and lengthy operations. India must take urgent steps to maintain an edge over the adversary through technology and force employment.

The IAF is at the forefront of technology, but India should push towards self-reliance, as it has to develop its own technology and defence industrial base. India's track record

in R&D however has been dismal and it is continuing to face a number of challenges in terms of meeting the quantitative requirements to defend the Indian skies. As per one of the recent reports, the IAF has only 32 squadrons of fighters, the lowest in a decade, while it needs at least 42 squadrons to protect its western and northern borders from Pakistan and China.[23] Also, as aircrafts such as MiG-21s and MiG-27s in the IAF are old and aging (which date back to the Soviet era), India is likely to lose another 14 squadrons by 2019-2020.[24]

Commercial negotiations with France on the deal over Rafale fighter jets are far from over and India has yet to start production of its first indigenously built aircraft Tejas (the project is more than 30 years old). India has to urgently focus on air dominance and control of the air by building capacity to indigenously produce future capabilities for design and development of aircrafts, heavy attack helicopters, and other combat and surveillance-related capabilities for further projection of air power.

From India's point of view, the most crucial component that has to be implemented for better integration of the services of the armed forces is a robust and an efficient Command, Control, Computers, Communication, Intelligence, Surveillance, and Reconnaissance (C4ISR) system. An integrated Indian C4ISR system will be central to augmenting India's overall defence capability.

With better integration of the services of the armed forces, it is also essential that there is integration between the armed forces, defence and intelligence agencies, and other government and private organisations as well. This would provide a joint force that would protect the country from traditional as well as asymmetric threats while providing flexibility, analysis, interpretation, and efficiency. This would also give advantages such as information assurance, controlling and disruption of information, data processing and management, quicker decision-making, and larger system integration.[25]

A strong political will and an enabling framework for the involvement of players from different sectors (such as private sector or academia) for indigenous production of such capabilities would be essential, which is turning out to be a key national security imperative.

7. Conclusion

Threats from China and Pakistan leave India with no other option but to augment its defence capabilities to secure its national security interests. India's pace of defence modernization, however, has been slow because of a number of inherent holes in the system such as lack of a National Security Strategy doctrine, or a long-term strategic defence plan, which are impediments in terms of evolving a clear-cut strategy to meet the defence requirements of the armed forces by making a thorough analysis of the security challenges in the immediate regional security environment.

Moreover, India's inability to produce advanced sophisticated weapons system and advanced defence technologies indigenously has severely affected its

aspirations of becoming self-reliant in defence production, thereby remaining heavily dependent on foreign sellers for defence purchases, which in a way or other, do expose India's vulnerabilities. Adversaries may seek advantage in case they happen to know India's vulnerabilities, which in turn would have severe implications for India's national security. Therefore, the policy priority for the Indian civil and defence establishment should be to take necessary decisions to ensure that India's defence requirements are met as soon as possible through indigenous production.

India's indigenous defence production capabilities have however not grown because of a number of challenges. There is a lack of the greater political will that has severely affected decision-making in terms of acquiring weapons on time as per the needs of the armed forces. The Indian defence industry suffers because of under-utilisation of human resources that has negatively affected India's defence R&D base. Because of unfriendly defence industrial procurement system, it has resulted in few co-development and co-production ventures with foreign firms.

The lack of conducive financial framework for the local industry to do business in the defence sector, especially for the private sector, has also negatively impacted private participation in the defence sector. Therefore, the urgent focus for the Indian government should be to encourage private individuals and entities in India that could contribute in indigenous defence production. This would mean that India would achieve its goal of self-reliance only if it allows more private players in India to participate in the defence sector, and the true potential of the Indian minds are utilised.

Also, initiating/implementing further defence reforms such as streamlining procurement and offset policy, and introducing newer positions and staffs for better policy coordination, would be essential if India wants to reduce the qualitative and quantitative gaps between its defence industrial base with that of the other major powers.

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- [13] Ibid, p. 164; The talks between India and France over 126 Rafale Medium Multi-Role Combat Aircraft (MMRCA) fighter jets have seen little progress because of differences on transfer of technology under India's offset policy. India had to purchase 36 Rafale jets on a 'direct purchase' basis (during Prime Minister Modi's visit to France in 2015) to meet its immediate requirements of the Indian Air Force (IAF).

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