

I India

Money, Military and Markets-XIV

Operation Sindoor = India's technology edge

- India's use of domestic military tech in Operation Sindoor showcased its defence self-reliance, democratic resilience, & commitment to the rule of law.
- The swift, decisive operation has elevated India's global standing and gave a big positive surprise to global investors vis-à-vis its technological innovation.
- With strong focus on semiconductor infrastructure through the India Semiconductor Mission, India is positioning itself as a future tech & power hub.

Rule of law, democracy and now going into big boys league

The past few days have highlighted several important points: India can defend itself using homegrown technology; it is a nation that cares deeply for the lives of its citizens—ergo, anyone doing business in the country, whether Indian or foreign, benefits from that commitment. India's indigenous technology startup ecosystem is second to none, and most importantly, democracy thrives in the country. The business environment remained steady throughout the 96 hours of conflict, and there was no capital flight from India. If anything, this episode reinforces that India is a responsible nation that upholds the rule of law. It's hard to imagine a fighter pilot giving up a tactical advantage in battle to protect a passenger aircraft—yet that's exactly what happened, as the Pakistani Air Force reportedly used such a civilian aircraft as cover. War is the most primal of human instincts. If a nation can uphold the rule of law even in such emotionally charged circumstances, it goes without saying what the normal course of business would look like in such a society. Equity investors need not fear capital controls like those in China, nor should they worry about the risks typically associated with frontier markets.

Operation Sindoor has propelled India like a 6-Day War did for Israel

Operation Sindoor has, like Israel's Six-Day War, fundamentally altered the perceptions of India's military capabilities and resolve. It has established a new deterrence dynamic with Pakistan, demonstrated India's technological and operational superiority, and signalled to the world that India is prepared to act decisively to protect its interests and citizens. This operation has elevated India's status as a power state in South Asia and beyond, much as Israel's actions in 1967 did for its regional standing.

India's homegrown technologies showed their mettle

India's homegrown technologies played a decisive role in the conflict. Key systems included: 1) **Loitering Munitions and Drones** – These platforms provided real-time surveillance and precision strikes with minimal risk to personnel. 2) **Missile Defence System – Akash Teer** – This system was built on indigenous, network-centric software technologies that seamlessly integrated a wide array of legacy and modern platforms, including L-70 anti-aircraft guns (dating back to 1964), the ZSU-23-4 *Shilka*, Akash surface-to-air missiles, QRSAM, and MRSAM systems. The result was an agile, AI-driven air defence network capable of responding rapidly to evolving threats. 3) **Hypersonic Technologies** – Indigenous platforms like the BrahMos missile demonstrated exceptional performance and inflicted significant damage during the war. While India did employ advanced foreign systems such as the S-400 air defence system and SCALP/HAMMER missiles, most of the critical battlefield impact was delivered by Indian platforms—particularly the BrahMos missile, which underscored the growing maturity and effectiveness of India's defence ecosystem.

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India is investing heavily in the development of chip infrastructure

India's chip development policy is anchored by the **India Semiconductor Mission (ISM)**—a comprehensive government initiative aimed at transforming the country into a global hub for semiconductor design, manufacturing, and technology development. Further details about India's semiconductor plans can be found in a recent report published by our analyst, **Shubham Dalia**. ([IN: Technology - Others - Semiconductors deep dive: India & the world](#)).

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A three-day war has announced the emergence of a new global power like Israel of 1967

The Indo-Pak war of 2025 lasted only three days and ended with Pakistan urging the US to intervene»

The India–Pakistan war in 2025, which lasted only three days, announced the emergence of a new global power

1. **India's rapid dominance:** India achieved clear, strategic objectives quickly destroying key military infrastructure, neutralizing air and missile threats, and asserting cyber or electronic warfare superiority.
2. **No nuclear escalation:** As the Pakistan Air Force was unable to operate independently, its nuclear bluff was effectively called. Indian aircraft never violated the International Border or the Line of Control but still managed to decisively degrade the operational capabilities of the Pakistan Air Force. Pakistan requested US involvement for assistance, and despite this, an uneasy calm continues to prevail.
3. **New doctrinal success:** India has executed an evolved form of its 'Cold Start Doctrine,' indicating advanced joint-force capabilities, artificial intelligence or AI-enabled targeting, and hypersonic weapons.

This short war has tremendous geopolitical implications »

1. **Emergence as a global power:** India would be perceived as a nation capable of **strategic autonomy**, **rapid deployment**, and **decisive leadership**, joining ranks with the US and China in power projection.
2. **Recalibration of alliances:**
 - Pakistan might be seen as diplomatically isolated or militarily vulnerable.
 - China's silence or involvement would influence how this war is interpreted globally.
 - Russia may pivot further towards India or remain neutral to preserve arms sales to both.
 - Nations will begin aligning more with India or at least factoring it more seriously into global security equations.
3. **Strategic & psychological impact**
 - **Demonstration effect:** Other regional powers may reconsider provocations or miscalculations (e.g., China on LAC, smaller neighbours).

- **Internal Indian confidence surge:** It will lead to a surge in nationalism, political consolidation, and defence investment.
- **Pakistan's internal turmoil:** A swift defeat like this could trigger political chaos, civil-military strains, or even regime change.

Operation Sindoor has propelled India into a higher strategic orbit, much like the Six-Day War did for Israel in 1967 ➤

Operation Sindoor in May 2025 has marked a pivotal moment for India, drawing strong historical parallels to Israel's emergence as a regional power after the Six-Day War of 1967. Just as Israel's swift and decisive military campaign in 1967 fundamentally altered its strategic standing and deterrence posture, Operation Sindoor has propelled India into a higher orbit of military and geopolitical influence.

- **Decisive military response:** Operation Sindoor was launched in response to the Pahalgam terror attack, with India conducting precision strikes on terror camps and military installations across Pakistan and Pakistan-occupied Kashmir (PoK). Over 100 terrorists, including high-value targets linked to major attacks like the IC-814 hijacking and Pulwama, were eliminated. The Indian Air Force (IAF) even struck deep targets such as Karachi's Malir Cantonment and radar sites near Lahore, demonstrating a new level of operational reach and confidence.
- **Robust defence and deterrence:** Throughout the escalation, India's multi-layered air defence systems, including the S-400, successfully neutralized waves of Pakistani drones and missiles, preventing any enemy aircraft from approaching Indian territory. The Indian Navy's carrier battle group and continuous surveillance further ensured air and maritime supremacy, echoing the kind of comprehensive control Israel established in 1967.
- **Political and strategic will:** Indian leadership, including Prime Minister Narendra Modi and Defence Minister Rajnath Singh, emphasized that Operation Sindoor was not just a military action but a demonstration of India's political, social, and strategic will power. The operation signalled a clear shift to a doctrine of zero tolerance for cross-border terrorism, with India making it clear that it would not differentiate between terrorists and their sponsors.
- **Regional and global consequences:** The operation forced a rapid ceasefire after four days of intense conflict, with both sides agreeing to halt land, air, and sea hostilities. The scale and precision of India's response, and the subsequent diplomatic engagement, have showcased India's ability to shape outcomes in the region, much as Israel's 1967 victory redefined its deterrence and diplomatic standing.

Operation Sindoor has, like Israel's Six-Day War, fundamentally altered perceptions of India's military capabilities and resolve. It has established a new deterrence dynamic with Pakistan, demonstrated India's technological and operational superiority, and signalled to the world that India is prepared to act decisively to protect its interests and citizens. This operation has elevated India's status as a power state in South Asia and beyond, much as Israel's actions in 1967 did for its regional standing.

The technologies developed by India have been tested under the most trying circumstances—namely in combat, multiple companies are developing it ➤

India has developed and tested a range of indigenous defence technologies under real combat and operational conditions, demonstrating their effectiveness and reliability in some of the most challenging scenarios.

Loitering munitions and drones

During Operation Sindoor, India deployed several homegrown weapon systems, including the Akash missile system, the anti-drone D-4 system, and advanced loitering munitions like Nagastra-1 and SkyStriker. The Nagastra-1, developed by

Solar Industries, is India's first indigenous suicide drone, designed for high-precision strikes with GPS-enabled targeting and an accuracy within 2 metres. These systems were not only tested but also used successfully in live combat, forcing adversaries to reconsider their positions.

The SkyStriker, produced in collaboration with Israeli partners, also saw combat deployment, highlighting the effectiveness of India's growing drone warfare capabilities.

Directed energy weapons (laser systems)

India has advanced in directed energy weapons, with the Defence Research and Development Organisation or DRDO successfully testing a 30-kilowatt Laser Directed Energy Weapon (DEW) system. This system, developed by the Centre for High Energy Systems and Sciences (CHESS), is capable of neutralizing drones, missiles, and aircraft by inflicting structural damage with high-precision laser beams. These systems have been tested in field conditions and have demonstrated their ability to destroy enemy drones and sensors in real time.

Missile defence system- Akash Teer

Akash Teer refers to the advanced deployment and operational doctrine of the Akash missile system, a cornerstone of India's indigenous air and missile defence capabilities. Developed by the DRDO, Akash is a medium-range, mobile surface-to-air missile (SAM) system designed to provide comprehensive protection against a spectrum of aerial threats, including aircraft, drones, cruise missiles, and air-to-surface missiles.

Key features and capabilities

- **Range and altitude:** The Akash system can engage targets at ranges from 4.5km up to 25–30km, with advanced variants like Akash-NG extending the range to 70–80km. It can neutralize threats flying at altitudes from as low as 100 metres to as high as 18–20km.
- **Multi-target engagement:** Each Akash battery, equipped with the Rajendra 3D PESA radar, can simultaneously track up to 64 targets and engage up to 12, firing 12 missiles at once.
- **Mobility:** The system is fully mobile, mounted on both tracked and wheeled vehicles, allowing rapid deployment and repositioning to protect static or moving assets.
- **Guidance and automation:** Akash uses command guidance with phased array radar for mid-course updates and an active radar seeker in advanced variants (like Akash Prime) for terminal homing. The system is highly automated, enabling real-time threat evaluation and engagement.
- **Warhead:** The missile carries a 60kg high-explosive, pre-fragmented warhead with a proximity fuse for maximum lethality.
- **Kill probability:** The system boasts a single-shot kill probability of 88%, which increases to over 98% when two missiles are fired in salvo.
- **Electronic counter-counter measures (ECCM):** Designed to operate effectively in contested electronic warfare environments, Akash can withstand jamming and other countermeasures.

Operational performance

Akash has been battle-tested under real combat conditions. During Operation Sindoor in May 2025, the Akash system played a pivotal role in neutralizing multiple waves of drones and missiles launched by Pakistan along the western border and the Line of Control (LoC) in Jammu and Kashmir. The Indian Army and Air Force have strategically deployed Akash batteries along the entire Pakistan border, where they have repeatedly thwarted aerial incursions and drone attacks. Akash Teer represents India's robust, indigenous solution for layered air and missile defence, proven in combat and adaptable for diverse operational requirements. Its continuous evolution, high mobility, and multi-target engagement

capabilities make it a critical asset for India's national security and a competitive offering in the global defence market.

Hypersonic technologies

India has achieved a milestone with the successful ground test of an active-cooled scramjet combustor, a critical component for hypersonic missiles. These missiles, capable of exceeding Mach 5, are designed to evade air defence systems and deliver high-impact strikes. The scramjet test marks India's entry into the elite group of nations developing hypersonic weapons, with future deployment expected to further enhance combat capabilities.

India has multiple homegrown companies who have developed these technologies for Indian armed forces ➤

A mix of public sector giants, private corporations, and innovative startups have driven India's advancement in indigenous defence technology. Here are the principal companies responsible for developing the major technologies mentioned:

Akash missile defence system

1. **Bharat Electronics (BEL):** The company is a primary integrator and developer of the Akash Air Defence Missile System, responsible for the system's radar, command, and control components. BEL's expertise lies in advanced electronics, multi-sensor data processing, and threat evaluation systems that allow the Akash system to track and engage multiple targets simultaneously.
2. **Bharat Dynamics (BDL):** The company manufactures the Akash Weapon System (AWS), including the missile itself and launch platforms. BDL's version is designed for both autonomous and group operations, with features like electronic counter-counter measures (ECCM) and full mobility.

Loitering munitions, drones, and advanced ammunition

Solar Industries India: It is the only private Indian company licensed to manufacture warheads. The company has developed loitering munitions (such as Nagastra-1), advanced explosives, and anti-drone systems like Bhargavastra CUAS. It also produces artillery shells (e.g., 155mm) and has secured major contracts for rocket systems like Pinaka.

Directed energy weapons (laser systems)

Defence Research and Development Organisation (DRDO): This organisation leads the development of high-power laser weapon systems and directed energy weapons. It often collaborates with industry partners for critical subsystems, such as integrated beam control systems for precise targeting.

Defence tech startups and private sector innovators

1. **Asteria Aerospace:** Specializes in drones and unmanned aerial systems for surveillance and security.
2. **CRON Systems:** Focuses on IoT-based border security, laser walls, and automation for drones and rovers.
3. **Zeus Numerix:** Provides simulation, modeling, and payload design for UAVs and swarm drones.
4. **Optimized Electrotech:** Develops advanced electro-optics and video surveillance systems for defence and aerospace sectors.
5. **Tata Advanced Systems (TASL):** Engaged in aerospace, defence electronics, and high-tech defence solutions, often in collaboration with global partners.

Figure 1: List of companies involved in new-age technology domains that were utilized during Operation Sindoor

| Technology/Domain | Key Companies/Organizations |
|-------------------------------|---|
| Akash Missile System | Bharat Electronics (BEL), Bharat Dynamics (BDL) |
| Loitering Munitions/Warheads | Solar Industries India |
| Laser/Directed Energy Weapons | DRDO (with industry partners) |
| Drones/UAVs | Asteria Aerospace, Zeus Numerix, CRON Systems |
| Surveillance/Electro-optics | Optimized Electrotech |
| Aerospace/Integrated Defence | Tata Advanced Systems (TASL) |

SOURCE: COMPANY REPORTS, INCRED RESEARCH

These companies, along with DRDO, form the backbone of India's indigenous defence technology sector, ensuring the country's growing self-reliance and global competitiveness in military innovation.

India has made significant progress in AI and software technologies, but there remains a critical need to build expertise in hardware ➤

1. India has established itself as a global powerhouse in software development and artificial intelligence (AI), with over 5m software developers and more than 6,50,000 AI professionals driving innovation across sectors like healthcare, agriculture, and fintech. The country's strengths lie in its vast talent pool, cost-effective solutions, and a thriving startup ecosystem, enabling rapid digital transformation and global competitiveness in software and AI applications.
2. However, India faces a significant gap in hardware expertise. While the nation excels in AI software and services, it lags in areas critical to hardware innovation, such as semiconductor design, advanced chip fabrication, and industry-ready hardware engineering. Key challenges include:
 - Limited deep-rooted hardware knowledge and practical experience.
 - Insufficient advanced fabrication infrastructure in academia and industry.
 - A shortage of skilled chip designers and hardware engineers.
 - This gap is especially pressing as AI advancements increasingly depend on specialized hardware-such as graphics processing units or GPUs, neural processing units or NPUs, and custom accelerators-to deliver high performance and efficiency. Countries like Taiwan and China have mature ecosystems for chip design and manufacturing, giving them a competitive edge in the global technology landscape.

However, that is now changing, as the government is offering substantial incentives to develop the necessary infrastructure ➤

India's chip development policy is anchored by the India Semiconductor Mission (ISM), a comprehensive government initiative launched to transform the country into a global hub for semiconductor design, manufacturing, and technology development.

Key elements of India's chip policy:

Massive financial incentives: The government has allocated Rs760bn (approximately US\$10bn) to support the semiconductor and display manufacturing ecosystem. This includes fiscal support of up to 50% of project cost for approved applicants setting up semiconductor fabrication plants (fabs).

Semicon India Programme: Under this umbrella, four major schemes have been introduced:

1. Support for setting up semiconductor fabs.
2. Support for display fabs.
3. Support for compound semiconductors, silicon photonics, sensors fabs, assembly, testing, marking, and packaging (ATMP/OSAT) facilities.
4. A Design-Linked Incentive (DLI) Scheme to encourage chip design and innovation.

Ecosystem development: The policy is not limited to manufacturing; it also focuses on creating a robust ecosystem that includes R&D, chip design, testing, packaging, and supply chain security. The aim is to foster indigenous intellectual property (IP) and incentivize technology transfer (ToT).

International collaboration: India is actively seeking partnerships with global semiconductor leaders and inviting foreign companies to set up manufacturing and design centres in the country. Strategic global partnerships are being pursued to integrate India into critical global supply chains.

Administrative structure: The ISM operates as an independent business division within the Digital India Corporation, with administrative and financial autonomy, and is guided by an advisory board of global semiconductor experts.

Strategic goals: Reduce the reliance on imported semiconductors and boost local manufacturing. Build a resilient and sustainable supply chain for electronics and semiconductors. Position India as a global leader in the semiconductor industry by 2047F, in line with the 'Viksit Bharat@2047' vision.

Recent progress:

1. Multiple semiconductor units have been approved under the ISM, including new fabs and design centres in states like Gujarat and Maharashtra.
2. The policy also supports modernization of existing facilities, such as the Semi-Conductor Laboratory in Mohali.

Multiple Indian companies are investing in semiconductor chip manufacturing ➤

Multiple Indian companies are making significant investments in semiconductor chip manufacturing, both in fabrication (fabs) and outsourced assembly and testing (OSAT) facilities. The key players and their initiatives include:

1. **Tata Electronics:** Tata Electronics, in partnership with Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC), is building a major semiconductor fabrication plant in Dholera, Gujarat, with an investment of over Rs910bn (US\$11bn). The plant will have a capacity of 50,000 wafers per month and will serve sectors such as automotive, computing, communications, and artificial intelligence. Tata Electronics is also setting up a large assembly and testing facility (TSAT) in Jagiroad, Assam, with an investment of Rs270bn. The company is planning further expansion, with two additional fabs in the coming year.
2. **Kaynes Semicon:** Kaynes Semicon is establishing a semiconductor unit in Sanand, Gujarat, with an investment of Rs33.07bn. The facility will have the capacity to produce 6m chips per day for applications across automotive, electric vehicles or EVs, consumer electronics, telecom, and mobile phones. This is the fifth semiconductor unit approved under the India Semiconductor Mission.
3. **Vedanta:** The company remains committed to its semiconductor fab project after Foxconn exited its joint venture. Vedanta has lined up new partners and secured a licence for 40nm production-grade technology from a leading integrated device manufacturer (IDM). The company aims to set up India's first foundry and continues to expand its semiconductor team.
4. **HCL Technologies:** The company has entered into a joint venture with Foxconn to establish an OSAT (Outsourced Semiconductor Assembly and Test) facility in India, with Foxconn holding a 40% stake. This move is expected to enhance India's capabilities in chip packaging and testing, moving HCL Technologies higher up the semiconductor value chain.
5. **Micron Technology:** The US-based company has received approval for a packaging unit in Gujarat, further strengthening India's role in the global semiconductor supply chain.
6. **Foxconn:** The company has expressed interest in setting up multiple semiconductor fabrication lines in India and is pursuing various partnerships, although it recently ended its joint venture or JV with Vedanta.

7. **Semiconductor Laboratory (SCL), Mohali:** The government is modernizing this state-owned facility, with bids from Tata Group, Tower Semiconductor, and Texas Instruments, to upgrade its capabilities for strategic and defence applications.

These investments are supported by the India Semiconductor Mission (ISM), which provides substantial fiscal incentives and is driving the creation of new semiconductor hubs across the country. The combined efforts of these companies are positioning India as a growing force in the global semiconductor industry.

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- Reduce** The stock's total return is expected to fall below 0% or more over the next 12 months.

The total expected return of a stock is defined as the sum of the: (i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.

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- Overweight** An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.
- Neutral** A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.
- Underweight** An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation.

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