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Towards a Techno-Diplomatic Future | India and the US as Strategic Partners

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Introduction

During the Cold War, the bilateral relationship between India and the United States was dominated by antipathy and distrust. In Nehruvian fashion, Indian policymakers remained deeply suspicious of what they perceived as Washington's neo-imperialist endeavors in Asia. Washington's close strategic relationship with Pakistan was another key policy issue. The US, in turn, was concerned about India's ties with the Soviet Union, which had emerged as India's most pivotal supplier of arms, and India's ambitions of developing nuclear weapons. The end of the Cold War initially did relatively little to meaningfully alleviate mutual suspicions, with India criticizing US hegemony and pronouncing ambitions to become a major player in a more multipolar international order (Tharoor, 2023). Further, the 1998 nuclear explosions of India and Pakistan raised nuclear tensions in South Asia and led to the US briefly cutting military and economic aid to both sides. Throughout the 20th century, India and the US were not positioned against one another but found themselves aligned on very few policy positions.

The tone surrounding the bilateral relationship has changed dramatically over the course of the 21st century. Defense and security cooperation between both countries has expanded significantly, including in the framework of the Quadrilateral Security Dialogue (Quad) that also involves Australia and Japan. The security relationship deepened significantly during the Trump administration, which promoted India as a key strategic partner for the US in Asia as part of the vision of a *'Free and Open Indo-Pacific'* (FOIP) (Ford, 2020). During his recent visit to the US, Indian Prime Minister Narendra Modi (2023) too suggested that *"When I speak about India's approach to the world, the United States occupies a special place [...] the United States has become one of our most important defence partners"* (Modi, 2023). This sentiment was echoed by President Biden (2023), who outlined that the India-US relationship *"will be one of the defining relationships of the 21st century"*. These assertions mark a far cry from the tension that had defined India-US relations previously.

Both in the bilateral relationship and the framework of the Quad, the rise of China has been a key factor in driving closer collaboration on a variety of policy issues. China has grown increasingly assertive in its conduct in territorial disputes, including on the Indian-Sino border, around major sea lines of communication (SLOCs) in the South China Sea, and in territorial disputes with Japan in the East China Sea (Crisis Group, 2021; Strating, 2021). Beijing has also ramped up its military presence in the Taiwan Strait while employing a series of gray zone tactics that have aimed at increasing the pressure on the Taiwanese government and asserting China's claim over the island (Tsui, 2022). Further, China's de facto abolition of partial self-rule in Hong Kong has raised further questions regarding China's long-term plans for Taiwan (Maizland, 2023). China's rapid technological advancements and aspirations to operate as the global leader in emerging technologies have also raised cybersecurity concerns, prompting the Quad countries to strengthen cooperation on cyber policy via the formulation of the Working Group on Critical and Emerging Technologies (Long & Chahal, 2022). The usage of cyber espionage, intellectual property theft, and the development of advanced surveillance systems by Chinese State-owned

enterprises have increased the urgency to protect critical infrastructure, intellectual property rights (IPR), and data privacy (Bhattacharjee, 2023). Taken together, these challenges have intensified perceptions of China as a source of strategic instability and threat in the region. Notably, concerns about China's technological capacities have emerged as a key facet of what is viewed as a multi-domain challenge.

As many of the concerns regarding China have centered on technology capacities, technology has emerged as a key sector of cooperation for India and the US. This continues a broader trend of technology cooperation between both countries that has resulted in the US emerging as an increasingly important defense supplier to the Indian armed forces. During his visit to the US, Modi (2023) highlighted that *"India and the US are working together, in space and in the seas, in science and in semiconductors, in start-ups and sustainability, in tech and in trade, in farming and finance, in art and artificial intelligence, in energy and education, in healthcare and humanitarian efforts"*. For India, this marks a significant recalibration of an arms diplomacy approach that has historically favored Soviet and Russian legacy equipment. Technology cooperation and associated arms and technology transfers have consequently emerged as one of the most central components of the contemporary relations between New Delhi and Washington.

This paper discusses the history and contemporary developments of bilateral technology cooperation and especially focuses on the emergence of frameworks allowing for the transfer of technologies and defense systems from India to the US. The paper initially outlines the historical trajectory from the 1960s to the late 1990s before discussing the frameworks shaping contemporary transfer models. Before concluding, the paper discusses some remaining challenges and makes some key policy recommendations.

History of India-US technology cooperation

Technology cooperation between India and the US has frequently been a highly contentious topic. Now looking back on more than 70 years of collaboration, the frameworks and drivers of technology cooperation have been shaped by various geopolitical factors and shifts, American suspicions regarding Indian ambitions to pursue nuclear weapons, and a hesitancy to share critical US-developed technologies with India. Until the late 1990s, bilateral technology cooperation can be broadly divided into three phases: (1) takeoff and nuclear limitations during the 1960s, (2) thawing relations and limited cooperation during the 1980s and 1990s, and (3) the Kargil conflict as a catalyst for closer defense cooperation.

- *The 1960s: Takeoff and nuclear limits*

The launch of India-US technology cooperation in the 1960s primarily revolved around space exploration and nuclear technology. As the Soviet Union and the United States sought to outperform one another in the space race, a host of other countries, including India, also aspired to make advancements in space technology. In 1962, the Indian National Committee for Space Research (INCOSPAR) was established under the leadership of Dr. Vikram Sarabhai with the mission to develop indigenous space capabilities, including by collaborating with other countries to gain access to advanced technology (Indian Space Research Organisation, 2023). That year, India and the US signed a bilateral space

technology agreement that allowed for the transfer of American space technology and expertise to India (Lee, 2004). Under this agreement, NASA (National Aeronautics and Space Administration) provided technical assistance and training to India's space program, aiding in the establishment of the Thumba Equatorial Rocket Launching Station (TERLS) in the southern Indian state of Kerala. The agreement enabled India to access valuable technical knowledge and resources that were crucial for the nascent Indian space program. Further, the US support for Indian space exploration laid the foundation for future collaborations in various sectors beyond space technology while leading to subsequent agreements and collaborations, fostering a closer relationship in space exploration, satellite launches, and Earth observation missions.

The 1960s were also marked by India's growing exploration of nuclear energy as an avenue to address its demographic growth and surging energy consumption. The US supported the exploration of nuclear technology in India as part of its "*Atoms for Peace*" initiative, under which Washington provided reactors, nuclear fuel, and scientific training for civilian nuclear programs in developing countries (Rowberry, 2013). Through this initiative, the two countries signed a civil nuclear energy agreement in 1963 that paved the way for American assistance in building India's first nuclear research reactor, CIRUS (Canadian-Indian Reactor, United States) (McGoldrick et al., 2005). The CIRUS came to play a crucial role in India's nuclear research efforts. Besides space technology, nuclear energy technology consequently emerged as the second pillar underpinning India-US technology cooperation.

The introduction of the nuclear Non-Proliferation Treaty (NPT), however, complicated research into nuclear technologies by reinforcing the division between civilian and military uses of nuclear programs. The NPT was opened for signature on July 1, 1968, and entered into force in 1970, recognizing five countries (the United States, the Soviet Union, China, France, and the United Kingdom) as nuclear-weapon States (NWS). The NPT was aimed at preventing the spread of nuclear weapons and promoting the peaceful use of nuclear energy by limiting the acquisition of nuclear weapons by non-NWS, calling on NWS to pursue nuclear disarmament efforts in good faith, and asserting the right of non-NWS to access nuclear technology and materials for peaceful applications under the guidelines set by the International Atomic Energy Agency (IAEA) (The Nuclear Threat Initiative, n.d.). Avoiding the further proliferation of nuclear weapons by non-NWS became a key cornerstone of US policy on nuclear arms.

India refused to ratify the NPT based on a series of considerations. Indian policymakers viewed the NPT as an inherently discriminatory treaty that created an unequal division of nuclear haves and have-nots, effectively empowering NWS while lowering the strategic scope for non-NWS (Kumar, 2020). An ambition to ensure strategic autonomy by not aligning with any nuclear bloc also played a role: signing the NPT would have required India to forgo its independent nuclear capabilities. Further, Pakistan also did not ratify the NPT, heightening Indian threat perceptions of a potential nuclear option in a future India-Pakistan war. For India, signing the NPT and foregoing the possibility of a nuclear arms program would thus have signaled a voluntary decrease in its deterrence capacities.

India's refusal to ratify the NPT had significant implications for the nuclear technology support it received from the United States and other countries. Its status as a non-NPT signatory affected India's access to civilian nuclear technology, nuclear trade, and cooperation agreements. In response to India's nuclear tests in 1974, the United States imposed a series of sanctions and technology embargoes on India that restricted the transfer of nuclear-related technology and equipment, including on dual-use technologies that could

be used for both civilian and military purposes (Gopalakrishnan, 2002). As a non-NPT signatory, India was also not eligible to participate in the Nuclear Suppliers Group (NSG), an international export control regime that governs nuclear trade and technology transfers, further limiting India's access to the global market for nuclear technology and materials (Stewart & Sultan, 2019). In 1978, the Carter government also passed the Nuclear Non-Proliferation Act (NNPA), which mandated that American governments could not export any nuclear supplies to countries that did not comply with IAEA regulations on their nuclear activities (Gopalakrishnan, 2002). The sanctions imposed in reaction to 1974 and following the passing of the NNPA protracted negotiations for civilian nuclear cooperation agreements and restricted India's access to international nuclear markets, thus pushing India further down a path-dependent trajectory of focusing on the development of indigenous nuclear capacities.

- *1980s-1990s: Thaw in relations*

The 1980s and 1990s saw a slow but gradual improvement in India-US relations. While nuclear armament remained a hot topic in the bilateral relationship and was reaffirmed as such following India's nuclear explosions in 1998, especially the 1990s led to closer technology collaboration between the US private sector and an Indian economy that was slowly liberalizing.

Cooperation on space technology, emerging information technology (IT), biotechnology, and health sciences emerged as key sectors of bilateral tech engagement. In 1983, India launched its first indigenously developed satellite, Aryabhata. The launch was performed with some assistance from the US, highlighting the continuing endurance of space technology as a key area for cooperation. As India began removing some of its export controls and opened up to foreign investment in the early 1990s (Mehra, 2021), the rapid expansion of the IT sector in the US simultaneously created growth opportunities for American businesses in India as US firms began to outsource their commercial operations (Forbes, 2007). India-bound outsourcing processes not only provided cost-effective solutions for US companies but also contributed to India's economic growth and technology capabilities as investments into the service sector ramped up. Biotechnology emerged as another field for India-US collaboration as India's growing biotech industry attracted attention from American pharmaceutical and biotechnology firms seeking opportunities for research and development (R&D) partnerships in Asia (Greene, 2007). Increased collaboration on IT and biotechnologies highlighted the scope for growth in technology sectors other than nuclear power.

The mid-1980s were also marked by a careful improvement in bilateral defense cooperation. Following a visit of Indian Prime Minister Rajiv Gandhi to the US, the 1984 India-US Memorandum of Understanding (MoU) on the transfer of technology allowed for the growing export of civilian and dual-use technologies from the US to India in accordance with American export control regulations (Sharma, 2008). While nuclear power was not a focal point part of the MoU and export controls continued restricting technology transfers, the 1984 MoU provided a baseline for subsequent agreements and set the stage for the deepening of India-US defense ties in the 21st century.

India's nuclear weapons program, however, remained the main hurdle to closer bilateral ties. In May 1998, India conducted a series of nuclear explosions commonly known as the Pokhran-II tests. The successful execution of these tests made India a de facto nuclear

power that operated in overt violation of the NPT. Less than two weeks later, Pakistan also detonated a series of nuclear bombs, replacing its strategy of nuclear ambiguity with one that was aimed at maintaining a “credible minimum deterrent” vis-à-vis India (The Nuclear Threat Initiative, 2019). The India-Pakistan conflict, which had been brewing ever since both countries had gained independence in 1947, now had obtained a nuclear dimension. In response to the Indian and Pakistani nuclear explosions, the US momentarily cut off aid to Islamabad and New Delhi in accordance with the Glenn Amendment, which the US Congress had passed in 1994 as part of the Arms Export Control Act. Under the Glenn Amendment, any US government was prohibited from delivering any economic and military assistance to any non-NWS that carries out a nuclear explosion (Wagner, 2001). The sanctions imposed on India and Pakistan included the suspension of economic and military assistance, restrictions on high-technology trade, and the withdrawal of loans from international financial institutions such as the IMF. An attack by Pakistan in the disputed region of Jammu and Kashmir (J&K) in 1999, however, once again changed the strategic equation.

- *The Kargil conflict and beyond*

The Kargil conflict, fought between India and Pakistan between May and July 1999, had a profound impact on the relationship between Islamabad and Washington and boosted India’s defense and technological relationship with the United States in the long run. In early May 1999, Pakistani troops entered the Kargil district on the Indian-administered side of Jammu & Kashmir (J&K), which has been disputed between India and Pakistan since the partition of British India in 1947. The conflict ended in late July with the complete withdrawal of Pakistani regular and irregular forces from Indian-administered territory, restoring the territorial status quo ante bellum. Despite the Indian victory, the crisis showcased the importance of strong defense capabilities and strategic partnerships for India and acted as a catalyst for closer defense relations with the United States. In the aftermath of the conflict, India sought to modernize its armed forces and enhance its defense capabilities, for which the US emerged as a key partner.

Pakistan’s war with India had immediate implications for its relations with the US, contributing to a deterioration in the Pakistan-US partnership. Through much of the Cold War, Pakistan had been a key ally for the United States as a balancing element against both Indian and Soviet power in South Asia. Following the Soviet invasion of Afghanistan in 1979, Pakistan further emerged as a key part of the US support for anti-Soviet fighters in Afghanistan, some of which would later become the Taliban. Pakistan-US relations, then, had generally been on the up throughout the 1980s. However, Pakistan’s nuclear tests in 1998 had already contributed to a decrease in support by the US in line with the Glenn Amendment (Wagner, 2001). Now, the US supported India’s rather than Pakistan’s diplomatic position during the conflict. As the war unfolded, the US called on Pakistan to immediately withdraw its troops from the Indian side of the Line of Control (LOC), the de facto border between India and Pakistan in J&K. The US emphasized the importance of resolving the dispute peacefully and harshly criticized the Nawaz Sharif administration, which had not previously informed Washington about its plans of invading Indian-administered J&K (Riedel, 2019). While urging restraint and a peaceful resolution, the US diplomatically sided with New Delhi, marking a significant shift in the US’ diplomatic position. At a time when Pakistan’s nuclear program had already heightened tensions, Pakistani aggression in the region and the potential prospect of nuclear war in South Asia contributed to a growing strategic

estrangement of the US from Pakistan. The Kargil conflict now led to a growing focus on India rather than Pakistan as the key security partner for Washington in South Asia.

In its relations with India, US policy during the Kargil conflict positively contributed to the slow development of an increasingly convergent strategic outlook between New Delhi and Washington. India's avoidance of nuclear escalation was perceived positively by the US and other global actors and contributed to a lifting of some of the sanctions on defense technology transfer and trade with India by the US in subsequent years. At the same time, the war highlighted India's need for modern military equipment and technology to strengthen its defense capabilities. On the back of a lifting of sanctions and an easing of export control regulations in the US in the following years, this allowed US defense contractors such as Boeing and Lockheed Martin to gain access to a growing and previously inaccessible defense market. The Kargil conflict ultimately played a pivotal role in transforming India-US relations by contributing to the lifting of selected sanctions and a simultaneous deterioration in Washington's support for Pakistan. The crisis acted as a catalyst in forging a stronger strategic partnership, leading to defense technology transfers, joint military exercises, and collaborative research initiatives.

The 21st century

The signing of a series of bilateral agreements with India over the past two decades has contributed to a significant increase in American technology exports to India, especially in the realm of defense technology. For India, this has resulted in the diversification of defense partners and a somewhat decreasing reliance on Soviet and Russian legacy equipment (although most of the equipment used by the Indian armed forces remains Soviet/Russian equipment) (Banerjee & Tkach, 2022). American export control regulations, designed to safeguard sensitive technologies developed in the United States and prevent their misuse or proliferation to unauthorized entities, have been a bureaucratic stumbling block in the transfer of technologies that reflects the legacy of disputes surrounding India's nuclear proliferation program. Today, (defense) technology transfers have come to reflect and reinforce the growing proximity of the India-US partnership. After briefly sketching out the significance of export controls, this part of the paper discusses how India and the US have sought to navigate the complexities of US export regulations and policies through a variety of agreements bilateral diplomatic frameworks.

- *Export control regimes*

US export control regimes are aimed at safeguarding US-developed technologies against the potentially malignant use of these technologies by State and non-State actors. The US export control regimes are primarily governed by the Export Administration Regulations (EAR) and the International Traffic in Arms Regulations (ITAR), which are linked to the US Department of Commerce and the US Department of State respectively (Reynolds, n.d.). While the ITAR regulates the sale, distribution, and manufacturing of defense articles and services, the EAR regulates dual-use items that are not covered by the ITAR, including some defense-related assets. Dual-use technologies can be broadly categorized as technologies that possess both civilian and military applications. These technologies have emerged as a major policy focus of US industrial policymaking as the US seeks to prevent the export of

US-developed dual-use technologies to China in particular (Lis et al., 2022). More generally, export control regulations, such as those under the Wassenaar Arrangement and the Missile Technology Control Regime (MTCR), aim to control the transfer of dual-use technologies to prevent their misuse in developing weapons of mass destruction (Bauer et al., 2010). As a result, specific advanced technologies in areas such as aerospace, advanced materials and minerals, and electronics have faced export restrictions, limiting their transfer to other countries for both civilian and military purposes. End-user restrictions, IPR concerns, and complex licensing processes provide further stumbling blocks in the export of cutting-edge technologies from the US. End-user restrictions imply the provision of assurances that the technology will be used for legitimate purposes and not diverted to unauthorized entities or countries. Taken together, these measures form a broader part of a complex legal regime aimed at preventing the trade of key technologies to States and political actors the US does not support.

Through export control regulations, the US has sought to leverage its dominance in cutting-edge defense technologies and deny adversary States access to these technologies. The countries targeted by US export control regimes are mainly divided into three categories. The first group includes countries subject to comprehensive US embargoes that prohibit almost all exports, re-exports, and transfers of US-origin goods, technology, or services to these countries (Elmerraji et al., 2023). These countries include long-standing geopolitical adversaries such as Cuba, Iran, North Korea, and Syria. The second group of countries is subject to certain restrictions due to their membership in the MTCR, which aims to limit the proliferation of missile technology capable of carrying WMDs and is part of the broader non-proliferation security architecture. MTCR countries thus include countries such as China, Russia, India, and Pakistan, restricting the export of certain missile-linked technologies to countries that could use these technologies to further their own nuclear weapons program. The third group includes countries subject to US arms embargoes, such as Myanmar. ITAR here aims to preclude the use of US-developed defense assets in poorly regulated and often highly volatile conflict environments.

Alliance status and a close strategic partnership with Washington generally has a positive effect of third States' access to US-developed arms technology. Countries that are members of the North Atlantic Treaty Organization (NATO) and other key allied countries receive preferential treatment when it comes to US defense exports, in the process producing a major market for US defense contractors. There are also specific exemptions for countries designated as Major Non-NATO Allies (MNNA), a status that provides benefits in terms of defense cooperation and technology transfers. MNNA countries include Israel, Australia, Japan, South Korea, and also Pakistan (United States State Department, 2021). For Pakistan, this has enabled access to more advanced US military technologies, such as the F-16 fighter jet (Congressional Research Service, 2015). For these countries, alliances and deeper military partnerships with the US provide access to cutting-edge military technologies.

In sum, US export control regimes leverage the US' advantages in the development of cutting-edge, high-end military technologies. The US has capitalized on its market advantages by restricting access to these technologies for countries perceived as adversaries. Conversely, alignment or extensive collaboration with the US yields advantages in accessing US defense technologies. As India and the US have reduced their strategic distance, the transfer of defense technologies has emerged as a key focal point of the relationship.

- *Technology transfer frameworks and agreements*

A milestone and foundational agreement for India-US technology collaboration has been the 2008 India-US Civil-Nuclear Agreement (IUCNA), which effectively reversed key components of the American nuclear policy approach toward India and significantly removed the red tape on technology transfers. Also known as the 123 Agreement, the IUCNA was a major step in strengthening the diplomatic and strategic relationship between India and the United States. As discussed, bilateral ties had long been strained by India's pursuit of developing nuclear strike capabilities and the associated tests of atomic weapons in 1974 and 1998, which led to the repeated imposition of sanctions and the reduction of economic and military aid. Under the IUCNA, the United States agreed to provide India access to nuclear fuel, technology, and equipment for its civilian nuclear energy program while India committed to separating its civilian and military nuclear facilities and placing its civilian nuclear reactors under IAEA safeguards (Bajoria & Pan, 2010). Washington's signature of the IUCNA effectively provided an exemption to India from the usual non-proliferation requirements imposed on countries with nuclear weapons, allowing for civilian nuclear trade and cooperation between India and the US. This exemption was granted through a special waiver from the NSG, which allowed India to engage in nuclear commerce with other countries (Suri, 2023). However, the agreement did not grant India the same privileges as NPT signatory countries and focused solely on civilian nuclear cooperation, thus not implying a formal acceptance of India as a nuclear weapon State by the international community. It also raised concerns about the potential for diversion of civilian nuclear technology to military use and faced criticism, both internationally and in India and in the US, for the weakening of global non-proliferation efforts in Washington's pursuit of closer ties with India (Bajoria & Pan, 2010). On a bilateral basis, however, the IUCNA signaled a significant recalibration in how the US perceived India and approached India politically.

While focused on nuclear energy, the IUCNA also had broader ramifications for the strategic partnership by enhancing India's access to US technologies and knowledge. The agreement encouraged joint R&D initiatives between India and the US in the nuclear energy sector, facilitating the exchange of scientific knowledge, expertise, and best practices. Additionally, the agreement allowed for the training of Indian scientists, engineers, and technicians in the US, providing them with exposure to advanced nuclear technologies and operational practices. This capacity-building aspect was crucial in developing a skilled workforce capable of handling modern nuclear technology and equipment. Such collaborations and technology transfers in the nuclear sector can lead to spin-offs and indirect technology transfers in other fields. For instance, advancements in nuclear research and development can have applications in areas such as medical technology, materials science, and environmental monitoring. These secondary technology transfers have consequently contributed indirectly to the expansion of various technological sub-fields in India.

The IUCNA also boosted bilateral strategic engagement beyond technology cooperation. The agreement created a conducive environment for the signing of several defense agreements and joint initiatives between India and the US. These agreements covered various policy domains, including defense cooperation, military exercises, intelligence sharing, and defense research and development. Since the signing of the IUCNA, regular high-level defense dialogues and military exchanges became more frequent, enhancing coordination and interoperability between the armed forces of both countries (Pant & Mishra, 2023). By enabling an expansion in technology transfers through an easing of export control regimes, the agreement paved the way for an increase in the US' arms exports to India (see Figure 1).

The signing of the IUCNA signaled Washington's growing strategic focus on India rather than Pakistan as an emerging security partner for the US in South Asia.

The IUCNA provided a key impetus for expanding defense trade and technology transfers between India and the US by facilitating the removal of (some) sanctions and restrictions on the transfer of advanced defense technologies to India. As a result, India was able to access a wide range of US defense equipment, such as aircraft, helicopters, naval vessels, and communication systems. Since the signing of the IUCNA in 2008, India has acquired a series of military technologies and assets from US-based defense contractors (see Figure 1).

Figure 1: Arms transfers from the US to India following the signing of the IUCNASource: Congressional Research Service (2023).

Name of asset	Type of asset	Capabilities
C-17 Globemaster III	Airlifter	An agreement with the US for the purchase of ten Boeing C-17 Globemaster III aircraft was signed in June 2011. The C-17 has a high payload capacity and long-range capabilities. It allows India to transport troops, heavy equipment, humanitarian aid, and disaster relief supplies across long distances and difficult terrains. The aircraft enhances rapid deployment and mobility capacities in both regional and global operations. Deliveries of the C-17 commenced later in 2011 and continued until 2014.
Lockheed Martin C-130J Super Hercules	Airlifter	The C-130J provides India, which began purchasing the C-130Js in 2008, with a versatile and highly maneuverable tactical airlift capability. It can operate in austere environments and land on short runways, enabling India to deploy forces and carry out special operations in remote or challenging areas (such as the Himalayas). The aircraft enhances India's strategic reach and response capabilities, especially in geographically remote areas.
P-8 Poseidon	Maritime patrol aircraft	India signed a contract with Boeing for eight P-8I Poseidon maritime patrol aircraft in 2009. Deliveries began in 2013. The P-8I is a maritime patrol aircraft equipped with advanced sensors, radar, and surveillance systems. It significantly enhances India's maritime domain awareness, anti-submarine warfare capabilities, and coastal security in the Indian Ocean region.
Harpoon Missiles	Anti-ship missiles	Acquired from Boeing as part of a larger arms deal in 2010. The Harpoon missiles provide India's naval forces with potent anti-ship capabilities. They can be launched from various platforms, including surface ships, submarines, and aircraft, enabling India to deter and counter potential threats in the Indian Ocean region.

These acquisitions were enabled by the regulatory changes brought about by the IUCNA, indicating the key relevance of the agreement for removing red tape on the export of advanced defense technologies to India.

The US-India Defense Trade and Technology Initiative (DTTI) is another key policy framework for the transfer of US-developed defense technologies to India. Launched in 2012 as a means to deepen defense ties and facilitate the co-development and co-production of defense equipment, the DTTI has multiple key objectives. Firstly, it aims toward identifying and prioritizing jointly developed projects for Indian and American manufacturers (Aryan, 2020). As part of this, the DTTI seeks to foster in the joint R&D of defense technologies by pooling resources and expertise. The DTTI further aims to streamline the defense trade process between the US and India and includes efforts to address bureaucratic hurdles, harmonize export control regulations, and promote greater defense trade and technology transfer. This has led to a further expansion of the export of US-developed assets to India (see Figure 2). The DTTI has ultimately contributed to the deepening of the bilateral defense relationship by providing a framework for regular interactions between defense officials, fostering better communication and cooperation, and further facilitating arms transfers and defense technology exchanges. Additionally, India has gained enhanced access to cutting-edge defense technologies that it previously lacked access to due to the various sanctions and export controls imposed on Indian acquisitions from the US.

Figure 2: Arms transfers from the US to India following the signing of the DTTI

Name of asset	Type of asset	Capabilities
AH-64E Apache	Attack helicopter	India signed a deal with Boeing for 22 AH-64E Apache attack helicopters in 2015. Deliveries started in 2019. The AH-64E is equipped with advanced avionics, sensors, and precision weapons. It provides India with enhanced firepower, anti-armor capability, and close air support for its ground forces. The Apache helicopters bolster India's deterrence and strengthen its offensive capabilities.
CH-47 Chinook	Heavy-lift helicopters	India purchased 15 Boeing CH-47F Chinook heavy-lift helicopters in 2015, with deliveries commencing in 2019. The Chinook possesses strong vertical lifting capabilities, allowing India to transport heavy equipment, artillery, and troops to high-altitude regions and remote areas, such as the border regions with China and Pakistan. The Chinook enhances India's logistics and troop mobility in challenging terrains.

M777	Ultralight howitzers	The purchase from BAE Systems was completed in 2016 and deliveries were launched a year later. The M777 howitzers are lightweight and highly mobile artillery pieces with precision-guided munitions. They provide India with accurate and responsive firepower, enhancing its artillery capabilities and supporting its defensive and offensive operations in varied terrains.
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Source: Congressional Research Service (2023).

The DTTI's focus on streamlining defense trade processes is particularly important to discuss in more depth in the face of US export controls on arms exports. The agreement includes several mechanisms aimed at smoothening the process of exporting defense assets and technologies to India. It has, for instance, established dialogue and working groups between the defense establishments of both countries that meet regularly to discuss defense trade issues, identify challenges, and work on solutions to streamline the process. The DTTI further works toward harmonizing export control regulations between the US and India to remove red tape on exports and avoid delays. The initiative further aims to establish clear guidelines on the protection and sharing of sensitive defense technologies, which involves the setting up of mechanisms to safeguard IPR and prevent unauthorized access to critical technology. Lastly, the DTTI promotes close collaboration between the defense industries of both countries on a private sector level. By engaging the private sector, the initiative aims to leverage industry expertise, accelerate technology transfers, and facilitate the co-development and co-production of defense equipment. In sum, the DTTI has included several measures to reduce the bureaucratic hurdles surrounding export controls.

In 2018, the US granted India Strategic Trade Authorization (STA) Tier-1 status, which was crucial to enhance India's access to a range of advanced defense technologies from the US without the need for individual export licenses. This move signified an increased level of trust and cooperation in defense technology transfers as STA Tier-1 status is typically granted to countries that meet specific criteria related to export control and non-proliferation norms (Hughes Hubbard, 2018). By now falling under STA Tier-1 status, India has acquired acquisition rights akin to that of NATO countries and MNNA countries such as Argentina, Australia, Canada, Japan, and South Korea. The rights granted as part of this status allow defense contractors to export and re-export their assets to India while also allowing for the in-country transfer of these assets without specific licenses, a process that significantly reduces the bureaucratic delays associated with technology transfers. Crucially, the STA Tier-1 being granted undercuts the ban on dual-use technologies, which can positively impact India's defense capabilities and various high-tech sectors while strengthening India's position as an attractive destination for foreign investment and technology transfers. While STA Tier-1 status streamlines technology transfers, certain defense technologies and equipment may still require individual export licenses and approvals from the US government. The granting of the status nevertheless indicates the growing closeness of the relationship and marks a major step in further limiting the degree to which export controls impact sales to India.

In 2016 and 2018, New Delhi and Washington signed two additional agreements that formalized closer defense relations and had an indirect effect on arms and technology transfers. The 2016 Logistics Exchange Memorandum of Agreement (LEMOA) facilitates reciprocal access to military facilities and enables the sharing of logistics support, including fuel and spare parts (Rajagopalan, 2016). The LEMOA has been used to enhance the military-to-military contacts between both countries and eases the process of the US gaining

access to Indian military bases without regularizing these base visits. While the LEMOA itself is not a technology transfer agreement, its overall impact on the defense partnership between India and the US could open opportunities for India to further access advanced American defense technologies. Closer military ties can also create an environment for discussions on technology transfers or the co-development of defense systems. The Communications Compatibility and Security Agreement (COMCASA), signed in 2018, additionally allows for secure and encrypted communication between the defense forces of both countries, thus enhancing real-time data sharing and situational awareness during joint military operations (Banerjee, 2018). The COMCASA's provisions for secure communication systems may enable India to access advanced US defense technologies and systems that require compatible communication infrastructure. While not explicitly focused on defense technologies, LEMOA and COMCASA thus can have indirect effects on technology transfers.

The Industrial Security Annex (ISA), signed in 2019, has further broadened the scope of India-US defense-technology cooperation. The ISA, a part of the General Security of Military Information Agreement (GSOMIA) signed in late 2019, includes several key provisions. Firstly, the ISA enables the exchange of classified and sensitive defense-related information between India and the US by establishing mechanisms for secure communication, data protection, and safeguarding sensitive technologies (Peri, 2019). Building on the broader aims of the IUCNA and the DTTI, the ISA facilitates cooperative R&D initiatives in the defense sector between India and the US by pooling resources and expertise. Further, it addresses export control regulations and technology transfer issues, thus aiming to ensure compliance with US export laws and regulations related to the transfer of defense technologies to India.

The most recent high-scale initiative is the US-India Initiative on Critical and Emerging Technology (ICET), launched in early 2023. The ICET is aimed at boosting the cooperation on a wide range of critical and emerging technologies, including semiconductors, AI standards, the bioeconomy, and quantum research (Bhandari et al., 2023). The ICET has evolved on the back of a series of technology sanctions, especially in the development and manufacturing of semiconductors, that the US began imposing on China under the Trump administration. As semiconductor firms have sought to shift their operations out of China, India has aimed to position itself as a major destination for semiconductor manufacturing (Reed, 2023). However, a complex regulatory environment in India and broader infrastructural issues have thus far prevented a major recalibration of the sector toward India, with firms focusing on other locations in East and Southeast Asia. The recent pullout of Apple manufacturer Foxconn from constructing a plant in southern India has been a setback for India's manufacturing efforts, reflecting the continued role of structural issues in India's manufacturing ecosystem. Policies such as the ICET may be beneficial to boost India's market attractiveness in the long run.

The degree of technology cooperation between India and the US has significantly expanded over the past twenty years, epitomizing the growing strategic partnership between both countries. Since the signing of the IUCNA, India has purchased defense assets from the US worth 20 billion US\$, with the US now being one of the top three defense suppliers to India with a 10% share of all imports by value, still ranging behind Russia (62%) and France (11%) (Congressional Research Service, 2023). The pace and size of this shift has been remarkable considering the reluctance that characterized India-US technology relations throughout much of the Cold War. The expansion of defense ties with India has been accompanied by a simultaneous decrease in the American defense collaboration with

Pakistan, especially following the signing of the IUCNA. Between 2000 and 2009, the US sold assets with a cumulative value of 1.39 billion US\$ to India, compared to assets worth 4.68 billion US\$ that were sold to Pakistan (Newman & Yousif, 2023). Between 2010 and 2017, however, arms sales to Pakistan had dropped to 2.09 billion US\$ whereas sales to India had risen to 7.93 billion US\$. US defense contractors have thus gained a major new market in India, which has gained enhanced access to increasingly high-end military assets. Despite the progress made, some concerns persist.

Remaining issues and policy recommendations

While both countries have sought to deepen their collaboration in various sectors, there are still some remaining issues that shape their technology cooperation. These issues are crucial to address for strengthening the partnership and realizing its full potential.

Data localization regulations in India and privacy concerns in the United States have been significant points of contention in discussions on enhanced technology cooperation. India's data localization policies require certain types of data to be stored within the country, which can affect cross-border data flow and cloud services. This policy emphasis has expanded under the Modi administration and is aimed at enhancing government control over data management practices, a move that has evoked criticism in both India and the US (Bergen, 2022). As part of this, the Indian government has increased regulatory pressure on social media platforms such as Meta and Twitter/X to target '*disinformation*'. While India has focused on data centralization, American legislative frameworks broadly emphasize the importance of data privacy and security, which has led to concerns about the handling of American datasets by Indian companies. Bridging these differing approaches is essential for fostering greater cooperation in areas like data analytics, AI, and cloud computing. Considering the domestic policy direction of the Modi government, data management practices are likely to emerge as a contentious issue.

There are also broader concerns surrounding the protection of IPR. India's legal framework allows for the issuance of compulsory licenses in certain circumstances, which permits a third party to produce a patented product without the consent of the patent holder. The pervasive use of compulsory licensing, particularly in the pharmaceutical sector, has raised concerns among innovators and investors about the protection of their proprietary technology (Siddiqui, 2016). This issue is indirectly related to the concerns on data management practices: while data protection laws in India have been evolving, significant concerns about the adequacy of data protection measures for sensitive and proprietary information remain (Matthan & Ramann, 2022). With the increasing reliance on data-driven technologies and the rise of data-driven industries, robust data protection is essential to instill confidence among businesses and investors. Addressing IPR issues can boost confidence among US companies aiming to invest in India and facilitate the transfer of advanced technologies. Linked with issues characterizing India's domestic politics, potential future changes in regulations present a hurdle for international investors. For India, providing a stable and predictable regulatory environment is vital to foster technology collaborations.

Indian policymakers can take a range of steps to address the issues identified above. They can streamline the patent examination process by investing in improving the efficiency and capacity of India's patent office to expedite the examination and grant of patents, including for foreign companies. Reducing patent backlogs and processing times will

encourage innovation and attract more investment in (joint) R&D. While preserving the flexibility of compulsory licensing, practices surrounding which have sustained concerns regarding IPR violations, India can establish clear and transparent guidelines to ensure that compulsory licensing is limited to cases of genuine public health emergencies. Indian agencies could also provide adequate compensation to patent holders to safeguard innovation incentives. Additionally, India can improve enforcement mechanisms and increase penalties for IPR infringement to act as a deterrent, for instance by establishing specialized IPR courts to expedite legal proceedings and ensure the effective protection of IPR rights.

US policymakers, in turn, must continue engaging in dialogue and can contribute positively to building Indian governance capacities. US government agencies can offer technical assistance and capacity-building support to India's patent office to enhance its efficiency and effectiveness in processing patent applications. This can help address patent backlogs and encourage the timely granting of patents. As part of this, Washington can promote collaboration in IPR enforcement, for instance by fostering enhanced mechanisms for information-sharing and cooperation to protect the rights of the US companies operating in India. Both countries can further work towards the mutual recognition of data protection standards and facilitate cross-border data transfers while ensuring data privacy and security.

Conclusion

India and the US have gradually expanded the scope and depth of their bilateral technology cooperation over the course of the 21st century, with a specific focus on defense technologies and critical and emerging technologies. Much of this has occurred in the context of a changing geostrategic environment in which India has sought to balance China via a diversification of its relationships with non-traditional partners. While these partnerships have not been formalized as alliances (and are unlikely to be formalized as such), they mark a significant recalibration in how India approaches its strategic environment. The increasingly close relationship between India and the US is perhaps the best epitome of this: characterized by various limitations during the Cold War, the US has emerged as a key arms supplier and security partner. Within the regional context of South Asia, this marks a significant transformation in the regional dynamics: closer India-US relations have come at the expense of and as a reaction to the deterioration of ties between Islamabad and Washington. As American support for Pakistan has decreased, Pakistan has edged closer to Beijing in economic, diplomatic, and security terms. The dynamics and alignments that characterized the region during the Cold War have profoundly shifted as a result.

While much has been made of the growing proximity between New Delhi and Washington, some issues remain. On the policy side, concerns about IPR remain a stumbling block that prevent an even-wider expansion of US exports to India. Part of this are the concerns vis-à-vis domestic policies in India. While this has not led to a significant rearticulation of US policy toward India at this point in time, it remains a topic of debate.

References

- Aryan, J. (2020, December 10). The Defence Technology and Trade Initiative (DTTI): Lost in the acronym bowl. Observer Research Foundation. Retrieved August 1, 2023, from <https://www.orfonline.org/expert-speak/defence-technology-trade-initiative-dtti-lost-a-cronym-bowl/>
- Bajoria, J., & Pan, E. (2010, November 5). The U.S.-India Nuclear Deal. Council on Foreign Relations. Retrieved July 31, 2023, from <https://www.cfr.org/backgrounder/us-india-nuclear-deal>
- Banerjee, J. (2018, September 19). India-U.S. Strategic Convergence in the Indo-Pacific Region. Center for International Maritime Security. Retrieved August 1, 2023, from <https://cimsec.org/india-u-s-strategic-convergence-in-the-indo-pacific-region>
- Banerjee, V., & Tkach, B. (2022). After Ukraine, where will India buy its weapons? War on the Rocks. Retrieved August 1, 2023, from <https://warontherocks.com/2022/04/after-ukraine-where-will-india-buy-its-weapons/>
- Bauer, S., Dunne, A., & Mičić, I. (2010, December 10). Strategic trade controls: countering the proliferation of weapons of mass destruction. SIPRI. Retrieved July 31, 2023, from <https://www.sipri.org/sites/default/files/SIPRIYB1111.pdf>
- Bergen, M. (2022, July 29). YouTube, Twitter Targeted by Modi's 'Fake News' Campaign. Bloomberg. Retrieved July 31, 2023, from <https://www.bloomberg.com/news/articles/2022-07-29/youtube-twitter-targeted-by-modi-s-fake-news-campaign>
- Bhandari, K., Singh, A., & Chaudhuri, R. (2023, June 12). India and the United States' Good Bet: One Year of the U.S.-India Initiative on Critical and Emerging Technology (iCET). Carnegie India. Retrieved July 31, 2023, from <https://carnegieindia.org/2023/06/12/india-and-united-states-good-bet-one-year-of-u.s.-india-initiative-on-critical-and-emerging-technology-icet-pub-89926>
- Bhattacharjee, Y. (2023, June 15). The Daring Ruse That Exposed China's Campaign to Steal American Secrets. The New York Times. Retrieved July 31, 2023, from <https://www.nytimes.com/2023/03/07/magazine/china-spying-intellectual-property.html>
- Biden, J. (2023, June 22). Remarks by President Biden and Prime Minister Modi of the Republic of India at Arrival Ceremony. The White House. Retrieved July 31, 2023, from <https://www.whitehouse.gov/briefing-room/speeches-remarks/2023/06/22/remarks-by-president-biden-and-prime-minister-modi-of-the-republic-of-india-at-arrival-ceremony/>
- Congressional Research Service. (2023, May 4). Major U.S. Arms Sales and Grants to Pakistan Since 2001. Retrieved August 1, 2023, from <https://sgp.fas.org/crs/row/pakarms.pdf>
- Congressional Research Service. (2023, June 29). India-U.S.: Major Arms Transfers and Military Exercises. Retrieved August 1, 2023, from <https://sgp.fas.org/crs/row/IF12438.pdf>

- Crisis Group. (2021, November 29). Competing Visions of International Order in the South China Sea. Retrieved July 31, 2023, from <https://www.crisisgroup.org/asia/north-east-asia/china/315-competing-visions-international-order-south-china-sea>
- Elmerraji, J., Boyle, M. J., & Kvilhaug, S. (2023). Countries Sanctioned by the U.S. and Why. Investopedia. Retrieved July 31, 2023, from <https://www.investopedia.com/financial-edge/0410/countries-sanctioned-by-the-u.s.-and-why.aspx>
- Forbes. (2007). The Father of Indian Outsourcing. Retrieved July 31, 2023, from https://www.forbes.com/2007/05/21/outsourcing-raman-india-oped-cx_rd_0522raman.html?sh=3975887c628f
- Ford, L. (2020). The Trump administration and the 'Free and Open Indo-Pacific. Brookings Institution. Retrieved July 31, 2023, from https://www.brookings.edu/wp-content/uploads/2020/05/fp_20200505_free_open_indo_pacific.pdf
- Gopalakrishnan, A. (2002). Evolution of the Indian Nuclear Power Program. Belfer Center. Retrieved July 31, 2023, from <https://www.belfercenter.org/sites/default/files/legacy/files/Evolution%20of%20the%20Indian%20Nuclear%20Power%20Program.pdf>
- Greene, W. (2007, May 28). The Emergence of India's Pharmaceutical Industry and Implications for the U.S. Generic Drug Market. US International Trade Commission. Retrieved July 31, 2023, from <https://www.usitc.gov/publications/332/EC200705A.pdf>
- HughesHubbard (2018, August 2). U.S. Elevates India to Strategic Trade Authorization Tier 1 Status, Easing Future Dual-Use Exports. <https://www.hugheshubbard.com/news/u-s-elevates-india-to-strategic-trade-authorization-tier-1-status-easing-future-dual-use-exports>
- Indian Space Research Organisation. (2023, May 2). Genesis. Retrieved July 31, 2023, from <https://www.isro.gov.in/genesis.html>
- Kugelman, M. (2023, July 12). Why Did Foxconn Pull Out of Its India Deal? Foreign Policy. Retrieved July 31, 2023, from <https://foreignpolicy.com/2023/07/12/india-foxconn-apple-semiconductor-tech-policy/>
- Kumar, A. V. (2020, September 25). NPT@50: How India Framed its Decision to Reject the Treaty. Institute for Defence Studies and Analyses. Retrieved July 31, 2023, from <https://idsa.in/issuebrief/npt-at-50-avkumar-250920>
- Lee, A. (2004). Indo-US Space Collaboration. Institute for Peace and Conflict Studies. Retrieved July 31, 2023, from http://www.ipcs.org/comm_select.php?articleNo=1430
- Lis, S. A., Pan, F., Shin, E. K., & Howard, C. (2022, October 24). BIS Issues New Export Controls Targeting China's Advanced Computing and Semiconductor Sectors. BakerMcKenzie. Retrieved July 31, 2023, from <https://sanctionsnews.bakermckenzie.com/bis-issues-new-export-controls-targeting-chinas-advanced-computing-and-semiconductor-sectors/>
- Long, N., & Chahal, H. (2022, June 14). The Future of the Quad's Technology Cooperation Hangs in the Balance. Council on Foreign Relations. Retrieved July 31, 2023, from <https://www.cfr.org/blog/future-quads-technology-cooperation-hangs-balance>

- Maizland, L. (2023, April 18). Why China-Taiwan Relations Are So Tense. Council on Foreign Relations. Retrieved July 31, 2023, from <https://www.cfr.org/backgrounder/china-taiwan-relations-tension-us-policy-biden>
- Matthan, R., & Ramann, S. (2022, August 31). India's Approach to Data Governance - Data Governance, Asian Alternatives: How India and Korea Are Creating New Models and Policies. Carnegie Endowment for International Peace. Retrieved July 31, 2023, from <https://carnegieendowment.org/2022/08/31/india-s-approach-to-data-governance-pub-87767>
- McGoldrick, F., Bengelsdorf, H., & Scheinmann, L. (2005). The U.S.-India Nuclear Deal: Taking Stock. Arms Control Association. Retrieved July 31, 2023, from <https://www.armscontrol.org/act/2005-10/features/us-india-nuclear-deal-taking-stock>
- Mehra, P. (2021, July 24). Looking back on the 1991 reforms in 2021. Observer Research Foundation. Retrieved August 1, 2023, from <https://www.orfonline.org/expert-speak/looking-back-on-the-1991-reforms-in-2021/>
- Modi, N. (2023, June 23). Address by Prime Minister, Shri Narendra Modi to the Joint Session of the US Congress. Ministry of External Affairs. Retrieved July 31, 2023, from <https://mea.gov.in/Speeches-Statements.htm?dtl/36714/Address+by+Prime+Minister+Shri+Narendra+Modi+to+the+Joint+Session+of+the+US+Congress>
- Newman, B., & Yousif, E. (2023, May 25). 25 Years of Security Cooperation Beneath the Nuclear Shadow. Stimson Center. Retrieved August 1, 2023, from <https://www.stimson.org/2023/25-years-of-security-cooperation-beneath-the-nuclear-shadow/>
- The Nuclear Threat Initiative. (2019). Pakistan Nuclear Overview. Retrieved July 31, 2023, from <https://www.nti.org/analysis/articles/pakistan-nuclear/>
- The Nuclear Threat Initiative. (n.d.). Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Retrieved July 31, 2023, from <https://www.nti.org/education-center/treaties-and-regimes/treaty-on-the-non-proliferation-of-nuclear-weapons/>
- Pant, H. V., & Mishra, V. (2023, June 16). Jumpstarting the next phase of U.S.-India defence ties. Observer Research Foundation. Retrieved August 1, 2023, from <https://www.orfonline.org/research/jumpstarting-the-next-phase-of-u-s-india-defence-ties/>
- Peri, D. (2019, December 19). Industrial Security Annex opens Indian private partnerships for U.S. defence firms. The Hindu. Retrieved July 31, 2023, from <https://www.thehindu.com/news/national/defence-ties-with-us-set-to-deepen-rajnath-singh/article61605050.ece>
- Rajagopalan, R. P. (2016, August 31). Logistics pact with US: Why LEMOA is significant for India. Observer Research Foundation. Retrieved August 1, 2023, from <https://www.orfonline.org/research/logistics-pact-with-us-why-lemoa-is-significant-for-india/>
- Reed, J. (2023, July 4). India aims to produce first semiconductors within 18 months. Financial Times. Retrieved July 31, 2023, from <https://www.ft.com/content/4b2dff77-045b-416f-83b1-da7893b1b2b3>

- Riedel, B. (2019, July 24). How the 1999 Kargil conflict redefined US-India ties. Brookings Institution. Retrieved August 1, 2023, from <https://www.brookings.edu/articles/how-the-1999-kargil-conflict-redefined-us-india-ties/>
- Rowberry, A. (2013, December 18). Sixty Years of “Atoms for Peace” and Iran's Nuclear Program. Brookings Institution. Retrieved July 31, 2023, from <https://www.brookings.edu/articles/sixty-years-of-atoms-for-peace-and-irans-nuclear-program/>
- Sharma, A. (2008). Indo-US Strategic Convergence: An Overview of Defence and Military Cooperation. Center for Land Warfare Studies. Retrieved July 31, 2023, from <https://www.claws.in/static/Indo-US-Strategic-Convergence-An-Overview-of-Defence-and-Military-Cooperation.pdf>
- Siddiqui, Z. (2016, March 23). India defends right to issue drug 'compulsory licenses'. Reuters. Retrieved July 31, 2023, from <https://www.reuters.com/article/us-india-patents-usa-idUSKCN0WP0T4>
- Stewart, I., & Sultan, A. (2019, June 10). India, Pakistan and the NSG. King's College London. Retrieved July 31, 2023, from <https://www.kcl.ac.uk/news/india-pakistan-and-the-nsg>
- Strating, R. (2021, February 9). Maritime and Sovereignty Disputes in the East China Sea. National Bureau of Asian Research. Retrieved July 31, 2023, from <https://www.nbr.org/publication/maritime-and-sovereignty-disputes-in-the-east-china-sea/>
- Suri, M. (2023, April 1). Can India Revive Its Quest for Nuclear Suppliers Group Membership? The Diplomat. Retrieved July 31, 2023, from <https://thediplomat.com/2023/04/can-india-revive-its-quest-for-nuclear-suppliers-group-membership/>
- Reynolds, T. (n.d.). ITAR vs. EAR – What’s the Difference? Export Solutions. Retrieved July 31, 2023, from <https://www.exportsolutionsinc.com/resources/blog/itar-vs-ear-difference/>
- Tharoor, S. (2023, July 10). The US and India's non-aligned alliance. Australian Strategic Policy Institute. Retrieved July 31, 2023, from <https://www.aspistrategist.org.au/the-us-and-indias-non-aligned-alliance/>
- Tsui, C. (2022, December 12). China's Gray Zone Activities and Taiwan's Responses. Stimson Center. Retrieved July 31, 2023, from <https://www.stimson.org/2022/chinas-gray-zone-activities-and-taiwans-responses/>
- United States State Department. (2021, January 20). Major Non-NATO Ally Status. Retrieved July 31, 2023, from <https://www.state.gov/major-non-nato-ally-status/>
- Wagner, A. (2001). Bush Waives Nuclear-Related Sanctions on India, Pakistan. Arms Control Association. Retrieved August 1, 2023, from <https://www.armscontrol.org/act/2001-10/press-releases/bush-waives-nuclear-related-sanctions-india-pakistan>

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