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FICCI

FICCI REPORT

Strategic Trade Management in India
Critical Issues in SCOMET Compliance



In partnership

Center for International Trade & Security
School of Public & International Affairs
UNIVERSITY OF GEORGIA

STIMSON

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Foreword

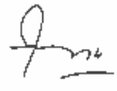


The global trade in high technology products, materials, technologies, and services, which have both legitimate commercial and military applications - is being increasingly targeted by terrorists and proliferators for illicit purposes. Governments around the world are concerned about the risk that such dual-use items can be diverted in-country or re-exported for unauthorized uses. Hence, most countries - including India and all its major trading partners - are instituting stricter licensing requirements for acquisition, manufacture, and trade in such items - with an aim to ensure adequate security along the entire transnational production and supply-chain.

The access to materials, equipment, and technologies, even domestically developed as in the Atomic Energy, Space and Defence-related sectors, and hiring of retired personnel from these sectors will be conditional on compliance with SCOMET regulations. Furthermore, customers in these strategic sectors, in India or abroad, will require, as a condition of contracts, that the company maintains a well-specified/functional internal compliance program.

Indian industry must take a deeper look at the growing international convergence around the idea that advanced technology products face the risk of diversion to weapons uses and take appropriate counter-measures to ensure the security of the supply chain. As this report points out, "within some government agencies and in the industry in India, Strategic Trade Controls are sometimes seen as a regulatory and financial burden that has been imposed upon India/Indian companies by outsiders. However, for Indian companies to plug into the global supply chains, it is essential to understand and imbibe international calibre compliance programs and best practices."

We hope that this report helps Indian companies understand the complex national and international legal-regulatory-enforcement landscape regarding dual-use technologies, as well as make them aware of strategic trade control regulations and how to successfully trade in dual-use technologies, products and services. This will position them well to forge technology-based partnerships with foreign companies, stimulate value-added manufacturing in India and contribute significantly to Prime Minister Modi's Make in India initiative.



Dr. Sanjaya Baru
Secretary General
FICCI



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Objectives of the Report

a. Assess the state of awareness in the Indian hi-tech industry about dual use trade regulations in India (SCOMET) and of its major trading partners

b. Highlight the salient economic and security advantages of stronger compliance with dual-use trade regulations for the Indian industry.

c. Examine the challenges associated with increasing such awareness, as well as compliance by various technology sectors

d. Recommend practical steps that the Indian industry and the Government of India should take to further promote hi-tech economic growth.

e. Identify the technology sectors and related companies who may need to be part of the awareness workshops

The Economic Context of Strategic Trade Management

Governments all over the world, while pursuing strategies to promote economic and national security objectives, maintain their prerogative to define what is or is not in the national interest. Businesses, on the other hand, while not denying this government prerogative, seek to limit its application in the sphere of domestic and international commerce, in order to preserve their ability to develop new products and seek new markets at home and abroad. On issues of national security, however, governments have had almost unchallenged power to define the context and to set the agenda.

Trade in strategic commodities and dual-use goods falls at the intersection of national security and foreign economic activities. Unsurprisingly, therefore, this is an issue-area where governments have had few reasons to see businesses as anything other than "subjects" whose only role is to comply with the established priorities and limitations, without any questions. This limited way of defining government-industry relationship has undergone major changes in the advanced economies, but this transformative process is still at an early stage in developing economies, including India.

The Indian economy has experienced strong growth over the past two decades, with the size of its GDP growing from about USD 400 billion in 1995 to USD 2.6 trillion by FY 2017-18, along with improvement in the efficiency of production relative to international standards. During the same period, foreign trade has expanded substantially, with exports crossing USD 340 billion and imports exceeding USD 590 billion. India now has over 2% share of global trade, with its trade portfolio reflecting a higher share of manufactured items. The liberalization of the economy has also freed its entrepreneurial talent and technically-skilled manpower to forge trade and technology based linkages with counterparts around the world. There are now numerous channels and innovative means through which such linkages are being established and nurtured: government-to-government, business-to business and government-to-business. This is also reflected in a growing number of foreign multinationals setting up operations in India, pursuing R&D, sourcing or manufacturing activities, and supplying to the domestic market as well as exporting to third markets.

India's Growing Engagement with Multilateral Export Control Regimes

Government of India (GOI) has sought to boost these linkages by joining international treaties, agreements and regimes that regulate international transactions in a variety of issue areas. Several recent initiatives have streamlined India's dual-use regulations.[1] A consolidated dual-use control list (SCOMET) has been established.[2]

[1] See Annexure 1 for a listing of Government of India regulations on dual-use trade.

[2] See Annexure 2 for a listing of SCOMET categories (these 8 categories cover a range of technologies including nuclear, chemical, pharmaceutical, aerospace, and munitions, as well as associated equipment, components, precursors and specialty materials).

The WMD Act (2005) institutes international-standard regulatory best practices, including on intangible technology transfers and catch-all controls.[3] These initiatives provide assurance to international technology suppliers that Indian government and Indian industry take the issue of technology safeguards as seriously as they do themselves. India is now a member of three (of the four) multilateral technology-supply regimes: MTCR, AG & WA.[4] Membership in these regimes will facilitate India's access to advanced technologies and have a salutary impact on economic growth, particularly in the value-added manufacturing sectors, and will boost the Modi Government's **Make in India** campaign.

Multilateral Export Control Regimes				
Name	**Established**	**Members**	**Regulates**	**India's Status**
Nuclear Suppliers Group (NSG)	1975	48*	Nuclear & radiological materials plus related dual-use equipment and expertise	*Membership request under consideration*
Australia Group (AG)	1985	43	Chemical & biological materials plus related dual-use equipment and expertise	Member since 2018
Missile Technology Control Regime (MTCR)	1987	35**	Missiles & aerospace technologies plus related dual-use equipment and expertise	Member since 2016
Wassenaar Arrangement (WA)	1987	35**	Missiles & aerospace technologies plus related dual-use equipment and expertise	Member since 2016

Notes:
** European Commission and the Zangger Committee Chair participate as Observers.*
*** Plus 3 Adherents [Estonia, Kazakhstan, Latvia]*

[3] The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act was formulated and passed by Parliament in 2005 in fulfillment of India's obligations under UN Security Council Resolution 1540.

[4] These are four informal groupings of like-minded supplier states that maintain control lists and have established guidelines for their members to follow when making decisions to allow or deny exports, re-exports and transit and transshipment of listed (and sometimes non-listed) items.

It is worth recalling that shortly after India conducted its first nuclear test (May 1974), a range of multilateral sanctions and restrictions were imposed upon India, through decisions taken by the principal member states of these regimes. While many of the sanctions were progressively removed or reduced, some restrictions on some entities remain in place, especially for accessing licensed, dual-use products, technologies and services.[5]

With the successful conclusion of India's civilian nuclear cooperation agreement with the United States in 2008 and the permission granted (technically, exemption from full-scope safeguards) to NSG member states, it is now possible for NSG member states to participate in India's IAEA-safeguarded civilian nuclear complex. As India now pursues formal membership of all four multilateral export control regimes, this will bring to an end the long period of restrictions, and enable India to access licensed commodities and technologies from the public and private sector entities from countries that are members of these regimes, i.e. the more advanced industrial economies of the world. It will also open up tremendous new business opportunities for Indian companies that seek advanced technology from abroad and would also like to sell their resultant value-added products in markets abroad.[6]

In a related vein, India's *Defence Offsets Policy* obligates foreign OEMs to mandatorily source at least 30% of the value of their defense contract from Indian companies for projects exceeding INR 2000 crore or USD 300 million (raised from USD 45 m earlier, to encourage greater international investments). This provision also offers the Indian companies a significant business opportunity to supply equipment, components and materials to foreign OEMs and engage in technology-embedded collaborative partnerships in the defense sector.[7]

At the same time, while international developments will open the door for Indian businesses to engage with foreign partners in both the above areas of growth, i.e. dual-use and defense, there still remains the operative requirement of instituting adequate standards of strategic trade controls. Unless Indian entities put in place international-caliber STCs, the regulations of the four regimes prevent companies from their member countries from engaging in technology-embedded commerce and partnerships. So STCs thus became an inescapable and vital *enabling condition* for India to harness the full dividends of the end to sanctions and to pursue intensified engagement in licensed commerce with the international community.

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[5] Government of India successively harmonized items in various control list categories of SCOMET with the corresponding categories of items in the NSG and MTCR, as also incorporated updates in the EU control list. These steps facilitated the review by principal regime members and the subsequent removal of sanctions. For comparison of coverage of items in SCOMET vis-à-vis EU and US control lists, see Annexure 3.

[6] One should note, however, that while regime membership should facilitate Indian entities receiving certain types of technologies from member states, there will remain some technologies that states protect in order to maintain their key industrial advantage. Access to those depends on broader strategic considerations that go beyond mere regime membership.

[7] *Defence Offset Policy,* Ministry of Defence, Government of India, August 14, 2014; available at http://pib.nic.in/newsite/PrintRelease.aspx?relid=107868

Membership in Treaties & Regimes: G-20 Economies										
Technology Sector	**Nuclear**				**Chemical & Biological**			**Conventional Weapons, Missiles & Munitions**		
Treaty/ Agreement	NPT	IAEA	NSG	ZC	BWC	CWC	AG	ATT	MTCR	WA
India	No	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes
Argentina	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brazil	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
China	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Indonesia	Yes	Yes	No	No	Yes	Yes	No	Yes	No	No
Mexico	Yes	Yes	Yes		Yes	Yes	Yes	Yes	No	Yes
Saudi Arabia	Yes	Yes	No	No	Yes	Yes	No	No	No	No
South Africa	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Turkey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

Evolutionary Stages of Government-Industry Engagement in STM Domains

The growing web of business relationships and international legal obligations has increased the burden of compliance on both the government and the industry in India. Broadly speaking, GOI will need to (a) invest more in its own capacity to provide compliance outreach and advice to the industry, and (b) significantly transform its relationship with the industry from the earlier approach of issuing directives to one of a more interactive and joint stake-holder model. . For its part, the Indian industry will require a change in its mind-set to (a) appreciate that dual-use regulations are a global requirement for doing business in the lucrative arena of advanced technology, and (b) provide constructive and specific suggestions to GOI to help make the Indian regulations easier to comply with.

Historically, government-industry partnership in almost all advanced industrial economies began only after one or more of the following conditions developed:

(i) they joined agreements that required policy coordination with national industry;[8]

(ii) they faced public scandals detailing the involvement of their businesses in prohibited activities;[9] or

(iii) their trading partners began to require more detailed technical specifications and safeguards-in-place on transactions relating to sensitive items.

As these conditions began to develop, the idea that industry is the "first line of defense" against proliferation gained popularity and institutional acceptance within these governments. India is fast approaching similar landmarks in its economic and political transition, and one expects that it would take advantage of its "late start" and act proactively.

FICCI's Pioneering Work in STC Outreach across India

FICCI, as the oldest and largest industry association, has been providing yeoman's service to its member companies by helping them understand and comply with GOI's SCOMET regulations for export/trade of hi-tech, dual-use as well as defense, items. A unique feature of FICCI outreach has been to help its members understand corresponding regulations in India's major trading partner countries so that bilateral dual-use technology imports and exports may be increased.

In partnership with **the Center for International Trade & Technology (CITS) at the University of Georgia (UGA) in USA, with its globally acknowledged expertise on STC matters -** FICCI conducted a series of outreach events from 2007-2016. In these

[8] The U.K. government began a regular interaction with its industry after the formation of the Australia Group in 1985.

[9] In Japan, the government adopted a pro-active outreach policy toward its industry after the 1987 Toshiba Machine Tools case. In much of Western Europe, industry outreach became an established practice after the post-Gulf War I investigations revealed the extent to which European industry had contributed to arming the WMD program of Saddam Husain's Iraq.

workshops, speakers from various GOI agencies,[10] industry leaders, and foreign experts, provided briefings to the attendees on Government of India's SCOMET regulations and on developments in similar Strategic Trade Control (STC) regulations and compliance best practices in India's major trading partners (US, EU, Japan, China, Singapore and South Korea). In 2013, 4 events were organized: Mumbai (April), Delhi (May), Chennai (July) and Hyderabad (July). This was followed by organizing aerospace-focused workshops in Bangalore, (February 2014, September 2016) and New Delhi (March 2017), chemical sector focused events in Mumbai & Gujarat (December 2014, October 2015 and September 2016), and nuclear sector focused events in Mumbai (March 2015 and August 2016).

Thus far, almost 1200 representatives of industry and select government agencies (Customs, DGFT, ISRO, DAE and DRDO) have attended these events. The workshops seek to provide awareness about Indian and international regulations, procedures and initiatives regarding trade in dual-use technologies, related best practices on internal compliance, and how adopting them can enhance business partnerships with companies located in countries that are members of multilateral export control regimes.

This report is based in part on the discussions during the workshops, informal conversations with GOI officials, off-the-record interviews with representatives of Indian hi-tech companies, subsidiaries of foreign companies operating in India, and independent observations of government-industry interactions in open forums across India.

Accordingly, the subsequent sections of this report cover the following themes:

Section 1 describes the state of awareness about dual-use controls in the Indian hi-tech industry.

Section 2 discusses the economic and security benefits of compliance for industry.

Section 3 identifies the technology sectors and related companies that require awareness regarding SCOMET and the need to establish compliance procedures.

Section 4 enumerates the salient challenges associated with increasing awareness and compliance.

The concluding section provides a set of specific recommendations for relevant stakeholders in India as they plan to balance their trade and security imperatives. This section also highlights key lessons that other developing economies in Asia and elsewhere can draw upon as they begin to fulfill their own national and international obligations on strategic trade management.

[10] GOI agencies represented in these FICCI-CITS events include: Ministry of External Affairs (D&ISA Office), Department of Atomic Energy, Indian Space Research Organization, National Authority-CWC, Department of Customs, the Directorate General of Foreign Trade and National Disaster Management Authority.

Section 1

The state of awareness in the Indian hi-tech Industry

Businesses in India have established a variety of mechanisms to solidify relationships with their counterparts in the developed world. These include partnerships, joint ventures, strategic alliances, subsidiaries, mergers and acquisitions, industry associations, industry networks, and vendor relationships (parts manufacturer / supplier). In general, Indian companies that have had a vendor relationship with the strategic technology developers for the Government of India, viz. DAE, ISRO & DRDO, are well aware of the "defence" related aspects of their products and, therefore, accept the injunction that no-export of such items can take place without GOI permission. Similarly, those Indian companies that have had any long-term partnership with one or more foreign companies have long followed the dual-use regulations of other countries as part of their contractual obligations with the foreign partner(s). In a related vein, large chemical companies that manufacture chemicals listed in Schedule 2 of the CWC, have been cooperating with the NA-CWC to facilitate inspections by the OPCW teams, providing annual declarations detailing the exports and imports of these chemicals, and, therefore, keep themselves updated on regulations covering the corresponding control list (Category 1) of SCOMET.

By contrast, small and medium enterprises (SMEs) in each of the above categories are less aware of how the GOI regulations apply to them. Given their resource limitations, many SMEs also face pressure to generate additional sales, providing a disincentive to check for the antecedents of a domestic buyer who might be intending to export their product, apart from a foreign importer. Moreover, vast majority of big and small companies in dynamic sectors like IT/software and biotechnology are unaware that SCOMET applies to their operations: largest industry associations in these sectors appear to have ignored dual-use regulations even as they organize panel discussions and interactions with GOI agencies on practically all other regulations that affect their members.[11] This creates an environment where compliance with regulations is more episodic and company-specific than routine or systematic. As industries grow, this increases the chances of deliberate and/or unwitting violations.

[11] See, for instance, the information on publications, events and resources provided on the websites of NASSCOM (National Association of Software and Services Companies), ABLE (Association of Biotechnology Led Enterprises), AIBA (All India Biotech Association) and APPI (Association of Pharmaceutical Producers of India). SCOMET regulations are conspicuous by their absence in discussions of industry demands from GOI.

Section 2

Economic and Security Advantages of Stronger Compliance

National and international intelligence suggests that hi-tech industries in emerging market economies - such as India - are likely to be the target of foreign entities who want to by-pass Indian and international sanctions and prohibitions to source materials for weapons purposes.

To operate in the highly lucrative, but also highly regulated, dual-use/advanced technology market, Indian companies must fully understand domestic and international standards and requirements of handling and trading in such strategic commodities. Specifically, they need to ensure that licensing requirements of SCOMET list do not apply to any of their products. But if any of their products does require a SCOMET license, companies need to put in place Standard Operating Procedures at key points along their supply chain, to ensure that they do not inadvertently supply the regulated products/services to entities within India without any due diligence, or outside India without a dual-use export license.

Specifically, companies need to understand such issues as:

- How do bad actors operate?
- What kinds of networks do they use to acquire controlled items and technologies?
- What are the possible national and international penalties for engaging with such actors - knowingly **and** unknowingly?
- How do you recognize suspicious customers and transactions?
- What should its employees do if they come across suspicious customers or orders?

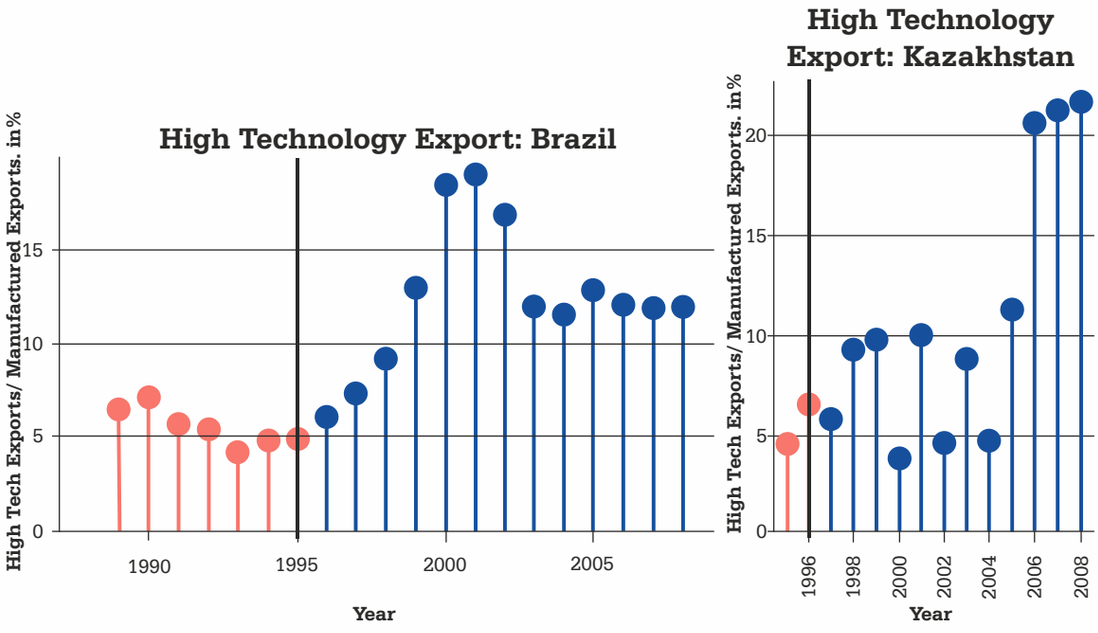
Companies that become aware of these risks and learn to mitigate them through some practical ways will stand to benefit in numerous ways: international tie-ups and access to critical technologies for R&D, manufacturing and innovation.

Research by scholars has established this linkage conclusively in a sample of 16 countries, including India, which have established national laws on dual-use trade and instituted regulations to implement and enforce the same. The time series data measured trade in ATP (Advanced Technology Products) before and after the adoption of STC laws and regulations.

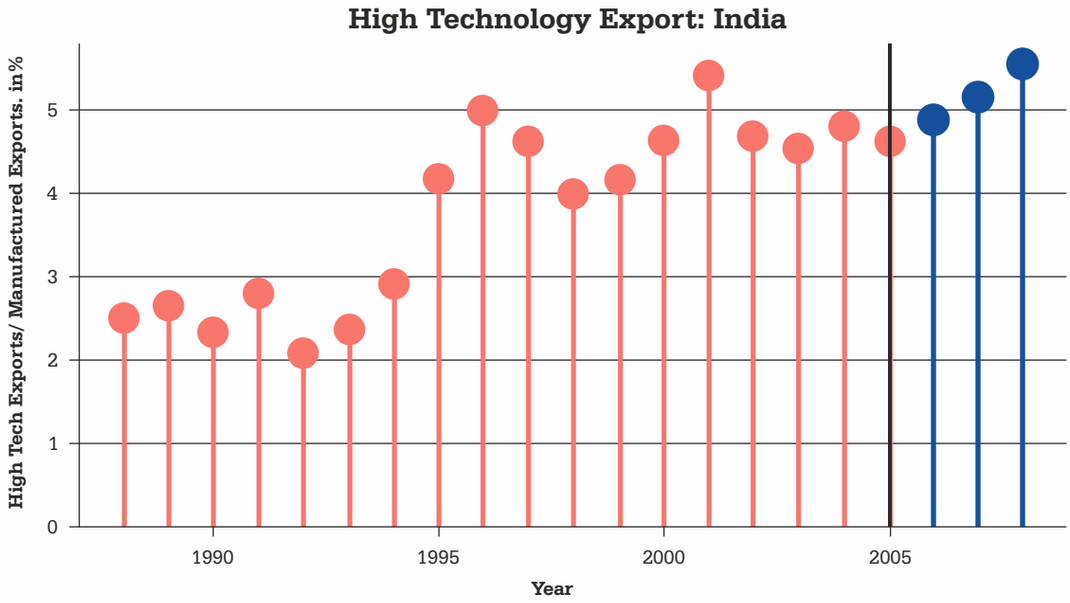


In each of the 16 countries in the sample, there was a statistically significant increase in imports of hi-tech products from the United States and Europe.[12]

Charts: High-Tech as % of all Exports in 3 countries
Results from CITS/UGA Study



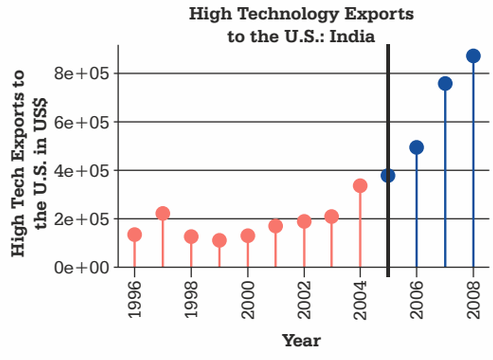
[12] Scott Jones and Johannes Karreth, Assessing the Economic Impact of Adopting Strategic Trade Controls, Report, Center for International Trade and Security, University of Georgia, December 2010. Available at http://www.nti.org/media/pdfs/off_us_dept_21.pdf?_=1316466791

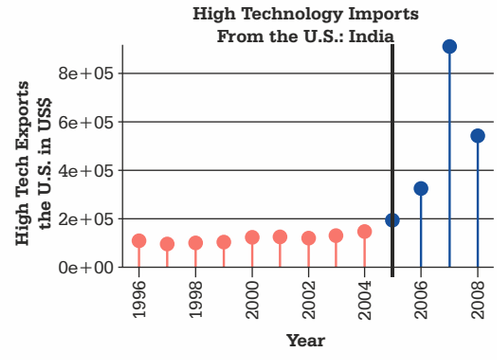


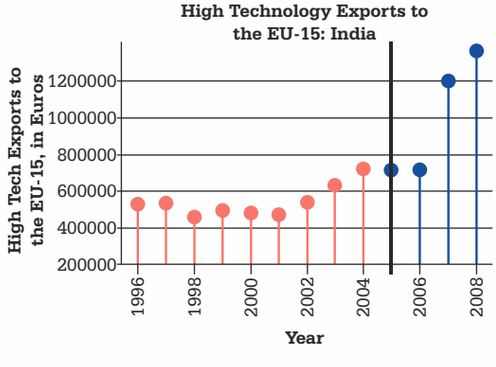
Equally crucially , the data showed no decline in exports to the US and EU, and indeed a discernible increase. In India's case, the export data shows a clearly growing trend line.

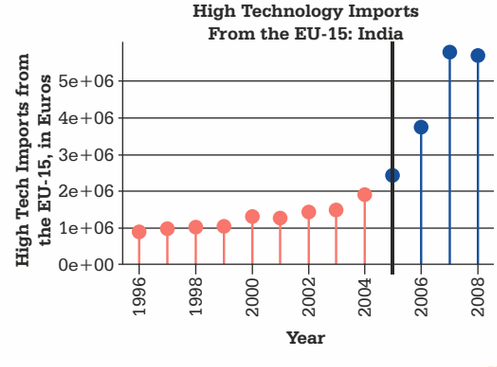
Charts: India's STC boosted trade

Results from CITS/UGA Study









It should be noted that while India's overall trade with the United States has grown considetably during this period. But it is equally safe to contend that the trade in ATP and hi-tech products and services would not have seen this steady rise without New Delhi increasingly tightening its STC laws and guidelines and aligning its control list with the corresponding elements of the multilateral export control regimes. And Washington would also not have correspondingly upgraded India's position in US policies and country charts governing trade in dual-use as well as military items with India.

Clearly, this refutes the common perception that adopting Strategic Trade Controls is harmful for a country's foreign trade. Indeed, the data highlights that STC regulations - covering advanced technologies - do not hamper exports in these items. For developing countries, establishing STCs appears to enhance their trade-worthiness vis-à-vis important stakeholders in the technology supplier countries: licensing authorities, supply-chain partners and investors, precisely because STCs are seen as mitigating risks of IP infringement, diversion to unauthorized uses and unauthorized re-exports from the recipient country, as well as fulfilling international nonproliferation and anti-terrorism goals. This, in turn, facilitates import of licensed commodities that are often the bedrock of technology-embedded joint ventures among foreign and domestic companies involving R&D, fabrication prototype development, and ultimately full-scale manufacturing.

Interestingly, the international community, led by the UN Security Council, has also focused on closing several other loopholes in the technology supply chain. The requirement to regulate brokering and facilitation in dual-use technologies under UNSC Resolution 1540 encompasses not merely brokering, but any ancillary services such as transportation, warehousing, freight forwarding and consultancy. On a parallel front, UNSC Resolutions against terrorism now cover financing of terrorism, which is combined with money laundering. The regulatory advice from the Financial Action Task Force (FATF) clearly brings into its ambit all financial sector activities that can contribute to facilitating a transaction that supports terrorism with or without the involvement of weapons of mass destruction. The convergence of Anti-Money Laundering (AML) and Combatting Terror Financing (CTF) initiatives at the legal and regulatory levels has raised the bar of compliance for many non-traditional actors in the supply chains. Now banks, insurance companies and chartered accountants, along with companies, trusts and foundations, are expected to understand national and international regulations regarding trade in the dual-use technologies, and need to ensure that they do not inadvertently facilitate transactions that assist in the development of WMDs, nor provide assistance to any terrorist groups. Thus, they are now obligated to screen each transaction and every party involved in the transaction to ensure that they are not facilitating any WMD-related transfers or otherwise contributing to terrorism-related transactions.

On another significant front, India remains the world's largest arms importer. As foreign companies attempt to fulfill GOI's offsets requirements, large and small Indian

companies are keen to become vendors to these foreign companies. But for the Indian companies to access foreign technologies or get even ancillary business from foreign companies will require that they demonstrate responsiveness to Indian (SCOMET) and foreign dual-use regulations: their internal compliance procedures are robust enough to minimize violations and ensure proactive vigilance.

Once the Indian companies engaged in production and trade of SCOMET-relevant items understand and institute basic compliance procedures, they will be in a strong position to access advanced technologies from suppliers around the world (as trusted partners), and use them to upgrade the quality and lower the price of their own products. This in turn will help them supply domestic markets more efficiently as well as export their products to third countries.

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Section 3

Technology sectors that require awareness and compliance

Indian technology sectors at risk of being targeted by proliferators and terrorists include: engineering, aerospace, nuclear, bio-tech, composites, specialty chemicals, strategic minerals, precision machinery, and the equipment used in R&D, testing and production of all the above. Moreover, public and private institutions involved in research and development of SCOMET-regulated technologies need to be aware that transfer of technology in intangible forms - including through presentations and data-sharing for academic purposes - might require notification to/consultation with government, even when a license is not required.

SCOPE OF CONTROLS UNDER SCOMET

Goods

Materials - chemicals, radiological, nuclear, biological materials (poisons and pathogens), composite materials

Equipment - machines and machine tools

Technology

Software - to run the machines & machine tools

Information - about R&D and manufacturing processes

Expertise - to adapt/innovate/integrate industrial materials, equipment and technology for weapons development

India's export and import in commodity sectors that may have dual-uses is growing substantially. These include not just the obvious ones such as nuclear and arms & ammunitions, but also organic and inorganic chemicals (including explosives), pharmaceuticals, medical and technical devices , electronic equipment and aircrafts, spacecrafts and ships.

India Trade Icdicators: 2013				
Product label	**Imported value 2013 (USD thousand**	**Exported value 2013 (USD thousand)**	**Ranking in world imports**	**Rankin g in world exports**
All products	**466045567**	**336611389**	**13**	**16**
Arms and ammunition, parts and accessories thereof	53888	63807	32	24
Fertilizers	5958024	75610	3	62

India Trade Icdicators: 2013				
Product label	Imported value 2013 (USD thousand	Exported value 2013 (USD thousand)	Ranking in world imports	Rankin g in world exports
Explosives, pyrotechnics, matches, pyrophorics, etc	13692	92332	62	11
Inorganic chemicals, precious metal compound, isotopes	5100315	1466232	7	21
Optical. photo, technical, medical, etc apparatus	6762689	2288877	21	28
Commodities not elsewhere specified	11073049	3310121	8	18
Miscellaneous chemical products	3843405	3398007	17	18
Ships, boats and other floating structures	7004947	3597492	4	7
Aircraft, spacecraft, and parts thereof	2566730	4151795	16	10
Electrical, electronic equipment	29790256	11275864	18	28
Pharmaceutical products	1667836	11731941	46	11
Machinery, nuclear reactors, boilers, etc	31945783	13126148	18	25
Organic chemicals	16960213	13340364	8	11

Source: ITC calculations based on UN COMTRADE statistics

Challenges associated with increasing awareness and compliance

The biggest challenge to raising awareness in India includes the large and mostly undocumented size of the dual-use industry. This is not a unique challenge confined to India alone. Senior U.S. and European officials often mention in public forums that their biggest concern is the small and medium companies in their own countries, who do not know about the regulations, despite systematic efforts to identify and train hundreds of companies every year, including those that may not be producing controlled items yet. In India, there has been little systematic effort to identify which companies produce SCOMET-regulated materials, with the partial exception of the nuclear and chemical sectors.[13] In the nuclear sector, given the pre-dominance of government enterprises and strict oversight of the DAE, most manufacturers of nuclear-relevant items are known, and are included in outreach efforts. Similarly, in the chemical sector, the National Authority-Chemical Weapons Convention has identified manufacturers of Schedule 2 chemicals as per the mandate of the Convention. These companies and other chemical manufacturers have been provided outreach through the various industry associations. However, most equipment manufacturers in these sectors remain on the margins as relates to understanding the dual-use nature of their products. Further, companies that manufacture chemicals that fall under Schedule 3 of the CWC, or under the so-called UDOC (i.e. Unscheduled Discrete Organic Chemicals), have even less awareness of the risks of unauthorized diversion of their products for use in explosives and other dangerous end-uses.

[13] This summary is based on the author's conversations with the private sector companies and government officials over the years.

The challenge in the other sectors is even more formidable. Companies in the aerospace sector, especially the regular vendors for ISRO/Antrix, are generally aware of the "defense" applications of their items, and hence inclined to be cautious in sales and exports. But awareness levels are fairly low when it comes to companies engaged in aerospace-allied manufacturing of components, metals and engineering services, as well as manufacturers of SCOMET-regulated equipment. Academia and private or public research institutions also display the same trend, where those engaged in contract work for government or in industry partnership in high-end, applied research, understand and institute some necessary precautions, but most others are acutely unaware that their technical expertise falls within the purview of SCOMET's "technology" components.

The second challenge is the lack of resources within the government agencies dedicated toward providing outreach to small and medium sized companies. Typically, outreach events are organized in partnership with industry associations, who attempt to gather their members via mailers, web-announcements and phone calls. The audience thus assembled consists of those companies who already see themselves as affected by SCOMET regulations. Those who believe that their business does not relate to manufacture of "defense items" or "weapons of mass destruction" stay away. Consequently, many companies who need to be particularly made aware of the possible dual-use nature of their product cannot be reached.

This system of voluntary self-exclusion needs to be curbed and eventually stopped. Government agencies should stipulate a minimum set of training and adoption of procedures for all companies in specified sectors. And over time, as awareness begins to grow, move toward a mandatory approach. This would be especially useful for employees in two categories:

(a) those engaged in technical work and

(b) those engaged in business development and providing product-specific information to customers at home and abroad to generate additional business.

Such directives also need to be followed up with random monitoring of company compliance by the concerned government agencies. Such effort will also complement the urgent need to document the size and type of activities of companies within the nuclear, chemical, biological, aerospace, defense, IT/ITeS, engineering and allied sectors.

The third challenge is that within some government agencies and in the industry, STC/STM is sometimes seen as a regulatory and financial burden that has been imposed upon India/Indian companies by outsiders. Among these groups, there is little effort to correlate the fact that large foreign multinational companies have been operating for decades with profits and witnessing significant growth *while maintaining extensive compliance programs.*[14] When such an Indian audience cites

[14] FICCI-CITS programs, therefore, have always included speakers from companies such as GE, Boeing, Lockheed Martin, Honeywell etc, to underscore this very point. Increasingly, presentations by Indian companies such as Tata, Godrej, L&T and GMM Pfaudler have been included in such programs to show that this holds true for Indian companies as well.

complaints from US or European companies regarding their national regulations, very often, it misses the point that the complaints are about making existing regulations practical and cost-efficient for companies - not about doing away with regulations altogether!

The fourth challenge is that, thus far, there appears to be no focused outreach to bio-tech, pharmaceuticals, machine-tools and IT sectors, either by the relevant government agencies, or by their industry associations. Unsurprisingly, therefore, the few companies from these sectors that showed up in FICCI-CITS programs remained unconvinced that SCOMET applies to them or that their foreign partners and competitors routinely comply with their own national dual-use regulations. In these discussions, company representative highlight that theirs is a "nascent" sector, and adopting SCOMET-compliant procedures might disadvantage them unfairly and inhibit their business growth.

Finally, while some companies are aware of SCOMET regulations, they remain uninterested in setting up even a rudimentary compliance program. Several reasons account for this reluctance. To some, transaction-by-transaction guidance from DGFT staff, routed through small brokers or chartered accountants, is seen as sufficient. For some others, expenditure on compliance, even to send staff to attend outreach events, is an expense unrelated to "real/immediate" business issues. Their risk-assessment gives low priority to such expenditure because there is no evidence to suggest that non-compliance with SCOMET will result in penalties or that government agencies are likely to launch pro-active investigation of possible non-compliance. Indeed, more Indian companies are aware of, and compliant with, US and EU regulations than they are with SCOMET. A good case in point is the EU REACH program. Regardless of its onerous and complex compliance requirements, even the smallest Indian chemical companies spend resources to comply with these. Vendors of US majors such as GE, Lockheed and IBM, keep track of latest changes in US dual-use and munitions regulations while only having a sub-optimal understanding of which SCOMET provisions might apply to them. If multinationals and large Indian companies - with all their resources - have imprecise understanding of SCOMET, it is not surprising that many smaller companies might be engaging in questionable transactions due to lack of awareness.

The message is fairly clear: compliance is seen as integral to company operations, and as a normal cost of doing business, only when the consequences of non-compliance are real, and affect a company's markets, earnings and reputation.

Interestingly, however, those Indian companies that have begun to deal extensively with American, European and Japanese companies have established strong compliance programs. Their complaints about SCOMET increasingly reflect problems faced by companies of the developed economies, e.g. lack of clarity of certain clauses, time taken by government agencies to review licenses, lack of pre-license consultative mechanism, and lack of incentives for good compliance, among others.

FICCI

Section 4

Recommendations: Practical steps for Government and Industry

A national system of Strategic Trade Control (STC)/Management (STM) comprises efforts by regulatory authorities and users/transporters to maintain the security of the supply chain. The main characteristics of an advanced STC/STM system are:

- Cradle-to-Grave approach with reference to the monitoring of controlled technologies, i.e. end-to-end safeguards along the supply chain, starting from the manufacturing site all the way through the Customs and transport routes until delivery at the end-use site
- Creative mix of government mandates, incentives & penalties to ensure industry compliance
- Voluntary codes and practices developed by user groups to make compliance cost-effective and with efficient processing

Indeed, in the advanced industrial economies, and among select regime members from Asia, governments establish regulations on STM and then spend significant resources to ensure that all relevant stakeholders are not merely aware, but understand the rationale and methodologies of compliance. They employ a variety of means to get this message across (see below).

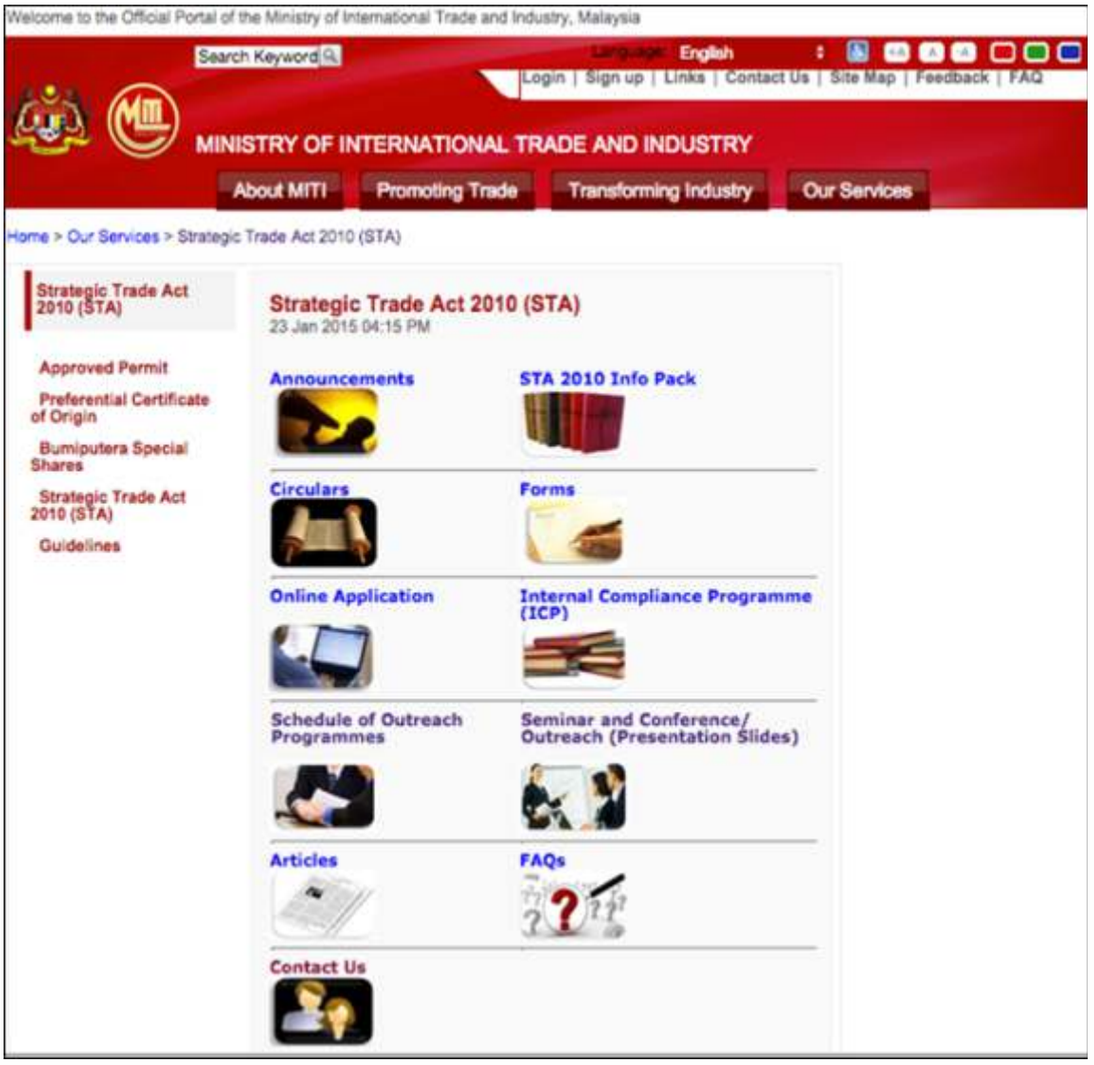
Table: Industry Outreach Resources

Industry Outreach Methods & Resources	Australia	Germany	Japan	Malaysia	Singapore	South Korea	UK	USA
Websites	✓	✓	✓	✓	✓	✓	✓	✓
Manuals & Brochures	✓	✓	✓	✓	✓	✓	✓	✓
National Updates	✓	✓	✓	✓	✓	✓	✓	✓
Domestic Regional Workshops	✓	✓	✓	✓	✓	✓	✓	✓
Compliance Training to industry through govt. agency	✓	✓	✓	✓	✓	✓	✓	✓
Support to an industry STC organization	✓	✓	✓	✓	✓	✓	✓	✓
Industry taskforce on strategic trade	✓	✓	✓	✓	✓	✓	✓	✓
Voluntary Compliance programs related to incentives	✓	✓	✓	✓	✓	✓	✓	✓

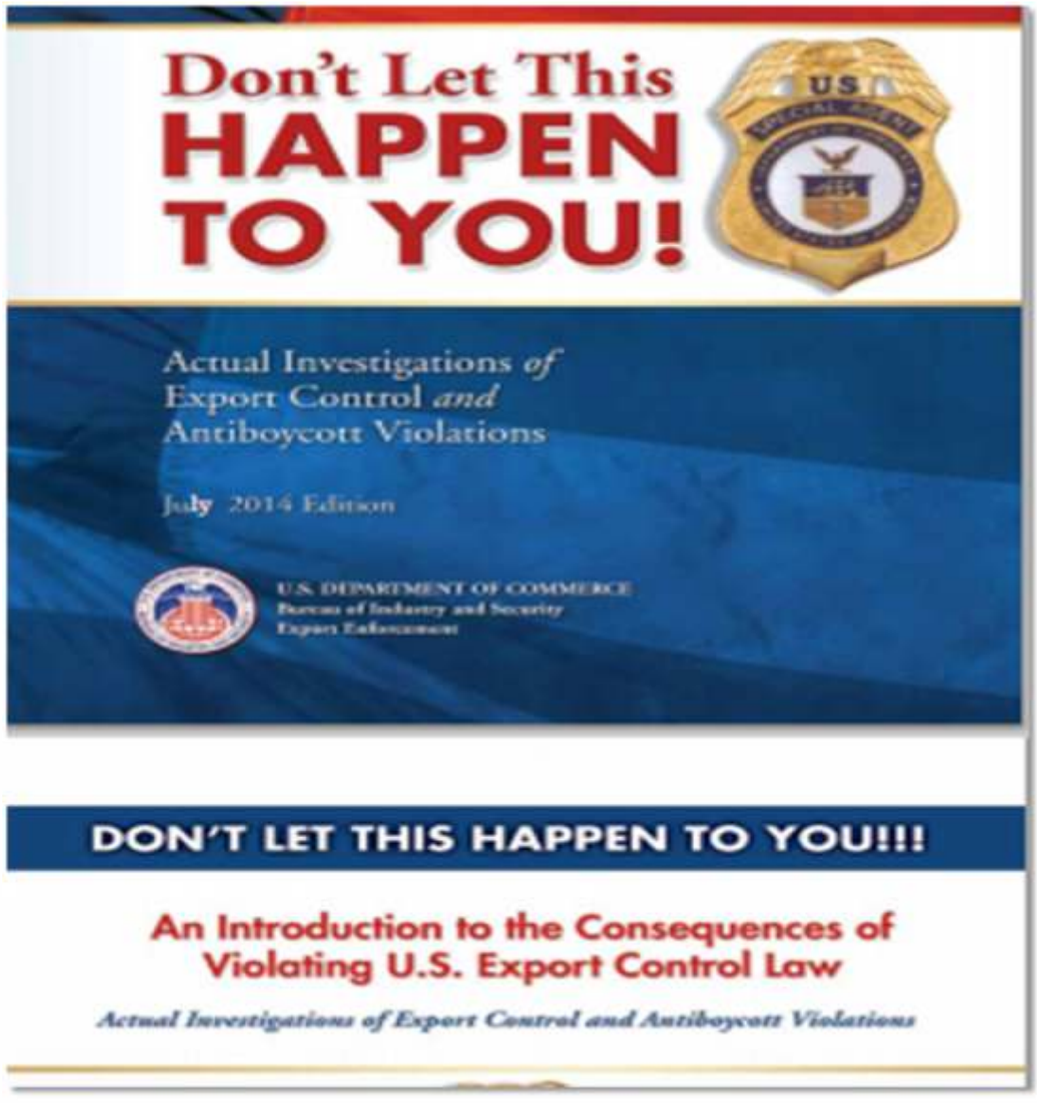
It is usual for governments in technologically-advanced countries to engage their companies pro-actively, using case studies to explain mechanisms used by "bad actors" to procure items from unsuspecting companies, and the modus operandi employed by skilled international proliferation networks. This includes development of either generic or transaction-specific red-flag guidance (e.g., for exporters or for freight-forwarders or brokers).

Red Flag Indicators *Things to Look for in Export Transactions* Adapted from the US BIS website
The customer or its address is similar to one of the parties found on a watch-list or a sanctioned entities list (national, UN, other)
The customer or purchasing agent is reluctant to offer information about the end-use of the item.
The product's capabilities do not fit the buyer's line of business, such as an order for sophisticated computers for a small bakery.
The item ordered is incompatible with the technical level of the country to which it is being shipped, such as semiconductor manufacturing equipment being shipped to a country that has no electronics industry.
The customer is willing to pay cash for a very expensive item when the terms of sale would normally call for financing.
The customer has little or no business background.
The customer is unfamiliar with the product's performance characteristics but still wants the product.
The customer declines routine installation, training, or maintenance services.
Delivery dates are vague, or deliveries are planned for out of the way destinations.
A freight-forwarding firm is listed as the product's final destination.
The shipping route is abnormal for the product and destination.
Packaging is inconsistent with the stated method of shipment or destination.
When questioned, the buyer is evasive and especially unclear about whether the purchased product is for domestic use, for export, or for re-export.

Countries like Malaysia and Singapore, although recent entrants to the STC fold, have developed extensive websites that offer detailed guidance to exporters regarding the national regulations. Malaysia offers a full slate of training & awareness programs in various parts of the country. The programs are advertised well in advance and often include events held in cooperation with a major trading partner (US, Japan). In some cases, outreach events are designed for government agencies of a regional trading partner (e.g. in ASEAN) that may be in the process of setting up its own STC system.



There is a sustained effort to highlight violations caused by casual interpretation of the regulations. Penalties, and ways to mitigate such penalties, are often highlighted and publicized, to ensure learning by other companies. The Bureau of Industry & Security (BIS) in the US Department of Commerce, for instance, puts out an annual brochure that explains some of the recent cases of violations and highlights the penalties levied.



In some countries, enforcement agencies proactively assess intelligence on attempts by foreign agencies and individuals to procure cutting edge technologies for commercial or proliferation purposes. They profile targeted technologies and reach out to producers of these technologies and make them aware of the modus operandi of procurement networks that might be targeting their facilities and/or their employees, the potential risks and legal penalties for noncompliance with the STC regulations. Illicit procurement attempts might involve buying a product with specification just below the license threshold, or stated for a civilian end-use that is not the principal line of business of the importing company.

Enforcement officials also regularly meet with companies in their operating region to understand their business and establish a relationship. When required, they provide the domestic companies information of such illicit networks or front companies, and encourage them to report any suspicious enquiries and orders or ask for assistance from the enforcement agencies if they face an ambiguous compliance situation.

Conclusion

Based on the preceding assessment of government-industry relations in India, we recommend that the governments and industry associations (1) learn from the experience of developed countries; (2) identify applicable best practices that can be customized to fit India's requirements; and (3) adapt policies and procedures that allow the government and the other stake-holders to work as partners rather than as antagonists.

Relationship with dual-use industry is currently based on outreach and limited advice functions.

1. **Outreach**
    a. Awareness about regulations and procedures
    b. Assistance on how-to implement the basic do's and don'ts
2. **Advice**
    a. Case-specific in goods classification
    b. Case-specific in instances of catch-all controls

As India becomes more engaged in export and import of increasingly larger quantities, values, and types of dual-use goods and technologies, the relationship between government and the national as well as international industry will need to be overhauled. In addition to the outreach and advice functions described above, Government of India will need to include a range of additional functions and programs to ensure that the national and international strategic trade control obligations are being implemented and enforced adequately and routinely.

For the future, the advice function should be expanded to include

1. Training to understand when, how and why catch-all controls might apply
2. Access to black list of foreign and Indian companies/individuals (that have suspect credentials or evidence of dealing with embargoed/sanctioned entities), so that trade with them should proceed with adequate caution and scrutiny
3. Advice and training to understand the most common situations where ITT controls might apply
4. Advice on how UN mandated sanctions against certain countries and/or entities apply to current and future transactions of Indian companies

In addition to outreach and advice, a stable and mutually supportive relationship with the domestic and international industry will require incentives and a "pro-active partnership."

3. **Incentives**

   a. Introduction of bulk licenses categories

   b. Existence of a working Internal Compliance Program (ICP) made a condition for exemptions or expedited licenses (e.g. for certain kinds of repeat transactions such as spare parts, servicing). (Note: Indian industry's demand for advance license to maintain inventory/ warehouse abroad of licensed parts to quickly meet supply orders is likely to grow rapidly. An ICP and strong compliance system will need to be mandatory in such cases.[15]

   c. Informal pre-license consultations introduced/expanded

   d. Voluntary disclosures of violations linked to mitigated penalties

   e. Anonymous Tip hotlines

   f. Whistle-blower protection

4. **Pro-active partnership**

   a. Predict technology trends that are likely to have STC implications

   b. Pro-active consultation regarding new regulations & procedures through industry contact groups or associations that meet licensing officials periodically

   c. Introduction of Comment Period (30 days or longer) and organizing events to solicit user feedback before finalizing policies or implementing guidelines

   d. Develop technology for STC implementation, monitoring and enforcement

As the discussion above indicates, implementation, enforcement and outreach functions require a lot of systematic data collection, data mining, consultations with industry and devising long term strategies for eliciting cooperation from the industry on an on-going basis. Consequently, GOI could learn from the experience of US, Germany, UK and others, and undertake a bifurcation of export promotion and strategic trade compliance functions within the DGFT, assigning these tasks to two separate divisions.

Recommendations for the Industry

The central conclusion to be drawn by industry in this discussion is simple: strategic trade and security compliance by any entity that deals with advanced and dual-use materials, equipment and expertise is no longer a choice, but a *statutory requirement*

[15] DGFT has already provided for SCOMET Export permission for "Stock & Sale" purpose vide § **Public Notice No. 7/2015-2020 dated 17.05.2017. Over time, the number and complexity of such industry requests is likely to grow much further.**

and indeed a *business enabler*. This applies to companies, R&D institutions as well as the academia. And if one extends the scope of regulations to include initiatives on money laundering and financing of terrorism, then financial institutions like banks, NBFcs, and ancillary businesses like the insurance industry, are also now required to implement the security protocols.

Establishing security compliance mechanisms makes an entity more trust-worthy for its technology-suppliers, trade partners, customers and national regulators. The dividends accrue in the form of more hi-tech imports, more technology-embedded partnerships and faster processing of licenses, transactions and consignments.[16] India Inc., therefore, needs to see security as part of *Corporate Social Responsibility.*

Specifically, as government agencies gear up to adopt/adapt some of the recommendations above, we recommend a few corresponding changes for the Indian hi-tech industry. These include, inter alia ,

a. Voluntary sharing of information with government agencies regarding suspicious orders and inquiries.

b. Ensuring that all subsidiaries - wherever they may be located, inside India or outside - are also made aware of these orders and inquiries.

c. Instituting the practice of providing succinct 1-page trade control data-sheets for each SCOMET-relevant product that lists the controls operative on that product.[17] All customers - foreign and domestic - as well as all relevant partners in the supply chain, such as trading houses, transporters and brokers, should also be provided this document, so that they are aware of do's and don'ts regarding that product.[18]

d. This would also serve to mitigate liability of the manufacturer in the event that the product is diverted/re-sold/exported in contravention of the law, and without obtaining a written, prior consent, of the Indian exporter/manufacturer. This safeguard has saved some Indian companies from damaging liability claims when, some years after the export, foreign intelligence resulted in the capture and prosecution of an entity outside India, and its supplier trails led back to select items supplied by an unsuspecting Indian exporter.

e. For domestic customers of SCOMET-controlled products, companies can institute a policy of stronger KYC scrutiny, to ensure that obvious linkages with domestic and foreign terrorist and proliferation networks are not missed.

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[16] Some of these ideas are discussed in Seema Gahlaut, Security Culture as a component of CSR , January 30, 2015, Defense & Security Alert, http://www.dsalert.org/dialogue/2015/01/security-culture-as-a-component-of-csr/

[17] These would be similar to safety data sheets (SDS) used with consignments in the chemical sector, which list handling instructions and emergency contact information related to certain categories of dangerous chemicals.

[18] The recipients could also be made to sign a receipt of the data sheet indicating that they have been provided this information.

Any changes in the procedures recommended above can be accompanied by broader, policy-level changes in how industry envisions its own role in the government-industry partnership:

1. At the top leadership level, any expenditure that improves the security of one's customers or of one's own facilities or of data or IPR, should be prioritized as a net investment rather than an unwanted business expense. If these steps strengthen a company's infrastructure and ability to attract technology embedded partnerships from abroad, and government trust at home, it should be regarded as a win-win situation.

2. At the managerial level, a coherent effort should be made to establish an appropriate internal compliance program (ICP) that seamlessly integrates SCOMET compliance with safety and security protocols relating to facilities, personnel, data and transport. Models exist at home and abroad, and consulting experts can assist companies to customize them to their specific requirements.

3. Any SCOMET-related ICP will need to be sustained through periodic training, incentives and penalties, just as in any other area of compliance.

4. But over time, the costs of monitoring and enforcement will diminish if companies and research organizations also focus on building a culture of security. This involves conscious methods of changing mind-sets of employees as well as managers, to see security threats as real and probable, and as affecting the reputation and profits of the organization, as well as downgrading their own job-security. Again, models and methodologies for doing this exist and can be accessed.

In sum, the *Make in India* campaign cannot come to fruition if foreign technology holders are not convinced that India - embodied by the government as well as the industry - takes technology security as seriously as they do. This uncertainty will preclude their transfer of investments and technologies, and hence the scope of their business operations in India. This will have a deleterious impact on the growth of India's value-added manufacturing and associated trade in services.

Laudably, the Government of India has taken several crucial steps by establishing a strong and comprehensive framework of legal and regulatory regime on strategic trade controls and management. It now needs to build upon it by streamlining implementation procedures and simultaneously pursuing rigorous enforcement. The Indian industry, for its part, has complied with the laws. But it too needs to take the next step: to see this compliance not as an imposition but as a trade-enabling mechanism, which proactively secures the supply chain, enhances corporate and national reputations, and generates benefits that go far beyond the balance sheet.

Annexure 1
India STC Laws and Regulations

India's STC Laws and Regulations (as of April 2018)
The Foreign Trade (Development and Regulation) Act, 1992 (amended in 2010) *URL http://dgftcom.nic.in/exim/2000/ftdract.htm* Empowers Directorate General of Foreign Trade (DGFT) to establish licensing mechanisms for exports and imports.
§ **DGFT Circular F. No. 18/24//HQ/99-?2000/ ECA II** Guidelines for maintaining the Denied Entities List (DEL)
§ **Amendment No. 122 of August 19, 2009** Requires all businesses registered or operating in India that manufacture, process, or use dual-use items on the SCOMET list to obtain the permission of the GOI before entering into any agreements that include a requirement that a foreign third-party or government make a site visit This approval process will be handled in the same manner as a license application.
§ **SCOMET List** *URL http://dgft.gov.in/exim/2000/scomet/2017/list2017.pdf* India's dual-use control list, which includes materials and equipment related to chemical, biological, radiological and nuclear materials, aerospace technologies, IT, electronics, pharmaceuticals, testing equipment etc. List has 0 to 8 Categories.
§ **FTDR Amendment Act 2010** Incorporates the provisions of the WMD Act (2005) into the FTDR (1992)
§ **Notification No. 38 (RE-2010)/2009-?2014 of 31 March 2011** Updates SCOMET list
§ **Notification No. XXX** Prohibits the "direct or indirect" import or export of designated arms and WMD-related goods and technologies to or from Iran, North Korea, and Iraq
§ **Notification No. 37 (RE-?2012)/2009-?2014 of 14 March 2013** Updates SCOMET
§ **Notification No. 56 dated 12 December 2013** Restrictions on the exports of 3 identified chemicals; now permitted under license
§ **Notification No. 05 dated 24 April 2017** Harmonizes SCOMET list with Australia Group and Wassenaar Arrangement controls.

§ **Notification No. 13 dates 28 June 2017**
Amends export policy regarding chemicals in Category 1C

§ **Notification No. 29 dates 21 September 2017**
Category 2H substituted with Genetic Elements and GMOs. Category 7 sub-categories A-E substituted with [Reserved], for Category 8 to remove overlap. Changes in 3D001(1) and (2), 3D004, 3D006, 3D014, 4A007, 4A032, 5C013, 8A301.b

§ **Public Notice No. 4/2015-2020 dated 24.04.2017**
Amendments in Paras 2.72, 2.73, 2.74,2.81 &2.82 and Appendix 2S of the Handbook of Procedures (HBP), 2015-2020

§ **Public Notice No. 7/2015-2020 dated 17.05.2017**
SCOMET Export permission for 'Stock & Sale' purpose

§ **Public Notice No. 11/2015-2020 dated 26.07.2017**
Amendment in Paras 2.16, 2.20, 2.51, 2.74, 2.79 and 2.80 of the HBP of Foreign Trade Policy (FTP) 2015-20

Public Notice. 27/2015-2020 dated 21.09.2017
Amendment to Paragraph 2.72 (b) [catch-all control] of the HPB

§ **DGFT Policy Circular No. 11 (RE-?2013)/2009-?14 of 30 December 2013**
Procedures for exports of chemicals identified in Notification No. 56

Weapons of Mass Destruction and Their Delivery Systems (Prohibition of Unlawful Activities) Act of 2005
URL http://mea.gov.in/Uploads/PublicationDocs/148_The--Weapons--Mass--destruction--And--Delivery--Systems-- Act--2005.pdf
Mandates regulation over trade in NBC technologies and delivery systems, and established penalties for violations.

Atomic Energy Act, 1962
URL http://dae.nic.in/?q=node/153
Regulates the export and import of designated substances, equipment, plants designed for the production, development, and use of atomic energy or related research, and radioactive substances.

§ **Resolution No. AEA/27(1)/2005-?ER, Guidelines for Nuclear Transfers (Exports)**
Prohibits the export of prescribed substances, equipment, or related technology to any country for the development of or use in a nuclear explosive device or in instances when there is an unacceptable risk of diversion for the development or use of a nuclear explosive device or acts of nuclear terrorism. Restricts re-transfers of controlled nuclear items to anyone other than the end-user of record.

§ **Notification on the Schedule of prescribed substances under the Atomic Energy Act, 1962 (20 January 2006)**
Lists goods and technologies that are subject to licensing by the Department of Atomic Energy (DAE).

Chemical Weapons Convention Act, 2000
URL http://chemicals.nic.in/chem4.htm
Mandates procedures for fulfilling obligations under CWC, including for inspections of production facilities.

§ **CWC Amendment Act, 2012**
URL http://chemicals.nic.in/ACT_36_11092012.pdf
Mandates

§ **CWC Appeal Rules, 2005**
URL http://chemicals.nic.in/cwc_rules.pdf
Mandates "no trade" in Schedule 2 chemicals with States that are not parties to the CWC. Also mandates registration requirement for all facilities engaged in production of Scheduled chemicals.

§ **Notification dated 30 August 2016 [G.S.R. 834(E)]**
Chemical Weapons Convention Rules, 2016. It replaces the 2014 Rules, and establishes the mandate and powers of CWC-National Authority and its designated officials.

Customs Act, 1962
URL http://www.cbec.gov.in/customs/cs-?act/cs-?act-?idx.htm

Mandates that goods - including defense and dual-?use - can be confiscated if attempted to be imported/exported contrary to any prohibition or the provisions of the Customs Act.

The Environment Protection Act, 1986
URL http://envfor.nic.in/legis/env/env1.html

Provides for procedures assuring the security of and oversight over pathogens, microorganisms, GMOs, and toxins at any stage of production, import, export, use, or research.

Annexure 2
Categories of SCOMET

(Special Chemicals, Organisms, Materials, Equipment and Technologies)		
Category	**Description**	**License Issuing Authority**
0	Nuclear materials, nuclear-related other materials, equipment & technology	DAE
1	Toxic chemical agents & other chemicals	DGFT
2	Micro-organisms, Toxins	DGFT
3	Materials, Materials Processing Equipment, and Related Technologies	DGFT
4	Nuclear-related other equipment and technology, *not controlled under Category 0*	DGFT
5	Aerospace systems, equipment, including production & test equipment, & related technology	DGFT
6	Munitions List	Authorization from Department of Defense Production (MOD) required for all munitions exports. Authorization from DAE required for all radioactive and reactive materials, nuclear power generating or propulsion equipment, including reactors, and simulators for military nuclear reactors.
7	Electronics, computers, & information technology, including information security	DGFT
8	Special Materials and Related Equipment, Material Processing, Electronics, Computers, Telecommunications, Information Security, Sensors and Lasers, Navigation and Avionics, Marine, Aerospace and Propulsion	DGFT

Annexure 3

Comparison of SCOMET Categories with the US and EU Dual-Use Lists

	EU Control List	US Control List	India (SCOMET)
Category 0	Nuclear materials, facilities and equipment	Nuclear materials, facilities and equipment	Nuclear materials, nuclear-related other materials, equipment & technology
Category 1	Materials, chemicals, "microorganisms" and "toxins"	Materials, chemicals, "microorganisms" and "toxins"	Toxic chemical agents & other chemicals
Category 2	Materials Processing	Materials Processing	Micro-organisms, Toxins
Category 3	Electronics	Electronics	Materials, Materials Processing Equipment, and Related Technologies
Category 4	Computers	Computers	Nuclear-related other equipment and technology, *not controlled under Category 0*
Category 5	Telecommunications and "information security"	Telecommunications and "information security"	Aerospace systems, equipment, including production & test equipment, & related technology
Category 6	Sensors and lasers	Sensors and lasers	Munitions List
Category 7	Navigation and avionics	Navigation and avionics	Electronics, computers, & information technology, including information security
Category 8	Marine	Marine	Special Materials and Related Equipment, Material Processing, Electronics, Computers, Telecommunications, Information Security, Sensors and Lasers, Navigation and Avionics, Marine, Aerospace and Propulsion
Category 9	Aerospace and propulsion	Propulsion systems, Space Vehicles, etc.	

Annexure 4

MEMBERS OF THE MULTILATERAL EXPORT CONTROL REGIMES (AS OF APRIL 2018)			
NSG	**AG**	**MTCR**	**WA**
Argentina	Argentina (1993)	Argentina (1993)	Argentina
Australia	Australia (1985)	Australia (1990)	Australia
Austria	Austria (1989)	Austria (1991)	Austria
Belarus			
Belgium	Belgium (1985)	Belgium (1990)	Belgium
Brazil		Brazil (1995)	
Bulgaria	Bulgaria (2001)	Bulgaria (2004)	Bulgaria
Canada	Canada (1985)	Canada (1987)	Canada
China			
Croatia	Croatia (2007)		Croatia
Cyprus	Cyprus (2000)		
Czech Republic	Czech Republic (1994)	Czech Republic (1998)	Czech Republic
Denmark	Denmark (1985)	Denmark (1990)	Denmark
Estonia	Estonia (2004)		Estonia
Finland	Finland (1991)	Finland (1991)	Finland
France	France (1985)	France (1987)	France
Germany	Germany (1985)	Germany (1987)	Germany
Greece	Greece (1985)	Greece (1992)	Greece
Hungary	Hungary (1993)	Hungary (1993)	Hungary
Iceland	Iceland (1993)	Iceland (1993)	
India	India (2018)	India (2016)	India (2017)
Ireland	Ireland (1985)	Ireland (1992)	Ireland
Italy	Italy (1985)	Italy (1987)	Italy
Japan	Japan (1985)	Japan (1987)	Japan
Kazakhstan			
Republic of Korea	Republic of Korea (1996)	Republic of Korea (2001)	Republic of Korea
Latvia			Latvia
Lithuania	Lithuania (2004)		Lithuania
Luxembourg	Luxembourg (1985)	Luxembourg (1990)	Luxembourg
Malta	Malta (2004)		Malta

MEMBERS OF THE MULTILATERAL EXPORT CONTROL REGIMES (AS OF APRIL 2018)			
NSG	**AG**		**MTCR WA**
Mexico	Mexico (2013)		Mexico
Netherlands	Netherlands (1985)	Netherlands(1990)	Netherlands
New Zealand	New Zealand (1985)	New Zealand (1991)	New Zealand
Norway	Norway (1986)	Norway (1990)	Norway
Poland	Poland (1994)	Poland (1998)	Poland
Portugal	Portugal (1985)	Portugal (1992)	Portugal
Romania	Romania (1995)		Romania
Russian Federation		Russian Federation (1995)	Russian Federation
Serbia			Serbia
Slovakia	Slovakia (1994)		Slovakia
Slovenia	Slovenia (2004)		Slovenia
South Africa		South Africa (1995)	South Africa
Spain	Spain (1985)	Spain (1990)	Spain
Sweden	Sweden (1991)	Sweden (1991)	Sweden
Switzerland	Switzerland (1987)	Switzerland (1992)	Switzerland
Turkey	Turkey (2000)	Turkey (1997)	Turkey
Ukraine	Ukraine (2005)	Ukraine (1998)	Ukraine
United Kingdom	United Kingdom (1985)	United Kingdom (1987)	United Kingdom
United States	United States (1985)	United States (1987)	United States
	European Union (1985)		

About FICCI

Established 90 years ago, FICCI is the largest and oldest apex business organization in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies.

A non-government, not-for-profit organization, FICCI is the voice of India's business and industry. From influencing policy to encouraging debate, engaging with policy makers and civil society, FICCI articulates the views and concerns of industry, reaching out to over 2,50,000 companies. FICCI serves its members from large (domestic and global companies) and MSME sectors as well as the public sector, drawing its strength from diverse regional chambers of commerce and industry.

The Chamber with its presence in 14 states and 10 countries provides a platform for networking and consensus-building within and across sectors and is the first port of call for Indian industry, policy makers and the international business community.

Notes

ABOUT THE CENTER FOR INTERNATIONAL TRADE & SECURITY (CITS)

CITS promotes peace and prosperity through programs that focus on the protection of nuclear, chemical, and biological materials, prevention of nuclear trafficking and denuclearization, chemical security, strategic trade controls for conventional weapons and dual-use products, as well as mitigation of threats posed by trade in technologies and materials that underlie weapons of mass destruction. The Center is committed to a world free of nuclear weapons.

CITS carries out its mission by engaging and informing policymakers, industry representatives, educators, students, and the general public, both in the United States and abroad, about the dangers of trade in and theft of weapons and weapons components. The Center also engages in international colloquia and second-track negotiations with a variety of nations. The Center puts great emphasis on mission-critical education and training programs conducted at the University of Georgia and at many other locations, worldwide. CITS prepares both undergraduate and graduate students for careers in international security and nonproliferation.

ABOUT THE STIMSON CENTER

The Henry L. Stimson Center is a non-profit, nonpartisan institution devoted to enhancing international security through a unique combination of rigorous analysis and coalition building. Stimson's approach is pragmatic - geared toward providing policy alternatives, solving problems, and overcoming obstacles to a more peaceful, prosperous, and secure world. Through in-depth research and analysis, Stimson seeks to understand and illuminate complex issues and transnational threats - from terrorism and the proliferation of weapons of mass-destruction and illicit small arms, to drug- and human-trafficking, environmental security, and the protection of civilians in conflict. By engaging policymakers, practitioners, and nongovernmental institutions as well as other experts, Stimson crafts recommendations that are actionable and effective. Stimson's work is focused on three priorities that are essential to global security: strengthening institutions for international peace and security; building regional security; and reducing weapons of mass destruction and transnational threats.

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