



वस्त्र मंत्रालय
MINISTRY OF
TEXTILES



TECHNOTEX-2017



Knowledge Paper on Advantage India: Emerging Global Manufacturing Hub for Technical Textiles



Knowledge Partner

wazir
ADVISORS

Disclaimer

This report has been entirely authored by Wazir Advisors Pvt. Ltd. and FICCI. Members of Ministry of Textiles shall not be held accountable in any manner for any kind of information presented in this report. This publication contains information intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. Neither Wazir Advisors nor FICCI accepts any responsibility for loss occasioned to any persons acting or refraining from action as result of any material in this publication. On any specific matter, reference should be made to the appropriate advisor.

Contents

Executive Summary	4
1. Global Technical Textiles Market Overview	6
1.1. Introduction	6
1.2. Market Overview	6
1.3. Key Trends and Growth Drivers	8
2. Indian Technical Textiles Market Overview	9
2.1. Domestic Market Overview	9
2.2. Export Market Overview	10
2.3. Key Growth Segments	11
2.4. Future Market Projections	15
3. India's Advantage in Growing as a Global Manufacturing Hub	16
4. Government Support	20
5. Key Issues and Way Forward	23
Glossary	27
About FICCI	28
About Wazir Advisors	29
About Ministry of Textiles	30

Executive Summary

The global technical textile market is a growing market and currently estimated at US\$ 145 billion. USA is the largest import market for technical textiles products accounting for 17% share followed by China, Germany and UK with a share of 10%, 8% and 4%, respectively. China is the largest exporter of technical textile products with a share of 24% followed by USA, Germany and Republic of Korea with a share of 10%, 9% and 4% respectively. Driven by the rapid industrialization, robust growth in construction & infrastructure projects, increasing automobile production, and rising demand from the health care sector, the overall market is expected to grow at a CAGR of 4% and reach US\$ 170 bn. by 2020.

The Indian market for technical textiles is estimated at US\$ 12 billion in 2015-16, growing at a CAGR of around 12% and expected to reach US\$ 22 billion by 2020-21. Packtech is the largest segment with 42% share of the market, followed by Indutech, Mobiltech and Homotech. India exported technical textiles products worth US\$2,078 million in 2015-16, growing at a CAGR of 16% since 2007-08. Majority of exports from India are commodity products which are not very research and development intensive. Indutech, Packtech, and Homotech are the largest exported segments which have a combined share of around 85% in the total exports of technical textiles.

Five sectors which have shown a considerable growth in technical textiles are Agrotech, Meditech, Mobiltech, Sportech and Protech.

- **Agrotech:** With the focused efforts by the government to promote use of agro textiles through various schemes of National Horticultural Mission (NHM) and National Horticultural Board (NHB), the demand for shade nets are expected to grow in the coming years.
- **Meditech:** Growing healthcare industry, increased spend by consumers for well-being, increasing number working women, rising awareness on personal hygiene & sanitation and higher disposable incomes are the key growth drivers for Meditech.
- **Mobiltech:** Automobile industry is a key contributor to Mobiltech growth as high end vehicles, commercial vehicles and two wheelers sales are rising with increased comfort requirement. Air Bags, tyre cord fabric, sun visors/sun blinds, usage in airlines (upholstery), helmets etc. are the key categories of growth.
- **Protech:** Protective wears like fire retardant apparel, outer protective clothing, bullet proof jackets, high altitude clothing for armed forces etc. are the highest growing categories for the segment.
- **Sportech:** Increasing interest towards sports and outdoor leisurely activities has led to immense growth in sports goods and equipment.

Even though the sector is largely dominated by Europe and China, there is huge potential for India to emerge as global manufacturing hub for technical textiles in the near future. Few of the key factors affecting the competitiveness of India's technical textiles include the following

- Abundant availability of textile raw material
- Technical textiles being labor intensive industry, presence of large pool of labor at a comparatively low cost in India vis-à-vis other technical textile producing countries like China, US, EU etc. provides India a competitive standing.

- Power costs in India is lower than countries like China & Germany and comparable to low cost destinations like Bangladesh, Vietnam, Myanmar, Kenya etc. The lending rates in India are on higher side as compared to China and Vietnam but with special Government support available for the sector, the effective cost of capital becomes comparable.
- Infrastructure for technical textiles in India is also developing with increasing investment in R&D, testing and investor facilitation through Centre of Excellences. Besides several textile parks have been established with good infrastructure for attracting investments.
- Support from central and state governments in form of textile parks, research centers, international collaboration with foreign institutes and laboratories, training facilities etc. is also playing a significant role in the sector's progress.

Government of India has launched various support schemes for textile and apparel manufacturers to make them globally competitive. The schemes target technology up-gradation, infrastructure development, export promotion etc. Various State Governments have also announced their textile policies aimed at attracting investments in their states.

India is yet to exploit its full potential in the technical textile sector due to various concerns like absence of regulatory measures for technical textile usage in infrastructure, construction etc.; dependence on import for technology and machinery; limited production of high-end products & specialized yarns and intricate duty structures.

Several measures need to be undertaken and prioritized to facilitate growth of the overall technical textile industry in India and help in growth of India as a global manufacturing hub. Some of these measures include establishing regulatory norms for mandatory usage of technical textile items in specific industries to increase their consumption, developing exclusive HSN codes for identifying high growth products for further development, establishing and implementing Indian standards for developing high quality products of global acceptance, improvement of operational standards, focus on training and education and creating end user awareness for increasing domestic demand for high end technical textile products.

Besides the above measures few specific measures need to be undertaken for developing India as a global manufacturing hub including measures to attract investments from domestic and global players, forming partnerships with global players for acquiring technical knowhow, creation of mega parks to attract large scale investments and focus on R&D initiatives.

India is poised for growth in technical textile consumption along with overall growth of the economy and modernization of the country. India's manufacturing competitiveness is also improving and the technical textile manufacturing industry needs to further gear up for tapping the huge domestic and global opportunities. With the appropriate measures, the industry has potential to emerge as global hub for technical textile manufacturing in the coming years.

1. Global Technical Textiles Market Overview

1.1. Introduction

Technical Textiles sector is one of the most innovative industries around the world, being used in almost all modern industries including automotive, healthcare, aeronautics, sports etc. The success of technical textiles is primarily due to the creativity, innovation and versatility in fibres, yarns and woven/knitted/nonwoven fabrics with applications spanning an enormous range of uses. The ability of technical textiles to combine with each other and with others to create a new functional products offer unlimited opportunity to growth. Depending on the product characteristics, functional requirements and end-user applications, the technical textile products are classified into 12 segments.

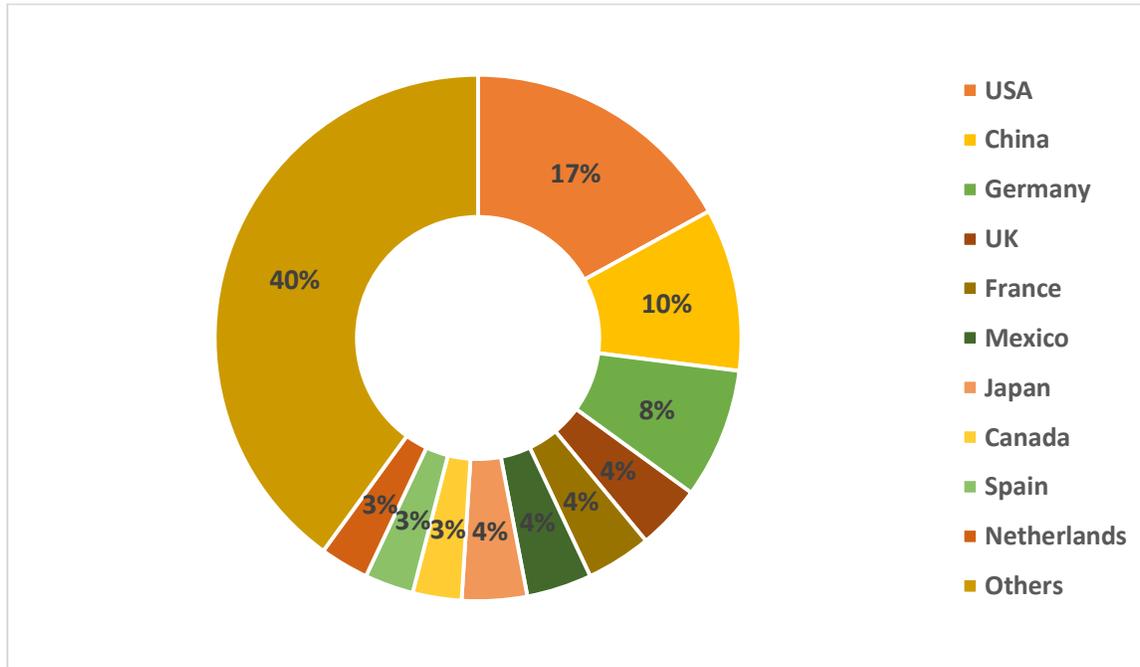
- i) Agrotech (Agriculture, horticulture and forestry)
- ii) Buildtech (building and construction)
- iii) Clothtech (technical components of shoes and clothing)
- iv) Geotech (geotextiles, civil engineering)
- v) Hometech (components of furniture, household textiles and floor coverings)
- vi) Indutech (filtration, cleaning and other industrial products)
- vii) Meditech (hygiene and medical)
- viii) Mobiltech (automobiles, shipping, railways and aerospace)
- ix) Oekotech (environmental protection)
- x) Packtech (packaging)
- xi) Protech (personal and property protection)
- xii) Sportech (sport and leisure)

1.2. Market Overview

Global market size for technical textiles is estimated at US\$ 145 billion in 2015 and is expected to grow at a CAGR of 4% and reach US\$ 170 bn. by 2020. The demand for technical textiles will be driven by the rapid industrialization, robust growth in construction & infrastructure projects, increasing automobile production, and rising demand from the health care sector.

Global technical textile imports is dominated by USA with a share of 17%. This is followed by China, Germany and UK with a share of 10%, 8% and 4%, respectively. The rest of the world accounts for 40% share in the imports of technical textiles. Emerging regions such as Asia Pacific and Latin America are presumed to witness rapid growth in multiple segments of technical textiles.

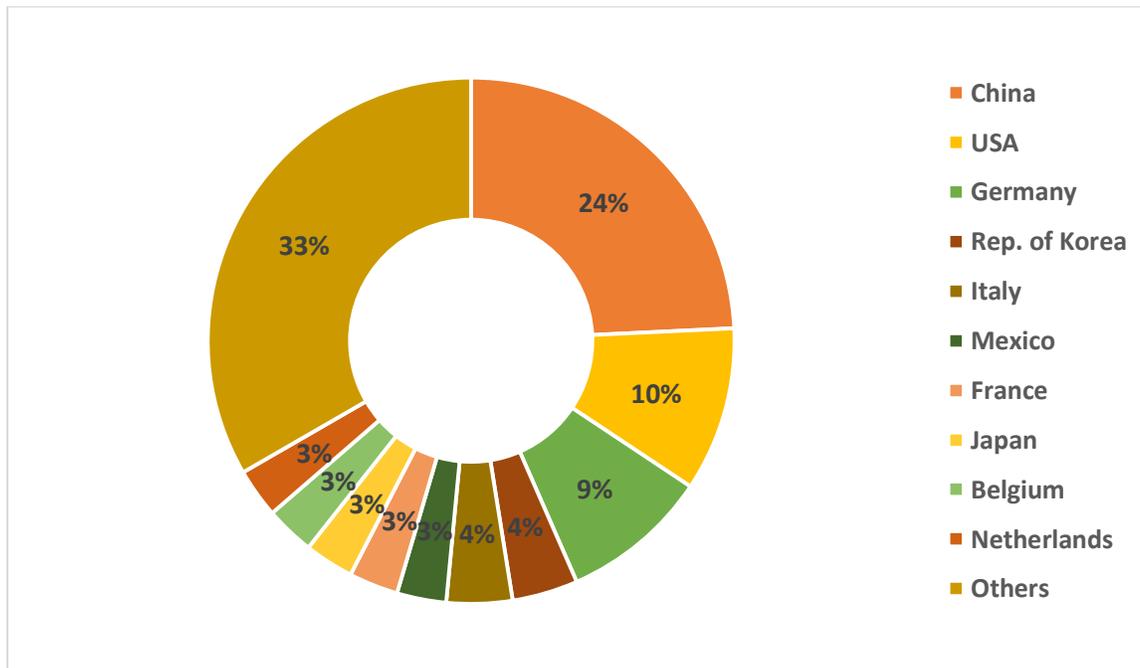
Figure 1: Top import markets for Technical Textiles (2015)



Source: Estimated based on data from UN Comtrade

China is the largest exporter of technical textile products with a share of 24%. This is followed by USA, Germany and Republic of Korea with a share of 10%, 9% and 4% respectively.

Figure 2: Top exporters of Technical Textiles (2015)



Source: Estimated based on data from UN Comtrade

1.3. Key Trends and Growth Drivers

a. Increasing role of technology

Technology plays a major role in development of technical textile products. Several products have been impacted by use of new technology. Some examples of technology include thermoforming, 3D weaving, and 3D knitting, which are being highly used in manufacturing technical textiles. Thermoforming in textiles is a heat treatment process that is used to shape composites containing fabric layers into various shapes. This technology is widely adopted in the Indutech, Mobiltech, Packtech, and Hometech segments. 3D weaving is a weaving process used for manufacturing products such as spacer fabrics, geotextiles, surgical implants, webbings, conveyor belts and more. 3D technology is used to manufacture complete garments with minimal or no cutting. This innovative technology eliminates post labor work, thus saving production time and cost. In addition, this technology offers knitwear consumers more comfort and better fit by eliminating seams. The heat-set method is a thermal process carried out either in a moist or dry heat environment. Finishing treatments are used in the final production stages. Newer technologies such as nanotechnology is expected to witness wide acceptance over the coming years and offers ample scope for growth.

b. Regulatory support

Several countries in the world have made usage of technical textile products mandatory for personal and property safety like usage of fire retardant fabric at public places, usage of protective work wear in hazardous industries, installation of airbags in automobiles, use of geosynthetics in infrastructure development projects, etc. This will continue to provide regulatory driven stability to demand patterns in the market.

c. Buyer/ Application trends

Technical textiles has brought about that change where unconventional textile products are being used to enhance the efficiency and sustainability of conventional products. Growth of end user industry in some specific segments are also driving the usage of technical textiles globally. Some of the examples include the below:

- **Mobiltech:** Mobiltech was the leading application segment and accounted for 22% of total market in 2015. The automotive industry is strong in many Asian countries such as China, Japan, India, Korea, Thailand and Taiwan. Growing demand for high performance materials from automotive industry is expected to remain a key driving factor for this segment over the coming years.
- **Meditech:** Increasing infrastructure spending especially in the developing regions such as Asia Pacific and Central & South America owing to government initiatives is presumed to be a major regional driver. Growing population, increasing access to medical treatment is estimated to drive the medical & pharmaceutical industry, which in turn is expected to aid the Meditech segment.
- **Protective Textile:** North America accounts for over half of the total market of Protech. Stringent regulatory guidelines coupled with high level of safety awareness in the industry are expected to drive the growth over the coming years.

2. Indian Technical Textiles Market Overview

2.1. Domestic Market Overview

The Indian technical textiles market, estimated at INR 92,499 crores in 2015-16, has grown from INR 65,920 crores in 2012-13 at a CAGR of 12%.

Table 1: Break-up of Technical textiles market in India (in Rs. Crores)

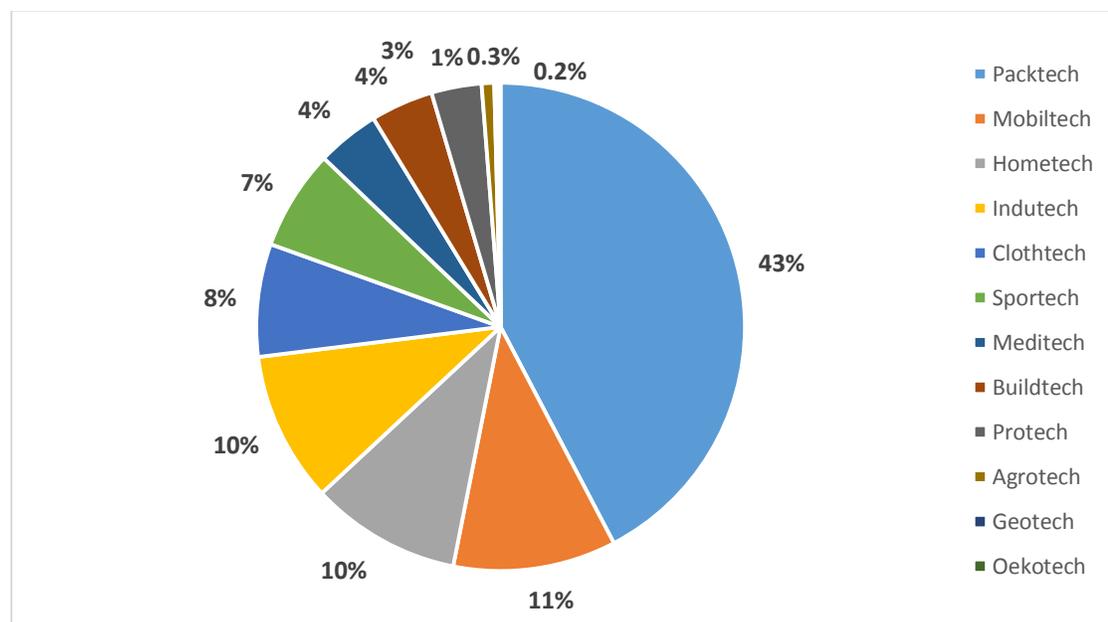
S. No.	Segment	2012-13	2013-14	2014-15 (P)	2015-16 (P)	CAGR
1	Agrotech	826	929	1,043	1,191	13%
2	Meditech	3,321	3,622	3,950	4,281	9%
3	Mobiltech	6,607	7,370	8,221	9,173	12%
4	Packtech	28,020	31,181	34,698	38,733	11%
5	Sportech	4,132	4,645	5,222	5,877	12%
6	Buildtech	2,514	2,819	3,162	3,577	12%
7	Clothtech [#]	4,835	5,357	5,935	6,591	11%
8	Homotech ^{\$}	6,249	7,119	8,110	9,274	14%
9	Protech	1,988	2,176	2,382	2,722	11%
10	Geotech	683	772	873	991	13%
11	Oekotech	120	132	145	160	10%
12	Indutech	6,625	7,567	8,642	9,929	14%
	Total market	65,920	73,689	82,383	92,499	12%

Source: ICRA Baseline survey report

#Clothtech market includes only specialized sewing threads

Packtech is the largest segment with 43% share of the market, followed by Mobiltech, Indutech and home tech with a share of 11%, 10% and 10%, respectively.

Figure 3: Segmentation of Indian Technical Textiles Market (2015-16)

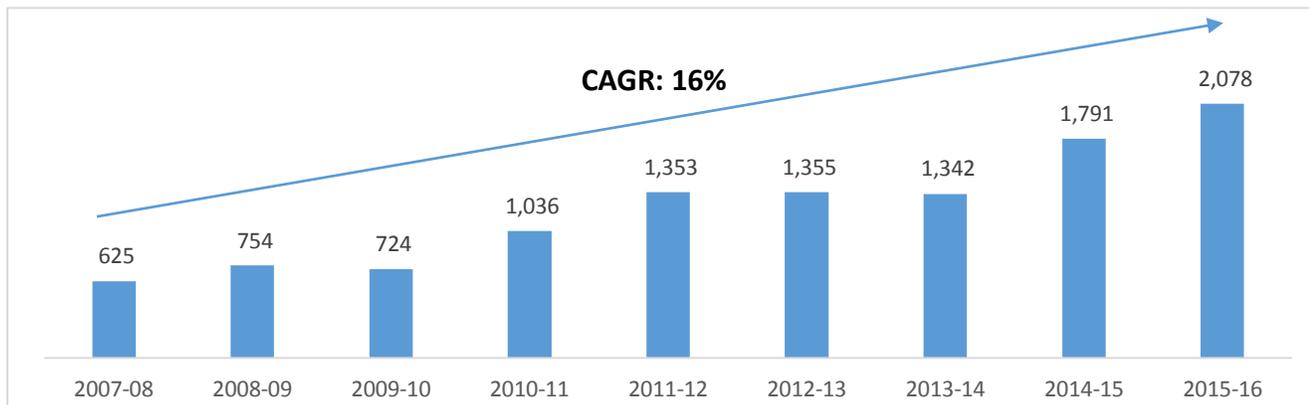


Source: ICRA Baseline survey report

2.2. Export Market Overview

India exported technical textiles products worth US\$2,078 million in 2015-16, growing at a CAGR of 16% since 2007-08. Majority of exports from India are commodity products which are not very research and development intensive. Indutech, Packtech, and Hometech are the largest exported segments which have a combined share of around 85% in the total exports of technical textiles. Higher focus on these commodity products is due to the fact that these products require low investments and there is an absence of the required technology and specialty fibres which are required in the manufacturing of advanced technical textile products.

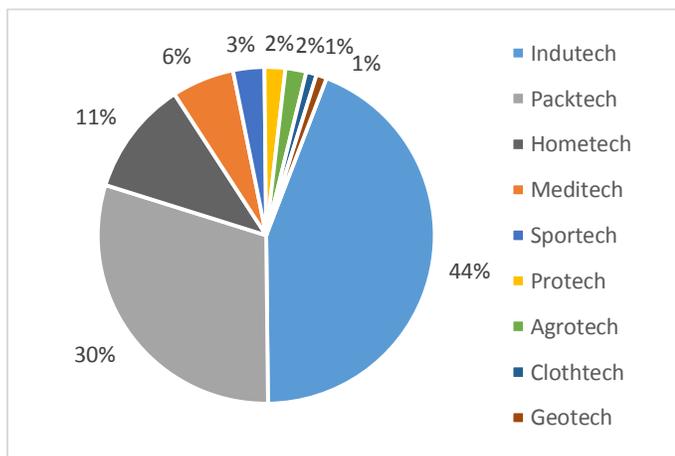
Figure 4: Export trend of technical textiles from India (US\$ million)



Source: Office of the Textile Commissioner

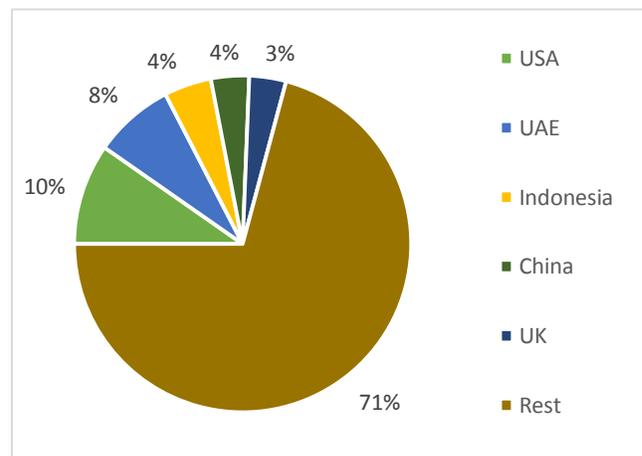
Largest export markets include USA, UAE, Indonesia, China and UK

Figure 5: Segment wise share in total exports in India (2015-16)



Source: Office of the Textile Commissioner

Figure 6: Major markets for India (2015-16)



Source: UN Comtrade

2.3. Key Growth Segments

While overall technical textiles market is growing, there are some specific segments which are showing high growth potential. Given below are details of the key growth segments within overall technical textile market.

a. Agrotech

Agrotech includes textile products used in agriculture, horticulture (including floriculture), fisheries and forestry. In Agrotech segment, there are ten different products, most of which are netting products. While a majority of them have a very small market in India, Shade nets is one product that has shown considerable growth during the last five years. Shade nets have widespread applications in floriculture (roses, orchids, etc.), horticulture (Cabbage, pepper, Grapes etc.), vanilla cultivation, tea plantations, drying of agri-products, cattle-sheds, parking lots, swimming pools, etc. The shade nets provide protection to the plants from wind, extreme weather conditions and reduce water evaporation. The details of the categories which have shown the highest growth is given in the table below.

Table 2: Fastest growing Agrotech categories and their growth drivers (Values in Rs. crores)

	Segment	2012-13	2015-16	CAGR	Growth Drivers
1	Shade Nets	145	274	24%	<ul style="list-style-type: none"> Focused efforts by the government to promote use of agro textiles through various schemes of National Horticultural Mission (NHM) and National Horticultural Board (NHB),
2	Fishing Nets	654	870	10%	<ul style="list-style-type: none"> Fish production in India is estimated at 9.1 MT, growing at 5% per annum
3	Others	27	46.7	20%	
	Total market	826	1191	13%	

Source: ICRA Baseline survey report

b. Meditech

Medical textiles embraces all those textile materials used in health and hygiene applications in both consumer and medical markets. The Meditech products are available in woven, knitted and non-woven forms based on the area of application. It includes products like diapers, sanitary napkins, disposables, contact lens, artificial implants, etc.

Table 3: Fastest growing Meditech categories and their growth drivers (Values in Rs. crores)

S. No	Segment	2012-13	2015-16	CAGR	Growth Drivers
1	Artificial Joints	108	185	20%	<ul style="list-style-type: none"> ▪ Growth of healthcare industry ▪ Increasing healthcare spend by urban as well as rural consumer
2	Hernia Mesh	160	244	15%	<ul style="list-style-type: none"> ▪ Approx. 2 million hernia surgery done in India
3	Disposable Bed-sheets, curtains and Pillow Covers	66	100	15%	<ul style="list-style-type: none"> ▪ Growing awareness ▪ Gaining acceptance in spa industry
4	Sanitary Napkin(TT Component)	63	95	15%	<ul style="list-style-type: none"> ▪ Higher Disposable income ▪ Changing Lifestyle- need for convenience ▪ Increasing number of working women ▪ Increased awareness of personal hygiene and sanitation ▪ Availability of low cost sanitary napkins
5	Baby Diaper(TT Component)	62	94	15%	<ul style="list-style-type: none"> ▪ Increasing acceptance of product ▪ Changing Lifestyle- need for convenience ▪ Higher Disposable income
	Others	2862	3563	8%	
	Total market	3321	4281	9%	

Source: ICRA Baseline survey report

c. Mobiltech

Mobiltech are technical textiles used in automotive or transport sector. It includes applications in automotive and automotive components (including aircrafts and railways). Mobiltech covers not only isolation and safety aspect but also focuses on comfort and style. Mobiltech products can be broadly classified into two categories: visible components and concealed components. Visible components include seat upholstery, carpets, seat belts, headliners, etc. Concealed components include Noise Vibration and Harness (NVH) components, tyre cords, liners, composite reinforcements for automotive bodies, civil and military aircraft bodies, wings and engine components, etc.

The demand for majority of Mobiltech products is dependent on the growth of both passenger cars and commercial vehicles segments. Over the years, the Indian automobile industry has emerged as one of the world's largest, with annual sales of 20.5 million vehicles in FY16. It is also one of the fastest growing auto markets, with production of 24.0 million vehicles in FY16 and a leading position in several sub-segments.

The mobiltech categories which have shown the highest growth are given in the table below:

Table 4: Fastest growing Mobiltech categories and their growth drivers (Values in Rs. crores)

S. No	Segment	2012-13	2015-16	CAGR	Growth Drivers
1	Air Bags	95	144	15%	▪ Growth of high end/ model vehicles
2	Tyre Cord Fabric	3,991	5,610	12%	▪ Growing tyre industry
3	Sun Visors/Sun Blinds	105	148	12%	▪ The primary growth driver for automobile interior carpets is the sales of passenger cars, MUVs and SUVs
4	TT usage in airlines (upholstery)	80	112	12%	▪ The primary growth driver for seat cover fabrics is the sales of passenger cars, MUVs and SUVs ▪ The commercial vehicles as well as two-wheelers use PVC/ PU / resin for manufacturing seat covers
5	Helmets	1,015	1,388	11%	▪ Growth in sales of two wheeler vehicles
	Others	1,321	1,771	10%	
	Total market	6,607	9,176	12%	

Source: ICRA Baseline survey report

d. Protech

Protective textile includes textiles used as protective clothing. These are specialty textiles that provide safety to the wearer during high-risk engagements like protection from bullets and explosions, and also from extreme atmospheric conditions. The protective textiles are made using specialty fibers such as aramid fiber used in making of bullet proof jackets, glass fibers used in fire proof jackets etc.

The Protech categories which have shown the highest growth are given in the table below:

Table 5: Fastest growing Protech categories and their growth drivers (Values in Rs. crores)

S. No	Segment	2012-13	2015-16	CAGR	Growth drivers
1	Fire Retardant Apparel	158	254	17%	▪ Growth driven by usage in oil and gas industry & chemical industry
2	Outer protective clothing	174	222	8%	▪ Demand from areas with heavy rainfall
3	Bullet Proof Jackets	523	588	4%	▪ With increasing threat level, requirement of bullet proof vests/ jackets for VIPs and VVIPs have increased ▪ High demand from security forces- Armed forces, Reserve services, Police services ▪ Demand from Indian army alone is 3.5 lakh pieces
4	High Altitude clothing	76	81	3%	▪ High demand by armed forces
5	FR Fabrics for furnishings	223	241	3%	▪ All building and constructions need to get fire safety clearance from the fire department Airlines, Railways and Ships are key markets. ▪ Office furnishings and hospitals and another key sector
6	Others	833	888	2%	
	Total market	1987	2274	5%	

Source: ICRA Baseline survey report

e. Sportech

Sportech are used mainly for making sportswear including sports shoes and other sports accessories. Increasing interest in active sports and outdoor leisure activities such as flying and sailing sports, climbing, cycling, etc. has led to immense growth in the consumption of textile materials in manufacturing sporting and related goods and equipment. Synthetic fibers and coatings have largely replaced traditional cotton fabrics and other natural fibers in the making of Sportech.

The Sportech categories which have shown the highest growth are given in the table below:

Table 6: Fastest growing Sportech categories and their growth drivers (Values in Rs. crores)

S.No	Segment	2012-13	2015-16	CAGR	Growth Drivers
1	Sports Nets	74	144	25%	<ul style="list-style-type: none"> Increasing National and International tournaments in India Favorable demography
2	Sport Composites	765	1141	14%	<ul style="list-style-type: none"> Defense spending Popularity of aero sports
3	Sport shoe components	3431	4819	12%	<ul style="list-style-type: none"> Rising disposable incomes Increasing demand of sport shoes
4	Parachute fabrics	102	143	12%	<ul style="list-style-type: none"> High demand of parachutes by armed forces Increasing deployment of armed forces personnel in high altitude and hazardous environments
	Others	172	241	12%	
	Total market	4898	7017	13%	

Source: ICRA Baseline survey report

f. Composites

Industries are constantly looking for modern innovative solutions and products. In this context, over the years composites have emerged as a product application for various industries. Composites are produced by reinforcing a resin matrix (thermoplastic/thermoset) with fibres like glass fibre, aramid, carbon fibre and/or natural fibres. Composites find application in various industries including transportation, building and construction, chemical, infrastructure, electrical and electronics, telecom, defense, automobiles, shipping, railways etc. and hence straddle across various technical textile segments. Their high strength along with lightweight features make them an attractive product for usage for various applications. The market for composites is expected to grow at 15% in line with growing investments in the end user segments.

2.4. Future Market Projections

On the basis of the historic growth trends, end use segment growth, it is projected that the technical textile market will grow from US\$ 12 billion in 2015-16 to US\$ 22 billion by 2020-21 at a CAGR of 12%. Segment wise expected growth rate is indicated in the table below:

Table 7: Projected Growth Rate of Indian Technical Textile Market

Segments	2015-16 US\$ Bn.	CAGR 15-20	2020-21 US\$ Bn.
Agrotech	0.1	11%	0.2
Meditech	0.5	9%	0.8
Mobiltech	1.3	12%	2.3
Packtech	5.1	11%	8.4
Sportech	0.8	12%	1.5
Buildtech	0.5	13%	1
Clothtech	0.9	11%	1.6
Homotech	1.2	14%	2.4
Protech	0.4	10%	0.6
Geotech	0.03	8%	0.05
Oekotech	0.02	10%	0.04
Indutech	1.2	14%	2.4
Total	12	12%	22

Source: Wazir Analysis

3. India's Advantage in Growing as a Global Manufacturing Hub

Indian technical textile industry is in its nascent phase and accounts for around 5% of the world technical textile production. However, over the last decade, this industry has shown high growth with its domestic market growing in double digits i.e. 12% and exports growing at an even higher rate of 16%.

The continuous growth of the industry indicates a growing acceptance of technical textiles in India. This growth when coupled with India's inherent strengths as a manufacturing destination gives the advantage to Indian technical textile industry in becoming a global hub for manufacturing. Given below are some of the key elements of India's advantage in technical textile manufacturing:

- a. **Raw material:** India enjoys a competitive position in terms of abundant availability of textile raw material, natural as well as manmade. India is the largest producer of Cotton, 2nd largest producer of Polyester and Silk, 3rd largest Viscose producer, 4th largest Acrylic and Nylon producer in the world. Technical textile products primarily require synthetic & specialized fibres for manufacturing. Currently, India has developed good capabilities in manufacturing basic synthetic fibres and yarn, although supply of specialized fibres is not at the requisite level. However, with growing consumption and manufacturing of technical textiles, India will further develop large capacity for manufacturing these fibres in the coming time.
- b. **Manpower Availability and Cost:** India benefits from a large pool of skilled workers at comparatively low wage rates compared with Asian countries, USA and EU. The fact that many segments of technical textiles require labour at competitive require a lot of manual labour in form of stitching and weaving, relatively cheap labour acts as a substantial benefit over other countries.

Table 8: Labour Cost Comparison

Cost element	Unit	China	India	B'desh	Vietnam	USA	Germany
Labour cost	US\$/Month	550-600	140-160	100	180	3,500	5,100

Source: Wazir analysis

- c. **Power Cost and Lending Rates:** Cost of power in India is better than countries like China & Germany (2nd and 3rd largest manufacturer of technical textiles in the world) and is also comparable to countries like Bangladesh & Vietnam. Currently, various state governments in India are also giving power subsidy as an investment incentive which will further reduce the cost of power. Overall lending rates in India are on the higher side in India, but many state governments in India provide interest subsidy on capital investment in the range of 5-7% thus bringing down the effective rate of interest to around 6% which is comparable to other competing nations.

Table 9: Power cost and lending rates

Cost element	Unit	China	India	B'desh	Vietnam	USA	Germany
Power Cost	US cents /kwh	15-16	10-12	9-12	8	5	16
Lending Rate	%	5-6%	10-10.5%	13%	6-7%	4.25%	2.5%

Source: Wazir analysis

d. Infrastructure Availability

India's technical textile sector is primarily SME-oriented, with manufacturing majorly concentrated in the states of Maharashtra, Gujarat, Tamil Nadu, Karnataka, and Punjab. Ministry of Textiles has supported the establishment of 8 Centres of Excellences (COEs) that focus on various segments of technical textiles. These COEs act as one-stop centres for various services relevant to technical textile industries, including:

- Facilities for testing and evaluating technical textiles products of identified segments in collaboration with national and international accreditations and collaborations with foreign institutes and laboratories
- Research and development facilities
- Resource centres with I.T. infrastructure
- Facilities for indigenous development of prototypes
- Facilities for training personnel in the technical textile industry
- Knowledge sharing with stakeholders
- Incubation centre facilities
- Identification and drafting of product and process standards for ensuring quality that is globally accepted

The COEs thus play a significant role in enabling Indian industries to realize their potential in addressing demand and scaling attractive opportunities in each of the 12 technical textiles sub-segments.

Product Focused Centers of Excellence

Category	Centres of Excellence
Agrotech	Synthetic & Art Silk Mills Research Association (SASMIRA), Mumbai
Geotech	Bombay Textile Research Association (BTRA), Mumbai
Indutech	PSG College of Technology (PSG), Coimbatore
Meditech	South India Textile Research Association (SITRA), Coimbatore
Protech	Northern India Textile Research Association (NITRA), Ghaziabad
Sportech	Wool Research Association (WRA), Thane

Process-oriented Centres of Excellence

Category	Centres of Excellence
Composites	Ahmedabad Textile Industry's Research Association (ATIRA), Ahmedabad
Nonwovens	DKTE Society's Textile & Engineering Institute (DKTE), Ichalkaranji

Apart from the CoEs, various technical textile parks have been established in different states of India as given below:

Textile Park	Location	Product Mix	Amenities
Pallavada Technical Textiles Park	Tiruvallur, Tamil Nadu	Technical Textiles for Meditech, Mobiltech, Buildtech, Agrotech and Hometech	<ul style="list-style-type: none"> • Centre of Excellence Cheap Power • Captive Power Project Common • Effluent Treatment Plant Common • Solid Waste Management & Disposal System • GRP Drains for Effluent Treated • Water Supply System • Uninterrupted Power Supply
Vraj Integrated Textile Park Ltd.	Village: Bidaj, Tal. & Dist. Kheda - Gujarat	Shirts, Denim, Technical Textile applications	<ul style="list-style-type: none"> • Water Supply system • Good connectivity • Sewage Water Drainage • Common Effluent Treatment Plant
Mundra SEZ Integrated Textile and Apparel Park Pvt. Ltd	Mundra, Gujarat	Garments and Technical Textiles	<ul style="list-style-type: none"> • Substation at the park for uninterrupted power supply • CETP • Workers Dormitory • Roads, SWD and Pressurized Water Supply System • Modern-high speed telecommunication and data lines
Gouthambudha Textile Park Pvt. Ltd	Vankayalpadu Village, Edlapadu Mandal, Guntur District, Andhra Pradesh	Woven fabric, Ready-made garments, Technical textiles	<ul style="list-style-type: none"> • Administration, Park Management & Security offices • Testing laboratory • Design center & Training center • Ware housing facility/ raw material depot & Packaging unit • Weaving preparatory (warping & sizing) processes • Crèche, Canteen, Bank, PO, Medical & Recreation facilities etc.
Great Indian Linen & Textile Infra Structure Co. (P) Ltd	Erode, Tamil Nadu	Cotton based Textile, Technical Textiles (Viscose, Linen, PP etc.) and Garments.	<ul style="list-style-type: none"> • 24 x 7 Treated Water Supply • Own Power Generation (uninterrupted power supply) • Rainwater harvesting. • Hostel & Recreational facilities. • Single window system for clearance

Source: Secondary Research

e. **Government initiatives:** Technical textiles is a focus sector for the Indian government. The government has taken several steps to promote the usage of technical textile in the country such as use of non-woven bags for packaging purposes, mandatory use of seatbelts in automobiles, announcement of mandatory use of airbags also in cars from 2018 etc.

Government has also put in place several policies to help develop a comprehensive manufacturing base for high value technical textiles in India. For e.g.:

- Amended Technological Up gradation Fund Scheme (ATUFS)
- Export Promotion of Capital Goods (EPCG)
- Benefits under Special Economic Zone (SEZ) and Scheme for Integrated Textile Parks (SITP)
- Scheme for promoting usage of Agro-textiles in North East Region
- Scheme for promoting usage of Geotechnical textiles in North East Region

These initiatives & policy intervention taken by government will drive consumption of technical textiles in the country which in turn will boost the manufacturing sector. Further details of Government support are elaborated in next chapter.

4. Government Support

Government of India acts as a facilitator for the development of the textile industry in India. Various schemes like Technological Up gradation Fund Scheme (TUFS), Scheme for Integrated Textile Parks (SITP), cluster development and others have been launched for promoting investments in the textile industry, upgrading technology and setting up integrated manufacturing set ups. Apart from this, support is provided to the industry through export promotion schemes / incentives like Merchandise Exports from India Scheme (MEIS), Market Development Assistance (MDA), Duty drawback etc. Skill development initiatives have also been implemented to improve the skill set of overall textile workforce of India and to provide incentives for growth of employment in the textile sector. These schemes have helped the industry to grow over the years and become more competitive in manufacturing and exports. Given below is a summary of the major Central Government schemes that are active presently:

Government Schemes for Textile Sector

Scheme / Policy	Key Features
ATUFS	<ul style="list-style-type: none"> 15% capital subsidy on eligible machinery in garmenting and technical textile sector with a cap of Rs. 30 Cr. per individual entity 10% capital subsidy on eligible machinery in weaving for brand new shuttle less looms (including weaving preparatory and knitting), processing, jute, silk and handloom sector with a cap of Rs. 20 Cr. per individual entity 15% capital subsidy on eligible machinery for composite units with a cap of Rs. 30 Cr. per individual entity (if the eligible capital investment in respect of garmenting and technical textiles is more than 50% of the project cost) 10% capital subsidy on eligible machinery for composite units with a cap of Rs. 20 Cr. per individual entity (if the eligible capital investment in respect of garmenting and technical textiles is less than 50% of the project cost)
Scheme for Integrated Textile Parks (SITP)	<ul style="list-style-type: none"> Grant/Equity up to 40% of the textile park development project cost subject to a ceiling of Rs. 40 Crores. GOI support under the Scheme will be generally in the form of grant to the SPV unless specifically decided by the PAC to be equity. However, the combined equity stake of GOI/State Government/State Industrial Development Corporation, if any, would not exceed 49%. Grant at 90% of the project cost subject to a ceiling of Rs. 40 Crores for first two projects in the States of North East Region of India.
Integrated Skill Development Scheme (ISDS)	<ul style="list-style-type: none"> Assistance up to 75% of the cost of the project, within an overall ceiling of Rs. 10,000 per trainee.
Swarnjayanti Gram Swarozgar Yojana (SGSY)	<ul style="list-style-type: none"> Provide assistance to people by providing them income generating skills through a mix of bank credit and Government subsidy. Subsidy at a uniform rate of 30% of the project cost, subject up to Rs. 7,500 per individual.

Integrated Processing Development Scheme (IPDS)	<ul style="list-style-type: none"> • Grant up to 50% of the project cost (excluding land cost) with a ceiling of Rs. 75 Crores for projects with Zero Liquid Discharge Systems and Rs. 10 Crores for projects with conventional treatment systems. Support for marine discharge projects would be analyzed on a case to case basis with a maximum ceiling of Rs. 75 Crores. • The project cost shall be borne by the Center, State, Beneficiary, Bank loan in the ratio of 50:25:15:10 respectively.
Merchandize Exports from India Scheme (MEIS)	Rewards for export of products shall be payable as percentage of realized FOB value: <ul style="list-style-type: none"> • For handloom, jute and coir based products - reward rate is 5% for all countries • For all other eligible textile and apparel categories - reward rate is 2% for EU (28), USA, Canada and Japan.
Duty Drawback	Drawback rates for key textile and apparel categories: <ul style="list-style-type: none"> • Cotton yarn: 2.8% to 4.7%, Cotton fabric: 4.3% to 7.1%, Apparel: 7.5% to 9.8%
Market Development Assistance (MDA)	<ul style="list-style-type: none"> • Financial support to exporters for conducting export promotion activities abroad
Market Access Initiative (MAI)	<ul style="list-style-type: none"> • Financial assistance for carrying out marketing projects abroad, including <ul style="list-style-type: none"> ○ Opening of showrooms ○ National level participation in trade fairs/exhibitions ○ Displays in international departmental stores ○ Publication of world class catalogues to create brand identity for Indian products ○ Publicity campaign and brand promotion ○ Research and product development • Assistance for building capacity for exporters, export promotion organizations etc. <ul style="list-style-type: none"> ○ For imparting training to Indian exporters ○ For up gradation of laboratories, research institutes, universities and other National institutions for creating testing facilities ○ For National level institutes and export promotion organizations to organize training programs to upgrade quality, improve product and reduce rejection ○ For setting up common facility centers, design centers by Industrial clusters, EPCs and National level Institutions ○ For hiring consultants/designers in the buyer country for facilitating negotiations/product modification as per local requirements • Assistance on reimbursement basis to individual exporters for charges/fees paid by them for fulfilling the statutory requirements in the buyer country • Assistance for conducting studies: <ul style="list-style-type: none"> ○ Survey for promoting exports of the identified product groups from the State ○ Project/study which the Empowered Committee in its deliberation feels would further the objectives of the Scheme ○ Studies on WTO related matters and JSG/FTA/RTA studies

Apart from Central Government schemes, several State Governments have also launched their textile policies under which several incentives are provided for investments in textile sector. The state level support for technical textiles is given in table below:

State level support for Technical Textiles:

State	Key Features
Andhra Pradesh Textile Policy (2015-20)	<ul style="list-style-type: none"> • 8% Credit-linked interest subsidy • (subsidy on long term loans linked to centrally sponsored TUFs Scheme) • Power Subsidy @ Rs. 1.50 per unit for a period of 5 years
Gujarat Textile Policy (2012-17)	<ul style="list-style-type: none"> • 6% Credit-linked interest subsidy (on term loan for TUFs approved machinery)
Haryana Industrial Policy (2015-20)	<ul style="list-style-type: none"> • 6% or Rs.10 Lakh per year Interest subsidy on term loan for new and existing units
Karnataka Textile Policy (2013-18)	<ul style="list-style-type: none"> • Re-imbusement of cost of power paid @Re. 1/unit
Rajasthan Industry Policy (2014-19)	<ul style="list-style-type: none"> • 7% Capital-linked interest subsidy
West Bengal Textile Policy (2013-18)	<ul style="list-style-type: none"> • 10% additional subsidy on Capital Investment subsidy (subject to a ceiling of Rs. 5 lakh for small enterprise and Rs. 10 lakh for medium enterprise) • 5% marketing incentive for manufacturers for its export sales
Maharashtra Textile Policy	<ul style="list-style-type: none"> • 35% capital subsidy (plant & machinery) – Spinning, garmenting & gining • 30% capital subsidy (plant & machinery) – Technical textiles & composites • 25% - Other units • 10% additional capital subsidy for investment in Marathwada, Vidharbha & North Maharashtra

5. Key Issues and Way Forward

Indian technical textiles markets is poised for high growth with increase in investment in industry sectors like automotive, healthcare, infrastructure, etc.; growing awareness about the superior functionality of technical textiles and increasing affordability of the consumer. Also, the proactive approach of Government of India towards boosting this sector through various schemes will have a great positive impact on this sector in the future. An increasing focus on research and development in this sector by Textile Research Associations (TRAs) will help the industry in competing with the global market where the demand of innovative products is increasing.

Though Government has taken various initiatives to boost the technical textiles sector in India, it has not exploited its full potential. Some of the major challenges faced by the industry today are:

- Absence of regulatory measures in sectors of infrastructure, construction, healthcare, etc. for usage of technical textiles.
- Dependence on import of technology and machinery for most of the high-end technical textiles products.
- Lack of awareness amongst the entrepreneurs as well as consumers about the usage, benefits and high growth potential
- Non-availability of skilled man power specifically trained for technical textiles.
- Production capacity is primarily focused on commodity products and is not very R&D intensive.
- Non-availability of indigenous high performance specialty fibres such as nylon 66, nylon 11, high tenacity PFY, Kevlar, Aramid for manufacture of technical textiles.
- Inverted duty structure i.e. manufacturers have to pay a higher price for raw material in terms of duty, while the finished product lands at lower duty and costs lesser.
- Antidumping duty on raw material like carbon fibre from China (40%) and western world (30%) makes it unfeasible for investment in technical textiles
- Cheap imports or under the border material is coming from Bangladesh and Nepal which creates the uneven competitive environment and product demand from the North East states down by almost 50%.

In view of the immense untapped potential in the technical textile sector, it is important for both industry and Government to work towards the growth of the industry.

The growth of India as a manufacturing hub for technical textiles will depend on attractiveness of India's domestic market and attracting investments in high end technical textile products to cater to global demand. To facilitate this growth several initiatives to be taken up and carried forward. Following are some of the key measures that need to be taken to facilitate overall growth of India's technical textile industry and in turn facilitate growth of India as a global manufacturing hub for technical textiles:

Measures for overall development of the technical textile industry

- **Regulatory mechanism to increase consumption of technical textiles**
 - World over, the usage of many items of technical textiles is mandatory, as it is in the interest of society at large and leads to social and economic benefit. In India also such regulations may be implemented for:
 - Fire retardant fabrics at public places where mass movement happens, i.e. Cinema halls, malls, railways, airports, hotels, hospitals etc.
 - Protective work wear for industrial workers.
 - Installation of air bags in the automobile
 - Usage of geo synthetics for erosion control
 - Usage of jute agro textile for sand dune stabilization in cold desert, etc.

- **Unique identity in terms of exclusive HSN codes**
 - Technical textile is multidisciplinary industry, completely different from conventional textile industry. However, most of the technical textile products are clubbed with conventional textiles in HSN codes, making it difficult to provide focused attention. Government to carry out a comprehensive study and suggest exclusive HSN codes for various technical textile products which, can then be incorporated by Ministry of Finance in the Indian HSN codes for focused attention. This will help in better analysis of India's technical textile product trade and identify specific products for growth and development.

- **Implementation of standards**
 - Uniform standards for technical textiles need to be established for ease of supplier buyer product related communications. The stakeholders of technical textiles sector should come forward and implement the Indian Standards in their area of activity and adopt the BIS certification scheme in promoting the quality of their product, till any further developments in standards are made. Establishing standards will help in developing products of global standards and better outreach to global buyers.

- **Improving operational standards:** In order to improve the operational standards, following steps should be undertaken:
 - Sector specific skill development initiatives to enable sustainable growth.
 - Creating centre of excellence in key regions to attract the investors in the technical textile industry.
 - Initiatives to enable production of fibres required for the technical textiles in India as it would be beneficial for the entire technical textile industry and it also help to generate investment and employment in India.

- **Training and Education:**
 - Indian technical textile industry needs requisite technical knowhow and the skilled manpower required for manufacturing of high end technical textile products. Hence skilling initiatives need to be taken to develop manpower at both technical and managerial levels.

- Steps should be taken for the inclusion of technical textiles in curriculum of various universities/institutions at graduate and post graduate levels e.g. Medical/civil engineering/agricultural/Textile Engineering etc.
- This will result in the formation of an efficient & innovative workforce which will lead the industry to greater heights

- **Create end user awareness**

- Indian technical textile industry also needs to focus on creating awareness amongst end user industries about the benefits of using technical textiles in order to create pull for the products. Specific product/ segment forum may be organized among end user industry and the manufacturing industry to address the mutual requirements and plan forward for growth. This would further facilitate domestic market consumption which will in turn drive investments in this sector.

Measures for facilitating growth of India's position as a global manufacturing hub for technical textiles

- **Attracting Investments – Domestic and Foreign**

- To achieve scale in the manufacturing sector, the most important thing that Indian technical textile industry needs is large scale domestic as well foreign investment in India on a regular basis.
- Industry needs to further identify specific sectors of interventions and facilitate investments in these sectors. For example, currently India lacks good conversion units for roll goods and there is need to attract investments in this area.
- To drive investments in the sector, industry should be projected as an attractive destination for investors. To achieve that certain policy initiatives need to be taken such as:
 - To tap major technical textiles consumption i.e. USA & EU, finalization of FTA with these regions will address the tariff disadvantage of the industry vis-à-vis competing countries.
 - Lending rates to be made more competitive for the sector
 - Majority consumption in technical textiles products is of man-made fibres. However due to differential tax treatment of man-made fibres in India, industry loses competitive advantage with global competition as they have to pay higher price. Establishing a fibre neutral duty structure is a must to align industry with the global demand

- **Forming International partnerships**

- In order to attract investments in high end technical textile products and achieve technical knowhow, Indian companies also need to look actively towards establishing partnerships with global players. The partnership can be in the form of a JV for Greenfield project, marketing tie-up, technology tie-up, buyback arrangement, etc. The partnership aspect is important since the Technical Textile processes/products are quite research and technology oriented and several times patented also. The technology and knowhow transfer is of utmost requirement considering the current standing of Indian sector. Several large international players are

already looking towards India to expand their business in the region, even on their own. The time is appropriate to take a step forward and showcase the benefits that international partners will gain in terms of access to a growing domestic market by involving a local partner.

- **Creation of Mega Parks for Technical Textiles:**

- One of the challenges of Indian textile industry as a whole and especially the technical textile industry is the lack of scale in its manufacturing. Majority of our manufacturing is sparsely distributed amongst a large number of players which have small production capacity. This poses as an unattractive feature for the investors who look for suppliers which can cater to their bulk demands. To check this problem, establishment of large scale textile/ mega textile parks of more than 1000 acres need to be carried out, where in multiple companies across the value chain will be setup in a common area and will function as an integrated unit thus creating scale.
- These mega textile parks will provide companies with readymade common infrastructure and availability of important utilities such as power, water etc. at subsidized rates.
- These lucrative features will attract investors to set up large scale units in these parks which in turn will further attract supplementary industries to set up their own units.

- **Increase focus on R&D**

- The uniqueness of technical textiles lies in its functionality. Technical textiles are specially engineered products which serve a particular function. Research & development plays a pivotal role in developing these specialized products. Currently Indian technical textile industry is primarily manufacturing very basic technical textiles products e.g. jute bags, nets etc. and exporting the same. However the global demand lies for high tech technical textiles products where India lacks.
- To emerge as a global manufacturing hub, it becomes imperative for the Indian technical textile industry to focus on research & development and thus build expertise in developing high tech products.
- Entrepreneurs who understand the importance of research & development should look for investment in this sector and devote appreciable fund and time on product and technology development activity.
- Government is taking appreciable measures to promote R&D initiatives by setting up Center of Excellences for different technical textiles segments. Industry needs to take advantage of these initiatives by the government by collaborating with them and creating an atmosphere for research & development in the country

Overall India is poised for growth in technical textile consumption along with overall growth of the economy and modernization of the country. India's manufacturing competitiveness is also improving and the technical textile manufacturing industry needs to further gear up for tapping the huge domestic and global opportunities. With the appropriate measures, the industry has potential to emerge as global hub for technical textile manufacturing in the coming years.

Glossary

CAGR	Compound Annual Growth Rate
CETP	Common Effluent Treatment Plant
COE	Centre of Excellence
EPC	Export Promotion Council
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GOI	Government of India
HSN	Harmonized System Nomenclature
JV	Joint Venture
JSG	Joint Study Group
MUV	Multi Utility Vehicle
NHB	National Horticultural Board
NHM	National Horticultural Mission
NVH	Noise Vibration and Harness
PFY	Polyester Filament Yarn
PVC	Poly Vinyl Chloride
PU	Polyurethane
R&D	Research & Development
RTA	Regional Trade Agreement
SUV	Sport Utility Vehicle
SEZ	Special Economic Zone
SPV	Special Purpose Vehicle
TUFS	Technology Up gradation Fund Scheme
WTO	World Trade Organization



About FICCI

The Federation of Indian Chambers of Commerce and Industry (FICCI) is an association of business organizations in India established in 1927. FICCI draws its membership from the corporate sector, both private and public, including SMEs and MNCs. The chamber has an indirect membership of over 2,50,000 companies from various regional chambers of commerce. It is headquartered in the national capital New Delhi and has presence in 12 states in India and 8 countries across the world.

FICCI is a non-government, not-for-profit organization involved in sector specific business policy consensus building, and business promotion and networking. It 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. It organizes conferences, forums, exhibition, trade fairs, etc. bringing the industry insight forward.



About Wazir Advisors

Wazir Advisors is a Management Consulting assisting its clients in strategy formulation and implementation, forming alliances and joint ventures, investments and market understanding, sector analysis and due diligence- thereby providing end to end solution spanning the complete business cycle in textile value chain.

Having worked with leading Indian and International companies, public sector organizations, Government departments, development agencies, trade bodies etc., Wazir has a deep understanding of global textile sector dynamics and right connect with the people who matter.

Wazir’s team of textile experts possess experience across function – projects, operations, sourcing and marketing in the sector. The team members have worked on strategy and implementation assignments in all major textile and apparel manufacturing and consumption base. Wazir leverages its body of knowledge, contact and combined expertise of its team to deliver value to clients.

Scope of Our Operations		
Strategy	Implementation	Alliances
<p>Wazir delivers practical, implementable strategies for clients to meet their objectives.</p> <p>Be it corporate strategy intending to enhance profitability or sector growth strategy to support MSMEs or evaluating Government scheme to access its impact, we are geared to advise our clients efficiently and effectively. Our services include:</p> <ul style="list-style-type: none"> • Sector Mapping and Growth Strategy • Policy Formulation Support • Government Scheme Evaluation • Corporate Strategy • Market Opportunity Assessment • Market Entry Strategy • Location Analysis • Business Performance Enhancement • Product Diversification • Marketing and Distribution Strategy 	<p>Wazir provides implementation services to textile and apparel sector entities to convert the plans into reality. Whether it is to manage a Government scheme or to improve productivity in apparel factories or to identify the most suitable technology; we have in-house competence to cover all the critical elements of implementation. Our services are:</p> <ul style="list-style-type: none"> • Project Management and Monitoring • Re-modeling of Manufacturing Plant • Process Re-engineering • Productivity Improvement • Supply Chain Optimization • Feasibility and Techno-Economic Viability (TEV) Study • Investment Promotion • Cluster and Industrial Park Development 	<p>Partnerships and collaborations are ways to achieve accelerated growth, expand market reach and attain technical advancement. Realizing the importance and need of inter-organization alliances in textile and apparel sector, Wazir has developed broad range of services to support companies and organizations looking for inorganic growth globally. Our services include:</p> <ul style="list-style-type: none"> • Company Due-diligence • Joint Venture • Marketing Tie-up • Technology Transfer • M&A Execution • Strategic and Financial Funding



About Ministry of Textiles

The Ministry of Textiles is responsible for the formulation of policy, planning, development, export promotion and regulation of the textile sector in India. The principal functional areas of the Ministry include: Textile Policy & Coordination, Man-made Fibre / Filament Yarn Industry, Cotton Textile Industry, Jute Industry, Silk and Silk Textile Industry, Wool & Woolen Industry, Decentralized Powerloom Sector, Export Promotion, Planning & Economic Analysis, Integrated Finance Matters, Information Technology.

Contact Ministry of Textiles:

Ministry of Textiles
Room# 235, Udyog Bhawan,
New Delhi
Website: <http://texmin.nic.in/>

Office of Textile Commissioner, Mumbai

The Office of Textile Commissioner formulates and implements various schemes of the Government of India in an industry-friendly manner. This office has wide reach across India through its 8 regional offices and 14 powerloom service centers in major textile clusters.

Contact Office of Textile Commissioner:

Office of the Textiles Commissioner
New CGO Building, 48-New Marine Lines, Mumbai-400 020
Telephone Number: +91-22-22001050
Fax: +91-22-22004693
Email: tmtt.coe@gmail.com, ttcell-otxc@nic.in
Website: www.txcindia.gov.in

