

TAG 2023

Textile Industry's Amrit Kaal: Roadmap for US$ 350 Billion Market by 2030

Knowledge partner

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1. Global Textile and Apparel Market Overview

Global Apparel Market

The global apparel market is estimated at around US$ 1.7 trillion in 2022 and expected to grow at a CAGR of around 8% and reach US$ 2.37 trillion by 2030. US, EU and China are the largest apparel markets comprising around 42% combined share. China and India are expected to be the fastest growing apparel markets, with China expected to become the biggest apparel market by 2030. The high growth in these markets will be primarily driven by the economic growth and increasing disposable income of a large population base.

*The decline in Japanese apparel market is due to its currency depreciation against US$. On comparison of the market size in Japanese Yen the market has shown a y-o-y growth of 2% from 2021 to 2022

Table 1: Global Apparel Market (US$ billion)

Region	2019	2022	2030 (P)	CAGR 2019-22	CAGR 2022-30 (P)
United States	235	276	350	6%	3%
EU-27	264	246	310	-2%	3%
China	184	244	450	10%	8%
India	78	92	180	6%	9%
Japan	101	64	80	-14%*	3%
UK	69	74	95	2%	3%
Brazil	48	39	60	-7%	5%
Canada	28	24	35	-6%	5%
RoW	621	640	810	1%	3%
Total	**1,628**	**1,699**	**2,370**	**1%**	**4%**

Source: Euratex, US Census Bureau, HKTDC, Ministry of Economy, Trade, and Industry, TEXBRASIL, Statistics Canada, IMF, and Wazir Analysis.

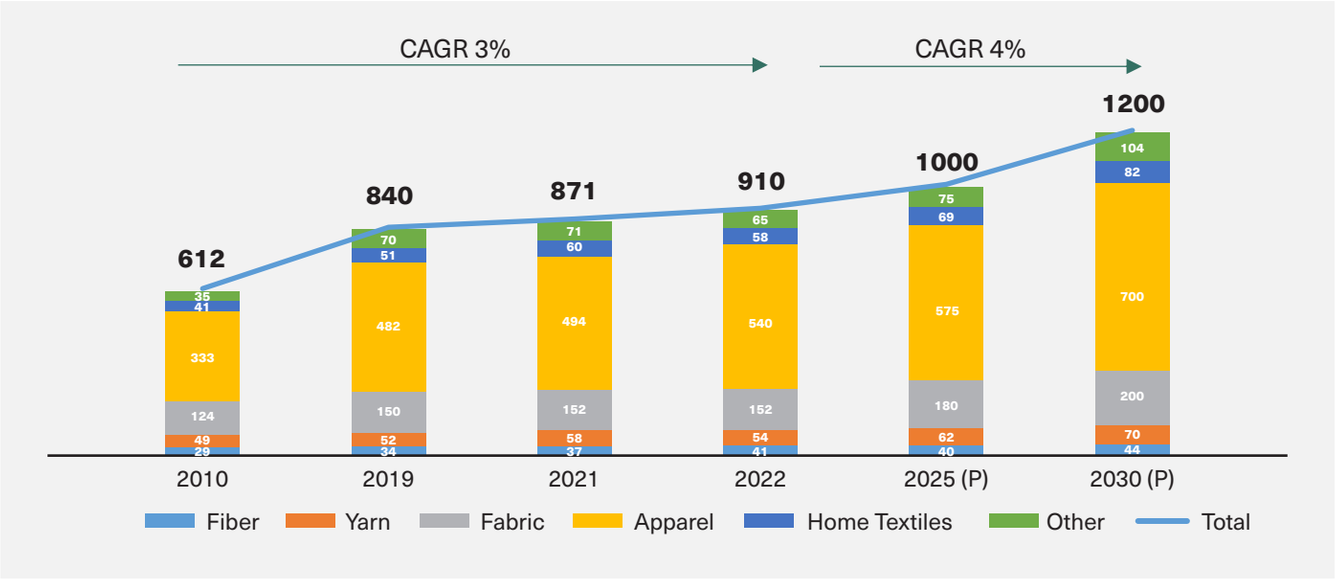
Global Textile & Apparel (T&A) Trade

The global Textile and Apparel (T&A) trade has gone through many ups and downs in the last decade due to various macroeconomic, social, and geopolitical factors. Despite several challenges, the trade has continued to grow over the years and is expected to remain positive. Global Textile & Apparel (T&A) trade was around US$ 910 billion in 2021 and is expected to grow at a CAGR of 4% to reach US$ 1.2 trillion by 2030. Apparel has emerged as the largest traded commodity holding a significant 59% share growing at CAGR of 4% from 2019 to 2022.Following closely, Fabric is the second largest traded commodity constituting 17% of the total share.

China, holding a 36% share, is the world's largest T&A supplier. However, a significant trend has been buyers diversifying sourcing from China to mitigate sourcing risks. The US ban on Xinjiang cotton has accelerated this shift. While China remains a major supplier, it has seen a nearly 10% decline in global share since 2015. This share has largely been claimed by Bangladesh (6%) and Vietnam (5%). India has experienced a modest growth at CAGR of 2% since 2019 and a has 4% share of the global market. India, due to its comprehensive ecosystem, stable political climate, and established global position, also has significant opportunity to emerge as alternative to China in the near future.

In terms of global apparel exports, China, Bangladesh, and Vietnam have maintained their leading positions for over a decade. Although China's share in apparel exports has declined by over 10%, it still retains the largest supply share. Conversely, both Bangladesh and Vietnam have seen their shares double. Meanwhile, India, along with other countries, has maintained a constant share.

Figure 1: Global Textile & Apparel Trade (US$ billion)



Source: UN Comtrade & Wazir Analysis

Table 2: Global Major Exporters of Textile & Apparel 2022 (US$ billion)

Country	2010	2019	2022	CAGR 2019-22	Share (2022)
China	234	279	329	6%	36%
Bangladesh	18	44	54	7%	6%
Viet Nam	14	44	42	-2%	5%
Germany	30	41	40	-1%	4%
Italy	32	36	39	3%	4%
India	27	36	38	2%	4%
Türkiye	22	29	35	6%	4%
RoW	237	332	333	0.1%	37%
Total	**613**	**840**	**910**	**3%**	

Source: UN Comtrade

Table 3: Major Apparel Exporters Share in the Global Trade (US$ billion)

Major Apparel Exporters	2010	2022
China	43%	32%
Bangladesh	5%	9%
Viet Nam	3%	6%
Italy	5%	5%
Germany	5%	5%
Türkiye	4%	4%
India	3%	3%
Total	**333**	**540**

Source: UN Comtrade

2. Trends Impacting the Global T&A Industry

Rise of Sustainable Practices and Circular Fashion

Today, sustainability has grown from being just a buzz word to a crucial factor in shaping the T&A industry. The global textile industry is amongst the most polluting industries and the environmental concerns facing the textile sector are significant. However, stakeholders across the value chain, from raw material suppliers to manufacturers, retailers, and consumers, are pushing towards sustainability with tangible actions such as controlled use of natural resources like water and energy in production processes, using raw materials which are sustainable in the long run, proper handling of hazardous chemicals used in dyeing and coating, proper waste disposal, treatment of water before discharge, using recycled products and adherence to certain guidelines to eliminate health-risks of workers, consumers as well as the environment. Also, there are various internationally acclaimed standardizations and autonomous accreditations present today which have become a yardstick for measuring the sustainability of any company. Additionally, governments and regulatory bodies are implementing policies to incentivize and enforce sustainable practices, such as emissions standards and waste reduction targets. This collective effort demonstrates a growing commitment to creating a more environmentally conscious and socially responsible global economy. Given below are few examples of the initiatives taken by global brands to promote sustainability.

- Zara – Targeting 100% organic linen and recycled polyester by 2025
- Adidas – Targeting 100% recycled polyester by 2024
- Uniqlo – Targeting 50% recycled material by 2050
- Nike – Targeting 100% waste diverted from landfill with at least 80% recycled back into products by 2025
- PUMA – Targeting 75% recycled material by 2025.

Several global manufacturers have also taken initiatives to align with buyer's requirement of sustainability, for example:

- Pan Brothers, Indonesia and TAL Apparel, Honk Kong are recycling up internal waste to promote circular economy.
- Haulida Garments Group, China has launched WWF certified low carbon manufacturing program
- Taypa Tekstil, Turkey has started "Economizer Project", for example reusing of heat generated during washing.

Adoption of Disruptive Technologies

Disruptive technologies are transforming the textile and apparel manufacturing processes and paving the way for better utilization and transparency of resources. Adopting industry 4.0 and digitalization is the key to achieving manufacturing & supply chain excellence. This shift involves the integration of cutting-edge technologies like IoT, artificial intelligence, blockchain technology, and automation into every facet of production and supply chain operations. Post covid the world has discovered the digital way of conducting business and this digital transformation is changing supply chain relations of buyer and supplier across the globe. These technologies have enabled buyers able to deliver better, transparent and more efficient business by optimizing processes and minimizing disruptions.

Blockchain Technology

Using this technology and supply chain modeling, tracing every phase of garment production to retail destination is possible.

Artificial Intelligence

AI can access and collect historical and real-time operational data, providing insights that can improve operational efficiency.

AR/VR

AR/ VR is mainly used to enhance the customer shopping experience with curated and individualized touches for each customer in the retail space.

Internet of Things (IoT)

IoT finds application in e-textiles, automated monitoring, predictive maintenance, increasing efficiency, product development

Notable examples include Lenzing's partnership with Textile Genesis, utilizing blockchain for comprehensive supply chain tracing. Customers can now scan a QR code to trace a garment's origin, ensuring end-to-end transparency. Meanwhile, H&M's Body Scan Jeans leverages AR/VR for a quick, 3-second body scan, creating consumer avatars at their Götgatan store in Stockholm. With customization taking the Centre-stage, a consumer-centric business model incorporating disruptive technologies is the need of the hour.

Changing Sourcing Landscape – "China +1"

China has been the most favoured sourcing location for decades, dominating the textile and apparel trade across the globe. However, recent years have seen a shift in this trend with an increasing number of countries looking to move their sourcing base out of the country. This can be attributed to US-China trade tensions, diminishing cost advantage due to increasing labour costs and growing geopolitical distrust between China and the West. Human rights related allegations in Xinjiang have also intensified pushback against China, especially by US and EU. This action opened up opportunities for other manufacturing nations such as Bangladesh, Vietnam and India to increase their share in the global T&A market and boost exports. Taking advantage of the production-capacity shift in the labor-intensive industry away from China over the past few years, countries in South Asia have been steadily increasing their market shares in terms of apparel exports.

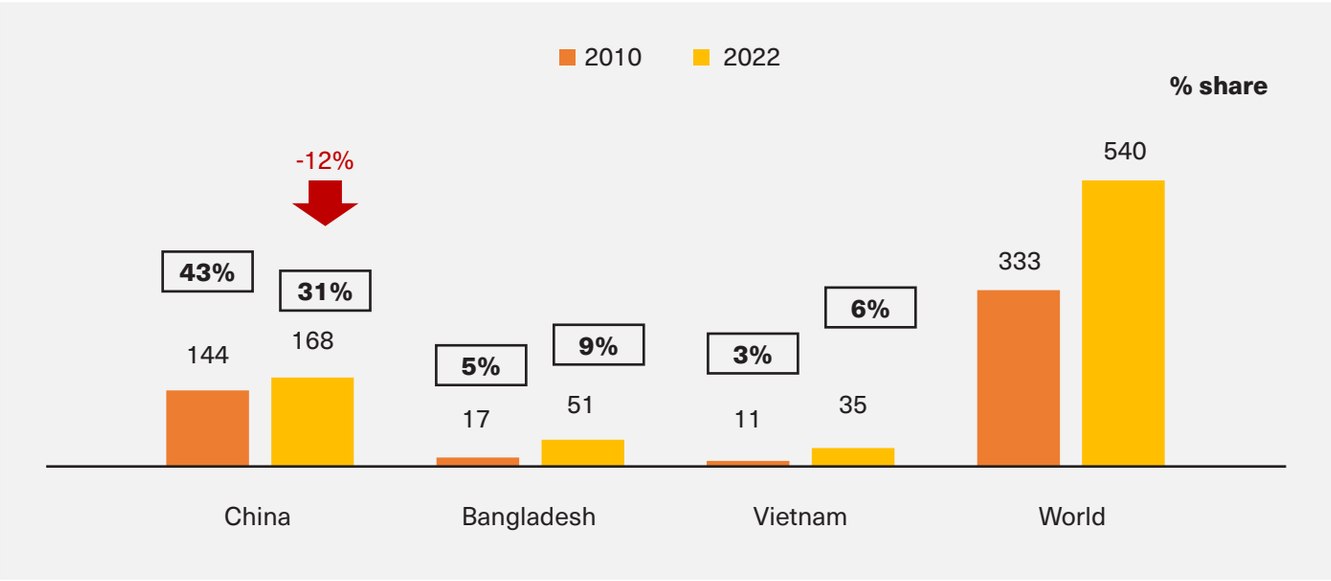
Buyers are also evaluating options like nearshoring and reshoring, trying to de-risk their supply chain, lower operational costs and gain higher control. In the Gartner Future of Supply Chain Survey 2020, 30% of respondents said that they are shifting from a global supply chain model to one that is regionally based in order to increase supply chain efficiency.

Inclination Towards Functional Wear

Functional wear are apparel or textiles incorporated with functionalities like absorbency, air permeability, durability, functional finishes, etc. based on the wearer's requirements. Initially, the main focus of such clothing was merely the functionalities that it catered to, however, over the years, the scope has expanded and the attributes of style and comfort have associated themselves with such clothing, demanding a perfect balance between style and comfort.

Consumption of functional wear has increased as the consumers have resorted to these not just for working out or playing sports, but also in other casual scenarios where the need for specific functionalities is not there. With more and more people adapting to an active lifestyle, the requirement of functional wear is set to increase further.

Figure 2: Global Apparel Exports of Major Countries (US$ Bn)



Source: UN Comtrade

Rising Demand of Synthetics

The global market for synthetic fibers has witnessed surge in demand in recent years. This upswing can be attributed to a various factor, including their versatility, durability, and cost-effectiveness. Industries ranging from apparel to automotive have increasingly turned to synthetic fibers to meet their diverse needs. Moreover, advancements in technology have led to the development of high-performance synthetic materials, further fueling this rising demand. The environmental consciousness of consumers has also played a role, as synthetic fibers can often be recycled and offer sustainable alternatives to natural counterparts. Consequently, synthetic fibres like polyester is dominating the fibre consumption space, making up around 57% of the global demand in 2022. This huge demand is due to less resource intensive production and possibility of innovative solutions.

Demand of synthetic based product is evident from the rise in exports. MMF based products constitute half of the T&A global trade, reflecting growth with a CAGR of 5%, increasing from US$ 267 billion in 2010 to US$ 455 billion in 2022. Within this segment, apparel holds the major share with exports valuing at US$ 264 billion in 2022, showcasing CAGR of 6% over the last decade. Following closely, MMF based fabrics emerged as the second largest category, accounting for a substantial US$ 72 billion, and experienced a CAGR of 4% during the same period.

Table 4: MMF Based Product Global Trade (US$ billion)

MMF Based Products	2010	2019	2022	CAGR (2010-22)
Apparel	137	233	264	6%
Fabric	48	70	72	4%
Yarn	26	30	31	2%
Home Textiles	15	22	29	5%
Fibre	11	11	11	0%
Others	31	43	46	2%
Total	**267**	**408**	**455**	**5%**

Source: UN Comtrade

3. Indian T&A Industry Overview

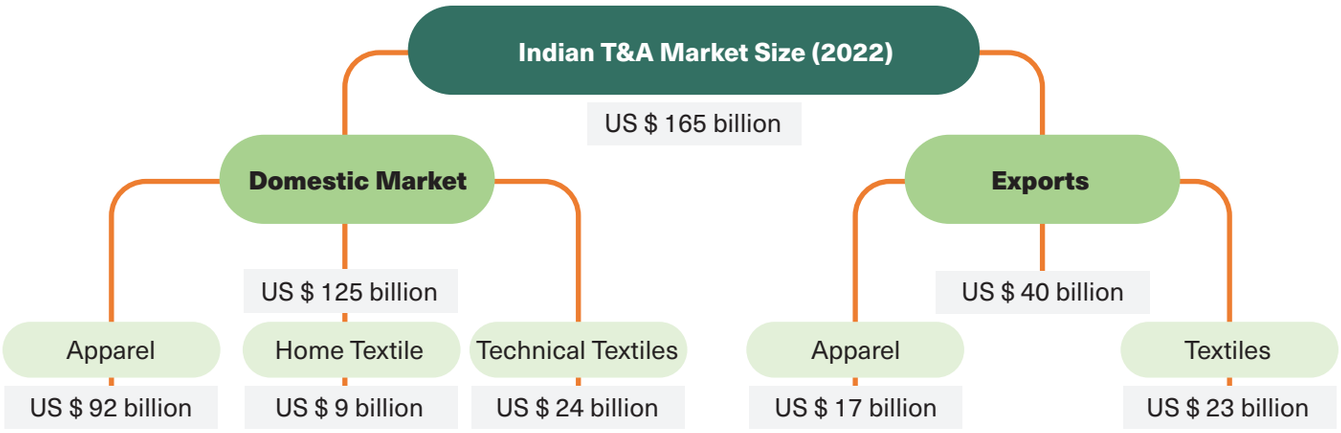
Domestic T&A Market is expected to reach US$ 350 bn. by 2030

The textile and apparel industry has become a vital contributor to the Indian economy over the years with the industry size reaching a value of approx. US$ 165 billion in 2022. The industry has been growing over the years despite challenges primarily due to strong fundamentals of domestic demand. While exports have struggled to grow in the past, going forward there is a huge opportunity for India to increase its export share in the growing global trade.

Given the positive outlook in the long term, the Indian textile and apparel market size is projected to grow at a 10% CAGR to reach US$ 350 billion by 2030.

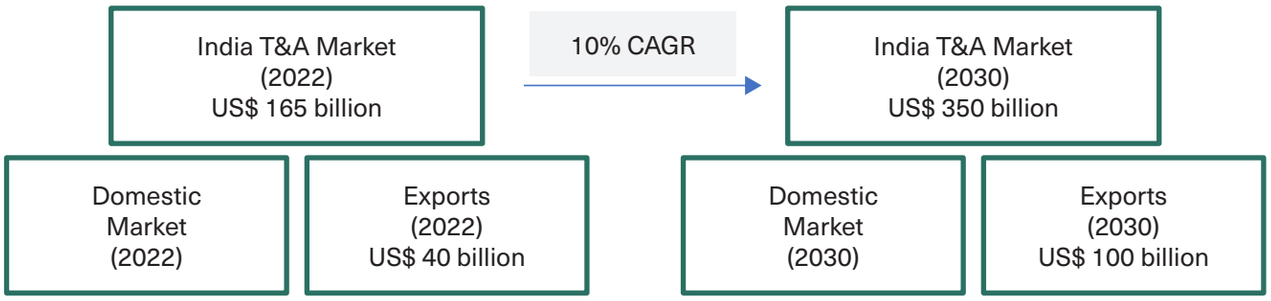
The domestic textile and apparel market is currently valued at approx. US$ 125 billion and is expected to grow at a 10% CAGR to reach US$250 billion by 2030. Apparel, which accounts for the majority of the market is expected to grow at a rate of 9% CAGR, followed by technical textiles, which is predicted to grow at a rate of 11% CAGR. Home Textiles, another important constituent of the domestic T&A market, is also expected to grow and reach a substantial value of US$16 Billion by 2030 growing at 7% CAGR.

Figure 3: Domestic Market of India (US$ billion)



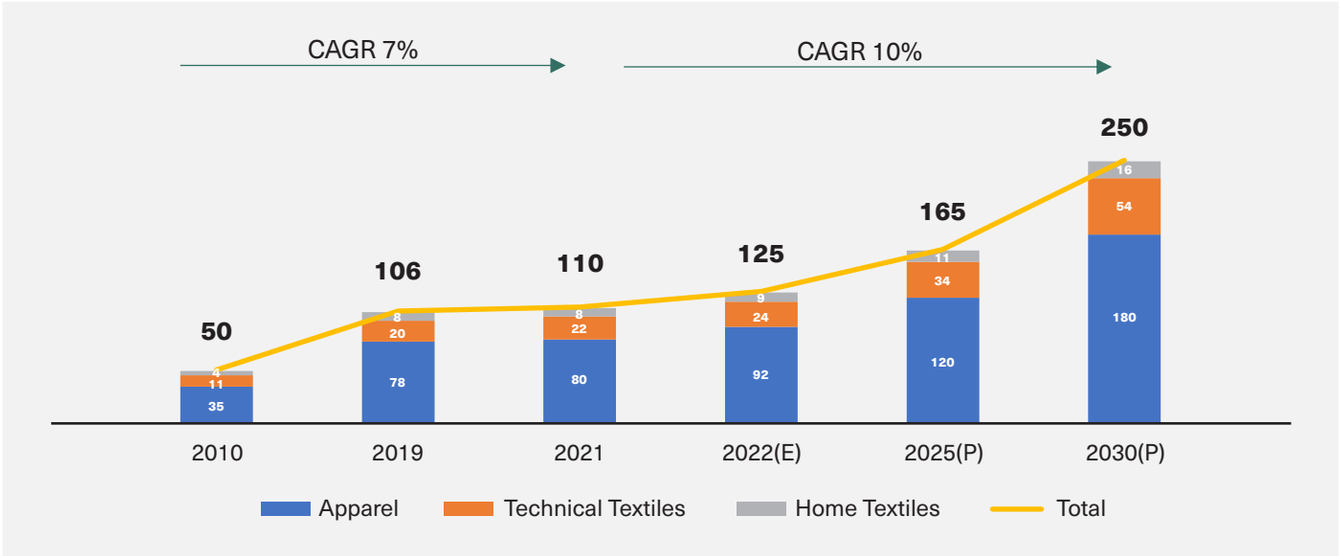
Source: Wazir Analysis

Figure 4: India's T&A Market Size Projections



Source: Wazir Analysis

Figure 5: India's Domestic T&A Market Projection (US$ billion)



Source: Wazir Analysis

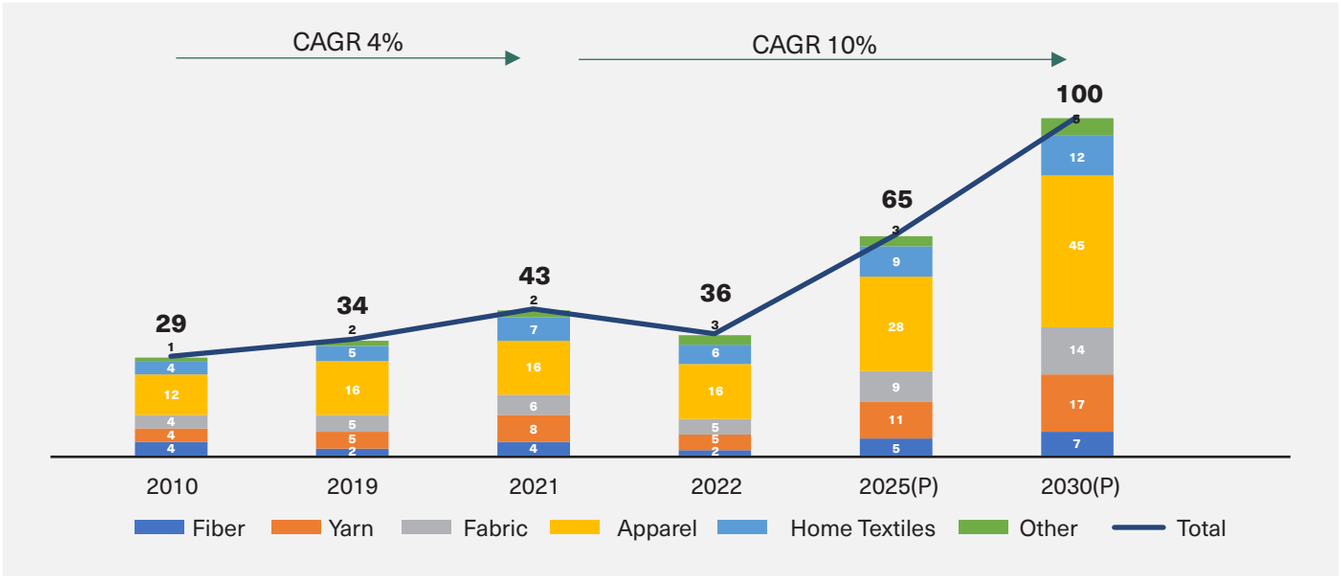
India's expanding share in the global market

The textile and apparel sector is a major contributor to India's total export earnings. Currently, it contributes to 11% of total export earnings of India. India's textile and apparel exports in 2022 was US$ 36 billion decreasing from US$ 43 Bn in 2021. The decrease in exports in 2022 can be attributed to various factors like sluggish demand in global market primarily driven from advanced economies like United States and EU, both of which are significant export markets for India. Additionally, geo political tensions and high inflations have aggravated the situation. However, with growing opportunities in global exports especially with "China +1" opportunity India is expected to increase its exports in future and is estimated to reach US$ 65 billion by 2025.

Apparel is currently the largest exported category in India's exports with a dominant share of 45% and is expected to reach US$ 45 billion by 2030 growing at a CAGR of 14% since 2022. It is followed by the exports of home textile and yarn with 16% and 13% share respectively. India's exports are anticipated to grow along with the global trade and India is expected to increase touch the US$ 100 billion mark by 2030. Furthermore, the China +1 strategy presents a significant opportunity for India to position itself as an alternative in the global supply chain. With its abundant and skilled work force, competitive production costs, established textile infrastructure, India is poised to attract substantial investment. Moreover, India can leverage FTAs with leading trade partners like Japan, South Korea, ASEAN countries, etc. and ongoing FTA discussions with EU & UK, have the potential of integrating India with the dominant global value chain of trade, bolster its appeal as a manufacturing destination. By leveraging these strengths, India can position itself as a key player in the post-China era, not only meeting the rising global demand for textiles and apparel but also contributing significantly to its economic growth and job creation.

Indian government has taken proactive measures to support and promote the textile and apparel industry, through scheme like PLI to increase the product basket and increase exports. Furthermore, the 'Make in India' campaign, which emphasizes domestic production and aims to transform India into a global manufacturing hub. These supportive policies collectively demonstrate the Indian government's commitment to fostering growth and competitiveness.

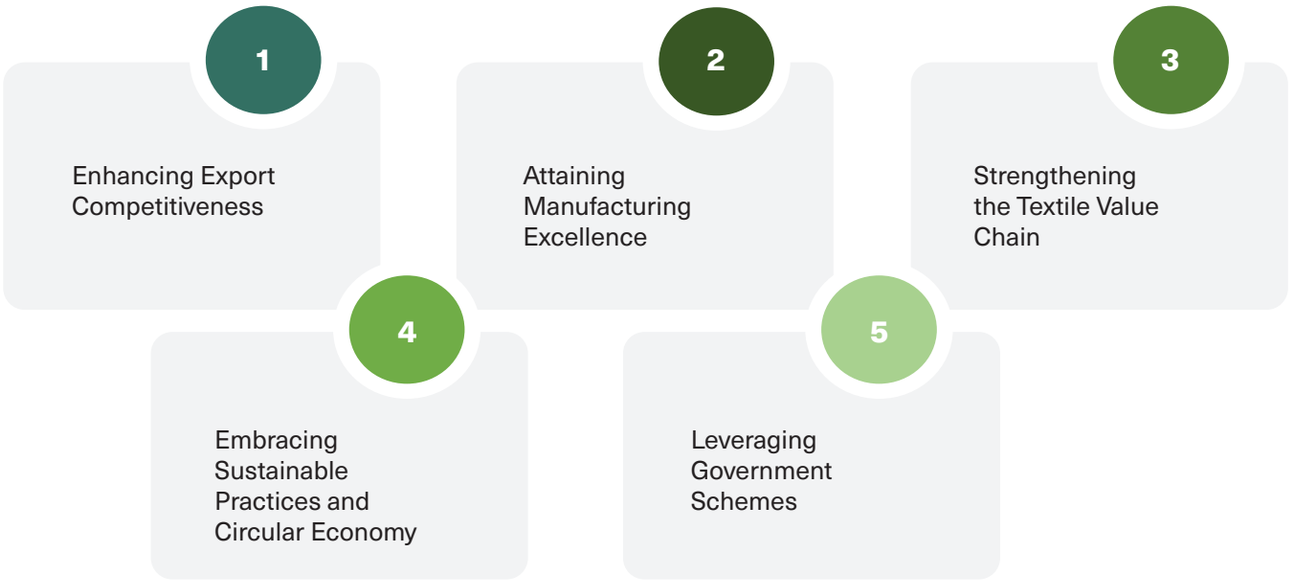
Figure 6: India's T&A Exports Projections (US$ billion)



Source: DGCIS & Wazir Analysis

4. Navigating Towards US$ 350 Billion by 2030

The Indian textile industry is one of the largest in the world, with a massive raw material and textile manufacturing base. It is a key contributor to the country's economy with 4% of the GDP attributed to the sector, providing direct jobs to approximately 55 million people. India is well-positioned to maintain its leadership in the textile industry with a robust industrial base that consists of a resilient supply chain extending from weaving to garment and processing and a wealth of raw materials. To realise the true potential of the industry and to attain the US$ 350 billion market, it is essential to focus on several strategies that can fuel its expansion in both domestic and global market. Given below are the key enablers that will help in achieving the targets:



4.1 Enhancing Export Competitiveness

The manufacturing of textiles and apparels was mostly done in places where it's cheaper for a long time. Over the years T&A manufacturing has shifted from developed countries like US, EU to Asian countries like China and more recently Bangladesh and Vietnam. The reason for this shift is that these low-cost countries are getting better at what they do. They're becoming more competitive compared to the high-cost places. Even though everyone wants to make more clothes, China, India, Bangladesh, and Vietnam are really good at it, and they want to keep doing it well. India, in particular, is working on making its manufacturing even better and wants to attract more investments in this area. India still lags countries like China, Vietnam and Bangladesh in terms of efficiency levels and scale of operations. Hence emphasis is needed to improve competitiveness in order to enhance India's export position.

Exploring Untapped Markets and Free Trade Agreements (FTAs)

India is the sixth-largest exporter of textiles and apparel globally, holding a 4% share in these exports. Despite this ranking, Indian exporters have yet to fully explore and tap into many global markets for textiles and apparel. There is significant untapped potential in these markets, presenting a great opportunity for Indian exporters to expand and increase their share in the global textile and apparel trade. The current market share of India in the global arena is outlined below:

Table 5: India's Exports Share in Major T&A Markets (US$ Billion)

Markets	Total T&A Imports 2022	India's Share
USA	146	8.5%
Germany	63	4.1%
Japan	36	1.3%
Italy	34	3%
UK	32	6.2%
China	31	1.5%
Spain	28	3.6%
Netherlands	24	2.8%
S. Korea	19	2.3%
Canada	18	4.8%
Russia	13	5.7%
UAE	10	16%

Source: UN Comtrade

Recognizing the specific obstacles associated with unexplored markets, such as quality concerns and cultural differences in Japan, elevated tariff rates in South Korea, Russia etc. as well as tariff barriers in Turkey. Nevertheless, by placing a heightened emphasis on manufacturing excellence, Indian manufacturers and exporters can carve out a unique position for themselves, enabling effective competition in these markets.

FTA's with Major Markets

India has advantageous Free Trade Agreements (FTAs) and other trade arrangements with various markets, providing an opportunity to explore new territories. Currently, India has trade agreements in place with Japan, South Korea, Australia, and the UAE. Additionally, it is on the verge of finalizing an FTA with the UK, offering direct and unrestricted access for Indian goods in the UK market. These trade agreements will not only open doors for Indian exports but also serve as pathways for the growth and investment in the country's industry. Countries like Bangladesh, Vietnam, and Ethiopia have successfully attracted substantial investments by leveraging their FTAs with the US and EU over the past decade. In contrast, India has faced challenges in this regard due to the absence of similar FTAs, making it less appealing for investments and subjecting it to tariff barriers in significant global markets. Therefore, expeditiously concluding FTAs with major textile and apparel markets will play a crucial role in attracting investments to India.

Table 6: Opportunity for India if FTAs with Major Markets are done *Figures for 2022*

Country	Global T&A Imports (US$ Bn)	Global Apparel Imports (US$ Bn)	India's T&A Exports (US$ Bn)	India's Apparel Exports (US$ Bn)	India's Current Market Share %	Potential India T&A Exports with 15% Market Share (US$ Bn)	Additional Market for India (US$ Bn)
EU	145	99	7.2	4.7	4.9%	22	14.8
USA	146	105	12.4	6.0	8.5%	22	11.2
UK	32	24	2.0	1.4	6.2%	4.3	2.3

Source: UN Comtrade

Aligning with global market demand

Despite ample opportunities to increase market share, India's exports currently meet only around 5% of the global demand. To thrive in this highly competitive environment, manufacturers need to focus on adding product capabilities that align with the global market demand.
An analysis of the world's top 10 traded commodities reveals that 8 out of 10 belong to the apparel category, and India's share in all these commodities is notably minimal, with figures falling below 6%. In specific categories, the share in trade is as meagre as 0.3%.

Also analysing India's top exported commodities, it can be observed that India's top ten commodities include commodities like fibre, yarn, garment and home textiles as well.

Table 7: Top 10 Global Traded Categories (US$ Billion) year 2022

Commodity Code	Description	Global Trade	India's Exports	India's Share
610910	Cotton T-shirts	38	1.8	5%
611020	Cotton Jerseys/ Sweater	33	0.2	1%
611030	MMF Jerseys / Sweater	31	0.4	1%
620342	Men's Cotton Trousers	28	0.5	2%
620462	Women's Cotton Trousers	24	0.3	1%
520100	Cotton, not carded or combed	20	1.2	6%
630790	Other made up textile articles; sets; worn clothing and worn textile articles; rags	18	0.4	2%
620240	Women's Overcoats, and similar items of MMF	16	0.006	0%
610990	MMF and Other T-shirts	16	0.7	4%
620140	Men's Overcoats, and similar items of MMF	14	0.07	1%

Source: Un Comtrade

Table 8: India's Top 10 Exported Categories (US$ Billion) year 2022

HS Codes	Description	India's Exports
610910	Cotton T-shirt	1.8
520100	Cotton, not carded or combed	1.2
630492	Knitted Made-ups	1.1
520523	Cotton yarn greater than 85 percentage single combed 232 192 dtex.	1.4
630260	Cotton Terry Fabrics	1.0
630532	MMF Fibre Bags	1.0
620442	Cotton Dresses	0.8
611120	Cotton Babies Garments	0.8
630520	Cotton Bag and Sacks	0.7
620443	Synthetic Fibre Dress	0.7

Source: UN Comtrade

This analysis highlights that India's exports are not well-aligned with global demand. Several product categories hold significant potential demand, but due to a lack of diversification, India's presence in those categories is minimal. The Indian textile industry should recognize and seize the opportunity in these potential markets by investing in different products. Additionally, it needs to monitor emerging product categories like technical textiles, functional textiles, non-woven etc., and tap into their expanding markets. Adapting to the needs of buyers in export markets and promptly responding to them can enhance the competitiveness of exporters.

Developing capacities in Synthetic Textiles

In line with adding product capabilities India also needs to increase its presence in the synthetic textile space. India is gaining strength in top MMF apparel commodities traded globally and has shown significant growth of CAGR 8% in the MMF based apparel Category since 2010. Going forward India can focus on consolidating these categories however, there are still many categories where diversification needs to be done. Categories like Trousers, Sweaters, Jackets, Brassieres, and Overcoats are some of the major categories where India can focus expansion in order to increase its share in the global MMF apparel market.

Tapping the huge potential of Technical Textiles

Technical textiles offer vast arrays of opportunities for the domestic market of India. This segment is still at a nascent stage in India and has the capability to grow at unprecedented rates in the future. This is due to the growing awareness about the benefits of technical textiles not only on industrial front but also in household usage. With applications in fields like healthcare, automobile, construction, agriculture, apparel, sports & fitness etc. Technical textile market is posed to reach a size of US$ 54 bn. by 2030 from a level of US$ 24 bn. in 2022. registering double digit growth rate of 11%. Hence, this sector is one of the most important areas for growth for Indian textile and apparel sector.

Developing Strong Buyer Relationships

Developing strong buyer relationships is a pivotal factor in solidifying a company's position and making its reputation as a reliable supplier. India stands out as a leading T&A supplier with strong product capabilities backed by inherent value chain advantages. However, to further enhance its global position Indian companies should prioritize offering comprehensive services to buyers and aspire to become enduring partners in the supply chain. India has earned a reputation as a dependable destination for buyers in terms of service levels. Both organized and unorganized Indian companies demonstrate remarkable flexibility in accommodating orders of various sizes. India must continue refining its products and services to fully tap into the immense potential of the global export market. Furthermore, integrating the manufacturing process is imperative to meet the demands of global buyers. This seamless integration ensures efficiency, consistency, and quality throughout the production cycle, thereby enhancing the appeal of Indian products in the international market. It is a critical step towards not only meeting but exceeding the expectations of discerning global buyers.

Table 9: India's Share in top MMF Based Apparel Commodities (US$ Billion)

Sr. no.	Row Labels	Global Trade	China	Bangladesh	Viet Nam	India	India's Share	India's Growth (2010-22)
1	Trousers	44	13.8	3.4	5.0	0.9	2.0%	5%
2	Overcoats	34.9	14.4	1.8	4.0	0.0	0.1%	8%
3	Sweaters	30.8	13.2	3.1	1.9	0.0	0.1%	6%
4	Dresses	23.6	8.6	0.7	0.9	1.4	6.0%	7%
5	Hosiery	15.1	7.1	0.0	0.3	0.1	0.9%	15%
6	Jackets	13.8	7.7	0.4	0.6	0.2	1.3%	5%
7	Brassieres	11.8	4.7	0.7	1.2	0.1	0.7%	5%
8	Blouses	8.3	1.6	0.5	0.5	0.4	4.7%	-3%
9	Gloves	6.6	3.3	0.0	0.5	0.1	1.0%	8%
10	Swimwear	6	2.5	0.3	0.7	0.0	0.2%	-2%
	Others	68.9	29.1	3	5.4	1.7	2.5%	5%
	Total	264	106	14	21	5	2%	3%

Source: UN Comtrade

4.2 Attaining Manufacturing Excellence

Becoming a preferred manufacturing destination requires a crucial focus on manufacturing excellence. Achieving higher productivity and efficiency is only possible when all systems and processes work in harmony. Unfortunately, the majority of the textile industry, excluding a few top companies, lacks manufacturing excellence. This deficiency results in increased waste, subpar quality, and lower efficiency and productivity levels.

Manufacturing excellence encompasses the streamlining of manufacturing operations, improvements in quality and processes, capacity enhancements, and the implementation of information systems for operations and control. An ideal production process would minimize throughput time, maintain balanced inventory, eliminate operational bottlenecks, reduce changeover time, eliminate defects, and clearly define critical paths. Sustaining competitiveness in the international market necessitates a continuous commitment to enhancing quality and productivity through manufacturing excellence.

Industry 4.0

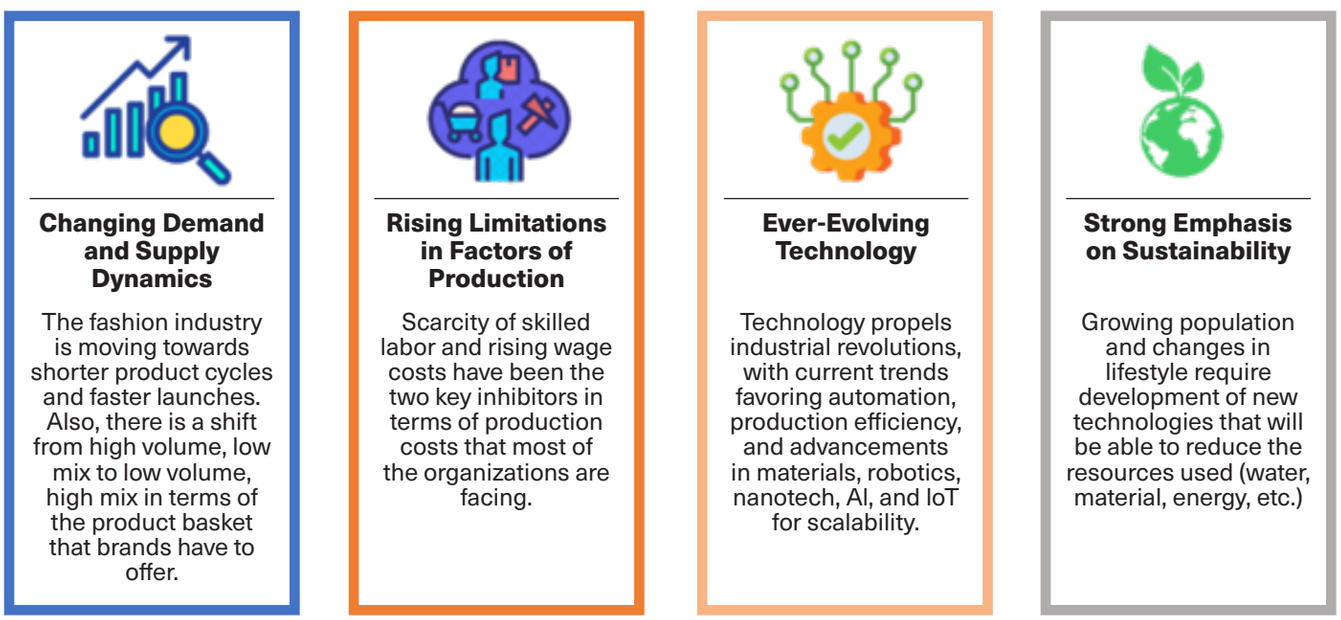
Industry 4.0 incorporates various components such as the Internet of Things, additive manufacturing, man-to-machine communication, smart manufacturing, and artificial intelligence. This marks a revolutionary shift in the manufacturing sector, aiming to make factories 'smart.' The era of relying on cheap labour and traditional manufacturing systems like Unit Production System (UPS) and Progressive Bundle System (PBS) is losing its dominance to the adoption of new manufacturing systems.

The initiation of an industrial revolution is often marked by the introduction of disruptive technologies. Numerous forces contribute to the emergence of these innovations and technologies within the manufacturing industry. Some of the driving factors ushering in the Industry 4.0 paradigm include:

Adopting Best Manufacturing Practices

In the current scenario, integration of technology and innovation is mandatory to keep up with the rapid changes of industry. The Indian textile sector is currently at a significant turning point, with the potential for progress towards both growth and sustainability. Embracing technology and fostering innovation can be the catalyst for this transformation. Companies worldwide have thrived by adapting to shifting consumer demands and leveraging cutting-edge manufacturing techniques. However, in India, the integration of advanced technology remains largely unexplored, with only a select few major players championing systematic manufacturing processes. This oversight has led to significant drawbacks: increased waste, diminished product quality, and a surge in defects and faults, ultimately devaluing the end products. It is imperative for the Indian textile industry to recognize the pivotal role of technology in revolutionizing its operations, paving the way for enhanced productivity, competitiveness, and a more sustainable future.

Figure 7: Industry 4.0 Factors



Source: Wazir Analysis

To attract investments in the sector, it's important to provide favourable incentives for investors. These incentives should focus on upgrading technology, increasing production capacity, and promoting long-term growth in the sector. They should be appealing to both Indian and international investors. A better investment environment will encourage investments, bring in technical expertise, and support the establishment of modern facilities needed for the sector's sustainable development.

Rigorous Adherence to Statutory Compliance and Regulations

The global textile industry is experiencing a positive shift towards embracing sustainable and eco-friendly practices. This transformation reflects a collective commitment from various stakeholders, including governments, communities, and environmental advocates. Regulations have been put in place to ensure that textiles and apparel are processed in ways that uphold high standards of environmental responsibility and social consciousness. In response, regulations governing the proper processing of textiles and apparel have been established. These encompass a spectrum of compliances, covering areas such as labour, social responsibility, environmental impact, and waste management, among others. The primary objective behind these regulations is to create a structured framework within which the industry operates, ensuring minimal harm to both society and the environment.

In India, a typical manufacturing company is required to adhere to approximately 70 compliances and submit over 100 returns annually. Oversight of these compliances falls under the purview of government authorities such as the Labour Department, Director of Factories, PF & ESI offices, and Pollution Control Board. However, due to the fragmented nature of the textile sector, full compliance is often lacking. Factors like insufficient awareness, inadequate training, and the high cost associated with adherence pose significant challenges, particularly for small-scale enterprises. This non-compliance not only has adverse environmental consequences but also tarnishes the global reputation of the Indian textile industry.

Despite the stringent legal framework established by the government, achieving sustainable growth necessitates genuine industry-wide commitment. A collaborative effort between the government and the industry is imperative. The government can play a crucial role by providing accessible platforms for textile companies to navigate eco-compliances, while the industry, in turn, must rigorously implement the regulations set forth by the authorities. Only through this concerted endeavour can a truly sustainable and responsible textile industry be realized.

Enhancing Manufacturing Flexibility and Agility

Manufacturers in T&A industry must develop a flexible and adaptable strategy when catering to international buyers. The surge in competition has amplified the demand for reduced lead times and a diverse product range, emphasizing the necessity for swift transitions without compromising effectiveness, and managing an extensive array of products. Demonstrating versatility empowers manufacturers to outperform their global counterparts. Implementing innovative concepts holds significance, as it can pave the way for discovering new and better manufacturing approaches to enhance agility, yield superior quality and designs, and optimize the overall process flow.

Promoting Innovation and R&D

The Indian textile and apparel industry has a reputation for producing traditional items, yet it has seen limited innovation thus far. Even for certain domestically developed technologies and processes, there is a lack of commercial acceptance and adoption within the sector. In comparison to other rival nations, the efficiency and productivity levels in the Indian textile sector are relatively low. Going forward India needs to project itself as a progressive manufacturer with high emphasis on new product development and innovation across the value chain. The government could also develop conducive policies that can help in faster adoption of innovation and R&D infrastructure that will facilitate this process.

4.3 Strengthening the Textile Value Chain

A crucial challenge confronting the industry today revolves around the structural vulnerability within the manufacturing value chain. As we progress downstream in this chain, manufacturing capacities progressively reduces, resulting in a missed opportunity for value addition. Significant amount of value addition opportunity is lost because of exports of unfinished goods viz. raw fiber, yarn and greige fabrics. Hence, it is must to strengthen the value chain to gain better value for the service.

The fundamental issue lies in the fabric manufacturing and processing sector, which grapples with insufficient capacity, lower utilization levels and lack of up to date technologies to such an extent that both the upstream and downstream processes are unable to tap into their full potential.

Gaps in India's Textile Industry

For India to achieve its maximum potential, it has to address below mentioned issues:

- **Fragmented supply chain**

India T&A industry is largely composed of unorganized players characterized by a multitude of small and medium-sized enterprises. While these entities contribute significantly to the sector's overall output, they often operate independently or in small clusters fragmenting the supply chain. These sectors face a shortage of production capabilities and rely on outdated technologies. Expanding capacity or modernizing technology poses a significant challenge for these small and medium-scale enterprises due to their limited resources. Certain regions in India have developed expertise in specific aspects of textile production. This regional specialization needs to be leveraged and capacities need to be consolidated to make the supply flexible to cater to small as well as large orders. There is need to support these clusters with support infrastructure and supply chain integration.

- **Challenges in cost competitiveness**

With the increasing global competition, one of the main factors affecting the growth of T&A industry in India is the lower efficiency level compared to key competitors like China, Vietnam and Bangladesh. India also lags behind its key competitors in elements such as power (Vietnam) and labour (Bangladesh). Additionally, logistics costs that occur due to lack of integrated facilities leads to expensive end product. Compared to its competitors, India has one of the highest costs of capital, which directly affects India's cost of production, and hence the country's competitiveness in the global market. The current lending rate in India is between 11 to 12.5%, while China, Vietnam, and Turkey, offer capital at a rate of 5 to 7% only.

- **Limited focus on MMF Textiles**

With the growing textile and apparel market of India, there are significant opportunities across all fibre types and products. However, MMF based textile products are expected to lead the demand globally. India, despite being second key textile exporter in the world, lags in this category because of unavailability of manmade fibres at competitive prices and is largely focused towards low-value added and commodity products. Countries like China, Taiwan and Korea are already into manufacturing of high end MMF based textiles. To keep up with the current needs, Indian companies need to invest and develop capabilities in MMF textile and apparel products to tap the value-added segment. Performance based MMF fabrics, which are currently not being manufactured in India sufficiently offers huge potential for future investments.

- **Lack of Technological Development**

About 50% to 60% of the textile machinery is imported with high excise duty, leading to high cost of purchasing machinery. This leads to disproportionate development in technology in different parts of manufacturing processes like dyeing, compacting and printing leads is a disadvantage for transitions. Additionally, Indian firms have much higher proportion of low and outdated technologies and manual machines especially in the power loom sector, processing, etc. In general, spending on R&D, product development etc. by textile companies in India is quite low. As a result, India has had a nominal presence in high value-added segments and innovation driven technical textile segment.

- **Limited FTAs**

Bangladesh, Vietnam, Pakistan, Turkey, etc. enjoy duty-free access to all the major textile markets like the US and the EU. India still lacks FTA advantages to major markets making Indian produce much more expensive compared to that of its competitors. Indian government's current foreign policy is expected to bring in more trade agreements and trading partners for the country.

Building Scale and Taking Cluster Approach

- **Large scale Investment**

There is immense potential for India to enhance its textile consumption and production, with expectations of the sector reaching a value of US$ 350 billion by 2030. Increased investments in India have the potential to drive economies of scale, providing a competitive edge in the global market.

Scale plays a major role in the competitiveness of global countries like China, Vietnam and Bangladesh. Due to high scale of operations these countries are able to cater to large order volumes to the large retailers and brands globally and produce at competitive costs due to the economies of scale advantage. India also needs to address this and build large scale capacities that will give it competitive advantage.

Realizing economies of scale in the textile industry requires significant investments from both foreign and domestic investors. This can be further amplified by improving the ease of doing business, offering competitive lending rates, and establishing a tax structure that is neutral to different types of fibres. Collaborations involving financial and technological expertise sharing with global players will contribute to establishing a notable global presence. Concurrently, there needs to be a heightened focus on domestic research and innovation to enhance the research and development intensity of our products, making them globally competitive.

- **Cluster Approach**

The textile and apparel manufacturing in India is characterized by significant fragmentation, with operations scattered across various clusters. The spinning sector stands out as the most organized within the textile value chain, while the other segments remain largely unorganized. Notably, Surat and Delhi NCR are prominent for woven fabric production, Ludhiana and Tirupur for knitwear, and Bangalore, Delhi NCR, Tirupur, and Ahmedabad for garmenting.

However, the unorganized manufacturing in these clusters encounters multiple challenges, including a lack of support facilities and infrastructure, limited scale, and labour-related issues. To meet the demands of the global market, it is imperative to upgrade and modernize these clusters.

Reviving the manufacturing sector in this industry can be spearheaded by consolidating unorganized manufacturing units under a single umbrella. Given the labour-intensive nature of the sector, such reforms would not only generate employment but also contribute to a more inclusive economic growth for India. This consolidation is expected to address supply-side challenges and enable reaching target customers at the right cost.

Clusters play a crucial role in enhancing productivity by facilitating efficient sourcing of inputs, accessing information and technology, coordinating with related companies, and measuring improvement. They create connections among industries with shared skills, technologies, and inputs, ensuring the fulfilment of buyer needs. A noteworthy example is the Tirupur knitting hub, where numerous small and medium-sized apparel production units have joined forces to achieve common goals. This collaborative approach collectively enhances the competitiveness and profitability of these units.

Focus on Skill Development

The Indian textile industry requires the essential technical expertise and a proficient workforce to diversify and grow its product base. Therefore, there is a pressing need for skill development initiatives targeting both technical and managerial roles. It is imperative to integrate textile education into the curricula of numerous universities and institutions at both undergraduate and postgraduate levels, spanning fields such as medical, civil engineering, agricultural, and textile engineering. This strategic move will culminate in the cultivation of a highly efficient and innovative workforce, propelling the industry towards unprecedented heights of success. In tandem with these efforts, the SAMARTH Scheme, a flagship initiative by the Indian government, plays a pivotal role in skill development within the textile sector.

Promoting Indigenous Machine Manufacturing and Investment

To maintain a competitive edge, it is imperative to employ state-of-the-art and updated machinery. These machines play a crucial role in producing high-quality products and can lead to improved profit margins by minimizing rework and breakdowns. However, it's worth noting that the majority of top-tier machinery currently on the market originates from either Germany or Japan. Importing these machines entails substantial costs, and the expenses associated with repair parts and routine maintenance are also notably high.

With the Indian Textile and Apparel (T&A) market poised to grow to an estimated US$ 350 billion, significant investments are being directed towards supporting this expansion. Its is estimated that a total of US$ 100 bn worth of investments will be needed to achieve the target by 2030. This surge in investments presents a tremendous opportunity to develop high-quality machinery domestically, offering superior service in terms of quality, pricing, and post-installation maintenance.

Establishing manufacturing operations in India affords global machinery manufacturers a substantial competitive advantage, particularly concerning the availability of spare parts. Presently, textile machinery manufacturers are already exporting their products worldwide, and the influx of fresh investments in this

sector is set to amplify these operations significantly. Once machinery manufacturers opt to establish their units in India, spare parts suppliers are likely to follow suit. Additionally, many Indian companies are anticipated to initiate the manufacturing of machinery components, driven by the potential for future demand. As the availability of spare parts becomes more accessible and swifter, it will also contribute to the expansion of the market for these machineries.

4.4 Embracing Sustainable Practices and Circular Economy

Sustainability has become a key consideration in global trade and sourcing decisions. It's crucial for entire supply chain to align with sustainability goals and understand their role moving forward. At the core of sustainable development is a responsibility towards the environment. Sustainable development seeks to balance economic growth with an awareness of environmental and social limits. Respecting our environmental boundaries is a core principle.

The textile industry is known for its significant use of energy, chemicals, and resources. From growing fibers like cotton (through agriculture) to manufacturing garments, it consumes a large amount of resources such as land, water, coal, and various chemicals. This resource consumption leads to the release of harmful emissions and chemical waste. This impacts the environment by depleting natural resources and releasing harmful byproducts. Any future development in the industry must consider its environmental impact. Therefore, it's essential for the textile industry to adopt sustainable practices.

Companies are now moving towards a greener, low-carbon, and environmentally-friendly approach. This involves incorporating advanced technologies for energy efficiency, emission reduction, and resource recycling, as well as implementing low-carbon and energy-saving projects. The first step in this process is establishing an Environmental Management System (EMS), which consists of practices and procedures that help organizations reduce their environmental impact and increase operational efficiency.

4.5 Leveraging Government Schemes

The Indian government is also placing a concerted emphasis on this endeavor and has introduced targeted schemes to support it. These initiatives are geared towards fostering the growth and development of the domestic machinery manufacturing sector. By creating a conducive environment for innovation and investment, the government aims to catalyze the production of high-quality machinery within the country. This strategic focus on the sector is poised to further amplify the potential for both local and global manufacturers, aligning with the broader vision of bolstering India's position in the global textile and apparel market. The Indian government is actively supporting the growth of T&A industry. With the vision to make India a global sourcing hub, the Indian govt. has introduced various turnkey policies such as Production Linked Incentive (PLI), Mega Investment Textile Parks (MITRA), National Technical Textiles Mission (NTTM), SAMARTH and State Policy Incentives for for investments in different states of India. Given below is a brief overview of the major policies.

Production Linked Incentive Scheme (PLI)

- The Production Linked Incentive (PLI) scheme promotes establishment of large-scale factories for production of MMF apparel & fabrics and technical textiles
- It has a budgetary outlay of approx. US$ 1.3 billion
- 64 projects in the manmade value chain (fabrics, garments technical textiles) were approved under Production Linked Incentive (PLI) Scheme with a cumulative investment of approx. US$ 2.5 billion. Recently government has reopened it till 31st October, 2023

- Further to this, PLI 2 is under active discussion which will be aimed at supporting all types of garments, made-ups and accessories with a lower investment and turnover threshold
- It will enable the country's textile industry to gain a larger market presence, enhance its global competitiveness, and generate employment opportunities

Mega Integrated Textile Region and Apparel (MITRA)

- To make India stand at par with global textile giants, Government has launched MITRA scheme aiming to create large scale integrated textile parks with world-class infrastructure having a minimum area of 1,000 acres. 7 parks have been notified in following States: Tamil Nadu (Virudhnagar), Telangana (Warangal), Gujarat (Navsari), Karnataka (Kalburgi), Madhya Pradesh (Dhar), Uttar Pradesh (Lucknow/Hardoi) and Maharashtra (Amrawati)
- It intends to reduce logistics costs and enhance the competitiveness of the textiles industry by achieving economies of scale
- This scheme is expected to create 0.7 million direct and 1.5 million indirect employment, attract cutting-edge technology and boost foreign direct investment and local investment in the sector
- The budget outlay for the scheme is US$ 542 million. Financial support in the form of Development Capital Support up to US$ 60 Mn per park will be provided to the developer
- The PM MITRA scheme aligns with the government's efforts to enter into free trade agreements that provide access to developed markets for Indian textiles, apparel, and various other industries

National Technical Textile Mission (NTTM)

- The National Technical Textile Mission aims to promote the production of technical textiles in India. It seeks to enhance the competitiveness of the Indian technical textile industry both domestically and internationally
- NTTM aims to position India as a global leader in Technical Textiles.
- The budget outlay for the scheme is US$ 180 million
- It focuses on the usage of technical textiles in various flagship missions, programs of the country including strategic sectors
- The mission has 4 components – Research Innovation & Development, Promotion, and Market Development, Export Promotion and Education, Training and Skill Development

Scheme for Capacity Building in Textile Sector (SAMARTH)

- SAMARTH Scheme aims to skill and train workers in the textile sector to make them more employable and to provide them with a sustainable livelihood
- The scheme aims to create more jobs in the textile and related sectors that will cover the entire value chain of the textile but will exclude spinning and weaving
- The skilling programs offered under Samarth Scheme aim to incentivize and supplement the efforts of the Textile industry
- The scheme primarily targets the workforce engaged in the organized as well as the traditional textile industry, especially those in the unorganized sector, which constitutes a significant portion of the textile workforce in India

Overall, the Indian textile and apparel industry has the potential to reach a target of US$ 350 billion by 2030, provided the right steps are taken in building the overall ecosystem for textile manufacturing and aligning with the global market requirements. India has a significant opportunity to enhance its global presence, and the industry must be prepared to capitalize on it.



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.

wazir ADVISORS

About Wazir

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

Wazir delivers practical, implementable strategies for clients to meet their objectives.

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:

- 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

Implementation

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:

- 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

Alliances

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:

- Company Due-diligence
- Joint Venture
- Marketing Tie-up
- Technology Transfer
- M&A Execution
- Strategic and Financial Funding


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