

# Automotive Textiles - Untapped Market In India

Change is the need of the hour. Change and Success go hand in hand. Recently we are witnessing the changing face of India due to change in leadership. Textile- The golden industry of India has at last accepted that change is inevitable and has taken steps in new direction. Entrepreneurs are now shifting from conventional textiles and thinking about investing in the future of textiles i.e. technical textiles. Recently a lot of technical textile projects are being thought about.

Though India is the 2nd largest textile economy in the world after China; our contribution in one of the growing textile segment, technical textile is negligible. This is an eye opener to how much behind we are as far as technical textile market is concerned. Moreover the other hard hitting fact of Indian technical textile scenario is that we have penetrated our roots in technical textile segments like packtech (36%), Clothtech and Hometech. These segments though are very well technical textile products having ample of growth however when it comes to the monetary value of the end products it is sadly on the lower side. The global technical textile market on the other hand is dominated by Mobitech having 23% share followed by Indutech, Sportech which are high value products.

When it comes to demand supply analysis of Mobitech, the huge potential of this sector is very much evident to the layman as well given the tremendous growth in Automobile industry. With rising economy having high disposable income and growing standard of living the demand for Cars is increasing day by day. In 2016 there were around 7.2 crore cars produced globally whereas, in India 36 Lakh cars were produced. Indian automobile industry is one of the largest in the world. It accounts for 7.1% of the country's Gross Domestic Product (GDP). The Passenger Vehicles segment witnessed a growth of CAGR 10.09% and the commercial vehicle segment witnessed growth of CAGR 9.4% during FY06-16. This ever increasing demand of automobiles is mainly due to the status symbol that Cars are having in India and also recently this has further accelerated with the launch of rental car service provider

as people have now started investing in cars and registering them with rental services giving them an added source of income just as over the years they have been investing in property, gold to secure their futures.

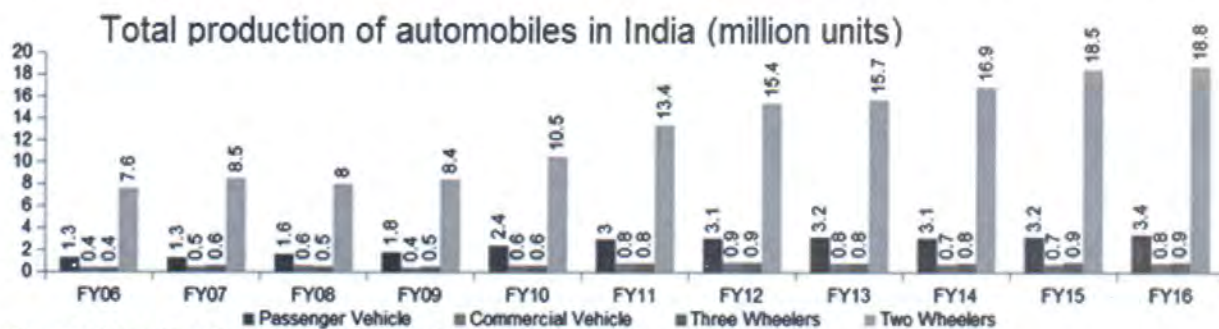
All said and done be it any kind of car, the automotive textiles is a must in any types of vehicle. The various automotive textile products are Nylon tyre Cord, Seat belt, Car body covers, Seat upholstery, Automotive Carpets, Headliners, Sunvisors/sunblinds and Airbags.

Apart from the huge demand for the utmost essentials of cars like seat covers, car flooring, seat belts etc. Recently the awareness of one's safety has also increased the demands of air bags. Safety is of utmost importance today, The scenario has changed gone are the days when people insisted on cars without air bags in order to get affordable lower prices. Today there are cars that are marketing purely on basis of the number of Air bags in the car thereby ensuring the safeguard of maximum passengers on board.

In India, the government has recently made it mandatory for all the cars to have air bags and three additional safety features for on board protection from accidents post October 2017. This compulsion will thus increase the demand for air bags exponentially as most of the budget cars today like Alto, Eon, Santro, Nano, and the Datsun GO are not providing air bags. A per car need of minimum 2 bags in such cars that are currently having highest market dominance in India will ultimately create a huge market for air bag manufacturer.

In value terms, the global automotive textiles market size was USD 23.82 billion in 2015 and is expected to reach USD 31.75 billion by 2024. Whereas, in volume terms, it was 3.81 million tons in 2015 and is expected to reach 5.14 million tons by 2024.

The Indian Automobile industry is estimated to reach 10.3 thousand Cr. by 2017 having a CAGR of 14%. Amongst the various automotive textiles produced in India, Nylon tyre cord accounts over 60% of the total technical textile

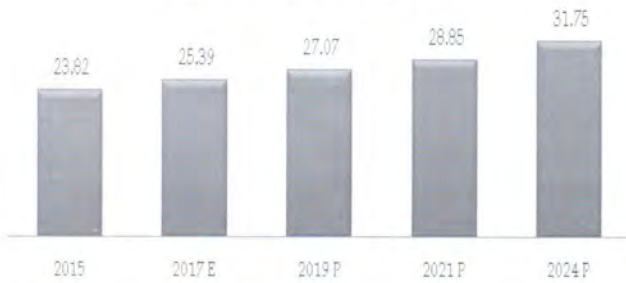


Source: SIAM, TechSci Research; Note: CAGR – Compound Annual Growth Rate





Global Mobitech Market (In Bn. USD)



Market Size in India INR '000 Crores



consumption in the segment followed by seat upholstery / fabric with a share of around 14%. Though the Indian market is showing promising growth there is ample of opportunities for Indian entrepreneurs to encash by investing in auto textiles due to the growing global demand for this market.

### Conclusion:

Globally Mobitech market accounts US\$ 36 Bn contributing 20% to technical textile market whereas in India the mobitech market is Rs. 11,433 Cr contributing only 10% of technical textile market. This shows that there is a

huge mobitech market that can be explored by entrepreneurs. Despite such great demands the Indian market is still fragile for investing in mobitech projects. The major reason for this setback is the lack of tie up with car Assembly suppliers. Most of these vendors are stationed in developed nations thereby increasing logistic cost of the product. Tie-ups with these vendors for setting up assembly units in India will ultimately decrease the logistic cost. Also from other point increased manufacturers of mobitech products will help in to bring these vendors to India.

Investing in mobitech product is highly sensible as most of these products are high end products having huge potentials ensuring a shorter span and higher return on investments. Domestic production of the airbags and other automobile textiles means that the Indian manufacturers can easily compete with other international mobitech suppliers due to reduced logistics charges. It's time that we start playing on our strengths and invest in products that will help us compete with global players. We must take advantage of the new windows that are opening and become global leaders than just followers. It is sensible to be the first of a kind rather than just repeating someone after. Indian Entrepreneurs can come out with business modules to supply all mobitech products to Indian branded Cars in low segment which is the largest market in India.



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## Invest In GST Regime

GST is the latest buzz of the town and is chattered in every corner of textile industry. Many reports and presentations have been published explaining the new tax concept with its impacts in both positive and negative ways.

The nation is talking about the burdens that manufacturers and consumers will have to face due to higher GST rates on certain commodities. Such situation is bound to happen the new tax reform would. create chaos and people need expert's opinion to understand the situation and remodel their structure.

So basically GST as clarified by government is a single taxation system for the goods and services. This taxation system is ultimately going to be beneficial as it has eliminated all other taxes and duties that we used to pay before the roll out of GST. With this GST regime, everybody will procure, manufacture and sell only through this defined system. All the services from the vendors will also be considered under the surveillance of GST reform. Thus in this system each and every commodity will be under the scanner creating a transparent module that will facilitate more business opportunities in a structured format.

While focusing on textile industry, it is observed that there is a gap in understanding GST, given the fact that there were late reactions by most of the industry associations related to the changes and impacts of the GST. Some of the issues are related to various fibres, for example in case of cotton textile there would be a common GST of 5% till fabric level and at garment level there are two different slabs. Whereas in case of synthetic fibres there is an issue as the GST on synthetic yarn which is higher than the GST on fabric. This difference will create an accumulation of GST credits for which till date there is no solution. However I am positive that government will address this issue and provide a solution at the earliest.

The government is quite confident and firm on the implementation of GST. They have clearly indicated that GST must be implied and it's already being rolled out from 1st July 2017. Any corrections or alterations then after will be incorporated and executed as and when it is approved.

If we analyse the growth of manufacturing hub in India since 2012, entire world is eyeing on India as a major contributor for global economy. Whereas Indian investors are only eagerly waiting and holding on their new business ventures with the hope of getting better reforms from government. Though in early 2015 all reforms and government initiative were introduced to boost the manufacturing sector and when things just started taking pace, again there was a pause due to demonetisation as an excuse. This slowdown was further dragged on by the announcement of GST as various entrepreneurs had little

idea on where abouts and impacts of GST. Though GST is functional now, the current scenario has not changed much as manufacturers are only focusing on restructuring their system and every investment is sidelined.

But now it's time to rise as GST regime is very much into place, all the rates and exceptions are announced and the reform of Indian taxation has begun. The centre has clarified its system which is to be accepted and implemented with a positive mindset. There is no going back now, GST isn't just a concept anymore, but is the hardcore reality.

It's now time for Indian Entrepreneur's to kick start new business ventures. Avail various benefits that the country is offering to the manufacturing sector and spin higher profits. The platform is all set for manufacturers as the GST reform is in action and all other policies are also launched. The state governments like Maharashtra, Gujarat, Andhra Pradesh and Jharkhand have come out with economical investment propositions.

It's now or never for the investors, they must understand the current situation and enact upon these opportunities. As far as business house focusing on export market is concerned there are clear cut guidelines of GST for them. Also procuring raw materials from different parts of the country will not have multiple taxes and then transforming into value added products will now be much easier. Hence, time has come that each and every investor starts investing in carrying out techno economic feasibility report which will assist them to analysis their project viability. We all know it takes a year or two for a proper execution of any project so it's now time to take actions and invest immediately. If we Indians do not take advantage of the situation, then there are foreign investors who are waiting to invest in a big way in our economy and take advantage of Make in India, Skill India and many other new initiatives provided by the Indian government.



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## Nonwovens- Unexplored Opportunities

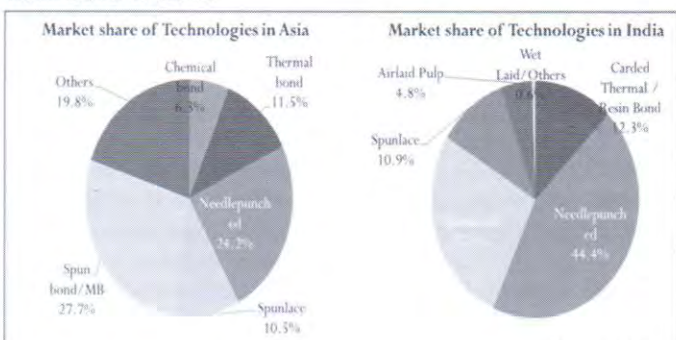
India has made its big name after China in global market, however due to ever increasing demands from brands, continuously rising raw material prices & operating cost there is always a constant pressure for earning higher profits. India has made its good name in textile world particularly in yarn & apparel business. It is a known fact that conventional textile process is lengthy, has huge competition & hence nonwoven technologies should come to rescue Indian textile industry to create a new portfolio & fresh products basket.

Modernization has turned the tides from conventional textiles to technical textiles. Textiles are no longer just apparels used for covering & protection but have evolved into high performance delivering products. They have become part & parcel of one's daily routine, present everywhere from the automobiles, households, buildings, hospitals, environment protection, sports, agriculture & event to the underground usage providing high comfort.

The main reason for rising demands of these highly engineered products is growing awareness of hygiene & protection, health & fitness, world class infrastructure & fascination towards leisure activities, adventure sports etc. The products like wet wipes, home textiles, travel kits, air bags, high end sports textiles and disposable products like medical textiles have today become products of daily consumption.

All these products are classic outputs of nonwoven technologies. Nonwoven technologies are compact technologies that produce complex and highly engineered products giving much higher production. As the process of these technologies is very short, the utility consumption will be much lower & further due to mass productions, the operating costs will be minimal. Moreover, the quality of product remains uncompromised as there is hardly any involvement of human beings.

Major Nonwoven technologies are needle-punched, spunlace & spunbond. Their consumption is growing rapidly in India because of their increasing industrial as well as household applications on day to day basis. Nonwoven market is expected to reach USD 45,363 million by 2019, growing at a CAGR of 6.7% from 2013 to 2019

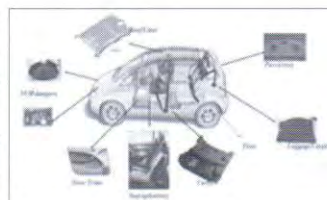


### Needle punched Nonwovens & Applications

Needle punching is the oldest method of producing nonwoven fabric. It involves mechanically binding a web to form a fabric by penetrating the web with an array of barbed needles that carry tufts of the web's own fibers in a vertical direction through the web. They find applications in specialized areas because of their characteristics like high water permeability, high abrasion resistance & ability to attach layers of different type of fiber webs to form composites. Needle punching is an eco-friendly technology & its estimated global share is around 12%.

The various end products developed through needle punched technology are as follows:

- **Automotive:** They are used in around 40 parts of automotive. Considering India's huge automotive market which is estimated to grow with CAGR of 13%, nonwovens consumption is going to grow exponentially.



- **Geotextiles:** Geosynthetics is another segments where there are tremendous investments opportunities considering increasing growth in infrastructure & real estate in India as well as worldwide.



- **Filtration:** Nonwoven materials used in filtration applications are an important part of the worldwide nonwoven industry.



- **Industrial Wipes:** Industrial wipes are used for a variety of applications in industry



- **Felted carpets & floor covering:** Indian export of felted carpets & textile floor coverings is around \$67.31 Mn in 2014 which growing at the CAGR of 31%. This steep increase is due to huge exports to Malaysia. In fact Global demand for flooring and carpets is expected to grow.

### Spunlace Nonwovens & applications

Spunlace technology facilitates highest flexibility and achieves much wider product range with most compact process. Global exports of spunlace nonwoven are steady over the year and





expected to reach 1.95 Bn. USD at 2% CAGR by 2017. Global production of Spunlace Nonwovens is growing at an average of 9.5%. India's exports of Spunlace Nonwovens are increasing at a CAGR of 4%, whereas imports have increased at a CAGR of 8% in last few years. Spunlace Nonwovens are used mainly for various low weight products by using natural fibers without deteriorating their physical properties.

Spunlace Nonwovens are also used in roofing substrates, consumer wipes, cotton pads, surgical disposables, etc. Growing population & growing markets of beauty & hygiene products will certainly increase demand of spunlace nonwovens in India.

**Spunbond Nonwovens & Applications:**

In the spunbond technology, usually a thermoplastic fiber forming polymer is extruded to form fine filaments fibers of around 15–35 micrometer diameter. The filaments are attenuated & collected on a conveyor belt in the form of a web. The filaments in web are then bonded to make spunbond nonwoven fabric. They are used for durable and disposable applications. The main applications are in automobiles, civil engineering, hygiene, medical, packaging, and agriculture.



**Application area & nonwoven technology matrix**

	Needlepunched	Spunlace	Spunbond
Automotive Applications	yes	yes	yes
Wipes	yes	yes	
Healthcare disposables		yes	yes
De-makeup pads		yes	
Wound care		yes	yes
Geotextiles	yes	yes	
Synthetic Leather Substrate	yes	yes	yes
Roofing Substrate	yes	yes	yes
Filters	yes	yes	

**Conclusion:**

Despite such great demands for nonwovens, we are still stuck up with age old conventional textiles. For more than 100 years, we are catering to clothing needs of our own large population, its high time for us Indians, to think out of the box & switch over to unexploited segments like nonwovens & create a new road map for our industry. With abundant availability of raw materials from natural fibers to synthetics & highly skilled labor force at comparatively lower cost than other countries, we will surely be able to dominate this segments. However we must change our mind set & overcome our weak links in marketing of products, timely delivery of products, consistency in quality of products & after sales service to the customers. We need to adopt new strategy & improvise on above qualities to explore & reap high profits from this niche nonwoven segments.

The Entrepreneurs can further reduce their overall capital cost by importing second hand plant from European countries. Due to high labour cost in EU such plants have shut down, but they are having sound technology & viability. By bringing these plants from EU countries, the overall capital cost will be reduced by around 60%. Also as the plants are in ready conditions, less time will be required for the plant to be fully functional. This in turn will help in minimizing the pay-back period & will also be competitive with the new plants.

Thus it is important for young Indian entrepreneurs, to take calculative risk & explore the various possibilities of investing in nonwoven markets as per their strengths & weakness. They need to do complete market research on what nonwovens are, what are their properties? How they are manufactured? What their applications are & most importantly what is a market potential? A proper analysis of above will help the entrepreneurs invest in the products that best suit their capabilities.



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## Importance of Indian Textile Machinery in Global Textile Industry



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### Global Textile Machinery Industry

Global Textile machinery market is witnessing tremendous growth buoyed by growing demand of textile & apparel market. It is forecasted to grow at a CAGR of 14.02% till 2018. It is expected to reach to US \$ 207.5 billion in 2015. The major manufacturers of textile machinery are Germany, Italy, Switzerland, France and now China. China is leading in the field of textile exports today because they installed a large set-up for spinning and weaving industry. One of the major trends in the Global Textile Machinery market is the growing number of technological innovations. The global market is divided into two parts i.e. Low cost manufacturing in developing countries (Labor concentrated market) where cheap labor and lower version technology is available & high cost manufacturing in developed countries where labor is expensive & more automation is needed to reduce operation cost.

### Indian Textile Machinery Industry

The industry witnessed a growth of 8-10 per cent to Rs 22,000 crore in 2014-15 from Rs 20,000 crore in 2013-14. The size of India's textile machinery industry is poised to double to Rs 45,000 crore in the next 7 years from the present Rs 22,000 crore in light of new projects and emphasis on setting up textile parks. The textile machinery manufacturing section is one of the important segments of the machinery manufacturing industry in India. Our in-house production is insufficient to meet domestic demand.

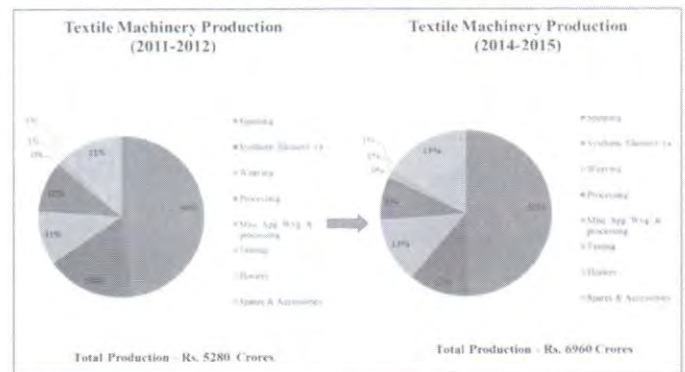
This industry is nearly sixty years old and has more than 1000 machinery and component manufacturing units. Nearly 300 units produce complete machinery and the remaining produce various textile machinery components. However, not all the units work to full capacity or even the optimum capacity level. Except for the units in the spinning sector where the machineries are of international standards; in the other sectors, machinery manufacturing for weaving, knitting and wet-processing lack high level of quality standard and performance (in most of the cases) to compete with the European manufacturers.

Year	Production	Export	Production less Export	Total Domestic Demand	% Demand met by in-house production
2009-10	4245	582	3663	7383	50%
2010-11	6150	915	5235	9312	56%
2011-12	5280	800	4480	11188	40%
2012-13	5650	1462	4188	11898	35%
2013-14	6775	2277	4498	12044	37%
2014-15	6960	2466	4494	12308	37%

Indian Machinery Production FY 2012-13 (In Crores)

In the weaving sector, shuttleless weaving machinery (rapier or air jet) and in the knitting sector (circular knitting and flat knitting) machineries hardly have any presence in the industry. The machinery manufacturing operation takes place at the organized and the unorganized sectors. In the organized sector, in addition to the public limited companies, machinery manufacturing is done in independent units, which have collaborative joint ventures with the

foreign entities. In the decentralized sector, there are small-scale industrial units as well as tiny units engaged in the production of accessories pertaining to the textile machinery. Majority of the production comes from the States of Tamil Nadu and Gujarat; collectively contributing around 84 per cent of the production.



Around 87 per cent of the total production, i.e., textile machinery is coming from the six clusters namely Ahmedabad, Bangalore, Coimbatore, Ludhiana, Mumbai and Surat. These clusters are strategically located to serve the textile industry and have the affiliation to produce the kind of machinery required by the industry. Ahmedabad is a cluster of weaving.

Currently most of textile machinery is consumed within the country, so there is very less scope for the export.

Years	Production	Exports	Imports	% of Export of total production
2010-11	6150	883	5315	14
2011-12	5280	1523	7643	29
2012-13	5650	1512	7599	27
2013-14	6775	2277	8562	34

Source: Office of Textile Commissioners

### Growth Drivers in India for Machinery Market

Purchase of new machinery is the key growth driver of the market. One of the major growth drivers for global machinery market is the strong economic recovery; post-recession, increasing demand for textile products, and environment friendly fibers, and a growing demand in the developing countries. Today machinery manufacturers produce textile machineries at competitive prices, and sophisticated machines of higher speed, and production capacity. Presence of numerous small scale players also makes the machinery sector more competitive. Along with them, MNCs have also entered the global arena, taking the competition to the next level, driving companies to work on their productivity and innovation.

The global demand of textile machinery is rising due to growing demand of textile industry. Today, Textile machinery sourcing



is majorly done from European countries, which is relatively costly. India is strategically located from most of major textile & apparel producing countries and India has good potential to explore global opportunities & tap global market. India has to first focus on exports to the neighboring countries which are emerging as significant textile producers.

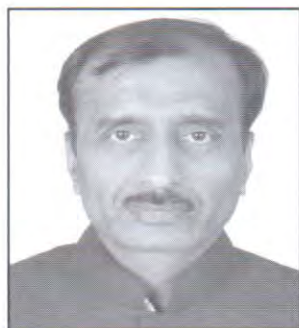
### Summary

Indian Textile Machinery Industry has tremendous growth potential in coming future buoyed by growing global demand; the only need is to identify the untapped opportunities. We need to focus more on Research & Development (R&D) to manufacture high standard Textile Machinery which is required to produce quality goods and replace imports and also to export to other developing countries. There is a dire need of techno commercial viable machinery which can reduce capital cost substantially with appropriate op-

erating cost, this would give an edge over highly priced European and Japanese machinery. Indian

The Indian Government has already declared "Make in India" drive to boost manufacturing sector. It should also support the R&D activities & allocate special funds for development of R&D centers. Our education pattern should develop research and innovation based concepts for Textile Engineering students so that the real growth happens within our country. Low material costs and economy of scale along with tremendous domestic market will give India an edge over other countries. However, India has to create its own brand and market Make in India products aggressively.

So let's come together & create India as "NEXT TEXTILE MACHINERY HUB" for global textile market.



## NOTE ON INDIAN TEXTILE MACHINERY INDUSTRY

### PROSPECTS, CHALLENGES AND REMEDIES

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PRESIDENT OF ITAMMA

The Indian Textile Engineering Industry (TEI) is more than 100 years old with an illustrious history of achievements, including manufacture of advanced spinning machinery, power looms, weaving preparatory machines, finishing and dyeing machines etc. It has also made a mark in the world specially in the field of export of accessories which amount to nearly 2/3rd of last year's export of about Rs. 2600 crs.

However, due to structural problems, lack of fiscal policy support and small size of firms engaged in the business, the industry has not grown to its potential. Import of machinery and spares in India (Rs 10385 crs.) still constitutes more than 70% in value of domestic demand. In comparison, China, which had a negligible TEI in 1990, has now grown into a major manufacturer and exporter of textile machinery and spares. Indian manufacturers sold about Rs. 3900 crs. worth machinery and spares in India and exported about Rs. 2600 crs (40% of production), while operating at only 60% capacity utilization.

The Indian TEI has the potential to grow more than 10 times to a USD 10 billion industry provided all the stakeholders including the government adopt a mission to "Make India a world leader in textiles by 2025". We have the skills, the tradition, the designs, the manpower, the raw material and a large domestic market to achieve this but it shall remain a pipe dream if we do not channelize all forces to this common goal.

We would like to briefly mention the problems hampering the industry growth and the remedial measures required:

1. **Lack of scale and technology:** Most firms are SMEs who do not have the wherewithal to compete with global giants. High interest rates, reluctance of mills for using domestic products, lack

of access to latest technology, lack of R&D infrastructure with academic institutions not geared up to undertake R&D projects on commercial basis, lack of innovation and Zero-defects culture (chaltahai still prevails!), archaic labour laws – these and innumerable other hurdles are the well-known impediments.

2. **Lack of presence in all sectors:** India does not possess advanced technology to offer machinery and parts for knitting, garmenting, non-wovens, technical textiles, embroidery, made-ups, garment accessories, etc. besides being leagues behind in weaving and finishing of fabrics.

3. **Adverse import policy:** Many machines are imported at concessional or nil duty while components attract 25% or more duty (including CVD). Second hand machines were also till last year enjoying subsidized interest and capital subsidy and duty concessions under TUF, EPCG and State promotional schemes whereas similar benefits were not available to local products.

4. **Lack of government support for technology advancement:** While huge subsidies are provided under TUF scheme to subsidize imports, the Indian TEI is not offered any concessional benefits similar to TUF to develop advanced indigenous technology to make machinery and components at par with international standards. This in spite of fact that Indian machinery is typically 40-60% cheaper than imported in most cases. If the government promotes technology among Indian manufacturers by offering a TUF scheme for TEI, there may not be any need for TUF for the textile industry as machinery and parts will be available at 40-60% lower cost! However, the strong lobby of foreign suppliers supported by domestic mills due to TUF scheme, had prevented this from happening in spite of the obvious advantages. Also the TUF for tex-



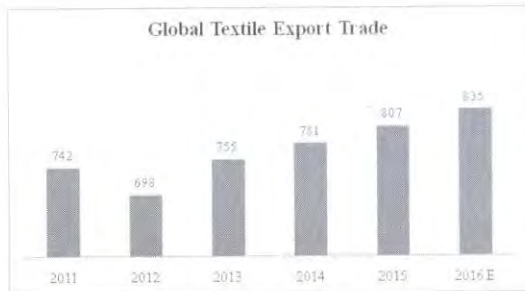
# Overview of Asian Textile Industry & Competitor Analysis



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## Asian Textile Industry

The global textile & apparel trade is increasing at a CAGR of 3% since last few years. Asia is the main hub for textile industry. China is the major exporter with total share of 37% in the global trade of



textile & apparel sector followed by other countries like India, Bangladesh, Indonesia, Vietnam & Cambodia. The textile industry is highly labor intensive industry. Hence, lower cost of production & cheap labor are the main reasons for growth of Textile industry in the Asian countries. USA, European Countries, UK & Japan are the major export market for Asian countries. China controls about 40 percent of global textile markets & India claims second position.

### China

China has dominated the textile and garment industry for the past 30 years, and remains the single largest producer and exporter of textiles and clothing, thanks to its low production costs. It has well-established supply chains, as well as good infrastructure and expertise in textile and apparel products in much larger volumes. No single emerging country in South East Asia can yet hope to match China in all of these capabilities. Hence China will likely remain the leading textile and apparel sourcing country in the region over coming few years. With labour, land and regulatory costs on the rise, analysts predict that the industry is about to undergo a shift to South East Asia and beyond. Despite competition from cheaper South East Asian nations, China will remain the dominant player in the industry for some time to come — given the size of the domestic market, supply chain concentration and the scale benefits it has accumulated over the years. These things are hard to replicate. Emerging countries in South East Asia are increasingly challenging China's dominance. Many international firms are adopting the "China plus one" strategy, whereby they retain a production base in China, yet open another facility in a low-cost Asian country. It's a sound diversification strategy to reduce risk, most suited to larger businesses that can afford to scale up.

### India

India is highest growing economy today on world's map. With abundant raw material availability & stable government, strong industrial growth is forecasted in near future. Textile is one of the most ancient industries. Today, textile sector is one of the largest contributors to India's exports with approximately 11 per cent of total exports. The industry realised export earnings worth US\$ 41.4 billion in 2014-15, a growth of 5.4 per cent, as per The Cotton Textiles Export Promotion Council (Texprocil). The Indian Textile Industry

contributes approximately 5 per cent to India's Gross Domestic Product (GDP), and 14 per cent to overall Index of Industrial Production (IIP). The Indian textiles industry, currently estimated at around US\$ 108 billion, is expected to reach US\$ 223 billion by 2021. The industry is the second largest employer after agriculture, providing employment to over 45 million people directly and 60 million people indirectly. The Indian textiles industry is extremely varied, with the hand-spun and handwoven textiles sectors at one end of the spectrum, while the capital intensive sophisticated mills sector at the other end of the spectrum. The decentralised power looms/hosiery and knitting sector form the largest component of the textiles sector. The close linkage of the textile industry to agriculture (for raw materials such as cotton) and the ancient culture and traditions of the country in terms of textiles make the Indian textiles sector unique in comparison to the industries of other countries. The Indian textile industry has the capacity to produce a wide variety of products suitable to different market segments, both within India and across the world. The future for the Indian textile industry looks promising, buoyed by both strong domestic consumption as well as export demand. With consumerism and disposable income on the rise, the retail sector has experienced a rapid growth in the past decade with the entry of several international players like Marks & Spencer, Guess and Next into the Indian market. The organised apparel segment is expected to grow at a Compound Annual Growth Rate (CAGR) of more than 13 per cent over a 10-year period.

### Bangladesh

While the rest of Asia disappointed in terms of export revenue in 2015, there was one surprising anomaly to the pattern – Bangladesh. Bangladeshi export earnings rose to \$31.5bn in 2015, thereby setting a new record for the South Asian country. This phenomenal success can be attributed to Bangladesh's growing apparel industry, which accounted for over 83 percent of total exports.

As global demand for cheap clothing rises rapidly, Bangladesh's position as the second biggest exporter of garments in the world continues to hold strong, which is mainly due to its large population and low labour costs. In fact, according to the World Bank, the country's GDP is expected to grow to 6.7 percent this year, which will make Bangladesh one of the fastest growing economies in the world.

The textile and apparel industries provide the single source of economic growth in Bangladesh's rapidly developing economy. Exports of textiles and apparels are the principal source of foreign exchange earnings. By 2013, about 4 million people, mostly women, worked in Bangladesh's \$19 billion-a-year industry, export-oriented ready-made garment (RMG) industry. Bangladesh is second only to China, the world's second-largest apparel exporter of western brands. Sixty percent of the export contracts of western brands are with European buyers and about forty percent with American buyers. Only 5% of textile factories are owned by foreign investors, with most of the production being controlled by local investors. The Ready-Made Garments (RMG) industry occupies a unique position in the Bangladesh economy. It is the largest exporting industry



## COVER STORY

in Bangladesh, which experienced phenomenal growth during the last 20 years. By taking advantage of an insulated market under the provision of Multi Fibre Agreement (MFA) of GATT, it attained a high profile in terms of foreign exchange earnings, exports, industrialization and contribution to GDP within a short span of time.

### Indonesia

Robust economic growth and rising purchasing power make Indonesia – the world's fourth most populated country – an attractive market for textiles and clothing. Both local and foreign companies are vying for market share. Rising costs are giving domestic producers a hard time as they try to fend off overseas competition, but technological modernization, improving labour skills, better infrastructure and not least the relatively low rupiah alter the picture in their favour. Local textile producers depend almost entirely on imported cotton, since domestic farmers are unable to satisfy even 1% of national demand. This makes yarn spinners vulnerable to the fluctuating global prices and has forced a number of small businesses to close up shops, though larger ones are in a stronger position, thanks to their greater stockpiling ability and better access to capital. The principle buyers of yarn from Indonesia are China and Japan, while textiles and textile products go mostly to the US, the EU and Japan.

### Vietnam

Vietnam has a lower cost base than China and India, although higher than Bangladesh and Pakistan. The textiles and apparel industry is actively supported by the government, and relatively significant currency depreciation makes the country's exports competitive. The local workforce is still largely of a low-end skill base, however, meaning that Vietnam's best sourcing opportunities are still in basic designs and standard types such as woven garments and baby wear products. The total export turnover of the garment sector reached \$24 billion in 2014 and \$27.5 billion in 2015, and it is expected to reach \$31 billion by late 2016. Plentiful competitively priced labor giving the country a distinct cost advantage; and supportive government policies, including incentives to attract foreign direct investment.

### Cambodia:

The garment and textiles industry has thrived for about two

decades now. Growth skyrocketed when the normalized trade relationship went into effect



with the United States and the European Union in 1996 and 1997. From humble beginnings with exports worth US\$27 million in 1995, the sector grew 200-fold and by 2014 provided more than half a million jobs for young Cambodians. The garment sector accounted for some 8.5 per cent of all employment in the country. Exports of the garment sector grew by a still substantial 8.3 per cent to \$5.4 billion. The continued growth of garment exports is driven mainly by strong demand from European buyers

### Summary

This very brief outline illustrates that China still holds the unique position in textile and apparel manufacturing however, it certainly is no longer the cheapest option available. It is still the dominant player, and will likely still account for the largest share of global textile and apparel sector, but other countries in South and South East Asia are now considered for certain product segments, and China's position will be further assailed in the years to come by these emerging Asian countries. India is the most powerful competitor to China's textile industry. It owns a huge and highly competitive textile industry and has become the world's second largest cotton textile supplier. Today, Indian economy is in transition phase. Our Prime Minister Mr. Narendra Modi is taking good initiatives to attract foreign investments from Japan, China, USA and other developed countries. Many other foreign nations are eyeing on Indian economy for investments. Our Vision for textile & apparel sector should bring the right environment for investors by creating good infrastructure, skill development, Government policies & marketing platforms.



**Shri RUSHIN H.VADHANI**

AGM – Market Research & Product Development  
AYM SYNTEX LIMITED (FORMELY WELSPUN SYNTEX LTD)

## Co-Branding : The Art Of Collaboration

Co-branding is an arrangement that associates a single product or service with more than one brand name or otherwise associates a product with someone other than the principal producer. The typical co-branding agreement involves two or more companies acting in collaboration to associate any of various logos, color schemes, or brand identifiers to a specific product that is contractually designated for this purpose. The object for this is to combine the strength of two brands, in order to increase the premium consumers are willing to pay, make the product or service more resistant to copying by private label manufacturers, or to combine the different perceived properties associated with these brands with a single product.

When two or more companies are in a co-branded relationship, they are endorsing each other in an attempt to build a more successful brand than would have been built individually. Co-branding in its purest form has at its core the exchange of values or attributes (on a reputational level) between brands, to create a new reality whereby both brands are perceived to be better as a result of the initiative. These brand partnerships are common among consumer markets, especially between manufacturers & retail brands.

### Forms of Co-branding :

There are many different sub-sections of co-branding. Com-



## Skill Development – Need of an hour for Tirupur Knitting Hub'



SHRI AVINASH MAYEKAR  
MD, SUVIN ADVISOR PVT. LTD.

### Introduction

Indian knitwear segment is witnessing tremendous growth. India has more than 65% young population below the age of 35 & most of the young population prefers to wear casual wear like t-shirts & track pants on day to day basis. In fact senior citizens seem to be inclined more towards western casual wear for morning walk, reason being the comfort & flexibility offered by knitted garments compared to woven ones. Already there is huge demand for knitted garments in export market. So, knitted garments forms major chunk in domestic as well as export market.

Tirupur, is one the major garment clusters in India providing direct & indirect employment to more than 3 lakhs people. Out of India's total cotton knitwear exports earning 50% comes from Tirupur itself. The demands for knitted garments from domestic & international markets will be growing multi folds in coming future. So, in order to meet these ever growing demands, Tirupur industry has to be revived. The major hurdle in growth of Tirupur cluster is lack of availability of technically qualified managerial level manpower like professional knitting master, merchandisers and marketing personnel for selling in the international market/designers etc.

### Skills gap analysis:

In order to achieve higher control on their target market, global competition and customised niche markets; the managers in Tirupur Knitwear units need to motivate people, create new direction, generate new opportunities. They have to combine creativity, imagination, intellect and sensitivity towards needs of new breed of employees. The strengths of these people can be fully utilized only through their involvement and co-operation which need effective training and development techniques. The Knitwear unit managers need to remain self-motivated. Increased responsibility, fair recognition, due appreciation and rewards for beyond normal efforts are great motivators. Current managers are under greater scrutiny. Their model behaviour can create the spirit of excellence. They have to set personal examples for others to follow. Effective communication is the key to effectiveness of actions. It helps to obtain better support and willing involvement of team members. It is also vital in order to ensure proper appreciation of actions and constraints by the top management; thereby garnering support. Managing people is an art and lending a sincere hearing solves even the most difficult of problems. The managers are responsible both for discovering and defining their role as well as discharging the same. The bottom line thus is that the onus of fine tuning between the old and new management philosophies lies on the managers of today by which they can enhance productivity and motivation. The managerial skill gap analysis would provide solutions to overcome the prevailing skill gap, so it is important to study the possibilities of how the prevailing skills gap could be effectively narrowed. The detailed study will help in identification of various modes of training that could be adopted. This would lead to empowering the organizations with a strong skilled workforce, enabling them to improve on their productivity. This in turn would enable the knitwear exports to take up a better share in the global market, thus lending

an extra avenue to boost our Indian economy.

### Skill development

The basic skills for managing a small team can be viewed in three categories i.e. organization, leadership, and communication. Of these three, leadership is the hardest skill to acquire. Without detracting from the main work, managers should stimulate their teams with changes of focus. This includes drives for specific quality improvements, mission statements, team-building activities, and delegated authority, though decisions must be made on how often to raise excitement about new issues. One of the most cited characteristics of successful managers is vision. For managers, vision is a vivid idea of what the future should be. The best managers are those who recognize problems, seize opportunities, and create their own future.

Many organizations across the countries have recognized that training is a strategic priority rather than a tactical response, which may be used as a catalyst for change and also as an aid to give an organization a competitive edge. Both the availability of required quality and quantity of Human Resource (HR), maintenance of such employment through training, as well as the HR's strategic responses to the worldwide changes ultimately determine the competitive strength of a firm within a nation or across the countries. Hence organizations in today's world need to follow the principle "innovation-training-development-action-sustainable growth" with true concern for the meaningful development.

### Suggestions

- **Communication skill:** There is significant gap in the managerial communication skills in Tirupur knitwear industry. Hence it is needed to improve the communication skills of the manager to improve their performance.
- **Greater Management Support and Commitment:** In today's competitive environment, the management of the knitwear companies should give serious attention and effort towards training the managers in the organization. The top management has to be committed to talent development and they must take a long term approach.
- **Improved Budgets for Training and Development:** Without sufficient resources any effort to improve managerial talent will be stifled. Thus return on investment and cost benefit analysis should be done to clearly demonstrate that the payback on such initiatives will be quick and significant.
- **Allocate Better Time Necessary to Train and Develop Managers:** Knitwear organizations are exceptionally busy places and the urgent issue can push put the important issue. Any organization wanting to develop the top management should be willing to allocate time in addition to financial resources. Managerial skill development takes time on the job and off the job. This has to be budgeted and allocated properly.
- **Assess Individual Management Competency:** While organizational needs assessment are important for identifying specific skill sets individual needs assessments are important for determining the competencies of individual managers. Formal assess-



## COVER STORY

ments, 360 degree Feedback tools and self-assessment are just a few tools that can be used to determine the managerial talents necessary to succeed.

- **Each Knitwear Company Should Have Clear Management Skill Sets Defined**

Every organization has its own skill sets that they deem most important for success. Effective needs assessment can be used to identify these skill sets that can become the basis for establishing clearly defined learning objectives and processes to acquire these specific skills.

### Government Initiatives:

Government approved aRs 6,000 crore special package for textiles & apparel sector to create one crore new jobs in 3 years, attracting investments of \$11 billion and generating \$30 billion in exports. The measures approved include additional incentives for duty drawback scheme for garments, flexibility in labour laws to increase productivity as well as tax and production incentives for job creation in garment manufacturing. The package breaks new ground in moving from input to outcome based incentives by increasing subsidy under Amended-TUFS from 15% to 25% for the gar-

ment sector as a boost to employment generation.

The Government of India also launched the National Skill Certification & Monetary Reward Scheme to encourage skill development for youth by providing monetary rewards for successful completion of approved training programs. The scheme will benefit 10 lakh youth at an approximate total cost of ₹ 1,000 Crores with an average monetary reward of ₹ 10,000

### About us

With the continuous efforts to serve Textile Industry, Suvin has smartly identified the need of textile industry for skilled manpower to cater to the global markets & ventured into Suvin HR Solutions LLP. We will be offering services like development of HR processes, people development & leadership development. Our unique programs will benefit organisations as well as individuals to grow. Our expert team brings more than 25 years of industry experience in conducting training programs. They will develop human resource to meet business challenges with effective soft skill development programs. We are all set to fulfill the demands of Indian Textile Industry for good human resource & training programs

## Review on Polyester Yarn Mark



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### History Of Polyester

The History of POLYESTER" is quite interesting, which I thought needs to be pointed out before reviewing the Industry as a whole. Polyester, as a specific material, most commonly refers to a type called PET (polyethylene terephthalate) Polyesters include naturally occurring chemicals, such as in the cutin of plant cuticles, as well as synthetics through step-growth polymerization such as polybutyrate.

Natural polyesters and a few synthetic ones are biodegradable, but most synthetic polyesters are not. Polyester is used very widely in clothing. Depending on the chemical structure, polyester can be a Thermoplastic or Thermoset. There are also polyester resins cured by hardeners. However, the most common polyesters are Thermoplastics.

Polyester yarn is not a very old yarn as compared to conventional yarn like Cotton or woollen Yarn, which are much older yarns available in the market.

Polyester cloth was invented by British scientists John Whinfield and James Dickson in 1941 in England. In 1945, after World War II was over, the United States Company DuPont bought the right to make polyester and by 1950, a factory in Delaware was beginning to manufacture it.

In 1960, in India, it was Mr. Dhirubhai Ambani and his co-brother Mr. Champaklal Damani, who started Reliance Commercial Corporation. In 1965, the partnership ended and Dhirubhai continued the polyester business of the firm. In 1966, Reliance Textiles Industries Pvt Ltd was incorporated in Maharashtra. It established a synthetic fabrics mill in the same year at Naroda in Gujarat in 1975. Since then, the core business of Reliance Industries till today, is manufacturing

of different kinds of polyester yarn.

This is documented in a very interesting book called 'The Polyester Prince' by Hamish McDonald, which was published in 2011, but the book was banned in India.

The book takes a balanced look at India's own robber baron. Mr. McDonald pays tribute to Gujarati traders/ Baniyas in the first few chapters, by acknowledging their exuberance of speech, inventiveness, and commercial drive. Dhirubhai first displayed his diplomatic and negotiating skills during the Junagadh freedom struggle. At Yemen, he exploited the fact that silver content in the Rial, was higher than in the pound.

Source: <https://indianvanguard.wordpress.com/2011/08/12/polyester-prince-the-real-story-of-dhirubhai-ambanibanned-in-india/>

### Review Of Polyester Yarn

#### The Polyester Prince



The rise of Dhirubhai Ambani  
Hamish McDonald

The Analysis of Fibres, Yarns & Threads, is an essential activity for the whole fibre and yarn industry, as these are important components of the textile industry. As per the fibre report, the trends favour man made fibres, yarns and threads. They have grown considerably in the recent years which has resulted in significant increase in their production and consumption. However, this rise is due to increased consumption in China which sustains global demand. But demands in fibre industry of other developed countries have decreased due to restructuring of their textile industry.



## Polyester changing the dynamics of Garment / Fashion / Retail Industry



SHRI AVINASH MAYEKAR  
MD, Suvin Advisor Pvt. Ltd.

### Introduction

Indian textile industry is dominated by cotton since ancient times because of abundant availability of the fibre in India. But, today our fashion dynamics have changed. Indian fashion industry is responding to global fashion trends. In fact our clothing style has tremendous impact of western styles. If we go 50 years back, there is hardly any fashion awareness in common population. The fashion was mostly limited to only film stars. But today, India has shown a fashion evolution. Kids & middle-aged are equally fashion conscious as youngsters. Our designers are exploring with fibres other than cotton.

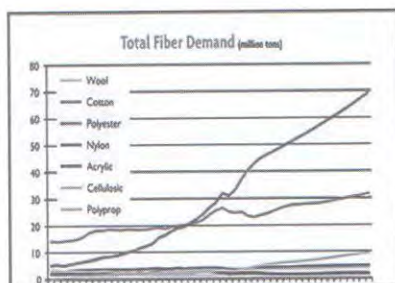
### Polyester in Fashion

The PET used in fabrics by the fashion industry was invented in 1941 by John Whinfield and James Dickson, two chemists in the UK who developed PET in response to the invention of nylon a few years earlier. Chemical manufacturing giant DuPont purchased the rights to their invention, known as Terylene at the time, and eventually developed their own version, Dacron, in the early 1950s. This endorsement by DuPont, along with the fact that the key ingredient petroleum was readily accessible in the middle of the 20th century, opened up the use of PET to the fashion industry and started the trend of using polyester in dresses.



### Global Scenario

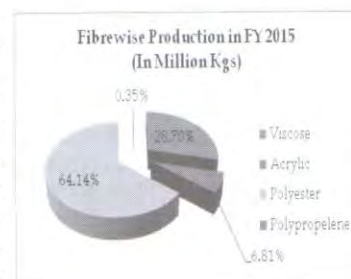
The graph shows the history of fiber demand in millions of tons, and demonstrates the dominant role that polyester has had in fiber demand growth. The graph also shows the continuing dominance of polyester going forward, as calculated by England-based PCI Fibres in its forecast out to 2030. Polyester demand passed that of cotton in 2002, and has continued to grow at a significantly faster rate than all other fiber types.



China, both polyester production and apparent domestic demand for the fiber have been very strong. China accounts for 69 percent of all polyester fiber production globally, and if India and Southeast Asia are added, these three regions represent 86 percent of global production. Polyester is dominant, but nylon, the oldest MMF, still plays an important role in the fiber business with 4 million tons of global production in 2014.

### Indian Polyester Market Scenario

Globally the fibre consumption ratio is at 40:60 for natural and man-made fibre where polyester is major MMF fibre consumed. However, in India it is reverse at 60:40. The demand for MMF from textile sector will largely be driven by the growing demand for clothing along with the augmented demand for the home textiles and technical textiles. Polyester alone accounted for approximately 66% of the total MMF consumption in FY15. The widening price differential between cotton and polyester and growth in use of non-cotton spun yarn and fabrics will drive the demand for polyester in India. The polyester segment consumption can be segregated into PFY – 63% and PSF – 37%. The PSF industry is highly organised with only three players – Reliance Industries, Indo Rama Synthetics and Bombay Dyeing. In PFY segment, RIL is the largest manufacturer accounting for about 55% of the total domestic production and Century Enka, Indo Rama Synthetics, Alok Industries, Garden Silk, JBF Industries are some other significant players.



### Properties in Polyester best suited for Garments

Polyester is known for its durability, tremendous resiliency, stain resistance, and wrinkle resistance. Polyester is also capable of retaining a colour dye quite well. In certain applications, this fabric can repel water and aid in the creation of waterproof clothing. Polyester tends to have sheen to it. It does not shrink much, it dries quickly, and it resists mildew well.

### Disadvantages of Polyester

- Polyester is not biodegradable, meaning it doesn't break down in soil & creates landfill. Generally it is used in manufacturing of recycled PET bottles.
- Polyester fabric is non-breathable; hence it doesn't absorb any sweat. It is not advisable to use polyester clothing during summer.
- But properties of polyester can be enhanced by blending with certain natural fibres or treating it with chemicals.

### Innovations in Polyester

With the continuous technology advancement and research & development, the polyester fibres' properties are enhanced to suit various applications. Classic example is Recron®- a polyester



fibre brand of Reliance Industries. It is developed in wide ranges depending on applications like Recron® Easy Stretch, Recron® FR (Fire retardant), Recron® LP (low-pill tow and fibre), Recron® Super bright, Recron® Dyefast, Recron® Micrelle, Recron® 3S, Recron® Superdye & many more.

Coolmax, a trademark of Invista, is specially-engineered polyester fibre to improve "breathability" compared to natural fibres like cotton. The series of closely spaced channels creates capillary action that wicks moisture through the core and out to a wider area on the surface of the fabric which increases evaporation & now often woven with other materials like cotton, wool, Spandex and Tencel. Properties of CoolMax fabric allows wearer to keep sweat free hence it is widely used in garments of mountain climbing gear, casual sportswear, underwear & mattress covers. Other useful properties include resistance to fading, shrinking and wrinkling.

Several other fibres /yarns are widely used various industrial & other functional applications like dope dyed polyester yarns used in high visibility garments.

### Growth drivers for Polyester garments

- **Westernisation**

Indian fashion industry has very high influence of western fashion. Polyester is majorly consumed fibre in clothings in western countries. Indians are seen quickly adopting most of western fashion trends.

- **Easy maintenance**

Polyester garments are resistant wrinkles due to fibre's inherent properties whereas cotton garments tend to wrinkle a lot. so it is blended with natural fibres to enhance its properties like breathability & sweat absorption. It is preferred highly preferred in office wear.

- **Trendy Looks**

Due to its inherent luster, polyester garments look more stylish & trendy, so it is highly popular amongst designers.

- **Strong Fibre**

Polyester which is also known as plastic fibre has very high strength; hence the garments are very long lasting & best suited for machine wash

- **Cheaper than cotton garments**

Polyester garments are cheaper option over cotton garments

so preferred

- **Growing export market**

Polyester has huge growth potential in export market as globally, fibre consumption ratio is at 40:60 for natural and man-made fibre where polyester is major MMF fibre consumed

- **High demand of polyester sari & dresses**

Polyester Saris & dresses are big market in India & they are main contributor to Indian polyester garment market

### Roadblocks in growth Polyester industry in India

- High Excise duty
- High customs duty
- GST Issues for textile Industry
- Lack of global competitiveness post dismantling of quotas
- Limited number of players
- Levy of anti-dumping duties

### Conclusion:

Globally, polyester is the most dominant man-made fibre, with a share of around 77% in total production and consumption of man-made fibres. The polyester has tremendous growth potential in coming future because of changing fashion dynamics of Indian garment industry. To meet huge demands from domestic as well as international markets, India has to gear up in terms of current capacities & fibre policy. Though our current capacities are excess to match the existing demand, it is forecasted that demands will grow exponentially in coming future. So, we certainly need to update our current capacities to match growing future demands.

The national fibre policy needs to lay a special emphasis on improving the competitiveness of Indian man-made fibres and textiles industry as it can drive the growth of the Indian textile industry in the future. This requires addressing of issues and constraints faced by the industry at present and make suitable provisions to avoid any foreseeable hurdles in the future. Some of changes like fibre neutral excise policy, reduction in excise duty & custom duty for MMF, custom duty exemption on certain raw materials & additives which are primarily imported, export oriented incentives can result in high growth of MMF industry.

In true sense, polyester has all the potential to become an universal fibre. It has a lot of potential to adopt and innovate characteristics of other fibres.

## SOS - YARN SPINNING COMPANIES IN DISTRESS



**MR. SANJAY K JAIN**  
PRESIDENT NITMA

In my business life, I have not seen a worse situation than this, where such a big disparity is there between spot cotton prices and yarn prices. This disparity for such an extended period of time shows there is a deep rooted problem and it's not a temporary feature. The current isolated spurt in Indian cotton prices has aggravated the situation to an extent that many can hear the death knell. The more disturbing fact is that no domestic yarn buyer is hassled or is rushing to buy yarn — they know **cotton prices have moved**

**50% and yarn just 20%** — still no anxiety !!! International buyers have diverted their orders as cotton in India has increased much much more in comparison to international cotton prices.

Indian spinners have been going through a very difficult time over the last 2 years despite cotton prices being reasonably low due to a demand supply imbalance created out of new spinning mills coming up in some States (viable due to incentives rather than fundamentals) and slow demand locally due to two succes-



# “Market trends in Home Textiles”



SHRI AVINASH MAYEKAR  
MD, Suvin Advisor Pvt. Ltd.

Home textiles reflects the choice of an individual. It helps in setting internal environment of house. When you have busy, hectic day at the office, it is necessary to have soothing and charming environment at home. The home furnishing plays major role in relaxing the mind which includes cozy sofa, attractive curtains, smooth and soft towel & last but not the least, a very good bed.



Sound Sleep plays a vital role in good health and well-being throughout the day. Sleep helps the brain work properly. Right kind of bed is equally important to have sound sleep. Thus home textiles directly affect human body & this is the reason, global awareness of home textile products is increasing. Continuous research is done to improve functional properties of home textile products considering the way it has shown its importance in human health. But, we Indians hardly give importance to such products. Though, there is slight awareness in metro cities in India but still it is negligible as compared to western countries.

Home textile is one of the fastest growing categories in global textile and apparel trade. Global home textile industry is estimated at USD 63.13Bn in year 2015 and growing at a CAGR of 7%. The Indian home textile market is estimated to reach USD 4.20Bn by year 2016. The industry is estimated to grow at a CAGR of 8%. Globally, US, EU & Japan are major importers of home textiles whereas China, India & Pakistan are major exporters of home textiles. The majority of home textiles are produced in Asia. Japan, Australia, New Zealand are largest consumer of home textiles.

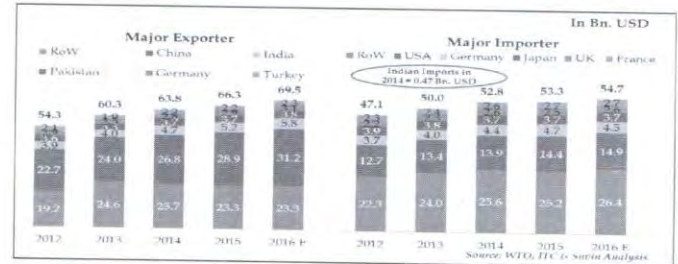
European countries are one of the biggest markets for Home Textiles. Total import in year 2013 stands at USD 10.43Bn contributing to 21% of total world's import. Germany, UK & France are major importers. European countries majorly focus on the high-end of the market, with more technically advanced and design-oriented products, leading to a relatively high export value.

Home textiles are classified into five categories namely bed linen, bath linen, table linen, kitchen linen & furnishing.

### Global Home Textiles Exports & Imports – In Bn USD

	2011	2012	2013	2014	2015	2016 F	CAGR
Woven Apparel	205	196	216	213	216	219	1.3%
Knitted Apparel	193	175	190	208	213	219	2.5%
Cotton Textiles	68	64	68	64	66	68	0.1%
Home Textiles	55	54	60	61	63	66	3.4%
MMF Textiles	90	82	85	89	89	88	-0.3%
Other categories	131	123	130	135	136	137	0.9%
Total	743	694	750	770	779	789	1.2%

Source: WTO, ITC & Suvin Analysis



Today, consumer is equally cautious about the functional properties of the product along with color, styles, texture, pattern & fashion. Increasing awareness of health is also contributing to the growth of home textile sector. Innovative techniques, innovative products are coming up in the market & today's consumer is bold enough to try those products with all confidence. With higher disposable income & rising retail culture, Indian customer taste is evolving day by day. Old laggard approach is no more in existence & this is all together a new business opportunity for entrepreneurs. Global Bed Linen market share was USD10.82 Bn in year 2014. The Indian market size of Bed Linen is estimated to reach USD 2.02 Bn by 2016 and expected to grow at CAGR of 8%. Hospitality sector is one of the demand drivers in bed linen segment. Variety of innovations is being done to improve customer's sleeping experience. For example, Westin's heavenly bed is very popular. The bed is specially designed of 10 layers considering human body structure. Antimicrobial treatments are applied to blankets, bed sheets & pillow covers



to keep it fresh, clean & comfortable after repeated washes.

Other innovative products like reversible sheets which can be used from both sides, cancer causing formaldehyde free sheets, sheets which are embedded with minerals in to core of the fibres which help in recycling body energy, micro twill sheets giving softer hand feel, sheets with various finishes like anti-bacterial conditioned finish, bioneem-protection against dust mites, sleep fresh finish, stress free finish, actiguard finish for dust mites protection, sanitized finish for antimicrobial protection, sheets made up of various special fibres like Tencel, Kanebo&Coolmax with inherent properties are gaining importance in the market.

The annual world demand for cotton terry towels is estimated at 3 Mn. MT and growing @ 5% p.a. while the current Indian market size of towel is USD5.9 Mn and expected to grow at CAGR of 8%.

In terry towels, design& hand-feel has great importance as it



comes in intimate contact with body. Different blends of yarns, fine counts are being used to achieve softer hand feel. Hollow core yarn is used to impart softness which makes it loftier wash after wash. Polyester slubs are also used to get softer hand-feels. Various fibres having inherent functional properties are becoming popular. e.g. eco-friendly recycled fibres having same look, touch & feel as conventional fibres, fibres having antimicrobial properties, light weight fibres for convenience during transportation, fibres with flame retardant properties, water repellent fibres. These fibres are used on various applications of home furnishes like table cloths, kitchen cloths, curtains, upholstery fabrics.

Kitchen linen market size is estimated to reach to USD 2.7 Mn by year 2016 in India. Table & kitchen linen market is strongly fueled by growing demands from western countries. Various products in these categories include tablecloths, table runners, napkins, table mats, aprons, gloves and mittens. Stain resistant and fire retardant are some of the popular finishes in these categories.

The new trends are seen in home textiles where there is a possibility of disposable home textiles produced on nonwoven technology are likely to gain importance. This trend will be especially for hygiene related home textiles used in hospitals, hotels, etc. Spun lace nonwovens may replace this hygiene market segment totally because of low operating costs as water is the media which is used to bond the fibre web. The technology also facilitates embossed designs and embossed name plates for branding purpose. This sector may bring revolution especially for disposable bed linens, table

covers, napkins and for some curtain cloth fabric.

Global trend is shifting towards organic products. Consumer is giving preference to ecofriendly, natural products over conventional products; hence many Home Textile manufacturers are focusing more on organic products.

E-commerce is showing tremendous growth into Indian market. It is forecasted to grow at the CAGR of 75%. Indian customer is now moving from electronics segment towards textile & apparel segments for online shopping. Home furnishing products will be adopting E-commerce as selling medium in future due to ease of selling & no challenge of size & fit.

Today customer is investing more time & money on his home décor. In fact, many of innovative products are resulted from need of today's customers. This gives huge opportunity for Indian entrepreneur to capitalize on up-coming trends on Home Textile market. We have all the resources from raw material to work force. What we lack is strategy and technology awareness. Investors can take professional help from consulting firms having expertise & technical knowledge of up-coming technologies. Investors have to be clear in their mind with a market entry strategy. With the professional help, they can even evaluate different business options & select most suitable one.

It's time to assess demand-supply gap in Home Textile Industry & choose a right path with highly professional strategy. With the help of right consultants like us entrepreneurs can easily identify global markets, upcoming developments & innovations & can forecast market trends as a part of successful market strategy

## Home – The Art and the Smart

Necessity is the mother of invention and shelter, along with food and clothing, is a basic need for mankind. We need to protect ourselves from the elements and this need has manifested itself in the dwellings we built for ourselves, right from the early days of civilization. The buildings we construct make us feel safe and are always there for us when we need them. Architecture in its most basic of forms is therefore, a very old field of knowledge. Over the years, as mankind made progress with time, architecture also kept on evolving continuously. Different parts of the world had different architectural styles and represented the cultures that were prevalent in their respective geographies at different points in time.

Today, in the second decade of the 21st century, we are in a world that is more connected than ever before. We travel a lot more to different countries and get exposed to the ways of life there; as a result what we have today is a situation where we see around us changes that are all coming out of global trends, in terms of living habits, where the common factors in the elements of different regions come together and represent a direction in which we are moving towards, as a race.

Fair to say, today the pace of life in urban India is quite high. In this materialistic world we are all in pursuit of our dreams, to attain success, which could mean different things to different people, whether it is expressed in terms of financial net worth, or cor-

porate positions, or even your span of control. The common thing for everyone is the place where you come back to after your daily grind- where you recharge the batteries, yours as well as those of all the electronic gadgets you carry with yourself, and reflect on the proceedings of your day, and catch up with your family and spend quality time with them. Your home is such an integral part of your daily life.

Let me ruminate over the early days of my corporate career. I started my career with an MNC in the food space. We used to deal with indulgence products and had a few household names with us, about which I am not getting into specifics at this point of time. These products were bought by customers from regular retailers and just consumed, without being flaunted. The consumer is, to a certain extent, not meant to be seen using them- these products do not define the user's personality. After a few years, I joined the apparel industry, again in a company that had a few well-known brands. While business processes differ from industry to industry, there was one word, that as a marketing manager I started hearing lot more frequently in my new job- Lifestyle. Over the years the concept of marketing your brand as a lifestyle brand became so ingrained in my way of thinking that it became second nature. From apparel to fashion to lifestyle, is a ladder that brands in different stages of evolution would go through.



**Shri VISHNU GOVIND**

Brand Consultant & Start up mentor  
Founder - Add Velorem consulting



# Sustainable Technologies in Textile Machinery



Shri Avinash Mayekar  
MD, Suvin Advisor Pvt. Ltd.

**Sustainable Technology**

=

**Economic Growth**

+

**Environmental Protection**

**Introduction:**

Sustainable technology refers to the technology which caters the needs of the present without compromising the ability of future generation to meet their own needs. It enables more valuable use of the

natural resources & greatly reduced ecological impact among other technological benefits. Though sustainable technology deals with energy efficiency, reduction in pollution, use of renewable sources, it should also be economically sustainable!

The consumption of natural resources has been increased exponentially in past decades in rapidly industrializing countries & it is relatively recently that we have started recognizing the unpleasant consequences of the carefree attitude towards the natural environment. Textile industry is among the most essential consumer goods industry in the world as it is one the basic needs of the man. Today, the world of fashion is glamorous & very stylish; however its impact on ecology worsening day by day. Textile industry is condemned of being one of the most polluting industries in the world. Not only production but consumption of textiles also produces waste. At every stage of the textile production, vast amount of energy, clean water & chemicals are being used to process the textiles & apparels. In turn these processes generate air, water & soil pollution through untreated effluent generation & waste generation which place heavy burden on environment. More than 2000 types of dyes, chemicals & other auxiliaries are being used in Textile Industry. The World Bank estimates that almost 20% of global industrial water pollution comes from the treatment and dyeing of textiles. Some of the toxic chemicals cannot be filtered or removed. Dyeing, washing and after-treatment of textiles requires large amounts of fresh water. Cotton production accounts for 2.6% of annual global water usage. A single T-shirt made from conventional cotton requires 2700 liters of water and a third of a pound of chemicals to produce. Millions of gallons of wastewater discharged by mills each year contain chemicals such as formaldehyde (HCHO), ammonia, chlorine, heavy metals such as lead and mercury & other pigments. These chemicals cause both environmental damage and human disease. Effluents released from mills are often at high temperatures and pH, which exacerbate the problem. Conventional cotton is highly dependent on pesticides, herbicides and fertilizers to grow. In many regions, insects limit cotton production and some of these pests become resistant to pesticides. Not surprisingly, cotton pesticides and herbicides account for 10% of all agricultural chemicals and 25% of all pesticides used worldwide each year. Untreated dyes cause chemical and biological changes in our aquatic system, which threaten species of fish and aquatic plants. The presence of these compounds also makes practical water use unhealthy or danger-

ous. The enormous amount of water required by textile production competes with the growing daily water requirements of the half billion people that live in drought-prone regions of the world. By 2025, the number of inhabitants of drought-prone areas is projected to increase to almost one-third of the world's population. If global consumption of fresh water continues to double every 20 years, the polluted waters resulting from textile production will pose a greater threat to human lives.

Today, the growing awareness of environmental issues makes customers to select ecofriendly products over conventional products. While the end-consumers of textiles were earlier concerned with only the finished product, there has been an increasing drive to better understand the input materials, the relevant production processes and their implications on the environment, be it air, water or soil. Ignorance and indifference to these will no longer remain an option for the textile supply chain, so it has become imperative that Textile Industry should address such issues within our supply chain & adopt better and cleaner technologies. Moving to greater degree of sustainability in our industrial processes and systems requires that we achieve better balance between social, economic & environmental aspect of the textile production. With the increasing awareness environmental issues posed by Textile industry, many of technology providers are working towards the improvement of technology to reduce the environmental damage created by the Textile Industry & reduce the consumption of energy, water & chemicals. Some of the innovative environmentally efficient technology solution at reduced production cost.

The Textile Wet processing industry is now in the spotlight due to the recent Detox campaign by Greenpeace and will have to align with the goal of zero discharge of hazardous chemicals by 2020 that is being pursued by several leading International Brands & Retailers.

**Some of Sustainable Technologies in Textile Machineries:**

Following are the technologies are currently being used worldwide as an answer to sustainability:

**Exhaust Piece Dyeing:**

A combination of advantages of long tube machine design with aerodynamic fabric transportation principle has been developed by THEN with their new development the THEN-AIRFLOW® LOTUS machine which is the world's first long tube machine to operate using to the original aerodynamic princi-



THENAIRFLOW® Machine



ple. The objective of the development was to create a system that would be especially suitable for the wet processing of delicate, easily creased, cellulose and synthetic fibre knits and wovens with a high percentage of elastane fibre, which are used in the lingerie, sport, leisure and swimwear segments. Resource benefits focus on ultra-low liquor ratio 1:2 to 1:5 with associated reduction in water demand, effluent volume and loading from reduced salt consumption when reactive dyeing and a reduced energy requirement. FONG'S have further refined their JUMBOFLOW machine with Advanced Intelligent Rinsing (AIR) with the option of a conductivity measurement to detect when the concentration of electrolyte has reduced after reactive dye processing to a concentration where the rinsing is transferred to the soaping stage, thereby optimising water consumption.

THIES have further developed their ecoMaster machine incorporating Multi Contact Dyeing from the double liquor : fabric interchange design to permit reduced dyeing times and low liquor ratios from 1:3 for synthetics to 1: 4.5 for cotton fabrics, and an auto control of the rinsing procedure using RINSEtronic software to further reduce process times and water consumption.

### Cold Pad Batch Dyeing

For vertical knitted fabric operations there is a renewed interest in reactive dye application by cold pad batch application due to the lower consumption of water and reduced effluent loading, with a claimed reduction in variable costs of between 15 and 30%. The resultant fabric has a much cleaner stitch definition due to no surface abrasion, and to produce a similar g/sq.m fabric as exhaust dyeing, an increase in stitch density should be considered at the knitting stage if the Cold Pad Batch application route is in ended.

Developments in machine design are mostly for open width processing using sophisticated auto-centre and edge uncurling devices but also include dosing pumps, low-liquor troughs and configurations to allow dye application in the nip as well as in the low-liquor trough. Also on modern pad rollers the pressure can be adjusted across the full width to allow uniform liquor pick-up to eliminate side-centre-side variation.

Integrated heating and cooling systems have also been developed to ensure constant temperature in the pad trough regardless of the time of day/season and thus improve the reliability of the process re liquor stability/hatching time

### Continuous Dyeing

Econtrol® Process: The Econtrol® process utilises the innovation of the Thermex Hot Flue from MONFORTS. The innovation exploits the thermodynamics of water evaporation from cellulose to provide the optimum temperature and moisture conditions within the Hot Flue dryer ideal for the efficient fixation of the specially selected reactive dyes. MONFORTS have in conjunction with DyStar further developed the successful Econtrol® process and at ITMA Munich in 2007 launched the new Econtrol T-CA process for the coloration of polyester/cellulose blends. This development combines the humidity control for reactive dyes with a Thermosol unit for application of new Dianix®



Monfort's Econtrol® process

T-CA disperse dyes and a new auxiliary package which obviates the need for an intermediate reduction clear process. The savings in chemicals, water, and energy are significant.

Along with newest machine technology, the right dye selection also places an important role & hence to maximise the synergy between innovative machinery design and application process to deliver productivity, cost efficiency, and environmental benefits, it is critical to optimise dye selection.

### Energy Efficiency:

Energy efficiency is an integral part of sustainability. For many years textile finishing has operated with chemical and thermal processes which, by present-day standards, can have a severe impact on the environment. The energy costs are high, and the use of chemicals absolutely essential. But with innovative ranges and advanced auxiliaries, Monforts has succeeded in optimising these processes. The savings benefits that have been achieved in recent years are in some cases, quite considerable.

#### Monforts Eco Applicator

An excellent example highlighting how the Blue Competence concept can influence the R&D activities is the Matex Eco Applicator; a unit which significantly reduces the initial moisture content before the drying process. The challenge of sustainability is to save natural resources without compromising production quality of the final products. The ECO Applicator ensures reduced energy consumption, faster drying and higher productivity compared with standard equipment such as padding systems.



Monforts Eco Applicator

Padding is a process employed in the textile industry for wet treatment of textiles. The fabric or 'substrate' is transported through a trough containing the finishing or dyeing liquor. The term 'liquor' is generally used to refer to an aqueous liquid in which textiles are washed, bleached, dyed or impregnated. It contains all the dissolved, emulsified or dispersed constituents such as dyestuffs, pigments or chemicals. During the further course of the production process, the substrate is transported through rollers to remove the excess liquor. A liquor absorption of 70 % - which is a typical value in standard padding application - means that 100 kg of textile fabric has to absorb 70 kg of liquor. After the impregnation process, the wetted fabric is dried in a final step by means of a Montex stenter. For this process, drying energy is required which, in the textile finishing industry, is a major cost factor. Influencing factors for the energy consumption and costs of drying processes are the initial moisture content, residual moisture content, drying temperature and relative water vapor content of the ambient air. The degree of initial moisture is the crucial point for determining how much evaporation heat and energy is necessary for drying.

#### Benefits:

Reduction the liquor pick up, which is the means of operation of the Monforts Matex ECO Applicator, results in less evaporation heat and lower operating costs. With the ECO Applicator, the liquor is not applied to the fabric by dipping it through a trough but by using steel rollers which transfer the required amount of liquor onto the fabric. With lower waste water contamination the application unit becomes a resource-conserving alternative to padding.



### Recent Developments:

Brazzoli has developed a 'Green Label' version of its InnoEcology fabric-rope-dyeing machine, which it says is geared to reducing consumption of water, steam, energy and chemicals, as well as to increasing machine productivity, while maintaining the final product quality. As an example, Brazzoli says a jersey fabric that, in 2011, on an earlier generation of the machine, required 35 litres of water per kg/ dyed can now be processed with only 28 litres. The carbon footprint has been reduced to 1.51 kg/CO<sub>2</sub> per kilo of fabric, equal to 0.5 kg/CO<sub>2</sub> per T-shirt.

In India recently, Alliance Machines Textiles of France, displayed a new dyeing machine that uses air technology to reduce water usage. The new, low-liquor-ratio Riviera Eco+ Green is a single-tube machine that uses air to rearrange the fabric at each revolution, just before it comes into contact with the liquor. This is said to avoid creases, especially on delicate fabrics. The air is not used for fabric transport.

Monforts is shortly to launch a retrofit heat-recovery system for its Montex stenters. This will allow existing users to achieve the same energy gains as with new machines, where the system comprises a compact, air-to-air heat exchanger, installed within the roof structure of the stenter. This uses energy from the exhaust gas to preheat up to 60% of the incoming fresh air entering the stenter and depending on production conditions, delivers energy savings of 10-30%.

### Future of Textile Industry:

In conventional textile dyeing, large amounts of water are used both in terms of intake of fresh water and disposal of wastewater. On average, an estimated 100-150 litres of water is needed to process 1 kg of textile material, with some 28 billion kilos of textiles being dyed annually. Water is used as a solvent in many pre-treatment and finishing processes, such as washing, scouring, bleaching and dyeing. Hence, the elimination of process-water and chemicals would be a real breakthrough for the textile dyeing industry, and it seems this has now come to fruition, with the launch of the world's first ever industrial dyeing machines that uses super carbon dioxide (CO<sub>2</sub>) as a replacement for water.

Dyeing with CO<sub>2</sub> "When carbon dioxide is heated to above 31°C and pressurised to above 74 bar, it becomes supercritical, a state of matter that can be seen as an expanded liquid or a heavily compressed gas. In short, above the critical point, carbon dioxide has properties of both a liquid and a gas. In this way supercritical CO<sub>2</sub>, has liquid-like densities, which is advantageous for dissolving hydrophobic dyes and gas-like low viscosities and diffusion properties, which can lead to shorter dyeing times compared to water. Compared to water dyeing, the extraction of spinning oils, the dyeing and the removal of excess dye can all be carried out in one plant in the carbon dioxide dyeing process which involves only changing the temperature and pressure conditions; drying is not required because at the end of the process CO<sub>2</sub> is released in the gaseous state. The CO<sub>2</sub> can be recycled easily, up to 90% after precipitation of the extracted matter in a separator. DyeCoo Textile Systems BV has achieved the unachievable, emancipating the world of fabric manufacturing from the troubles of water-based textile dyeing process for once and for all. A dyeing machine named "DryDye" that utilizes carbon dioxide (CO<sub>2</sub>) instead of water and extra textile chemical agents is a highly innovative waterless textile dyeing



breakthrough achieved by the Dutch company.

CO<sub>2</sub> dyeing technology has become more intelligent and energy efficient with the discovery of the DryDyedyeing machine. Though the waterless dyeing technology using CO<sub>2</sub> was invented in Germany almost two decades ago, no commercially viable machine was developed until now. DyeCoo Textile Systems is undoubtedly the laurelled victor acclaimed by the textile techies around the globe. Though the machine is capable of dyeing polyester at batches of 100 to 150 kg, work is under progress to accentuate the functionality of the waterless textile dyeing machine. The day is not far when reactive dyes for cellulosic are to be used resulting in greater all round efficiency and a better fabric dyeing.

### Summary:

If we see awareness on the hazardous effluent generated & amount of energy consumed during the entire manufacturing process of textiles & apparels amongst the end-consumers, it is very limited. Many of them are not even aware that some of the dyes & chemicals used are carcinogenic and life threatening.

Some of the retailers and brands in western countries have taken a green initiative to produce goods in most sustainable manner. On the contrary, there is very little awareness amongst Indian manufacturers & end consumer about the harmful impact on the environment. Some of the processing units are still discharging untreated effluents which are polluting water bodies. Some of the dyes and chemicals can even cause chronic diseases. It is very important to bring about awareness amongst textile manufacturers & end-users. Entire textile value chain should take the initiative to manufacture the goods economically with sustainable processes & technologies with minimum or no impact on environment or consumer. Technology is a key to reach sustainability targets of the Textile industry.

With volatile commodity and energy prices as well as requirements from brands, retailers, consumers and governments, sustainability has become a significant competitive factor for textile manufacturers. Sustainability is an issue with hard economic aspects. It has become a significant competitive factor. Technological upgrading is one of the keys to realize sustainable textile production and so remain competitive. Some of remarkable innovations in technology have paved the way for sustainable production technologies, but there is huge scope further for all technology providers to upgrade technology which will help in economical production of the goods in sustainable manner!





# Disposable Textiles – Future of Indian Textile Industry



Shri Avinash Mayekar  
MD, Suvin Advisor Pvt. Ltd.

### Introduction:

Disposable textiles are generally used in or as apparel for functional applications, produced in such a way they can be disposed off after use. They are generally used for “use & throw” applications. Textiles can roughly be classified based on technology used into two types namely woven & non-woven. Of these nonwovens fit most to manufacture disposable textiles as they can be produced by using compact production lines which give much higher productivity at much lower operating cost. They can be tailor-made functionally and economically for the end user. Disposables are used to replace apparels as well as for technical applications. To list a few: Absorbent hygiene, Wipes & surgical gowns etc. Disposables are gaining popularity due to their hygiene related properties, ease of use & cost effectiveness. They have wide range of applications in the sectors like healthcare & hospitality. The use of household disposables is also growing with rapid pace. There are numerous other disposable applications, such as shopping bags, tablecloths, towels, airline head rests, pillow cases, sorbents, sponges, etc., which are made and marketed in domestic markets.



### Current Indian Scenario

Indian market is under transition phase. Indian customer is showing paradigm shift from durables to the disposables. The average age of Indian population is 25 years. Significantly over 50% of the population is below 25 years – the vibrant segment for any market. This population is receptive to new technology & new products. They are faster in adopting global trends. The potential for nonwoven disposable usage in India is always increasing. The world giants in consumer products have all modified their strategies to suit Indian conditions prior to achieving any success. India is the second fastest growing economy after China. According to a survey by Goldman Sachs, India will become the largest economy by 2035. If we use PPP (purchasing power parity) which takes into account local purchasing power, India already has the 3rd largest economy. According to a new report by Goldman Sachs, India will grow at 8% until 2020. With the younger workforce and growing per-capita income, the middle and upper classes will grow significantly, and spending will increase. Although the use



of nonwovens per-capita is extremely low in India at \$0.04/capita compared to \$2.73/capita in North America.

The market is growing rapidly for end uses in feminine care, medical, automotive and packaging applications. The hygiene market in India has a great potential because of the low penetration and the sheer size of the market. The entry strategies with feminine hygiene products followed by baby diapers, and eventually adult incontinence, will make it possible for women, children and adults to benefit from new, hygienic and easy-to-use products. The need for single-use surgical products (gowns and drapes) is imminent in Indian hospitals.



### Growth Drivers:

#### • Favorable Demographics

The major young population is the key growth driver in the growth of Disposable Textiles market. Young population is receptive to westernization. They are always adapting most of the trends of western markets. For example, today, we see many of ladies confidently using kitchen wipes which seem to be a rare scene about 20 years back.

#### • Increasing Purchasing Power

Purchasing Power of Indian population is rising. In fact, in most of the household, the husband & wife, both are working, so they have more disposable income which makes them spend more. They are susceptible to buy new products.

#### • Woman Population

With the changing time, number of working women has increased & this has given them more freedom to spend. With busy life schedule, they are left with less time for household work. “Use & throw” products offer them convenience.

Use of sanitary napkins is not limited to the urban market; it has started reaching to rural markets. TV Media has a great role to play in the promotion of hygiene products. Disposable products give them ease of use & these products are less time consuming. India will be the biggest market for feminine hygiene products like sanitary napkins in coming future. A typical potential estimate for feminine hygiene, based on per capita consumption of 50 units per annum by the eligible population of nearly 300 million users (Age group 15 to 40) will give a theoretical total market size of approximately 15 billion pieces. This could result in market sale value of \$1.5 billion at 10 cents per piece.

#### • Growing Healthcare Industry:

Indian healthcare industry is growing exponentially. The de-



mand for products like surgical gowns, masks and other wearable products to surgical drapes, pads, dressings and filtration materials is huge. Specialty textiles are manufactured for healthcare purpose like isolation gowns, disposable trousers, howie coats, liquid resistant laboratory coats, latex anti-allergic gloves, sleeve protector, shoe cover, disposable bed sheets, etc. These textiles are durable, lightweight and inexpensive.

Medical tourism is growing in India, so there with high demand for such products in coming future.

### • High Birth Rate:

India has more than 50% population below 25 years. Median age of Indian is 25 years & birth rate in India is 20.66/1000 Population. Some 24 million babies are born in India every year. If we typically calculate that 25% of these infants in the period between birth and 24 months use at least 28 diapers a week, the theoretically available market for diapers is 8.7 billion pieces per year. This is a big number for any industry. With rising income levels, the consumption levels of this order are achievable in the near future, if the prices are kept right. So, demand for baby diapers will grow exponentially in coming future.

### • Growing Retail Industry:

Most of Tier-1 cities accustomed to "Mall Culture" & now it is catching up Tier-2 & Tier-3 cities as well. Retail culture has major share in growth of the many of the disposable products such as kitchen wipes, adult & baby diapers & sanitary napkins.

### Challenges

The major challenge in growth of disposable textiles is the tendency and attitude of the large population of Indians. The currently low penetration of nonwoven disposable products provides an untapped market for new entrants to India. However, Indian customers are value-driven; hence the product with a true value will only be successful. A considerable quantity of bleached cotton wool

and woven bandages is still used in the medical market. The market penetration of feminine hygiene is only 15% and sales are mainly in the urban areas. When the price barrier is broken, this market will explode in a big way. Cotton wool and woven gauzes are still popular in the country as nonwoven disposable material is not made locally and imports can be expensive. The health care industry is still using reusable caps, gowns and drapes. A significant portion of this market will remain with woven reusable material until necessary legislation for hygiene standards are introduced by the health authority in the government.

Other Area of concern for disposables is how disposable products affect landfills. As is the case in many Western countries, landfills is simply not the solution, but municipal waste can be used for energy provision and therefore benefit the country and the environment.

**To summarize the issues why the disposables not much used much in India are:**

- Low Hygiene awareness
- Pricing policies of nonwovens
- Pollution
- Availability of cheap washing facilities favoring reusable cotton apparels
- No standards for medical disposables; Quality is poor

### Conclusion

To build momentum, change must happen much faster and with a greater degree of business expertise and planning. No doubt, the country has the tools to build a highly industrial nation, but implementation of the state of the art technology locally is where we need to focus on. With proper planning, vision in mind and engaging appropriate consultancy firms one can successfully implement projects for disposable nonwovens.

Be a part of a new India...

## RESOLUTION PASSED AT THE CONDOLENCE MEETING



LATE SHRI SURESH B. RAO

### TO MOURN THE DEMISE OF SHRI SURESH B. RAO

The Members of the Indian Textile Accessories & Machinery Manufacturers' Association (ITAMMA)

deeply mourns the sad and sudden demise of Shri Suresh B. Rao on 28th February, 2016 at Mumbai. The textile engineering industry in general and ITAMMA in particular have suffered a grievous loss on his passing away and recalls with high appreciation his abiding contributions.

Born on 24th December, 1936, Shri Suresh B. Rao was nicknamed 'Babu' having been born at Babulnath temple road, South Mumbai. He passed his S.S.C at an early age of only 13 years due to a double promotion in school and graduated at 18 years in Bachelors of Science in Chemistry from Sidharth College, Mumbai. He then studied L.L.B at Government Law College Mumbai. He completed Management studies from prestigious Bajaj Institute - in the very first batch conducted by the institution.

His first love was playing Cricket. A specialized left arm spinner, he played the first level of the game at Kanga League matches. He acquired membership and played actively at Karnataka Sports Association, Hindu Gymkhana and Mumbai Cricket Association & Wankhede club Mumbai soon after. He keenly followed the game and watched the India -Pakistan T20 Asia cup match a day before passing away.

He was the Sole Proprietor of M/s. Universal Marketing Corporation, Mumbai, which completed 50 glorious and successful years in 2015.

**HIS LATE WIFE SMT. SHUBHA SURESH RAO WAS A STRONG PILLAR OF SUPPORT THROUGH HIS PERSONAL AND PROFESSIONAL ENDEAVORS.**

Shri Suresh B. Rao was elected as the 51st & 52nd President of ITAMMA in the year 1993-94 & 1994-95 and also had been on the Board of Trustees since last 2 decades. Till the very last day of his passing away, he pro-actively addressed ITAMMA through correspondence in spite of his failing health through sheer will power and dedication.

During his Presidentship of ITAMMA and Vice-Chairmanship of India-ITME Society, he took keen interest in the Activities of the Association. He was amenable and courteous in handling various issues concerning the activities of the Association.

The demise of Shri Suresh B. Rao created a void which is difficult to fill. He will be very much missed by the members of ITAMMA, India-ITME Society and all his colleagues who had benefitted by his counsel.

ITAMMA members share their sorrow and invoke Divine Grace to give strength to his daughters, Ms. Sadhana Dhargalkar, Ms. Archana Rao and his son-in-law Shri Praful Dhargalkar, the members of his family & other relatives to bear the loss with courage and equanimity.



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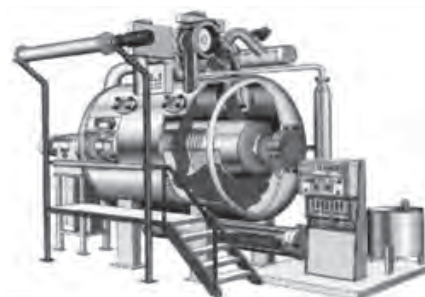
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Integrated heating and cooling systems have also been developed to ensure constant temperature in the pad trough regardless of the time of day/season and thus improve the reliability of the process re liquor stability/hatching time

### Continuous Dyeing

Econtrol® Process: The Econtrol® process utilises the innovation of the Thermex Hot Flue from MONFORTS. The innovation exploits the thermodynamics of water evaporation from cellulose to provide the optimum temperature and moisture conditions within the Hot Flue dryer ideal for the efficient fixation of the specially selected reactive dyes. MONFORTS have in conjunction with DyStar further developed the successful Econtrol® process and at ITMA Munich in 2007 launched the new Econtrol T-CA process for the coloration of polyester/cellulose blends. This development combines the humidity control for reactive dyes with a Thermosol unit



Monfort's Econtrol® process

for application of new Dianix® T-CA disperse dyes and a new auxiliary package which obviates the need for an intermediate reduction clear process. The savings in chemicals, water, and energy are significant.

Along with newest machine technology, the right dye selection also places an important role & hence to maximise the synergy between innovative machinery design and application process to deliver productivity, cost efficiency, and environmental benefits, it is critical to optimise dye selection.

### Energy Efficiency:

Energy efficiency is an integral part of sustainability. For many years textile finishing has operated with chemical and thermal processes which, by present-day standards, can have a severe impact on the environment. The energy costs are high, and the use of chemicals absolutely essential. But with innovative ranges and advanced auxiliaries, Monforts has succeeded in optimising these processes. The savings benefits that have been achieved in recent years are in some cases, quite considerable.

### Monforts Eco Applicator

An excellent example highlighting how the Blue Competence concept can influence the R&D activities is the Matex Eco Applicator; a unit which significantly reduces the initial moisture content before the drying process. The challenge



Monforts Eco Applicator

of sustainability is to save natural resources without compromising production quality of the final products. The ECO Applicator ensures reduced energy consumption, faster drying and higher productivity compared with standard equipment such as padding systems.

Padding is a process employed in the textile industry for wet treatment of textiles. The fabric or 'substrate' is transported through a trough containing the finishing or dyeing liquor. The term 'liquor' is generally used to refer to an aqueous liquid in which textiles are washed, bleached, dyed or impregnated. It contains all the dissolved, emulsified or dispersed constituents such as dyestuffs, pigments or chemicals. During the further course of the production process, the substrate is transported through rollers to remove the excess liquor. A liquor absorption of 70 % - which is a typical value in standard padding application - means that 100 kg of textile fabric has to absorb 70 kg of liquor. After the impregnation process, the wetted fabric is dried in a final step by means of a Montexstenter. For this process, drying energy is required which, in the textile finishing industry, is a major cost factor. Influencing factors for the energy consumption and costs of drying processes are the initial moisture content, residual moisture content, drying temperature and relative water vapor content of the ambient air. The degree of initial moisture is the crucial point for determining how much evaporation heat and energy is necessary for drying.

### Benefits:

Reduction the liquor pick up, which is the means of operation of the Monforts Matex ECO Applicator, results in less evaporation heat and lower operating costs. With the ECO Applicator, the liquor is not applied to the fabric by dipping it through a trough but by using steel rollers which transfer the required amount of liquor onto the fabric. With lower waste water contamination the application unit becomes a resource-conserving alternative to padding.



## Recent Developments:

Brazzoli has developed a 'Green Label' version of its InnoEcology fabric-rope-dyeing machine, which it says is geared to reducing consumption of water, steam, energy and chemicals, as well as to increasing machine productivity, while maintaining the final product quality. As an example, Brazzoli says a jersey fabric that, in 2011, on an earlier generation of the machine, required 35 litres of water per kg/ dyed can now be processed with only 28 litres. The carbon footprint has been reduced to 1.51 kg/CO<sub>2</sub> per kilo of fabric, equal to 0.5 kg/CO<sub>2</sub> per T-shirt.

In India recently, Alliance Machines Textiles of France, displayed a new dyeing machine that uses air technology to reduce water usage. The new, low-liquor-ratio Riviera Eco+ Green is a single-tube machine that uses air to rearrange the fabric at each revolution, just before it comes into contact with the liquor. This is said to avoid creases, especially on delicate fabrics. The air is not used for fabric transport.

Monforts is shortly to launch a retrofit heat-recovery system for its Montextenters. This will allow existing users to achieve the same energy gains as with new machines, where the system comprises a compact, air-to-air heat exchanger, installed within the roof structure of the stenter. This uses energy from the exhaust gas to preheat up to 60% of the incoming fresh air entering the stenter and depending on production conditions, delivers energy savings of 10-30%.

## Future of Textile Industry:

In conventional textile dyeing, large amounts of water are used both in terms of intake of fresh water and disposal of wastewater. On average, an estimated 100–150 litres of water is needed to process 1 kg of textile material, with some 28 billion kilos of textiles being dyed annually. Water is used as a solvent in many pretreatment and finishing processes, such as washing, scouring, bleaching and dyeing. Hence, the elimination of process-water and chemicals would be a real breakthrough for the textile dyeing industry, and it seems this has now come to fruition, with the launch of the world's first ever industrial dyeing machines that uses super carbon dioxide (CO<sub>2</sub>) as a replacement for water.

Dyeing with CO<sub>2</sub> "When carbon dioxide is heated to above 31°C and pressurised to above 74 bar, it becomes supercritical, a state of matter that can be seen as an expanded liquid or a heavily compressed gas. In short, above the critical point, carbon dioxide has properties of both a liquid and a gas. In this way supercritical CO<sub>2</sub>, has liquid-like densities, which is advantageous for dissolving hydrophobic dyes and gas-like low viscosities and diffusion properties, which can lead to shorter dyeing times compared to water. Compared to water dyeing, the extraction of spinning oils, the dyeing and the removal of excess dye can all be carried out in one plant in the carbon dioxide dyeing process which involves only changing the temperature and pressure conditions; drying is not required because at the end of the process CO<sub>2</sub> is released in the gaseous state. The CO<sub>2</sub> can be recycled easily, up to 90% after precipitation of the extracted matter in a separator. DyeCoo Textile Systems BV has achieved the unachievable, emancipating the world of fabric manufacturing from the troubles of water-based textile dyeing process for once and for all. A dyeing machine named "DryDye" that utilizes carbon dioxide (CO<sub>2</sub>) instead of water and extra textile chemical agents is a highly innovative waterless textile dyeing breakthrough achieved by the Dutch company.

CO<sub>2</sub> dyeing technology has become more intelligent and energy

efficient with the discovery of the DryDyedyeing machine. Though the waterless dyeing technology using CO<sub>2</sub> was invented in Germany almost two decades ago, no commercially viable machine was developed until now. DyeCoo Textile Systems is undoubtedly the laurelled victor acclaimed by the textile techies around the globe. Though the machine is capable of dyeing polyester at batches of 100 to 150 kg, work is under progress to accentuate the functionality of the waterless textile dyeing machine. The day is not far when



reactive dyes for cellulosic are to be used resulting in greater all round efficiency and a better fabric dyeing.

## Summary:

If we see awareness on the hazardous effluent generated & amount of energy consumed during the entire manufacturing process of textiles & apparels amongst the end-consumers, it is very limited. Many of them are not even aware that some of the dyes & chemicals used are carcinogenic and life threatening. Some of the retailers and brands in western countries have taken a green initiative to produce goods in most sustainable manner. On the contrary, there is very little awareness amongst Indian manufacturers & end consumer about the harmful impact on the environment. Some of the processing units are still discharging untreated effluents which are polluting water bodies. Some of the dyes and chemicals can even cause chronic diseases. It is very important to bring about awareness amongst textile manufacturers & end-users. Entire textile value chain should take the initiative to manufacture the goods economically with sustainable processes & technologies with minimum or no impact on environment or consumer. Technology is a key to reach sustainability targets of the Textile industry.



With volatile commodity and energy prices as well as requirements from brands, retailers, consumers and governments, sustainability has become a significant competitive factor for textile manufacturers. Sustainability is an issue with hard economic aspects. It has become a significant competitive factor. Technological upgrading is one of the keys to realise sustainable textile production and so remain competitive. Some of remarkable innovations in technology have paved the way for sustainable production technologies, but there is huge scope further for all technology providers to upgrade technology which will help in economical production of the goods in sustainable manner!



## Technical Textile – Future of Indian Textile Industry!



Shri Avinash Mayekar  
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### Introduction

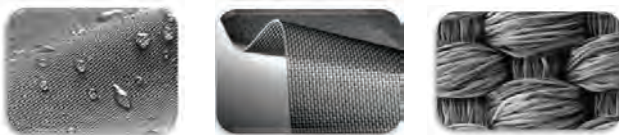
“Make in India” is one of the most appreciable initiatives taken by our respected PM “NarendraModi” to fuel growth of Indian manufacturing sector. Textile Industry is one of the core segments of Indian Manufacturing Industry contributing 14% of total industrial output & employing about 45 Million populations directly. Though Textile Industry has its huge contribution in terms of export earnings, industrial output & employment generation when it comes to investment initiatives, Indian entrepreneurs are turning back to the sector. So let’s analyze why most of Indian entrepreneurs are turning back towards the sector which has presence in country since ancient times.

If we look at the mindsets of most of the investors while investing, they are looking for higher profit margins, lower gestation period, sustainability, faster returns & easy returns of investments. Unlike all above, most of conventional textile businesses give lower profit margins & are very labour and capital intensive which is why most of the existing Textile players are looking for opportunities to diversify into other businesses.

### The questions to all these investors may be

- • Whether you have figured out all opportunities available in your own industry?
- • Have you done enough research to find out which are upcoming market trends in Textile sector globally?
- • What are current shifts of Indian Textile market & which are prospective Textile growth sectors?
- • The answer is “No”

India has a strong history of Convectional Textiles. It is traditional industry where generations to generations are involved into same convectional business but today’s scenario is different. In spite of growing demands of domestic & international markets, convectional textile sector is highly saturated. It is facing challenges such as high competition levels, high inflation rates, less control over prices, labor intensively& overall decrease in profitability levels. So Textile entrepreneurs have no other alternative than diversifying into other business. But why can’t they think of “Technical Textiles” as potential investment sector which goes parallel to the conventional textile industry.



### Technical Textiles - Opportunity for India

Unlike conventional textiles, Technical textile has huge potential in India, as the sector is in introductory phase. Indian Technical Textile Industry has witnessed significant growth of 16% from 2001-02 to 2009-10 & is expected to grow at the rate of 20% year on year to reach market size \$ 36 billion by 2016-17.

The income of Indian consumer is also growing very fast. This rise will enable them to make more discretionary spent on technical textile products viz. Hometech, Clothtech, Mobiltech, Sportech and Meditech. India’s per capita income is projected to soar by 10.4 per cent to Rs 74,920 in 2013-14 as the country becomes a \$1.7 trillion economy( Source: Economics times)

The fast growing middle class of 300 million with higher discretionary income is expected to increase to 520 million in 5 years. The middle class is well educated and receptive to the many technical textile products particularly the disposable products which have huge market in western countries. This combined with the growth of organized retail in the country is a key growth driver for technical textiles used in consumer products.

Significantly over 50 % of the population is below 25 years – the vibrant segment for any market. Also India leads the world with highest confidence index (Confidence was highest in India for a 7th straight quarter) – showing optimism of consumers in economy. (Source: Neilsen Global Consumer Confidence Index for quarter 3 of 2011).

Their wide range of applications, lack of competition and growing consumer and industrial demands make it a big opportunity area and an attractive option to invest in. Add to this, the factors conducive for the growth of manufacturing and consumption of technical textiles are also available within the country. Though India is the 2nd largest textile economy in the world after China; its contribution in the global technical textile industry is only 9% to the total consumption.

Currently, we have very few market players in Technical Textile segment. Technical Textiles itself is a vast sector. Depending on the product characteristics, functional requirements and end-user applications the highly diversified range of technical textile products have been grouped into 12 categories.



As Technical Textile products are highly engineered products manufactured based on its functional properties for specific use, they are higher value products, so they fetch higher returns to manufacturers giving good profit margins. The Indian culture is showing paradigm shift towards westernization, so the new generation entrepreneurs should think of untapped market segments. As we are moving towards globalization, our needs and market demands are changing and I am sure the products like wet wipes, disposable home textiles, travel kits, air bags, high end sports textiles and disposable products like medical textiles will be products of daily consumption in near future.

If we go 10-20 years back, the products like sanitary pads, baby diapers or wipes, were hardly used by mass population. But today,



these products are reached to rural parts of India. So time has come to change our mindset from “Conventional Textiles” to high value “Technical Textiles” as investment options. Investors need to direct themselves from basics to high engineered niche products.

Major chunk of Technical Textiles are manufactured by Non-woven technologies. These are compact technologies and give much higher production and are emerging technologies to produce complex products as well. As the process is very short, the utility consumption is much lower and due to huge production, the operating costs are minimal.

Moreover, there is hardly any involvement of human beings and hence quality is determined by technology and very less chance for human interference. In India only 12% of Technical Textiles products are manufactured by Nonwoven technology as compare to 24% of usage in the world. So India still has long way to go to meet global requirements of nonwovens.



### Positioning India

Time has come to position India as manufacturing hub for Technical Textiles (TT). In order to position us in global market, first we need to understand Technical Textiles thoroughly. We need to create awareness amongst each verticals of Textiles industry. Government is been taking initiatives to promote TT among the value chain, but efforts taken by government are not enough. So, first step into positioning India as TT hub is to carve out clear vision, strategy & action plan for TT. We need to map out existing TT demand & future growth rate in each of the 12 TT segments in domestic as well as global market. Once demand assessment is done; we need to analyze our current potentials in terms of raw materials, infrastructure, technology level & human resource. The demand-supply analysis will give us clear picture of enormous opportunities available in the TT segment & we can frame out our vision for Technical Textile segment. The assessment of additional raw material, infrastructure, technology level & skill development required to match the global & domestic demand & make India as leading global player.

Each & every state of India can be mapped out for type, quality & quantity of fibres produced & what is the % of fibre produced is directly exported. Based on this data, we can work out how much is the current potential to produce finished product instead of selling it as raw material. This value addition into TT will not only give higher returns but also fetch good profit margins to entrepreneurs.

Once we map out raw materials, we are ready to figure out additional investments required & level of infrastructure to be development. Hereafter role of government will be to introduce various schemes & policies favorable for the investment in TT sector. This will create conducive environment amongst the investors.e.g. Capital subsidies & interest subsidies to the investors into Technical Textile sector.

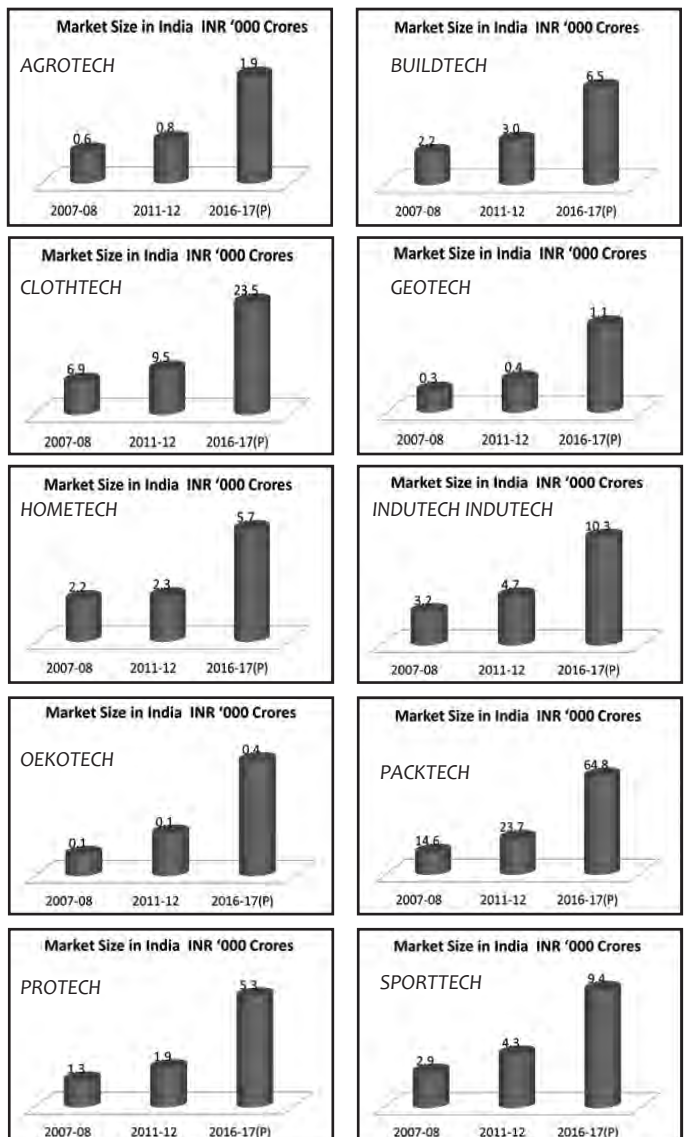
As Technical Textile is high engineered product, it requires high skilled labor trained with international skills and standards. It is necessary to check whether existing educational programs are capable to create such high skilled human resource. Educational seminars & training programs can help to create good human resources. In fact, there are international consulting firms who are specialists and have experience in training to textile experts as well as labors. Such kind of training programs can develop a good skilled workforce. Government can support such skill development programs & training centers for growth of TT segment.

Technology advancement plays crucial role for growth TT segment e.g. if our vision is to double market share in next 5 years, but we do not have state-of-the art technology to produce international standard goods, then we can never achieve our vision. In Technical Textiles, product specifications are very stringent. With the obsolete machineries, we cannot achieve desired norms & standards of products competitive to international standards. We have to update ourselves with the latest state-of-the are technology. Government has launched TUFs scheme to support technology development which is an appreciable initiative. However, it needs efficient implementation and promotion across the value chain. More such Government schemes are needed to bring about technology advancement.

Last but not the least is government policy framework. Government policies should be in tune with our vision. Various central & state government schemes can help to boost investment in TT sector. Benefits like tax exemption, tax holidays, and capital & interest subsidies should be given to promote TT sector. Subsidies on machineries of Technical Textiles will be helpful. Similar to Textile Park concept, Technical Textile Park can stimulate positive environment for the growth of TT sector.

Thus we can definitely position India as potential hub for Technical Textile provided, we develop world class infrastructure, technology level, skill development program & Government policy framework which will support our vision...

### Technical Textiles – Market Size in India





## COVER STORY

### New Face of Indian Retail: Bricks Vs Clicks!

**R**ecent war between brick & mortar stores & online retail has changed the face of Indian retail. Retailers are coming up with promotional offers & heavy discounts on merchandise to lure customers for shopping. "Sale" word is used every other day. Indian customer is evolved dramatically from buying books & electronics to buying clothes & other fashion accessories online. In fact fashion is major category having maximum number of transaction in year 2013. India is expected to generate \$100 billion online retail revenue out of which \$35 billion will come from fashion e-commerce by 2020. According to study conducted by Accel Partners, online shopping of fashion category is expected to grow at the whooping rate of 400%.

Online retail has created a great shopping experience for shoppers. Customer can now shop sitting at home enjoying his coffee or his favourite serial episode. Some of benefits like thousands of brands under one roof, heavy discounts, no long queues, no traffics, easy price comparison, user friendly shopping websites or apps & easy return policy make online shopping attractive option over the Brick & Mortar store. One of the best features of online shopping is you can filter goods on the basis of price range, colors, brands & categories. You can compare prices on number of shopping portals & avail the best price.

With the growth of online retail, some of the brick & mortar retail stores have also joined the band wagon to grow their sales. Madura Fashion & Lifestyle of A V Birla group sells their brands like Louis Philippe, Allen Solly, Pantaloons, Van Heusen, Peter England & People through Trendin.com. Raymond has launched online platform RaymondNext.com to sell their brands like Park Avenue, Parx and ColorPlus. Arvind, one of the country's oldest textile and apparel brand houses, has launched Creyate, a custom clothing brand for men and women that allows customers to do everything from the comfort of their homes through online platform. They can design their own garments and book home visits by Arvind's style stewards, who will take measurements and provide consultancy.

-Online shopping portals have offered great platform to small time manufacturers & start-up brands. They can sell their products online & have easy access to entire Indian market which was almost impossible without online retail platform. With the online shopping portals, it is possible for them to reach maximum target audience with minimum investment cost & risk factors. The huge cost of infrastructure, marketing expenses & manpower has been substantially reduced.

With remarkable growth in purchase made by mobile phones in past 2 years, next face of the online retail will be "App only" shopping. According to MasterCard Online Shopping Survey 2014, purchases made through mobile phones in India have grown by more than 100 percent over the past two years. Currently, most of e-tailers have nominated "Websites" as well as "Apps". But some of country's top e-commerce jargons like Flipkart & Myntra have taken bold step to switch to "App only" shopping portals looking at the



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strong potential of mobile phones & tablet based purchase in India. Many of the other players are soon planning to join the league.

The success of online shopping portals is backed by dedicated supply chain & technology. The warehouses are the backbones of the e-commerce industry. Warehouses are virtually mapped out by software to manage inventories & payments. These companies are constantly smarting up their hardware, software and storage. Highly automated warehouses & efficient supply chain management help them to meet timely deliveries & create great shopping experience for customers.

Online shopping portals need to be extra cautious during "Mega Sale Event" announced by them. Millions of users visit the shopping website & Apps during such events leading to huge traffic generation sometimes resulting in overload. The shopper faces technical glitches like down website, problems in connecting with payment gateway during such times which creates a bad shopping experience to users. It is necessary to forecast the kind of response, such events would receive & accordingly planning the infrastructure to avoid such unpleasant experiences to users.

#### Growth drivers for online shopping

##### • Increase in disposable income

Increase in disposable income has definitely increased the number of times shopper shop now. Online shopping offers convenient option for shopping.

##### • Rise in Internet users

IAMAI-KPMG estimates that there will be a total of 500 million Internet users in India by 2017, up from a current number of about 350 million. Growing Internet users is one the major reasons of growth of online shopping.

##### • Growth in Smartphone Users

Increase in number of Smartphone users has further catalyzed the growth of the online retail in India. In 2014, India had 140 million smartphone & 2 million tablet users which are expected to reach to 651 million & 18.7 million respectively by 2019 which marks tremendous potential for online retail in India in coming year.

##### • Increase in number of working women

Working women population has grown in past few years. Busy life schedule leaves working woman with very less time for household work & shopping. Online shopping has given great option to working woman to save her time. In addition to that financial independency is an added factor for increase in number of woman shoppers.

##### • Youth Population

India has world's largest youth population which is quite open to try new things & new technologies. Online shopping gives smart tech-savvy option to this youth population



**•Wide variety**

The online shopping portal offers thousands of brands under one roof so enticing shoppers with huge variety. This is simply impossible in case of brick & mortar retail stores.

**•Heavy discounts & offers**

Whooping discounts & offers make online shopping attractive to shoppers.

**•Extensive Marketing Tools**

Digital marketing has given an edge to online shopping portals. Now it is possible to track the activities of shoppers & their consumer behavior. Innovative marketing campaigns are launched by online shopping portals to lure customers to shop. They often send personalized campaigns through SMS, mails or App notifications giving customers a sense of accountability.

**SETBACKS IN ONLINE SHOPPING**

**•Can't touch & feel**

The major setback in online shopping that merchandise can't be felt & touched. Some of the shopping portals try best to display their product in such a way that it should look almost same in the product image. In spite of the best efforts, sometimes product has been found different in finish, quality or color than customer expectations resulting in customer dissatisfaction.

**•Fitting problem**

Fitting are the most common problem faced by online shoppers. Unlike Brick & mortar shops, customer doesn't have trying option here, so customers face issues with size & overall fitting of garments.

**•Poor Return Policies**

Some online portals do not offer flexible return policies to the customers. Sometimes the money is not refunded after several fol-

low ups. This results in customer dissatisfaction.

**•Missing the fun element of offline shopping**

Some shoppers, especially ladies think offline shopping as an experience. For them, online shopping might feel like missing the fun element.

**Summary**

In India, Tier-1 cities are currently occupying big market share of online shoppers because of convenience of shopping in busy life schedule. A day is no longer when this boom will spread across the Tier-2 & Tier-3 cities. But online shopping boom is the major concern to many of the country's retailers & mall operators. Already retailers are noticing the reduction in footfalls in brick & mortar shops during festive seasons. Shoppers prefer to shop sitting at home rather than offline shopping. Shopping sites offering consumers heavy discounts are cutting down the profitability & giving preference to market share.

Almost a million of retailers selling online are concerned about cutthroat margins. This is making them difficult to survive. Some of the fashion retailers have already noticed the practice of trying the merchandise in showrooms & buying it online by shoppers because of heavy discounts. Some fashion brands are showing concern because their offline business is getting hit and to the extent there is fear among brands that their image can get hurt if the prices are too low. On the contrary, online shopping portals are also considered as a great platform to retailers to cut down their huge infrastructure cost substantially which can be used more effectively in marketing of the goods. Also it offers easy reach across the country by virtual presence. For long term perspective, though E-tail is here to grow but traditional brick & mortar model will simultaneously exist as brands can't afford to discount the products too heavily for long term because they need to make profit at some point of time!



<p><b>Few Statistics of India:</b></p> <ul style="list-style-type: none"> <li>• Indian Population : 1.2 billion +</li> <li>• 52% population below 25 years of age</li> <li>• 22 languages</li> <li>• 1700 plus dialects</li> <li>• Biggest Mid Income in the world.</li> <li>• Over 150 million mid income households</li> <li>• Growing consumption from tier 2 &amp; 3 cities</li> <li>• Over 900 million mobile phone connection</li> <li>• Over 130 million smart phones</li> <li>• Over 200 million internet user</li> <li>• 1 /120 : Tablet Users</li> <li>• 1/10 : Mobile internet user</li> <li>• 1/13 : Social media users</li> </ul>	<ul style="list-style-type: none"> <li>• 1/6 : Internet users</li> <li>• 73.9 million Indians surfed the web via home or work computer</li> <li>• 205 million Indian internet user by 2014, expected 350 million by 2015</li> <li>• 39% Female , 61% Male</li> <li>• 137 million from Urban area, 68 million from Rural area, 58% YOY growth</li> <li>• In 5 years , Indian Rural market 2X bigger than urban today</li> <li>• India's online population : 75% are under 35 years</li> <li>• 57 million search for brand related information</li> <li>• 40 million for online review</li> <li>• Fastest growing web category in India: Ap-</li> </ul>	<ul style="list-style-type: none"> <li>• parcel , 85 % YOY growth</li> <li>• USD 20 Billion Size of Indian E-commerce industry expected by end of 2015.</li> <li>• E-commerce growing @ 37%</li> <li>• Online travel constituted 71% of the e-commerce market in India, followed by e-tailing (16%). Travel has grown at a CAGR of 32% over 2009-13.</li> <li>• e-tailing will be the biggest growth driver, with expected CAGR of over 60% to \$7 billion in 2016 from \$1.7 billion in 2013. Within e-tailing, fashion is likely to be the driving segment.</li> <li>• Fashion was \$559 million in 2013, and estimates peg the growth in fashion e-tailing to anywhere between \$3 billion and \$6 billion by 2016.</li> </ul>
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**Things should be known about industry**

Source : business – standard newspaper

In a report on e-commerce, however, broking firm Motilal Oswal says that this is just the start of a multi-year growth for the e-commerce sector in India. Indian retailers, therefore, do not have to be too concerned as despite strong growth in USA and China, e-tailing is still only 5-6% of total retail sales there.

Here are five interesting insights from the report.

1. India is almost 10 years behind China in the e-commerce space. China's inflection point was reached in 2005 when its size was similar to India's current market size. Thankfully for India the dynamics currently are similar to what existed in China then – growing broadband penetration, acceptance of online marketplaces,



## COVER STORY

### Textile Machinery Industry - A Big Opportunity for India



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#### Global Textile Machinery Industry

Global Textile machinery market is witnessing tremendous growth buoyed by growing demand of textile & apparel market. It is forecasted to grow at a CAGR of 14.02% till 2018. It is expected to reach to US \$ 207.5 billion in 2015. The major manufacturers of textile machinery are Italy, Germany, Switzerland, France and now China. China is leading in the field of textile exports today because they installed a large set-up of spindles, open end rotors and shuttleless weaving machines.

China is manufacturing the entire range of machineries for the textile industry, not only spinning, weaving and processing but also knitting, embroidery and plants for the non-woven industry. One of the major trends in the Global Textile Machinery market is the growing number of technological innovations. The global market divided into two parts i.e. Low cost manufacturing places like developing countries (Labor concentrated market) where cheap labor is available & high cost manufacturing places like developed countries where labor is expensive & more automation is needed to reduce operation cost.

#### Indian Textile Machinery Industry

The industry witnessed a growth of 8-10 per cent to Rs 22,000 crore in 2014 from Rs 20,000 crore in 2013. The size of India's textile machinery industry is poised to double to Rs 45,000 crore in the next 7 years from the present Rs 22,000 crore on the back of new projects and emphasis on setting up textile parks. The textile machinery manufacturing section is one of the largest segments of the machinery manufacturing industry in India. Domestic demand has increased with CAGR of 17% between FY 2009-2013. Our in-house production is insufficient to meet domestic demand.

This industry is nearly sixty years old and has about 1000 machinery and component manufacturing units. Nearly 300 units produce complete machinery and the remaining produces various textile machinery components. However, not all the units work to full capacity or even the optimum capacity level. Except for the units in the spinning sector where the machineries are of international standards; in the other sectors, machinery manufacturing for weaving, knitting and wet-processing lack standard of quality and performance (in most of the cases) to compete with the European manufacturers.

#### Indian Machinery Production FY 2012-13 ( InCrores)

Year	Production	Export	Production less Export	Total Domestic Demand	% Demand met by in-house Production
2009-10	4245	582	3663	7383	50%
2010-11	6150	915	5235	9312	56%
2011-12	5280	800	4480	11888	40%
2012-13	5650	1462	4188	11898	35%

In the weaving sector, shuttleless weaving machinery (rapier

or jet) and in the knitting sector (circular knitting and flat knitting) machineries hardly have any presence in the industry. The machinery manufacturing operation takes place both in the organised and the unorganised sectors. In the organised sector, in addition to the public limited companies, machinery manufacturing is done in independent units, which have collaborative joint ventures with the foreign entities. In the decentralized sector, there are small-scale industrial units as well as tiny units engaged in the production of accessories pertaining to the textile machinery. Majority of the production comes from the States of Tamil Nadu and Gujarat; collectively contributing around 84 per cent of the production.

Around 87 per cent of the total production, i.e., textile machinery is coming from the six clusters namely Ahmedabad, Bangalore, Coimbatore, Ludhiana, Mumbai and Surat. These clusters are strategically located to serve the textile industry and have the affiliation to produce the kind of machinery required by the industry. Ahmedabad is a cluster of weaving.

Currently most of textile machinery produced consumed in-house, so there is very less scope for the export.

Year	Production	Export	% Export of total production
2009-10	4245	582	14%
2010-11	6150	915	15%
2011-12	5280	800	15%
2012-13	5650	1462	26%

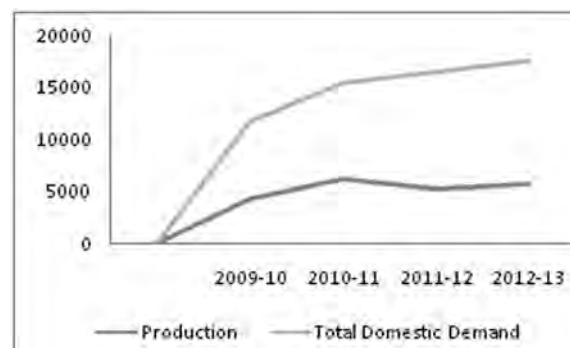
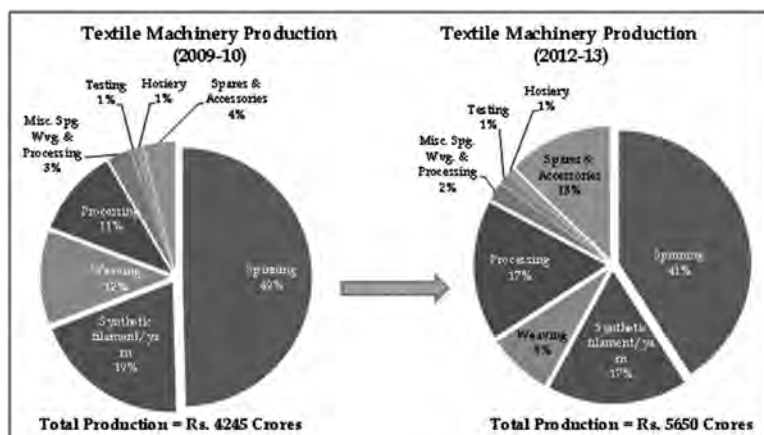
#### Problems faced by Indian Textile Industry

The major problem in the textile machinery manufacturing industry is the lack of investment in Research and Development, except for the manufacturing units who have technical collaboration with reputed foreign companies; no progress has been made in the quality of the machinery produced. This dependence on borrowed technology and want of research has kept most of the sectors except spinning machinery sector far behind in the standard and performance of the machinery produced. This has resulted in the import of second hand machinery especially in the area of weaving thus discouraging the advancement of technology in the manufacturing of similar machinery in India. Lack of systematic fiscal support to the industry by the Government has also added to the problems.

#### Growth Drivers in India for Machinery Market

Purchase of new machinery is the key growth driver of the market. One of the major growth drivers for global machinery market is the strong economic recovery; post-recession, increasing demand for textile products, and environmentally friendly fibers, and a growing demand for the developing nations. Today machinery manufacturers produce textile machineries at competitive prices, and sophisticated machines of higher speed, and production capac-





Source: Office of Textile Commissioners

ity. Presence of numerous small scale players also makes the machinery sector more competitive. Along with them, MNCs have also entered the global arena, taking the competition to the next level, driving companies to work on their productivity and innovation.

The global demand of textile machinery is rising due to growing demand of textile industry. Today, Textile machinery sourcing is majorly done from European countries, which is relatively costly. India is strategically located from most of major textile & apparel producing countries and India has good potential to explore global opportunities & tap global market. India has to first focus on exports to the neighboring countries which are emerging as significant textile producers.

#### Summary

Indian Textile Machinery Industry has tremendous growth potential in coming future buoyed by growing domestic & global demand; the only need is to identify the untapped opportunities. We need to focus more on Research & Development (R&D) to manu-

facture high standard Textile Machinery which is required for our own consumption first so that we can reduce imports and may think of exporting appropriate technology to other developing countries.

The Indian Government has already declared “Make in India” drive to boost manufacturing sector. It should also support the R&D activities & allocate special funds for development of R&D centers of each of the Indian manufacturer. Our education pattern should develop research and innovation based concepts for Textile Engineering students so that the real growth happens within our country.

Low material costs and operating costs along with our own huge market will give India an edge over other countries. Let’s come together & create India as NEXT TEXTILE MACHINERY HUB.

Production of Textile Machinery in 2009-10 Vs 2012-13

CATEGORY	2008-09	2009-10	2010-11	2011-12	2012-13
Spinning & Allied Machinery	2417.44	2105	3500	2570	2310
Systematic filament yarn machinery	412.79	830	900	925	965
Weaving & allied Machinery	410.35	495	600	480	445
Processing machinery	419.29	460	700	750	960
Misc. Spinning, weaving, processing machinery	122	120	150	100	120
Textile testing/controlling/measuring instruments	80.43	30	50	65	80
Hosiery machinery (including machine & needle)	33.31	35	50	20	45
<b>TOTAL</b>	<b>3895.61</b>	<b>4075</b>	<b>5950</b>	<b>4910</b>	<b>4925</b>
Spares & Accessories	167.39	170	200	370	725
<b>TOTAL</b>	<b>4063.00</b>	<b>4245</b>	<b>6150</b>	<b>5260</b>	<b>5650</b>

**A.T.E. ties up with Color Service, Italy – a global leader in the design and manufacturing of dispensing systems for dyes and chemicals.**

A.T.E. has tied-up with Color Service Srl, Italy, a global leader in dispensing systems for dyes and chemicals. A.T.E. will exclusively handle the marketing, sales and service of Color Service’s products and solutions in India and Bangladesh.

Color Service was founded by Mr Fabrizio Toschi in 1987. Its portfolio includes fully automatic systems for dyes, liquid chemicals, powder chemicals, print paste dispensing systems and print paste thickener preparation systems along with automated lab dyeing systems and complete laboratory solutions for bulk reproducibility in dyeing printing textile houses. Apart from textiles, it also provides solutions for the food, rubber, cosmetics & tannery industries. Color Service is already a well-established player in India, with an impressive reference list including Vardhman, Abishek, Alok, Welspun,

BRFL, Bombay Dyeing, Arvind, Trident, Himatsingka, Sharadha Terry – to name only a few.

The most critical factor influencing dye house productivity is to get dyeing “right the first time and every time”. With its domain expertise in dyes and chemicals for 28 years, Color Service provides exclusive and tailor made solutions (both semi and fully automatic systems) for perfect dyeing. These solutions improve the production cycle time, avoid wastages of dyes & chemicals, reduce labor, provide safe working environment, and most importantly they help to achieve consistency in processing.

A.T.E. is known in the Indian textile industry as a solution provider for all machinery and accessory needs – from spinning to garmenting. With this latest tie-up of A.T.E., customers have an added advantage of dealing with just a single source for all their textile processing machinery and automation requirements.



## COVER STORY

# The Inadequate Earmarking of Funds for TUFs – Dark Cloud for Textile Industry!



Shri Avinash Mayekar

MD, Suvin Advisor Pvt. Ltd.

### Introduction

The Textile Sector plays a crucial role in Indian economy. The sector has major share in country's economy in terms of GDP, export earnings, industrial output & most importantly in employment generation. Though the sector has presence in country since ancient times, it has witnessed problems of obsolete technology resulting in low production & poor quality. Higher machinery cost is major setback in modernization of technology. To address this issue, Ministry of Textiles has introduced Technology Up-gradation Fund Scheme (TUFs) in year 1999. The scheme has been serving as "Sanjivani" (Life Giving) for Textile sector since then. It was introduced with an aim to boost an investment into textile sector and the industry could get full advantage out of it.

**The main objective was to upgrade the machineries into most modern state-of-the-art technology to face global competition.** The scheme helped in fostering the investment across Textile Value Chain over the period of time. TUFs was initially introduced for 5 years of period with 5% interest subsidy on machinery which was subsequently extended upto year 2007. The scheme was continued in modified form from year 2007 to 2010. The restructured TUFs was extended from 2011 to 2012 which was further rolled up to 2013. So the scheme has been modified over the period of time to ensure the balance across the Textile Value Chain. The last modification has notified in year 2013. Total fund released under TUFs is Rs.18211 crores till FY 2014-15. Total investment facilitated by TUFs is Rs.243721 Crores.

Though the TUFs subsidy has boosted the overall investment in textile sector, investors are facing many issues in availing subsidy. Today's investor is very smart. He keeps on exploring new opportunities of investments. Though Textile business has presence in India & it is passed on from generations to generations, entrepreneurs are no longer loyal to the business. If one sees any new business opportunity with less investment & better returns, he will not hesitate to diversify into other business area. Already, many investors are thinking on options for diversification into other segments. But, if we see huge global & domestic demand of textile and apparels, there is great scope of investments in the sector. India being strategic location for Textile sector due to abundant availability of raw materials & skilled manpower, we still have huge scope for capacity expansion. TUFs is being catalyzing the investment in Textile sector, but most of the investors complaining that availing TUFs subsidy have been a cumbersome job. Delay in TUFs subsidy is one of the major reasons in maintaining time lines of the project. It also leads in huge loss of money and promoter needs to look for alternative resource at much higher cost. So, let us put light on some the major problems faced by investors.

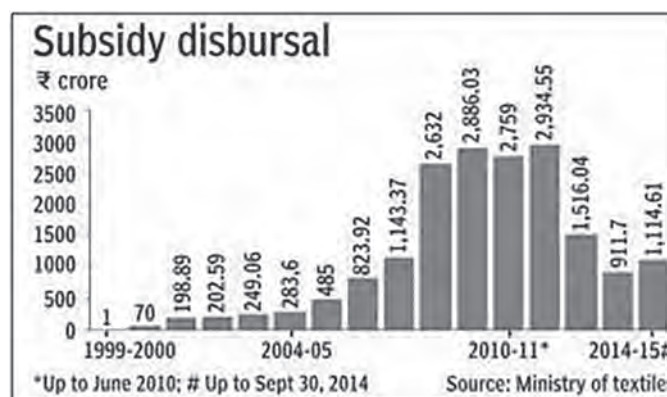
### Problem faced by the Investors

- Cumbersome Procedure

Textile is very capital intensive sector. Machinery forms major part of capital cost. Considering this very fact, the Government has introduced the TUFs scheme. But, average time taken for disbursement of funds from ministry ranges from 24 - 36 months whereas average time for implementation of textile project is 12- 18 months. Longer period in availing subsidy makes it difficult to complete project in stipulated time & in turn resulting into huge losses for investors. The procedure to be followed in getting subsidy is very simple. It starts with application by investor seeking assistance to the nodal banks / nodal agencies / co-opted PLIs with project details and Detailed Project Report (DPR). Lending agency will submit the information online in the prescribed format to the Textile Commissioner (Mumbai), after determination of eligibility and admissible amount under Restructured TUFs for each case. On receipt of the information in the prescribed format, the Textiles Commissioner will issue a Unique ID (UID) number to pre-authorize the loan application for submission of subsidy claim by the lending agency. On receipt of subsidy from the Ministry of Textiles, the lending agencies will transfer the amount of subsidy into beneficiaries' account within a period not exceeding three days. Though the procedure is simple, lack of co-ordination between the nodal agencies & monitoring makes it cumbersome for investors.

- Blackout period

The 'blackout period' for the Indian Textile industry corresponds to the duration between 29 June, 2010 and 27 April, 2011 when no funding support was available. The modified TUFs was suspended in June 2010 and the revised TUFs was introduced in April 2011. Lack of fund support creates insecure atmosphere amongst investors during "blackout period". Most of investors put their projects on hold due to lack of support so it's necessary to have continual fund support to the investors to catalyze investments during such low





periods.

- List of machinery

List of sector-wise machineries covered under TUFSS should be reevaluated. Some of segments like linen spinning are value addition in conventional spinning & it needs to be given special attention as it has great demand & potential. For such segments, special rates of subsidies to be given. It is necessary to identify & offer special subsidies to propel the investment to such sectors.

#### Summary

TUFSS is a great initiative started by Ministry of Textile. But inadequate earmarking of funds & lack of co-ordination between nodal agencies is resulting into delay in availing subsidies. Ministry of Textiles (MoT) should forecast the total investments & required funds outlay for TUFSS well in advance for each year. This can be only done when applications for UID should reach to the MoT at the planning

stage of the project but not at the implementation.

Currently lending agencies are furnishing subsidy requirement on quarterly basis. This can be done on-line basis which will not only avoid accumulation of applications but will make procedure faster. Faster UID generation will help MoT to forecast fund requirement well in advance. This will definitely avoid the inadequate earmarking of funds. Once adequate fund support is available each year, automatically the delays can be shortened by continuous monitoring & coordination further.

In fact consultants like us have smartly identified the need of the textile industry. With in-depth knowledge base and proven track record, we are assisting investors for availing TUFSS subsidy. With the strategic approach and continuous monitoring & co-ordination, we are all set to assist industry players to avail TUFSS subsidies timely.

## What lies ahead in 2015-16 ?

### Budget Blues

The central budget for 2015-2016 for the textile industry was a damp squib. The industry was eagerly awaiting reduction in the excise duty structure to promote the use of man made fibers in tune with the international norm of consumption of MMF to the extent of 70p.c. This is a long standing demand of the industry. This means that the country has been paying cost in the shape of imports of MMF woven fabric presently worth USD 325 million ( ch. 54 & 55). The heavy excise duty on man-made fibers depresses MMF fabric market and hence consumption of man made fibers is stuck at 40 %. India is missing the valuable opportunity of developing products in areas like leisure wear and sportswear which are the emerging segments of MMF. The spandier excise duty tangle is resolved, the faster will be the growth in exports of MMF fabrics and garments. If a GST is introduced as per present time frame there will be some saving game.

Another disappointment for the industry in the budget was a drastic reduction in the allocation of TUFSS from Rs. 1864 crore in 2014-15 to Rs.1520 crore in 2015-16 ie a reduction of nearly 10 %. The operation of TUFSS, the industry is apprehensive, will run into serious payment problem. Besides heavy arrears of TUFSS payments for first 3 quarters in 2015-16 left out cases & black out cases are staring at the industry. This has severely eroded the cash-flow position of the industry. As a result, ShriPrakashBhagwati, chairman of TMMA ( Textile Machinery Manufacturers Association) is of view that the pace of investment in capital assets is severely affected and entrepreneurs have by and large, adopted the policy of wait and watch.

### Depressed Demand

What ails the textile industry at this stage is the low demand for fabrics. The statistical position of the industry is dominated by yarn. stocks of cotton yarn started climbing up with the industry from May 2014. From 131.60 Million kg in May 2014, stocks piled up to

178.62 million kg in Oct 2014. Thereafter, as a sequel to the festival demand, stocks started moving down and touched 148.59 million kg in March 2015, the latest month for which such figures are available. These figures reflect the demand pattern for fabrics.

The slowing down of demand is the cumulative effect of sharp increase in consumer prices for daily needs, unsatisfactory level of economic growth, unsavoury situation in the labour market, etc.

Apart from poor domestic demand, export market is also not quite helpful. In 2014-15 exports of textiles and textile products increases by 8.67% against 7.82% in 2013-14. The target for FY 2015 was 15 %. It seems the world demand is flat. At the same time, it can not be overlooked that india has so far not been able to take advantage of China, losing its growth potential.

### Cotton engulfed in uncertainty

Cotton is always a gamble on monsoon. But the contradictory report on monsoon forecast is causing some nervousness in the industry. The industry could not take advantage of slump in cotton prices earlier in the cotton season 2014-2015. Now cotton prices have started going up. If monsoon fails, or if it does not follow the normal time schedule, the problems of the industry will multiply.

### Other Cost Factors

The minimum basic wages have significantly increased in some states. The Power cost is abnormally high and there are no signals of any reduction in power tariff.

There are no definite signs of any reduction in the cost of working capital.

In this situation, faith of the industry in its own ability is the only saviour.



Shri V.Y. Tamhane



## SKILL DEVELOPMENT IN INDIAN TEXTILE SECTOR



Mr. Avinash Mayekar  
MD, Suvin Advisor Pvt. Ltd

**T**extile Industry, the golden industry of India has a rich culture of more than 100 years and it has proven its importance for earning foreign exchange and generating huge employment since ancient times. The Indian textile industry, currently estimated at around US \$108 billion, is expected to reach US \$ 141 billion by 2021.

The sector contributes about 14% to industrial production, 4% the GDP and 27% to the country's foreign exchange inflows. Indian Textile Industry is always been backbone of the country's economy employing around 45 million people directly & 60 million people indirectly. India is the second largest producer of textiles & apparels. It accounts for about 24% of the world's spindle capacity and 8% of global rotor capacity. Being a labour intensive industry, country's large population directly or indirectly depends on the industry. Textile Industry has evolved from traditional handlooms to most modern high speed Airjet looms. Today, we are manufacturing ranges of highly engineered textiles & apparels for various applications ranging from sports textiles, medical textiles, automotive, protective textiles & so on. Last year, India has overtaken Germany and Italy to emerge as the world's second largest textile exporter. But still if we compare with China who is world leader in Textile exports, we lag substantially as it exports seven times higher than India. According our Vision 2024-25, our production level is estimated \$350 billion by 2024-25 from current \$100 billion & export to reach \$300 billion. We have to carve out clear strategy & action plan to achieve our vision.

Though, India has rich resources of raw material such as cotton, silk, jute & wool, there are certain area to be focused to harness the growth of the industry. One of the core areas to be focused and highlighted is "skill development". Indian Government is taking commendable initiatives by launching programs like Integrated Skill Development Scheme (ISDS), but it is equally important that industry stakeholders should equally contribute in this movement. The first step is to bring awareness on need of skill development for Textile Industry. Main focus should be on enhancing right skills and generation of employment, in order to reap the demographic dividend. Skill building can be viewed as an instrument to improve the effectiveness and contribution of labor to the overall production. It is an important ingredient to push the production possibility frontier outward and to take growth rate of the economy to a higher trajectory. Skill building could also be seen as an instrument to empower the individual and improve his/her social acceptance or value.

To carve out our strategy for skill development, first we need to understand the existing structure of skill sets and assess gaps in the system. We are required to take the 360 degree feedback and approach to understand the existing gap between required skill sets & workforce. We can map our country into the smaller modules of states thoroughly

for type, quality & quantity of fibres produced & how the levels of productions, which are existing in textile industry e.g. Spinning, Handloom, Powerloom, Shuttleless Weaving, Knitting, Processing, Garmenting or Technical Textiles. Detailed market research needs to be done to understand existing workforce, their level of skillsets, number of textile education institutes in the region, what is their curriculum and course content, whether educational programs are in line with the required skillsets of the region. This will help us to understand demand-supply gap & answer questions like additional number of workforce required to match the demand supply, what are skillsets required & whether existing textile education institutes are sufficient to meet the workforce requirement in that state, whether there is any need to redesign the course content as per industry requirement, whether additional vocational courses or workshops are required to be developed. The answers to these questions will help us to design the strategy for every region and every sector.

The next step will be action plan. The action plan will be arranging various program & seminars in the region. This will bring awareness amongst entrepreneurs and stakeholders about the need of skill development programs. Textile institutes providing degree, diploma & vocational courses are to be developed to meet huge demand supply gap. This will help in supply of high skilled labour to achieve higher productivities & good operational management.

It is also important to understand level of skill development to meet our export vision. With the changing market scenario, it is necessary to identify innovative trends in global market. We need to adopt latest technology to produce goods which are competitive into international market. To meet our export vision we are able to generate skilled labours trained with international skills and standards. In fact, international consulting firm like Werner International have industry specialists and have experience in training to all level textile human resource from entrepreneurs, CEOs, general managers, plant heads, managers to workers. Such kind of training programs will be really helpful to create a good skilled workforce in our country. Already big textile giants like Welspun, Trident and many other groups are using skill set improvement programmes.

Suvin Advisors has smartly identified the need of the Indian Textile Industry for efficient manpower with technical knowhow. With our extensive network & experience, we are all set to fulfill the need of the Industry. In today's competitive world, Top level & middle level plays very crucial role in the success of the company. With highest level of dedication & proficiency, Suvin can help assist the industry to identify suitable workforce for top level & middle level. We are already commissioning 2 big size textile projects in Angola through a Japanese collaboration.

Today, Indian economy is in growth phase. Our Prime Minister Mr. Narendra Modi is promoting "Make in India" program across the globe. There is a great demand for right people and right place. We foresee tremendous demand of efficient manpower in coming future in India. With the clear vision, right strategy & aggressive action plan, we can supply efficient people for textile industry and in real sense can lead the global textile market!!!



## TECHNICAL TEXTILES INTO FILTRATION FABRICS



**Mr. Avinash Mayekar**  
MD, Suvin Advisors Pvt. Ltd.

### Overview of Technical Textiles

Global technical textiles market is at growth phase. Technical textiles market was worth USD 133.93 billion in 2012 is expected to increase to USD 160.38 billion by the end of 2018. In terms of volumes, the global demand is expected to reach 30.71 million tons by 2018, growing at a moderate CAGR of 3.3% from 2012 to 2018. Their wide range of applications, lack of competition and growing consumer and industrial

demands make it a big opportunity area for Technical Textile sector. Technical Textiles itself is a vast sector. Depending on the product characteristics, functional requirements and end-user applications the highly diversified range of technical textile products have been grouped into 12 categories based on application namely Agrotech, Meditech, Buildtech, Mobiltech, Clothtech, Oekotech, Geotech, Packtech, Hometech, Protech, Indutech and Sportech. Technical textiles have wide area of applications into filtration products in industries like mining, pharmaceutical, food processing, desalination, automobile & aircraft.

### Introduction to filtration

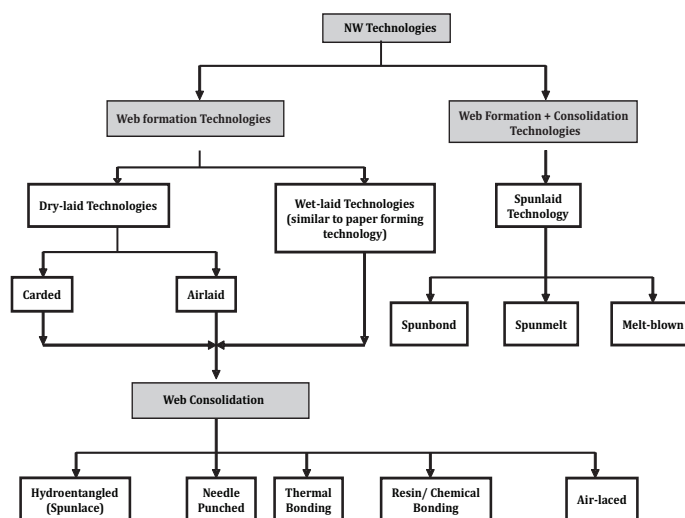
Filtration is the process where solids are separated from fluids by interposing medium through which only fluid can pass. Filtration is used to separate particles & fluid in a suspension, where fluid can be liquid, gas or supercritical fluid. Depending upon the application, either one or both the components can be isolated. Porosity & permeability are two main characteristics of filter media. Permeability increases with increase in porosity of the filter media. Filtration can be classified into microfiltration, ultrafiltration, nanofiltration & reverse osmosis depending upon the size of fluid it can pass through.

Global filtration market is growing at rate of 7.6 % annually and will reach to the mark of USD 65.9 billion in 2015. Textile filter media can be classified into Woven filters, needle felted & knitted filters. Woven & non-woven filters are produced into flat form & then formed into tubular shape while knitted filters are directly formed into tubular shape only. Woven filters are made of yarn with a definite repeated pattern. Felted filters are formed by laying fibres into mat then bonded together by thermal, mechanical or chemical means & attached to loosely woven backing material. A membrane filter is a special treatment where a thin, porous membrane is bonded to the support fabric. Woven filters are generally used with low energy cleaning methods such as shaking and reverse-air. Felted fabrics are usually used with higher energy cleaning systems such as pulse-jet cleaning. Membrane filters were developed in efforts

to achieve high efficiency particle capture and to handle flue gas conditions where high moisture and resulting high pressure drop problems frequently occur.

Woven filters have open spaces around the fibers. The weave design used will depend on the intended application of the woven filter. Woven filters are designed into plain, twill or satin weave. Woven weave is the tightest structure offering maximum resistance retaining particles very quickly whereas twill & satin weave are comparatively loose structure giving more flow rate.

Nonwoven fabrics are broadly defined as sheet or web structures bonded together by entangling fiber or filaments (and by perforating films) mechanically, thermally or chemically. They are flat, porous sheets that are made directly from separate fibers or from molten plastic or plastic film. Some of the important characteristics of nonwoven fabrics make it suitable for filtration applications such as porosity, durability, strength, washability, bacteria barrier, resistance to chemicals & high temperature resistance. Following diagram explains manufacturing technologies of nonwoven fabrics. Nonwovens are manufactured in two steps namely web formation & web consolidation. Formation of web can be done in various ways like Card, Water, Air, or Melt Spinning. Web Consolidation can be done by using Needles, Water, Chemicals, Heat or Air. Depending on the technology of their production, Nonwovens are named accordingly. Following diagram explain various nonwoven technologies.



Sources: McKenna and Turner 1989 & Greiner 1993.

### Major applications

- Power Stations- A baghouse is an air pollution control device which removes particulates out of air organs released from commercial processes or combustion for electricity generation. Powerplants, steel mills, pharmaceutical industries, food manufacturers, chemical producers and other industrial companies often use baghouses to control emission of air pollutants into the atmosphere.



## TECHNICAL TEXTILES INTO FILTRATION FABRICS

Characteristics of various fibres used as filter media

Generic name	Fiber	Maximum temperature				Acid resistance	Alkali resistance	Flex abrasion resistant
		Continuous		Surges				
		°F	°C	°F	°C			
Natural fiber cellulose	Cotton	180	82	225	107	poor	excellent	average
Polyolefin	Polypropylene	190	88	200	93	excellent	excellent	good
Natural fiber protein	Wool	200	93	250	121	good	poor	average
Polyamide	Nylon	200	93	250	121	poor to fair	excellent	excellent
Acrylic	Orlon®	240	116	260	127	very good	fair	average
Polyester	Dacron®	275	135	325	163	good	fair	excellent
Aromatic polyamide	Nomex®	400	204	425	218	fair	very good	very good
Fluoro-carbon	Teflon®	450	232	500	260	excellent except poor for fluorine	excellent except poor for trifluoride, chlorine, and molten alkaline metals	fair
Glass	Fiberglas® or glass	500	260	550	288	good	poor	poor to fair
Polymer	P84®	450	232	500	260	good	fair	fair
Polymer	Ryton®	375	191	450	232	excellent	excellent	good

- **Water Filtration** - Reverse osmosis is a water purification technology that uses a semi-permeable membrane to remove larger particles from drinking water. In reverse osmosis, an applied pressure is used to overcome osmotic pressure, a colligative property that is driven by chemical potential, a thermodynamic parameter. Reverse osmosis can remove many types of molecules and ions from solutions, including bacteria, and is used in both industrial processes and the production of potable water. The result is that the solute is retained on the pressurized side of the membrane and the pure solvent is allowed to pass to the other side



- **HVAC filters** - HVAC stands for heating, ventilating, and air conditioning. The HVAC systems are used in industries, commercial and residential buildings where humidity and temperature need to be closely regulated. HVAC filters belong to the category of air filtration products. The HVAC filters include pre filters, medium efficiency filters and HEPA filters. HEPA or High Efficiency Particulate Air filters are high efficiency filters capable of removing 99.97% of airborne particles of 0.3 micrometers ( $\mu\text{m}$ ) diameter. Filters capable of removing 99.999% of dust, pollen, mold, bacteria and any airborne particles of size 120 nanometres or larger from the air are categorised as ULPA or Ultra Low Penetration Air filter. The major filter media used in HVAC filters are nonwoven and made of polyester, polypropylene and glass fibre. These nonwoven media are generally needle punched and have a GSM of 200-250



- **Vacuum cleaners**-Vacuum cleaners have a filter to remove the dust from the exhaust air. The dust is collected in a paper bag which can be disposed of. Some of the vacuum cleaners also use HEPA filters. The major filter media are non-woven and made of polyester, polypropylene and glass fibre. Nonwoven fabric used for vacuum cleaners are generally made up of needle punched and have a GSM of 200-250.

- **Automotive** - Automotive filters are primarily of three types - Oil filter, Air filter and Fuel filter. The filters clean the oil, air and fuel by blocking dirt and other unwanted particles from entering the vehicle system. The technical textile used in the filters is cellulose and polyester non-woven filter paper. The characteristics of the automotive filter are based on the specification of the original equipment manufacturers: permeability, corrugation depth, bursting strength, pore size, volatile content, resin content and width and height. All the three filters are required for proper functioning of internal combustion engine. The technical textile used in the filters is polyester and cellulose non-woven fabric of around 120-150 GSM.



- **Geo-textiles**- The non-woven geo-textile fabric is a common choice for areas looking to stabilize, separate or filter materials. All non-woven fabrics come with a needle-punched exterior that allows thin water particles to filter through the fabric while keeping soil from filtering through. This geo-textile filter fabric helps to retain fine particles when water passes from fine to coarse-grained soil layers.



### Growth drivers

Major drivers for the growth of global filtration industries are growing consumer awareness regarding health issues, product safety, air quality & water purity. Manufacturers are looking for purest form of products due to consumer demand for higher standard products. Global pollution levels are growing day by day. Efficient filtration technologies are required to control pollution levels to optimum. The Technological advancements in both, the product and application segments would create opportunities for growth in the global market. Technical Textiles has huge application area in filtration industry. Technical textile has advantages of simple manufacturing process, less expensive & good strength so today it is widely used into filtration industry. With the continuous R & D and innovations, textile filter industry can grow exponentially!





## Roadmap to Indian Textile Exports



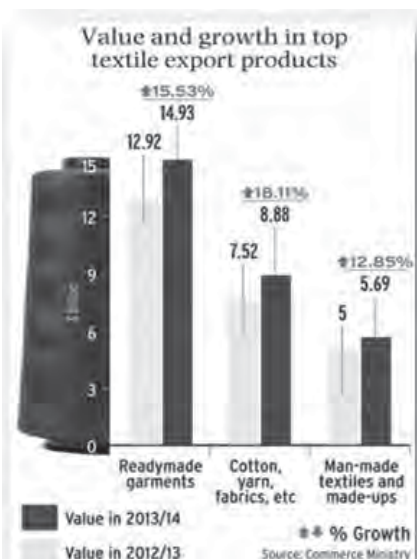
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India is gearing up to play much bigger role with new policies announced by new Government under leadership of Mr Narendra Modi. The publicized, "Make in India" campaign would certainly give rise to a bigger potential to export from India as well.

### Introduction:

The current global garment market is approximately US\$ 1.15 trillion which forms nearly 1.8% of the world GDP. Almost 75% of this market is concentrated in EU-27, USA, China and Japan. This data put light on

tremendous opportunity available for India in terms of Textile & apparel exports. Last year, Indian Textile industry did remarkably well in terms of exports. Textile exports were \$30.37 billion up from \$26.36 billion in previous year. Out of total Textile Exports, readymade garments, which accounts for nearly half of all textile exports at \$14.93 billion, grew 15.53 per cent. Cotton yarn and fabrics grew 18 per cent to \$8.88 billion, while manmade textiles grew nearly 13 per cent to \$5.69 billion. Though we have grown substantially in terms of Textile Exports last year, we can not ignore 2 major external factors like weak rupee & Bangladesh textile factory fire which contributed to the Indian Textile Export.



As the world population is growing with the faster pace, global Textile & Apparel (T & A) products demand is rising. Increasing per capita, changing lifestyles & fashion culture are adding to total consumption of T & A. Stable government, abundant raw material & cheap labour gives India a big opportunity to capitalise global T & A market. So are we all ready for this opportunity?

Our Textile Ministry has vision to increase our export to \$350 billion by 2024-25 with CAGR of 20%, which is possible only when the equal efforts are put by government as well as entrepreneurs.

### Role of Government

Major role of the Government is always to facilitate creation of conducive environment for exporters. Exercise supportive policy framework, create suitable infrastructure, make availability of state-of-the-art technology, attract skilled workforce, make arrangements for easy finance & create marketing platforms. It is very much necessary for government to identify the requirements of Textile exporters. Most of the exporters face major challenge due to inconsistent export schemes. Attractive export incentives are practiced by many countries to boost exports in the particular segments, increasing incentives on export of certain high value products like garments, technical textile will certainly help the exporters. Government should ensure that export of finished products happening rather than raw materials or semi finished products which in turn fetching them higher returns & giving government more foreign exchange. e.g. we should focus on garment exports than fibre, yarn or fabric exports. Thus incentives under focus products export will definitely boost overall export earnings and it will create a pull across complete value chain.

Zero % Import Duty under 100% EOU Scheme was highly favoured by most of the Textile Exporter in the past. Many Spinning EOU units were put up under this scheme during years 1990 to 2000. The scheme can be relaunched for the growth of the Textile Exports. Focus Market Scheme can also support exporters in competing with foreign export market against high freight cost and other externalities. We need to study our strengths and target market segments.

Supportive infrastructure like textile parks, common ETP, connecting high efficient ports, extensive road network, uninterrupted power & quality water supply are important contributors for the growth of exports e.g. presence of textile parks in cotton growing areas which will have nearness to ports, textile institutes, CETP & other resources.

We can not manufacture goods of export standard with obsolete technology. State-of-the-art technology is essential to produce high quality standard goods. Government has launched TUFSS scheme to support technology development which is an appreciable initiative, more such schemes will be helpful to support technology up gradation and can boost export segment.

High skilled labors trained for international skillsets and quality standards will help to achieve higher productivities & good operational management with lower defects. We need to redesign our existing educational programs to create high skilled human resources. Need basic Educational seminars & training programs can also help to create good resources. There are international consulting firms who are specialists and have experience in training to textile experts as well as labors. Such kind of training programs can develop a good skilled workforce in our country.

If we see current scenario, many of the financial institutions are hesitant to finance textile projects because of couple



## Roadmap to Indian Textile Exports

of bad debtors. They are concentrating more on more profitable business opportunities. When they scrutinize a project report having 6 to 7 years of pay-back period with DSCR of 1.5 to 1.7 or IRR of 12 to 14%, the banks are unable to find the lucrative proposition from the financial angle. Hence, they are a bit hesitant to sanction loans in this particular industry. However, due to high foreign exchange earnings and sustainability of more than hundred years of existence, the banks should reconsider their exposure to this industry. Entire industry cannot be judged upon few of bad experiences of serving back term loans because if we look at the overall scenario, textile industry fared very well in paying back the term loans.

The right marketing platform for exporters to showcase & promote their products at international market is essential. Government can give subsidies to exporters for business development activities like participating in various international events & other business promotion activities. Government can hold certain international exhibitions for Indian exporters which will create awareness on Indian Textile Goods. The time has come to book export pavillions for all exporters under Indian Brand and exercise professional networking with all probable buyers. We need to understand buyer's requirement and create product portfolio for them.

### Role of Exporter

Major challenges faced by Indian textile exporters is to meet timely deliveries. If we see any export business, leadtime plays an important role. Due to quick changing fashion trends product cycle is becoming shorter, which further demands shorter leadtimes from exporter. In contrast to this, Indian exporters fail to give product in specified delivery time & losing big part of their profits. Major reason behind this issue is our higher production cycles and unplanned production programs. We need to address this issue by shortning our overall production cycle by effective Production Planning & Control (PPC) & advanced technology level.

The other challenge faced by exporter is right quality. International apparel brands have stringent norms for quality & shades. Many export shipments are rejected for various issues like shade rejection, strength parameters, fastness etc. We need to standardise our products to match all quality norms & standards so that we can supply right product & reduce losses incurred due to shipment rejection. We also need to stick to certifying criterias and maintain quality standards across value chain.

India is second largest cotton fibre producing country after China. India's cotton production was 6641 thousand

metric tons in FY 2013-14. China is the biggest importer of Indian cotton fibre. It is likely that demand of cotton fibre from China will reduce substantially as they are already sitting with huge inventory. So, now the time has come that exporters should think of forward integration options in Textile Value Chain. They can think of various options to manufacture value added cotton based products rather than exporting cotton fibre. This will definitely give them higher value returns.

In total fabric production, knitted fabric accounts for 25% of total fabric production which is comparatively very less considering huge market for knitted fabric. Our exporters should think of exploring new product options and can win over competition in untapped product segments.

Technical Textiles is another opportunity for Indian exporters. The demand for technical textiles that was worth USD 133.93 billion in 2012 is expected to increase to USD 160.38 billion by the end of 2018. In India, export knowledge about Technical Textiles is at nascent stage, but time has come to put our all efforts to capitalise this big global market. With the abundant availability of raw materials & cheaper labour, we have conducive environment to manufacture of Technical Textiles. Now we have to focus on technology know how & product developments. Even existing conventional textile exporters can add few technical textile products in their basket and can make test marketing. The profitability is much higher for technical textile products and India has to enter into this sector in a big way.

Along with innovative & higher value products, our exporters should keep on exploring new global markets & widen their customer base.

### Summary

India need to understand a basic fact that after China, if any one can play a bigger role in the textile and apparel sector, is only India. Moreover, due to increase awareness towards cash products, China is likely to curtail its market share in Textiles and that itself is a huge opportunity for India. It is a very crucial phase that our government & exporters should take concrete steps & start moving towards common goal to achieve our Textile Export vision.

Government needs to create conducive environment for exporter by creating supportive policy framework, suitable infrastructure, state-of-the-art technology, skilled workforce, finance & marketing platforms whereas exporters should gradually think of moving towards forward integration manufacturing value added products positioning their products at right price and in the right markets. Consultants like us trained with international technology are always ready to bridge the gap between exporters & untapped opportunities and spreading the wings of knowledge across the Textile Value Chain...

**Right Products**

**At Right Place**

**At Right Time**



The proposed project will, on an average, process 70,000 metres of cloth per day i.e. 210 lakh metres in a year of 300 working days. Assuming that an average garment requires 2.5 metres of cloth, 84 lakh garments could be stitched from 210 lakh metres of cloth. At US\$ 5 per garment (f.o.b) the foreign exchange earning would be US\$ 40 million per annum. One processing unit can process cloth of 20 shuttleless looms, producing 200 metres per day.

The above calculation is at 100% efficiency, with 100% production and 100% exports and no wastages have been assumed. While actual production would depend upon efficiency, intensity of use of machines, work stoppages, machine stoppages, overhauling, maintenance, etc, exports will depend on export orders, and f.o.b prices.

There should be a sizeable number of clusters of imported shuttleless looms at different powerloom destinations and adequate number of Textile Processing Parks at such places.

### GARMENTING SECTOR

Once the number of shuttleless loom for production of grey fabrics is increased to the required extent and processing facilities of international standard are made available,

garment manufacturers would get adequate supplies of fabrics of international standard at most economic prices and they would be in a position to increase exports in a significant manner. Additionally, this route will not increase import content of export production and the industry will contribute significantly large amounts in foreign exchange for growth and development of national economy.

If the production base of processed fabrics is enlarged, the remaining problem of the garmenting sector would be the availability of skilled workers, the withdrawal prohibition imposed on engagement of women workers between 10 pm and 6 am (next day), the restricted number of hours for doing overtime work, etc

It is a matter of gratitude that Government is giving due emphasis on skill development programmes. The Garment industry with the support of Apparel Export Promotion Council has taken a lead for training. It is reported that about 1 lakh workers have already been trained. Skill development activity should be enlarged and supported by firing on all cylinders.

Let us look forward to a textile industry, which will dominate the Indian economy by earning loads of foreign exchange and providing jobs to teeming millions.

## VISION, STRATEGY & ACTION PLAN FOR INDIAN TEXTILE & APPAREL INDUSTRY



**Avinash Mayekar**  
MD & CEO, Suvin Advisors Pvt Ltd

Recently "Navaratri festival" has added colours to the lives of all Indians. We are fortunate to be born in the country of colours and colours reflect in our culture and in to our clothings. Every State in India has its specific cultural attire, matching style and colour combinations. Our woman has got great affinity towards colour and has sense & choice for her colour. To help her, textile industry is present in our country since ancient times and contributing a lot to the fashion industry.

The Indian Textile Industry is playing an important role in country's economy by generating large employment base since decades. It is also a prime source for foreign exchange earnings for years. Hence, it is of paramount importance to chalk out our Country's vision, strategy & action plan to carve out better future. Somehow, the efforts in this regard have been of very low scale and have not come to the expectations of the globe till date. At international scenario, China is still a big brother and India has all its merits to take a bigger pie of the cake from China. However, the efforts are not in right directions far away from value additions and targets. We need to design our master plan in more appropriate way.

The very first step to the ladder of success would be to study our resources in terms of raw materials, work culture, skill sets & infrastructure. We can map our country into the module of each and every State thoroughly for type, quality & quantity of fibres produced & how the levels of productions can further be improved in the region, what challenges are faced by the people while producing fibres & how

these problems can be overcome. e.g. cotton yield is still a big challenge across India and there is a huge scope for improvement by using latest cultivating techniques.

It is equally important to study prevailing industries in that particular State & whether there is a balance in the supply chain management e.g. if only spinning industry is grown exponentially in the particular region but weaving & processing industry has not any presence in the region, then the producer will be directly selling the yarn in the neighboring state or foreign countries. But instead, if cluster is developed in such a way that ginning, spinning, weaving, processing & garmenting sector are based in one cluster, then value chain can be easily balanced. This will help in reducing transportation, logistics, administration and overhead costs drastically giving more profit margins. Integrated Textile Park Scheme envisages the vision to bring entire value chain at one place with all supporting infrastructure. Mini Textile Park concept can definitely boost this scheme. The other important aspect is presence of ginning & spinning industries near cotton growing regions. This would facilitate reduction in logistic costs as well as contamination & wastage thereby giving superior quality products. Similarly, other fibres like silk, wool, jute etc. have their own importance and can be developed in the respective States for value addition.

It is very important to use various tools such as SWOT analysis, PESTEL analysis, competitor's analysis, geographic analysis & demographic analysis for each & every State. We have to study the market gaps, growth drivers, products having international markets etc. whether our strategy is in line with the global trends or not. e. g. China is the biggest player in the global textile industry but because of increasing labour cost in China, industry players are eyeing on other Asian countries for production & this can be a good oppor-



tunity for India. Study & Implementation of similar business models of States like Maharashtra and Gujarat where Textile Industry has shown tremendous growth will definitely add to success of Indian Textile Industry.

Once we have all data pertaining to Textile Industry of entire country based on various segments in textile value chain, organized or decentralized sectors, fibre-wise industries, scale of economy, technology level; we can arrive at the existing scenario of Indian Textile Industry. This will facilitate us in understanding our vision statement. Our vision should not only be in numbers indicating market share or export values, but it should be derived based on various factors like resource availability, growth drivers, level of infrastructure development, level of skill development & level of technology advancement and probable investment possibilities.

Next step is to devise roadmap for our vision. This roadmap can be formed by identifying investment opportunities in the region, based on segment analysis. Once we identify industries to be developed, it is very necessary to chalk out the action plan for development. This plan will be integration of all aspects like value chain, infrastructure development, skill development, technology levels, policy reforms & creation of marketing platforms. e.g. if a particular State has to be developed for production of export oriented garment industry, it is necessary to develop skill sets and supporting infrastructure like design studios, creativity related activities, roads, ports, labour training schools & marketing platforms to attract global brands. Absence of any one of these aspects can lead to a failure. Hence, it is crucial to pursue holistic approach which will cover all parameters.

Extensive and efficient road network, availability of good quality water, uninterrupted power supply & other utilities, well developed ports are important factors contributing to infrastructure development. Likewise, highly skilled labours trained with international skills and standards will help to achieve higher productivities & good operational management. It is necessary to check whether existing educational programs are capable to create such high skilled human resource. Educational seminars & training programs can also help to create good resources. In fact, there are international consulting firms who are specialists and have experience in training to textile experts and workers. Such kind of training programs can develop a good skilled workforce in our country.

Technology advancement plays crucial role for growth of the any industry e.g. if our vision is to double our exports in next 5 years, but we do not have state-of-the-art technology to produce international standard goods, then we

can never achieve our vision. Some of the textile sectors like Ginning, are still using very obsolete technologies. With the obsolete machineries, we cannot achieve desired standards of products as impurities in cotton can lead several problems like less absorbency, harsh hand-feel & less brightness etc. We have to update ourselves with the latest state-of-the-art technology. Government has launched TUFSS scheme to support technology development which is an appreciable initiative. However, it needs efficient implementation and promotion across the value chain. More such Government schemes are needed to bring about technology advancement.

Government policies & initiatives should be in tune with the vision e.g. if a particular cluster has to be developed for Fabric processing industry, Government policies should create conducive environment for growth of the processing industry, such as CETP plants and water availability. Benefits like tax exemption, tax holidays, capital & interest subsidies should be given to promote textile sector. This will help to create positive environment amongst investors. Once the cluster is developed, the next step is to create marketing network for businesses like arrangement of events & exhibitions which will promote the products. This can create a platform to bring about awareness & marketing of products & help in business development. The last but not the least is continuous monitoring of action plan. No action plan is complete if it is not monitored at various stages. So it is necessary to decide milestones & time frames. These milestones have to be implemented within time frames to achieve the vision. A continuous dialogue with all stake holders is needed to boost the sector. Similarly financial institutions play very important role in sanctioning commercial values for the future projects. They need to be guided properly for appraisal systems and faster financing procedures.

Today, Indian economy is in transition phase. Our Prime Minister Mr. Narendra Modi is taking good initiatives to attract foreign investments from Japan, China, USA and other developed countries. Many other foreign nations are eyeing on Indian economy for investments. Our Vision for textile & apparel sector should bring the right environment for investors by creating good infrastructure, skill development, Government policies & marketing platforms. We can definitely lead the globe in future by devising right and appropriate strategies to create our Vision and Action Plan.

Textile Consulting firms having in depth knowledge of Indian and global textile industry can add value in the efforts of the Government initiatives to devise appropriate action plan, strategy and vision statement for Indian textile industry...

#### PIN UP IS BACK: THE KNITWEAR OF THE FUTURE

Leading fashion brand **Benetton** invented it – a revolutionary line of sweaters that enhances a woman's shape by accentuating her curves in all the right places.

New for F/W 2014 is Muscle Fit, the version for guys. Accentuated curves and a super slim fit even wearing a classic cashmere sweater? Yes, thanks to United Colors of Benetton's revolutionary patented technology plus more than forty

years' know-how in weaving yarns and designing new generation knitwear and its penchant for innovation.

Considering the human body in 3D led to the idea for this knitwear line, which by carefully placing invisible seams in strategic places would have optimal wearability and fit that flattered the shape of men's and women's bodies to perfection.

In recent years, Pin Up has already made women's dreams of feeling both elegant and feminine come true, and F/W 2014 also sees the launch of the Muscle

Fit line for men. Pin Up and Muscle Fit knits hug the body, nip in the waist and, especially for men, accent the shoulders and muscles. Science fiction? Not in the least.

Dressing all women and making them feel as beautiful as Pin Ups, and from today, giving all men a trim silhouette and an elegant carriage. This is a challenge that Benetton always wins with its expertise in knitwear and use of the most modern technologies. A perfect marriage of beauty and comfort.



## NEW OPPORTUNITIES:

However, the shifting of textiles manufacturing to developing countries has made the supply chain more global and complex, thus providing scope for value-addition in terms of supply chain management. Fashion retailers are interested in offloading more of their responsibilities to T&A manufacturers who in turn need to provide more value in order to gain a substantial edge over their competitors. This requires an end-to-end understanding of the global supply chain and the associated trends, from raw materials to consumers, and, sometimes, recycling as well. Similarly, the use of data analytics tools has opened up opportunities for diving deeper into the granularities of inventory management, manufacturing costs, vendor performance evaluation, logistics, and lead time management. Comprehensive data are increasingly seen as the new frontier of productivity, for all kinds of business operations.

The textiles industry has always been linked to issues of environmental pollution. Thus, investing in building a socially- and environmentally-responsible value chain is a credible opportunity for manufacturers. In recent times, it has been seen that consumers' perception of brands, retailers, and manufacturers associated with sustainable business processes and eco-friendly textiles has sharpened. Consequently, there is more demand, and production, of organic textiles, recycled garments, etc.

Ingredient branding contributes substantially to the perceived value of T&A products. Value-addition through branding also provides a long-term, strategic advantage to e.g., some component brands like COTTON USA, Gore-Tex, Lycra, YKK, etc. have managed to make a long-lasting impression on the minds of T&A consumers.

The blurring distinction between the products offered by the various functional elements within the textiles value chain forces manufacturers to bank upon weaving additional services and improved solutions into their core value proposition. In order to remain competitive in this highly globalized industry, players have to factor in the constantly evolving business dynamics in their attempts at value-addition. For a long-term, competitive edge, it is critical to revisit the value provided by the company vis-à-vis its competitors and the solution required by the customer on a regular basis and realign the value added with that offered by the industry and/or required by customers. At the industry level value-addition is largely about creating a culture of innovation through mutual collaboration so that the consumer can benefit through availing better products and services. While conceptualizing newer options of value-addition within the textiles value chain, it is imperative to keep in mind its effect on the entire value chain and to ensure that the value created will be nurtured and sustained beyond short-run benefits.

## VALUE ADDITION, VIEWS OF SUVIN ADVISORS PVT. LTD.

## COVER STORY



**Mr. Avinash Mayekar,**  
**MD & CEO,**  
**Suvin Advisors Pvt. Ltd.**

Value addition as term suggests "when value is added to something". But in many cases value addition term referred when financial value is added to the product or process so value addition term is taken in the wrong sense. Real value addition comes from the augmentation of process, innovation of technology, re-engineering of processing parameters or reduction in operating cost e.g. technology advancement in Technical Textiles leads transformation of fibre to fabric in shorter duration is kind of value addition in process unlike in conventional textiles where it takes longer duration whereby increasing total product cycle.

So, the time has come to understand, where actual value lies. Value lies in converting low price raw material into final product for various applications which can be marketed at very high price. Similarly value addition is achieved by having proper waste management system to reduce total raw material cost. There are various plants in Israel & Italy where waste materials from textile industry is used to manufacture various types of textile products like carpets, rugs etc. This waste material is bleached & then converted into value added product & sold in market at higher value. One cannot identify that these products are generated from waste materials, so this is real value addition.

Value addition is process driven. The process where overall power cost is reduced by altering conventional process is a value addition. The process where overall product cycle is altered is a value addition. The process where dyes and chemicals are

reduced is a value addition. So, value addition leads to increase in profit levels cutting down overall cost involved in product manufacturing. One cannot control some costs like raw material cost, utilities like water & power cost but he can definitely bring value addition in technology & process. Especially, in case of conventional textiles where value addition plays very important role as market faces very high level of competition. There are ample numbers of producers of yarn, fabric & garments in the market, so value addition cannot be just done only from fibre to yarn, yarn to fabric, fabric to garment but it has to be done by various other methods like by optimization of overall operating cost, by improving the spinability of fibres with the use of various spinning techniques so that one can use inferior raw materials & produce best quality of yarn, by optimizing weaving costs with the use of various weaving techniques like reduction in Cover factor, EPI (Ends per inch) & PPI (Picks per inch) keeping fabric structure same, by generating best recipes to increase pick up ratio dyes & chemicals. So, value addition is the key to survive in the competition & thereby to bring about sustainable growth in long run.

Value addition can also be brought by various techniques of improving efficiency & productivity of the plant and quality of the products. In fact our associate Werner International USA is providing such services since past 7 decades in 70 countries. They are also involved in training manpower as per international standards to improve productivity, efficiency, utilization and reduce operating cost. Such trainings are very crucial in Indian market where many companies have infrastructure & machineries of global standards but workforce which is required to operate such high standard machineries are not trained enough.

Innovative product development is also a value addition. These



products are developed considering market demand. For example, various kinds of wipes are seen in the market nowadays ranging from kitchen wipes, baby wipes, industrial wipes & many more. Freudenberg is a German company involved in production of such wipes & they are specialized in production of such wipes. Beauty of these wipes is they are becoming thinner and thinner day by day & at the same time they are using finishes which are utmost necessary. So, depending upon the end use ranging from household to industrial purpose, wipes of various GSM, various fibres, and various finishes are available in the market. This indicates how wide range of technology innovations can be brought in the single product & can be used for multipurpose. This kind value addition required for textile value chain.

In India, value addition is always considered from fibre to yarn, yarn to fabric, fabric to garment barring few

examples. But we have to understand need of setting up R & D facilities, generating new techniques & innovative methods.

In India, there are various low cost natural fibres available in the market e.g. Jute fibre which is abundantly available as resource in eastern part of India. This is used for producing various end products like geotextiles, mats, bags & other decorative products since years. But it's time to innovate these products by reducing GSM, by applying various finishes, by beautifying products with different dyeing techniques. Thus there are many ways to convert conventional products into value added products.

**Conclusion:** Value addition is not just a process, but it is science, it is an art, it is commerce & it is engineering. Ultimately value addition brings about profit. However, profit is not the only criteria to characterize value addition but it also reduces the resources required in the manufacturing process saving it for future as they are limited, it sets skills & brings about technology advancement which is necessity of any industry!

## COVER STORY

## VALUE ADDITIONAL VIEWS BY INDUSTRY

### Value addition in Textile Engineering Sector



**Mr. Rajnikant Bachkaniwala, a Doyen of Indian Textile Engineering industry, based in Surat, shared his thoughts :** Textile Engineering supports user industry of textile value chain. Engineering depends upon user-based requirement. From cotton picking, Machine- Processed Fibres, Spinning, Weaving, Processing,

Garmenting to Fashion, in short all the segments of textile value chain continue to value addition with the aid of textile engineering.

Recently, Real value addition has been taking in large scale in **Embroidery segment**. There are more than **100 thousands/ plus embroidery machinery in just one cluster**, Surat. All Hand embroidery work is now replaced by Machine Embroidery like, Sequence, lace, embellishment attachment which is done on Sarees, Dress materials. All the machinery is imported from China. Any new Indian Entrant wanting to enter segment is too late, as investment cost and return period are high.

**Printing techniques** are a new development. But this is Fashion based, like digital printing, block, screen, rotary printing. Some new developments continuously go on, as per need and want of customer and fashion trends.

Indians are good manufacturers of Ginning, Spinning, Yarn & Fabric Processing Machinery. We lack in **Weaving & Garment Machinery**. Garment segment has the least Indian manufacturers due to lack of proper policy decisions, investment constraints, barrier on free trade and many more. Association like TMMA is working hard and pursuing with textile ministry for the development in this field.

### Value Addition in Retail – Suiting / Shirting



**Mr. Ashwani Misra, President of Lombard, Future Group Company,** launched a new brand in year 2013. Brand philosophy, Lombard means Lombardi, a Tribe in Milan, Italy.

**Lombardi means Power**

in Italian word. Their tagline is “**Where Real Power Rests**” His brand driving on **Revolutionized Retailing**. They are working on Most desired Brand for individuals.

- **Product :** Fabrics, Ready-mades, Accessories
- **Segment:** Premium
- **Price Band:** Rs. 4000 / Meter Onwards
- **Production :** Umargaon, Gujarat & Italian Production unit
- Producing only 100 meter, limited Quantity of for most premiums, for exclusivity, classy fabric.
- **Marketing :** MBO's, EBO, Inshop Branding Gandola
- Advertising / Promotion : TV Advt appx 5500 spots, Print, Outdoor, Inshop Vinyl, Lamas, Look Books, Carry Bags.
- **Unique Promotion by Lombard:** Unit of Poly wool Trousers Panel Hanger sample which will be placed in Gandola. so that salesman need not open 20-30 units to sell one trouser length and refold the material. He can easily show these to customer. **This will be complete revolution to the Indian Man's Retail clothing Experience.**





**Avinash Mayekar,**  
MD & CEO,  
Suvin Advisors Pvt. Ltd.

The banking sector seems to be averse to the textile industry, despite it being the premier industry of the country. These days, the way bank finance is being done, the banks seem to be more inclined to way hi-fi industries. They should also consider the industry which is there for decades in the country and contributing to the significant chunk of foreign exchange earnings in country's economy. It is right now the second largest industry in terms of foreign exchange earnings. However, if we take a history of last decade, it has been always the number one industry which is contributing towards foreign exchange earnings consistently. India has to keep its own mark of showing dominance in the international market as the best emerging country in the world and it has to compete mainly with China. At this stage, competition has no limitation. Our textile industry is hardly competitive compare to China though we have all resources available from skilled workforce to raw materials. However, if we want to develop a base and make a foundation towards most growing economy, we have to increase our export earnings and hence, we just cannot ignore textile industry as it is the most potential industry.

We have seen a major shift in global consumption from the manmade fibres towards natural fibres due to global warming issues. We are very strong as far as all types of raw materials are concerned which are required to produce textiles whereas China has its own limitations on fine quality cotton varieties. It is better to focus more on India's strengths & weaknesses than comparing it with any other country. Just to give emphasis on how India can substitute export earnings, the comparison with China is given.

If we consider the growth within textile industry, there are very few mega-scale projects and very large numbers of MSMEs. MSME industry is the one which is going to contribute to the growth of the textile industry. They have their inherent problems like shortage of funds, collateral securities, inadequate net-worth etc.

As far as entrepreneurs are concerned, they are eager to invest and identify many pastures. Consultants like us, keep them busy by giving various options whereas when it comes to actual implementation part of it, most of them struggle to get approvals or green signals, mainly because lack of support by financial institutions. As a matter of fact, it is always seen that if financial institutions become a bit lenient on this industry, there would not only be large investments happening in this industry in terms of exports but also it would satisfy the needs of the large existing domestic market. We have a very large

population & textile demand of this population is very high & we foresee potential increase in this demand in coming years due to change in living standard. The entire market segment is huge and if the industry serves both the opportunities i.e. exports as well as domestic, there would be a huge market that would be available.

However, the way things happens in this traditional industry, it keeps on crying for modernization and introduction of new technology. There is a huge necessity of adopting not only the state-of-the art practices with minimal labor interference but also uninterrupted quality monitoring systems. Moreover, new investments need to be brought in the country. But these factors are not getting enough support from financial institutions, due to lack of knowledge and not having clarity on the vision of the industry.

If we see from financial institution point of view, they are concentrating more on more profitable business opportunities. When they scrutinize a project report having 6 to 7 years of pay-back period with DSCR (Debt Service Coverage Ratio) of 1.5 to 1.7 or IRR (Internal Rate of Return) of 12 to 14%, the banks are unable to find the lucrative proposition from the financial angle. Hence, they are a bit hesitant to sanction loans in this particular industry. However, there is sustainability of more than hundred years of existence and good reputation of this industry and that's why the banks have to think from the point of view of sustainability of this particular industry. Entire industry cannot be judged on the basis of a couple of bad experiences of serving term loans. If we look at the overall scenario, textile industry fared very well in servicing the term loans.

Literally, it needs to be seen why financial institutions have not shown much interest in textile industry in spite of having good history of return on investments.

The textile industry also has advantages as far as employment is concerned. It is one of the largest industries, employing about 55 million of country's population. It has shown very good network throughout the entire nation, almost in each and every state of India. Value addition is tremendous, be it in spinning, power loom weaving, shuttlelooms, garmenting and now the technical textiles. There are many sectors and many ways by which income can be generated. If we see from the industry point of view, when they compete with other countries, they find that the financial institutions are charging interest rate that is much higher than many other countries and hence they find it difficult to sustain in the market.

Industry needs some sort of support from financial institutions, how the interest rates can be brought down for this particular industry in order to gain more export earnings. At the same time, the financial institutions are looking for immediate and huge returns. The payback period is almost 6 to



7 years in case of most of the sectors. The industry is highly capital intensive. Hence, they find it very difficult to give loans to this industry. These are the few things that need to be improved upon and to be thought over.

If there is a good dialogue between the industry and the financial institutions, most of the things can be sorted out. Maybe a third party intervention e.g. consultants like us can help financial institutions as Lenders Independent Engineers i.e. LIE which is a new concept adopted by a few of the nationalized banks. We can help them in understanding the nature of the project, level of technology to be used, proper justification for the costs, appropriate marketing set up, planning and monitoring of the project on continuous basis. So whenever a new project comes to a bank, nominated consultant by the bank can keep on giving monthly or quarterly reports on regular basis which can monitor the progress of the project along with fund flow statement from project start to the completion to avoid the misuse of the funds provided by the banks. Consultants can help in executing the project with latest tools and software. This will help the financial institution to understand the crux of the industry.

The financial institutions may create a platform wherein not only the consortium of few banks but also a consultancy firm can add value in understanding the project concept, in the great interest of the industry. If at all they think of taking a call on various aspects of a project which are being prepared or submitted to various financial institutions, they can really understand how things are happening in the industry and then they can finance such project. They also need to understand that all projects are not similar and each project has its own merits and demerits.

#### Conclusion:

A value addition in terms of appointing a LIE (Lenders Independent Engineers) for all projects would bridge the gap in between the industry and the financial institute. A project monitoring committee can be formed by involving professional consulting firms to decide the effectiveness of the project. Textile industry has a tremendous potential in the global market and it would make India a strong foreign exchange earner hence financial institution should look at its sustainability rather than immediate returns from other industries.

## 【 VOICE OF POWERLOOM SECTOR... 】

### Interview with Shri Momin, President of Bhiwandi Powerloom Federation Ltd.

**TVC : What is your experience in getting financial accommodation from banks for the constraints and it suffers from various problems.**

A major handicap of this sector is non availability of adequate credit on time. This happens unlike the corporate sector which has unhindered excess banking and industrial finance. Because powerloom sector is not to link to collateral security to that extent.

There are 23 lac powerlooms in India. Of which only 15-20% take loans from banks and/or even have accounts in the banks. 75- 80% of powerloom job workers sell directly to master weavers. Power loom consist of 96% contribution in Indian textile cloth production as compared to mills which only have 3-4% contribution. Major Powerloom hubs are Bhiwandi, Ichalkaranji, Surat.

**TVC : Are powerloom workers having enough working capital limits to purchase and stock cotton yarn to cover your annual requirement?**

Power loom factories are unlike to stock cotton yarn, the main raw materials because of lack of bank finance. They carry stock of just 10-15 days. Fabric is made immediately and sold as they do not have enough money to buy excess yarn. As a result, sometimes they just sell fabrics below cost. Average rate of Production is 60-70 meter /day /loom.

We have also observed yarn price race where merchants

store yarn in ware houses and create artificial scarcity. Hence we have proposed to the Government to establish yarn depot, where yarn stored and be available at Ex- mill prices. We do not want any agent in between for our yarn requirement, as it is a costly affair for powerloom sector to depend on yarn agents.

**TVC : What about Export?**

As we are small scale units, we exports through exporting agents.

**TVC : What's your experience about collateral Securities?**

The business model of the power loom industry is something which has no place in management books. The powerloom sector is in the name of one person, labour are in the name of different person and person running business has no documents with him. In such circumstances, how can you give collateral security and hence they failed to get banking funds.

**TVC : Are your proposals for long term borrowing under TUFS considered without many problems?**

Currently, Only 20 big companies are taking benefits of current TUFS scheme. We have proposed government a TUFS scheme Rs. 25000 to 30000 per power loom. This will enable recipient to few parts of machine which will give uniform, defect free fabrics and increase productivity of power loom. Government had announce scheme, its in process of implementation.

Job worker do not have any source of funds / capital. Master weavers invest in sector which is borrowed from different entrepreneur.



## PET BOTTLE RECYCLING & NONWOVENS



**Mr. Avinash Mayekar,**  
**CEO & MD**  
**Suvin Advisors Pvt. Ltd.**

### Introduction



Latest trend that is catching up in the textile industry is the recycling of PET bottles for manufacture into fibres. PET bottles recycled into fibres and other applications not only help us in saving energy but also in reducing carbon emissions. This market is growing at a relatively faster pace globally as well as in

India as the PET recycled fibres can replace most of the applications in which polyester fibres can be used. The recycled PET fibres can even be used in the manufacture of various types of nonwovens for high-end technical use.

### PET Bottle Recycling & Their Benefits

Polyethylene terephthalate or as it is more commonly known PET or PETE is a polymer resin that is part of the polyester family. Polyethylene terephthalate is a transparent, lightweight, strong, safe, shatterproof and recyclable packaging material with an inherent barrier, making it suitable for a wide array of product applications. It has a wide range of uses including synthetic fibers, food, beverage and other liquid containers. Average 60% of global production of PET is used in the manufacture of synthetic fibers. Bottle production accounts for about 30% of the PET produced.

PET is simply referred to as polyester when it is used in textile applications. The name PET or PETE is used mainly in packaging applications. The most common use of PET as a packaging material is its use as a raw material for bottles and other containers of consumer goods. Some of these are used in bottles for soft drinks, alcoholic beverages, edible oils, pharmaceuticals and detergents. PET is one of the most common plastics being used by consumers.

The PET package is simply discarded by the consumer and becomes part of the waste stream as post-consumer waste. In the recycling industry, this is known as post-consumer PET. Most thermoplastics can be recycled and PET is no exception. PET bottle recycling is also more practical and more easily executed because they are more easily identifiable in the recycle stream since most soft drink and water bottles are made exclusively of PET. PET has the resin identification number 1.

The sorted bottles are first broken down into small flakes and compressed into bales which are easier to transport and are then used to make new bottles or other products such as textile fibers. PET is easily recycled and since there is abundance post-consumer PET in bottle form it is becoming a preferred source of

material in the production of carpet fiber.

PET is the most widely recycled plastic in the world. PET can be recycled multiple times and used in a variety of products. Recycled PET is used for many end products including fiber, fiberfill, carpet, strapping, food and non-food bottles, and thermoformed packaging such as cups and take-out containers. PET reclaimers wash, grind and further process PET containers for re-use in new products. PET thermoform manufacturers are using increasing amounts of recycled PET in their packaging, up to 100%.

PET recycling not only saves energy and reduces emissions, it creates domestic jobs. On an average, it takes 70% less energy to produce a product from recycled plastic than from raw materials. For every pound of recycled PET flake used, energy use is reduced by 84%; greenhouse gas emission by 71%.

### Conversion rates of bottles are as follows:

5 PET bottle of 2 Liter	▶	1 T-shirt
5 PET bottle of 2 Liter	▶	1 Ski-jacket
19 PET bottle of 2 Liter	▶	1 Sweater
20 PET bottle of 2 Liter	▶	1 Filter
35 PET bottle of 2 Liter	▶	1 Sleeping bag
60 PET bottle of 2 Liter	▶	1 m <sup>2</sup> Carpet

Globally the collection rate of PET bottles is at an average of around 36%. Asian region has the highest collection rate of 78.2%. China has the highest collection rate of almost 90% whereas India is second to it with around 75%. The collection rate in India has appallingly grown to this rate from negligible in last five years.

The collection rates in North America and South America is around 30% and 37.5% respectively. Approximately 1.5 billion pounds of used PET bottles and containers are recovered in the U.S. each year for recycling, making it the most recycled plastic in America. In Canada, PET container recycling rates range from 60–80% depending on the province. In Toronto, single-use PET bottles comprise less than 1% of the city's municipal solid waste.

In Europe, PET is the largest plastic material recycled, with the equivalent of more than 60 billion bottles recycled in 2012. From a sustainability perspective, European industry has achieved an overall collection rate in 2012 of more than 52% of all post-consumer PET bottles available in the region.

In Africa-Middle East region, the collection rate of PET bottles is around 13.9%. As per PET Plastic Recycling Company (Pty) Ltd. (PETCO) and its' 28 signatories, post-consumer plastic beverage bottle recycling in South Africa grew by 18% year on year in 2012. The recycling rate rose from 42% in 2011 to 45% in 2012, while the local market consumption of PET grew from 145 000 to 166 000 tonnes. According to PETCO, this amounts to the recycling of over 1.9 billion PET plastic beverage bottles in 2012 – that's an astonishing 5.3 million bottles each and every day.



Globally, around 72% of recycled PET is converted to fibre whereas the other products manufactured from recycled PET are PET sheets, strapping, Bottles-non food contact, bottles-food contact etc. In India, the conversion rate of recycled PET is around 95% for use in to textile application and other applications are strapping etc.

Globally, the production of recycled PET stands at 9.5 mn. tons in 2012 and is growing at a rate of 7% whereas in India, the production of recycled PET is 0.35 mn. tons growing at a rate of 12%.

## NONWOVEN INDUSTRY

As per EDANA, nonwovens are unique, high-tech, engineered fabrics made from fibres and which are used across a wide range of applications and products. Nonwovens are innovative, versatile and

Web Formation	Web Bonding	Finishing Treatments
<ul style="list-style-type: none"> <li>• Drylaid</li> <li>• Carded</li> <li>• Airlaid</li> <li>• Spunmelt</li> <li>• Spunbond</li> <li>• Meltblown</li> <li>• Wetlaid</li> <li>• Other technologies</li> <li>• Electrostatic spinning</li> <li>• Flash spun</li> </ul>	<ul style="list-style-type: none"> <li>• Chemical</li> <li>• Thermal</li> <li>• Mechanical</li> <li>• Needlepunching</li> <li>• Hydro-entanglement</li> <li>• Stitchbonding</li> </ul>	<ul style="list-style-type: none"> <li>• Wet finishing</li> <li>• Chemical finish</li> <li>• Coating &amp; lamination</li> <li>• Mechanical finishing</li> <li>• Surface finishing</li> </ul>

indispensable. The production of nonwovens can be described as taking place in three stages, although modern technology allows an overlapping of some stages, and in some cases all three stages can take place at the same time.

### Following are the three stages of nonwoven manufacturing:

According to a new study by Smithers Apex, the global nonwovens market is projected to reach \$40.1 billion by 2015 with a CAGR of 8.5% over a five year period. Driving this figure is the high growth Asian market with forecast CAGR of over 14% for the same period. Currently, the demand in North American region is the highest in the world. However, owing to the rapid growth, Asian markets are bound to be the highest consumer of nonwovens by 2015.

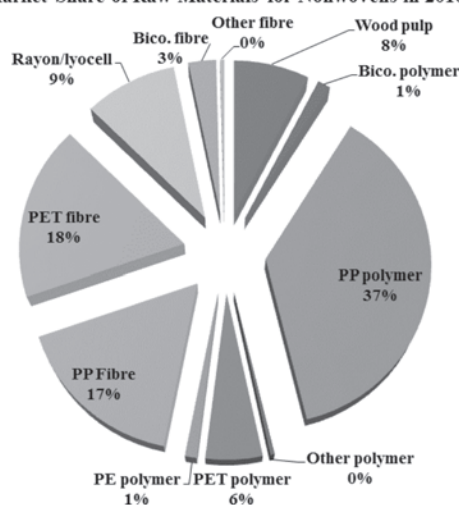
In terms of consumption, there are 2 types of nonwovens – durable and disposable. The market share of durable markets is around 60% of the total nonwoven market whereas the disposable market is around 40%. As has been the case for most of the 2005-10 period, disposable nonwovens are expected to continue their loss of market share to durable nonwovens in everything but value through to 2015.

EDANA, the International Association Serving the Nonwovens and Related Industries, in its public summary of its annual statistics on Nonwovens Production and Deliveries for 2011 has shown a growth in production volume for 2011 of 5.7%, with several market segments recording their best output ever in both tonnage and square metres, including baby diapers, medical, personal care wipes, civil engineering, automotive and agriculture. The total deliveries

reached the level of 18,97,748 tonnes and 55,740 million square metres in 2011.

With the global economy strengthening, raw-material consumption is projected to reach 9.574 million tonnes by 2015, with a CAGR of 8.5% for 2010-15. This is up on a 6.1% CAGR for the 2005-10 period. Polypropylene polymer is by far the single largest raw material used in nonwovens, accounting for 37% of all raw materials for nonwovens in 2010 and Smithers Apex expects this share to exceed 40% by 2015. PET fibre is the second largest consumed of the raw materials for nonwovens with around 18% share.

Market Share of Raw Materials for Nonwovens in 2010



Source: Pira International Ltd.

Market gains in developing parts of Asia, Eastern Europe, the Africa/Mideast region, and Central and South America will outpace gains in the US, Western Europe and Japan. Product sales in developing areas will be fueled by above-average economic growth, ongoing industrialization efforts and rising living standards. China alone will account for almost half of additional global volume demand through 2015. Lower-volume markets such as India and Brazil are also expected to achieve growth above the global average.

In India, the consumption of nonwoven fabrics has increased by 12.7% per year in constant dollars to USD 390 million by the end of 2012. These dollar sales represent nonwoven product that is produced within India and nonwovens that are imported in roll good forms or in a converted state, such as baby diapers or modified bitumen roofing materials. Driving this growth is the rising standard of living as the country industrializes. The rising consumption of nonwoven materials versus other nations is illustrated in the figure on the following sheet.

India's disposable markets accounted for 35% of the total whereas the durable markets account for around 65% of the total market. The major durable markets are interlinings, bedding and upholstered furnishings, automotive, geotextiles, building construction, agriculture and landscape, carpet components and coated/laminated substrates. Absorbent hygiene products, wipes and some medical/surgical are some of the largest segments within the disposable market. The other disposables segments are fabric softener substrates, oil and



chemical sorbents, sterile and non-sterile packaging materials, courier envelopes, miscellaneous airlaid pulp markets and numerous other small and emerging markets.

Driving this growth has been the industrialization of India that has resulted in the growing purchasing power of consumers. The rising number of woman working outside the home in new industries is increasing disposable family incomes. This continues to have a significant impact on raising consumer spending on many products that use nonwoven materials.

### Recycled PET in Nonwovens

Polyester is today the second most used fibre in nonwovens both in terms of production and consumption. Polyethylene terephthalate or polyester is made by condensation polymerisation of ethylene glycol and terephthalic acid followed by melt extrusion and drawing. It can be used in either continuous form or as short staple of varying lengths. The popularity of polyester largely stems from its easycare characteristics, durability and compatibility with cotton in blends. Its very low moisture absorbency, resilience and good dimensional stability are additional qualities.

Polyester is used in variety of application of nonwovens like geotextiles, agrotexiles, automobiles, medical textiles, consumer goods etc. In geotextiles, polyester based nonwovens can be used in variety of applications like drainage systems, roadway separation / railroad stabilization, asphalt overlays, geomembrane protection, landill leachate collection, hard armor underlayment etc. In agrotexiles, polyester nonwovens can be used in variety of applications like mulch mats, crop covers etc. In automobiles, polyester nonwovens can be used in applications like carpets, acoustics, ceilings, seat covers, interim trim etc. Some of the medical applications of polyester nonwovens are wipes, surgical gowns, masks etc. These are just some of the applications wherein polyester nonwovens can be used. There are many more applications in sectors like construction, clothing, home textiles, industrial textiles etc.

The polyester fibres obtained from recycling of PET bottles is similar in properties of virgin polyester. The difference between virgin PET and Recycled PET is indistinguishable. Hence, nonwovens from recycled PET fibres can be used in most of the above mentioned applications where strength is not the major parameter for its application.

### Challenges faced by the Nonwoven Industry in India

There are various challenges faced by the nonwoven industry in India. India is not witnessing many investments in this industry even though the market is growing at a decent rate. One of the major constraints for the investors to enter this sector is the complex marketing aspect of the applications of nonwovens. The nonwovens are used into both consumer and industrial applications. There is wide range of consumers from hospitals to railways to automotive industries to agriculture to road infrastructure. Hence, to have a common mantra for marketing of nonwovens becomes a bit difficult for the industry. The marketing strategy for each and every product will differ depending upon its end use.

Also the raw material, machinery and equipment differ from application to application. Hence, the difficulty rises in generalizing

the use of nonwoven in different applications. The other difficulty which investor faces is in huge capital investments in case of high-end technical products and in requirement of huge working capital. Also the investor being a novice in the field of technical textiles finds it difficult to get a joint venture partner for selling of his/her products. Absence of existing norms and mandatory requirements of technical textiles for specific end applications makes it difficult for the investor to understand the actual requirements of the market.

### Summary

About 20,000 plastic bottles are needed to obtain one ton of plastic. The process of a recycled plastic bottle is energy saving and green. It has wider applications and can replace all the conventional products including nonwovens which are used in geotextiles, agrotexiles, automobiles, medical textiles, consumer goods etc. The challenge is collection of bottles and segregating it based on colour, grade and foreign materials.

Recycling of PET bottles is increasing across the world in order to reduce carbon emissions from the virgin polyester manufacturing. With classical Indian tradition of reuse and recycle, any form of waste into various applications has automatically diverted attentions of many entrepreneurs to look at the opportunity of PET recycled fibres & yarns. This has resulted into one of the largest PET recycled country to the tune of 75% after China. The process of converting bottles into fibres & yarns is relatively easier and has a cost advantage. The cost of such fibres & yarns is 10-20% cheaper than the virgin polyester.

Recycled PET can be used in all segments of technical textiles in one or the other form and has wide range of application. One of the major significant uses of recycled PET is in nonwoven industry which is still in nascent stage in India. The trend of consumption of nonwovens has been established with respect to average purchasing power of the country and as we know that India's purchasing power has started growing and will lead to increase in per capita consumption of nonwovens. With the increase in consumption of nonwoven, recycled PET will lead to increased consumption in various applications.

It can also be blended with cotton, viscose etc. and can be used for apparels and made-ups. In short, it has no limitations in terms of applications. It can replace almost 40-50% of virgin polyester products. Recycled PET will reduce the pollution and improve energy conservation as compared to manufacturing of virgin polyester by chemical process as recycle process is nothing but depolymerisation and reorientation of polymer chain. This industry is creating a huge indirect employment for collection of bottles and provides self-sustainability to poor laborers. It will also help to reduce the waste and directly and indirectly helps society, nation and environment.

### References :

- 1) Plastic News
- 2) Relpet Newsletter, Reliance Industries Limited
- 3) European Disposables and Nonwovens Association (EDANA)
- 4) Smithers Apex
- 5) Handbook of Technical Textiles edited by A R Horrocks and S C Anand





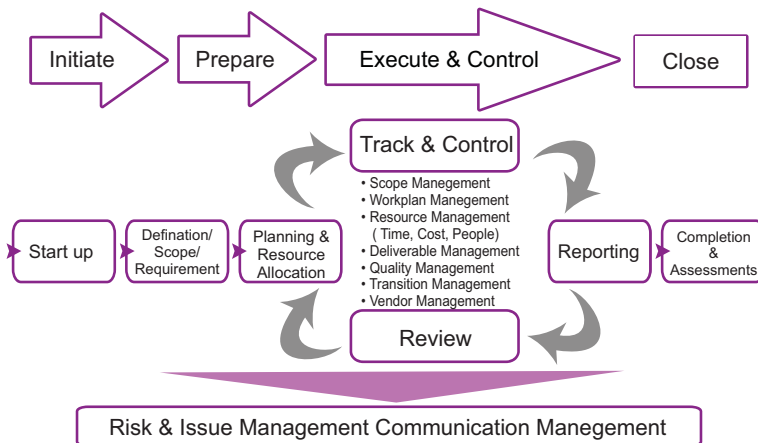
**Mr. Avinash Mayekar**  
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## Project Planning

**There's a well-said quote by Benjamin Franklin "By failing to prepare, you are preparing to fail".**

Planning is the most crucial aspect for a successful project. These days, the investors planning to invest in a manufacturing unit are facing huge problems of project delay or failures due to various reasons like delayed disbursement of funds by financial institutions, inappropriate project management team, inadequate knowledge of project execution, etc. For a project to be devoid of cost overruns, schedule delays and poor quality execution, the investor needs to execute the project with effective project management methodology.

**Project Management:** Project management is defined as the application of knowledge, skills, tools and techniques to project activities to meet project requirements and organizing and managing resources so the project is completed within defined scope, quality, time and cost constraints. It involves planning, organizing, and managing resources to bring about the successful completion of the project. Following is the framework that is generally followed for successful project management :



The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived project constraints. Typical constraints are scope, time, and budget. The secondary—and more ambitious—challenge is to optimize the allocation and integration of inputs necessary to meet pre-defined objectives.

In the Project execution stage, multiple agencies work together on parallel activities. The challenge lies in constant monitoring of each activity, quality check and taking mid-course correction if required, enabling an efficient and smooth implementation of the project.

There are 3 major steps to be followed for project management :

- 1) Pre-designing, 2) Project Management and
- 3) Construction Management

**1) Pre-designing:** In pre-designing, various activities like Site plan, Master Planning, Drawings for Statutory Approvals, Utilities Data Collection, Design Conference, Basic Data Fixation etc. is taken care of. Preparation of Master plan is done by exploring the various possibilities and aspects for the suitable development of the site, from the point of view of Industrial planning and architectural design to be shown in a site plan, considering effective use of climatology and natural site gradients & overall planning by giving due considerations to man, material and management. The built-up area is fixed by considering various units, utility area, ancillary buildings, power plant etc.

The prime focus should be given on a "Design conference" where all the stakeholders such as the client, Consultants and suppliers contribute to finalize all variables of the project after considering all other options. This conference needs to be organized to arrive at building utility and machinery details from all suppliers & their recommendations and to freeze all design parameters. As per approved data of individual units and master plan during design conference, a basic data fixation report should be prepared, which would be referred to as a bible and would forms the basis for further designing & planning, covering built-up area, statement of utility requirement for machinery, building specifications, utility requirement and equipment specifications, design conditions, time schedule and budget.

**2) Project Management:** Project management revolves around the objectives of scheduling, effectively estimating costs, working out cost benefit analysis, preparing file note with single line diagram, preparation & evaluation of tender, prequalifying & approving contractors, giving recommendations and preparation & submission of design & working drawings.

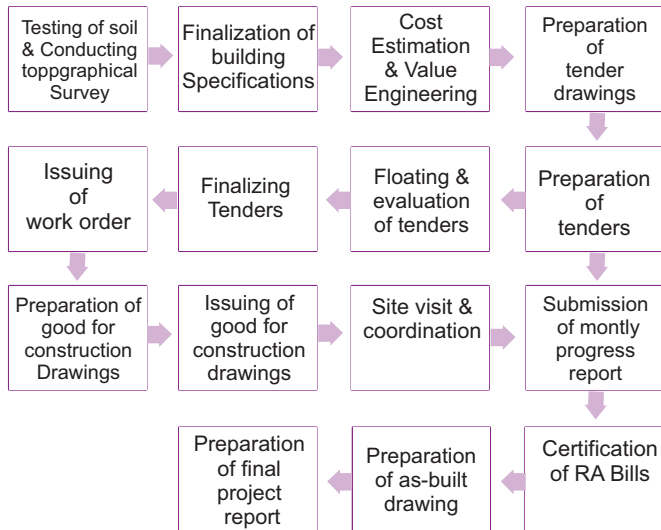
The geo-technical analysis of the proposed site needs to be carried out with particular regard to size, surface, shape and level conditions, load bearing capacity of subsoil and surface water conditions, water supply, yield of wells, interpretation of water analysis, drainage, disposal of rain water & waste water and industrial effluent, electric power connections, climate and meteorological data, rainfall, velocity & direction of prevailing winds, municipal/ local rules & regulations etc. If, in the course of investigation regarding water supply, load bearing capacity of sub-soil and sub-soil water conditions, it is found necessary that civil work like excavation pits, boreholes or load tests has to be carried out, the same will be carried out. If an up-to-date contour plan and survey map is not available it should be arranged accordingly.

Based on geotechnical analysis of the site and master plan prepared, architectural drawings should be prepared for infrastructure, production buildings and ancillary buildings.



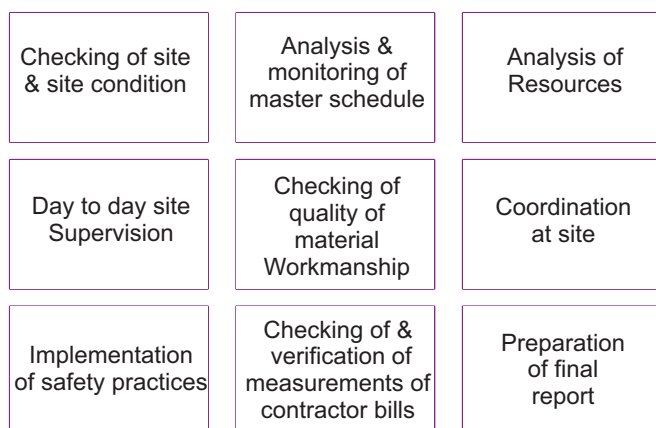


Architectural drawings include plans, sections, elevation, doors & window schedule for each building and necessary details for implementation. Structural design and detailed drawings includes static calculations of reinforced concrete or steel construction for buildings, preparation of structural GA drawings, preparation of RCC designing and drawings. Utility systems need to be effectively designed to arrive at an appropriate system, detailed design, scheme drawings and layout drawings. Following is the sequence of activities to be followed for Project Management :



The work needs to be closely supervised to ensure timely completion as well as to ensure quality. Schedule of work for each contract should be monitored. Adequate resource should be deployed at site. Monthly progress report should be prepared covering costs, critical decisions and progress achieved by collecting site reports for material, labour, work progress. The list of drawings issued and diary of important events should be maintained.

**3) Construction Management:** Construction management revolves around the objectives of resource planning, micro scheduling & orientation, site supervision, risk assessment and management, safety & security measures, material control, quality control, cost control and successful implementation. Following are the activities to be followed for Construction Management:



**Major Reasons for Project Failures/Delay:** Project, if not planned properly, can fail or get delayed indefinitely.

Some of the major reasons for project failures or delay in execution are inadequate project planning, poor scheduling of projects leading to delays in implementation, misallocation of funds, lack of accountability and transparency, Lack of defined, clear, or concise requirements, bureaucracy in decision-making, weak monitoring systems, lack of team work etc.

These reasons can be overcome by improved project management that would resolve most of the issues faced by the project investor in implementation of the project.

**Need of Improved Project Management:** Better project management leads to better predictability leading to commitments that can be met. Lower cost can be achieved through reduced rework, better resource management and better planning. Quality is improved through proper quality planning and control. Project management aids in better visibility into project health and state leading to timely intervention and also helps in better handling of risks reducing the chances of failure/delay. All this put together leads to higher project investor satisfaction and self and organization improvement. This can be achieved by appointing a proficient project management team within the organization or a professional project management consultant outside the organization.

**Importance of Project Management Consultant:** A project management consultant has practical experience of setting up various projects and complete knowledge of the project execution along with the intricacies involved while implementing a project. The consultant is cognizant of the systematic process for managing a project and is able to answer crucial queries like the goal of the project, the need for the project, the beneficiaries of the project, probable obstacles in the project execution etc. With effective communication and good interpersonal skills, a project management consultant can efficiently co-ordinate between various vendors and the project investor delivering the project within the prescribed time schedule and with optimum budget.

Implementing a project within prescribed schedule, with insignificant deviations from budget and maintaining appropriate quality enable the project investor in saving around 5-10% of the project cost.

**Summary:** To summarize, project planning is the key for executing any project within cost estimates, timely execution and avoiding repetitive work and delays. The precision needs to be taken while planning, designing and implementing any project. As there are various independent factors involved in project management, a right and omniscient consulting firm having relevant team with knowledge of project execution should be appointed which can assist in giving most favourable end-to-end solutions for any project. ↴

## India's Policy on Infrastructure: Textile Parks, Power and CETP



**Avinash Mayekar**

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### Introduction

**Indian Textile industry is one of the major sectors of Indian economy, largely contributing to the growth of the country's industrial sector in terms of export earnings.**

However, in order to nourish this industry there has to be facilities like road network, power, water and other infrastructural aspects. Somehow, Indian Govt. has yet not focused on policy framework required by the industry and hence it is being created by the industrialists themselves. However, it means delays in getting land parcels, plenty of bottle necks in the systems and procedures and many obstacles in liaison with Govt. bodies.

In order to give a major thrust to the development of textile industry in India, Govt. has now come out with schemes like SITP, which should create good infrastructure with state-of-the-art facilities as per the guidelines.

### Scheme for Integrated Textile Park (SITP)

SITP was launched by merging two schemes, namely, Apparel Parks for Exports Scheme (APES) and the Textiles Centre Infrastructure Development Scheme (TCIDS). The primary objective is to provide the industry with world-class infrastructure facilities for setting up their textile units and facilitate them to meet international environmental and social standards. The total project cost is funded through a mix of Equity/Grant – from the Ministry of Textiles, State Govt., State Industrial Development Corporation, Industry, Project Management Consultant and Loan - from Banks/ Financial Institutions.

The Government of India's (GOI) support under the Scheme by way of Grant or Equity will be limited to 40% of the 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 to be equity. However, the combined equity stake of GOI/State Govt./State Industrial Development Corporation, if any, should not exceed 49%. However, GOI support will be provided at 90% of the project cost subject to a ceiling of Rs. 40 crore for first two projects in the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim and Jammu & Kashmir.

### The pre-requisites for SITP

- ⊗ The Integrated Textile Park (ITP) should have atleast 50 units
- ⊗ The land area should be minimum 100 acres
- ⊗ The aggregate investment in land, factory buildings and plant & machinery by the entrepreneurs in ITP shall be at least twice the cost of common infrastructure proposed for the ITP

⊗ The main promoters in the ITP would be Industry Associations/Groups of Entrepreneurs

⊗ The ITP should have maximum of 8 Separate Special Purpose Vehicle (SPV) and shall be formed with the representatives of Local Industry, Financial Institutions, State and Central Govts.

The scheme targets industrial clusters/locations with high growth potential, which require strategic interventions by way of providing world-class infrastructure support. An ITP will have components like Land, Common Infrastructure, buildings for common facilities, factory buildings for production purposes and Plant & machinery with flexibility in setting up to suit the local requirements. The following are the elements of the project cost eligible for the grant:

Factory Buildings & Common Infrastructure	Common Facilities
<ul style="list-style-type: none"> <li>• Factory Buildings in case it is individually owned</li> <li>• Compound wall</li> <li>• Roads</li> <li>• Drainage</li> <li>• Water supply</li> <li>• Electricity supply including captive power plant</li> <li>• Effluent treatment</li> <li>• Telecommunication lines etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Testing laboratory (including equipments)</li> <li>• Design centre (including equipments)</li> <li>• Training center(including equipments)</li> <li>• Trade center/display center</li> <li>• Ware housing facility/ raw material depot</li> <li>• One packaging unit</li> <li>• Crèche</li> <li>• Canteen</li> <li>• Workers hostel</li> <li>• Offices of service providers</li> <li>• Labour rest and recreation facilities</li> <li>• Marketing support system</li> <li>• Backward / forward linkages</li> </ul>

### Advantage India

Abundant availability of raw material (like cotton, silk, jute etc.), growing domestic market, investor friendly govt. policies and availability of skilled manpower makes India an ideal location for investment in textiles. The major factors affecting the viability of the textile park are availability of raw material and labour in the vicinity, well-equipped infrastructure in and around the park, availability of market and investor friendly govt. policies. Hence while selecting a location for a textile park; we need to consider parameters like logistics, availability of raw material, skilled labour and supervisory staff and nearness to targeted market.

Presence of back-end resources, targeting suitable customers, customer profiling, catering to customer needs, creating state-of-the-art infrastructure are some of the differentiating factors for a textile park. Some of the strategies to be adopted to create a techno-economic viable textile park are

Conducting market research globally and domestically to understand the current demand-supply situation, assess any gaps in demand-supply, target new market segments and identify key growth areas, key product segments & key business requirements





Creating state-of-the-art infrastructure with facilities matching the international standards

Determine the product mix of the park with appropriate land location & its details, location analysis, arriving at the most beneficial investment and understand the overall requirement of infrastructure like CETP, power, water, marketing hub and other facilities

Mapping the quality of infrastructure provided by the competitors against the price offered by them and positioning ourselves to be competitive

#### Existing parks under SITP

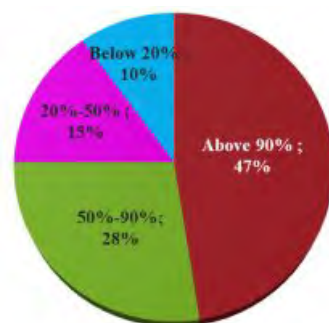
Till date 40 parks (Locations of which are shown in the map of India below) have been sanctioned under the 11th Five Year Plan of which 24 have already started operations and have attracted investments of over Rs. 18,880 crores. Below is the graph showing the grant in percentage received by the 40 textile parks.



The 40 ITPs is estimated to have an investment of Rs. 18,425 Crores with combined project cost of around Rs. 4,486 Crores and annual production of Rs. 33,964 Crores. The grant sanctioned to the ITPs is around 1,385 Crores with Rs. 825 Crores of grant released to these ITPs. The total no. of entrepreneurs or units in the ITPs are 1,893 and the total employment generated in the park is 6,16,388 (Direct: 2,82,576 & Indirect: 3,33,812).

Govt. has sanctioned Rs. 2,100 crores to set up 21 new textiles wherein ITPs would leverage an investment of over Rs. 9,000 crores, provide employment to nearly 4 lakh workers. Of the 21 units approved, 6 are in Maharashtra, 4

% Subsidy Received by the Parks



in Rajasthan, 2 each in Tamil Nadu and Andhra Pradesh and 1 each in Uttar Pradesh, Gujarat, Tripura, Himachal Pradesh, Karnataka, Jammu and Kashmir and West Bengal.

Some of the established ITPs are Islampur Integrated Textile Park (Maharashtra), Latur Integrated Textile Park (Maharashtra), Gujarat Eco-Textile Park (Gujarat), Palladam Hi-Tech Weaving Park (Tamil Nadu), Karur Textile Park Limited (Tamil Nadu), Madurai Integrated Textile Park (Tamil Nadu), Komarapalayam Hi-tech Weaving Park (Tamil Nadu), Baramati Hi-tech Textile Park (Maharashtra), Doddaballapur Integrated Textile Park (Karnataka) and Vraj Integrated Textile Park (Gujarat).

Some of the solutions proposed for the Govt. are to understand requirement of the industry, reserve land parcels at appropriate places for Textile parks, and develop schemes for mini parks of about 25 acres which can be developed for specific requirements and to support the industry on merits.

#### Common Effluent Treatment Plant (CETP)

The textile processing industry which takes care of value additions in the fabric is characterized by the high volume of water required at various stages of processing and the range of chemicals required for the various processes. These processes generate tremendous amount of waste, the nature of which depends on the type of textile facility, the processes and technologies being involved, and the types of fibres and chemicals used.

The waste generated from these processes needs to be disposed correctly otherwise it causes environmental pollution. This necessitates the need for effluent treatment plant wherein the effluent generated in the process house can be treated to such a level that it can be disposed of without causing any damage to the environment.

The best case study to emphasize the significance of effluent treatment plant is the Tirupur textile industry. In Tirupur, the effluent generated from the bleaching and dyeing units was discharged into the River Noyyal & River Nallar. The two rivers are natural drainage courses that only carry water in the monsoon period. During the remainder of the year, they used to carry only industrial effluents that stagnate in the riverbeds and percolate into the groundwater. As a result, the groundwater quality around the cluster of bleaching and dyeing units was polluted to such a level that it was unfit for domestic, industrial and agricultural activities.

Due to public pressure (especially the farmers), the court intervened and closed the dyeing units several times since 1997. Recently, in June 2005, this took an ugly turn, when the Chennai High Court ordered complete closure of the dyeing units and slapped crores of rupees of compensation to clean the environment on the dyeing units. This created a furore in the whole textile industry as this led to more problems when the demand for the processed fabrics was increasing.

However, at present all Dyeing & Processing units are using 100% Zero Discharge technology and units in Tirupur



created and generating more than 2000 MW in Wind Mill Energy. Both Common Effluent Treatment Plants (CETPs) and Individual units are following this ZLD technology and are meeting the requirements of the trade and servicing the requirements. More than 50% of total units are running, 494 Dyeing units and 162 bleaching units were there before closing down due to court order. There are 16 CETPs under operation out of 18 now.

Below is the picture of River Noyyal at Tirupur which looks visibly cleaner downstream of Tirupur (inset) after the city's dyeing factories were shut in February:



CETP is the concept of treating effluents by means of a collective effort mainly for a cluster of small scale industrial units. The main objective behind setting up of a CETP in a cluster is eliminating the need of effluent treatment plants in individual process house which has following advantages:

- ⊗ Saving in capital and operating cost of treatment plants
- ⊗ Availability of land at ease
- ⊗ Disposal of treated waste water & sludge becomes more organized
- ⊗ Reduced burden of various regulatory authorities in ensuring pollution control requirements

Some of the solutions are suggested to the textile industry for implementation of CETPs. The State Pollution Control Boards should prescribe standards for discharging effluents and conduct regular jar tests and submit to CETP. Govt. should come out with CETPs at most of the State Industrial Development Corporations to facilitate good quality infrastructure. No industrial park should be allowed without CETP. Build-own-operate-transfer (BOOT) should be adopted for CETP as well. BOOT is a form of project financing, wherein a private entity receives a concession from the private or public sector to finance, design, construct, and operate a facility stated in the concession contract. This enables the project proponent to recover its investment, operating and maintenance expenses in the project.

### Power Generation and Distribution

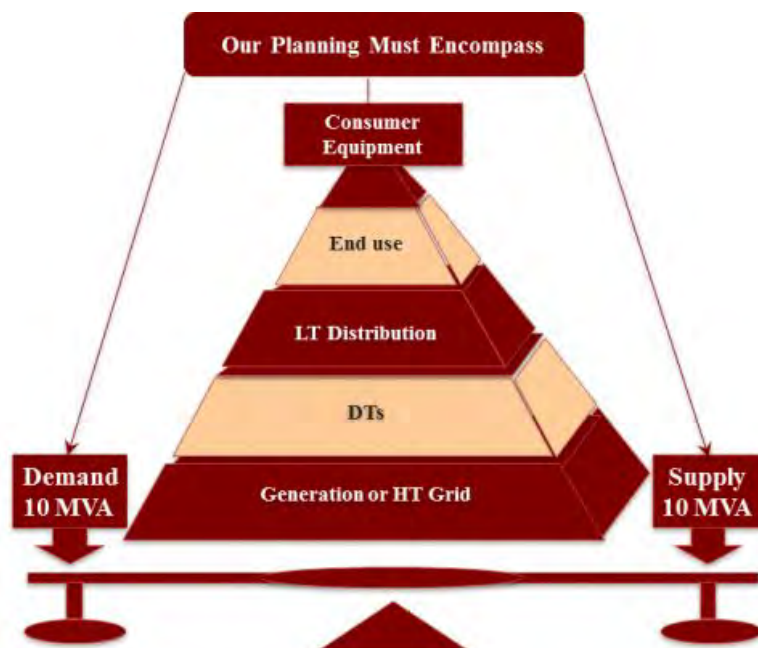
Electricity is one of the major components contributing to the hassle-free operations of the textile units. Textile industry is bound to suffer if cost of power (diesel) increases

or there is shortage of power. Shortage of power in textile cluster leads to load shedding thereby leading to drop in production. SSI's are unable to sustain in these conditions and this leads to the closure of the units.

States	Rs./ Unit
Maharashtra	7.01
Punjab	4.95
Tamil Nadu	5.50
Rajasthan	6.25
Gujarat	5.00
Karnataka	5.50
Andhra Pradesh	3.97

The combined net profit of BSE Sensex companies in the sector fell from Rs 5,166 crores in 2010-11 to Rs 1,845 crores in 2011-12, which is a decline of 64%. As cited by DK Nair, secretary general, CITI, the financial results of 287 textile companies listed on the BSE for 2011-12 have shown a sharp decline in net profits during the year compared to the previous year, despite a growth in net sales. This is indeed a worrying trend that shows a combination of increasing input costs and declining profits.

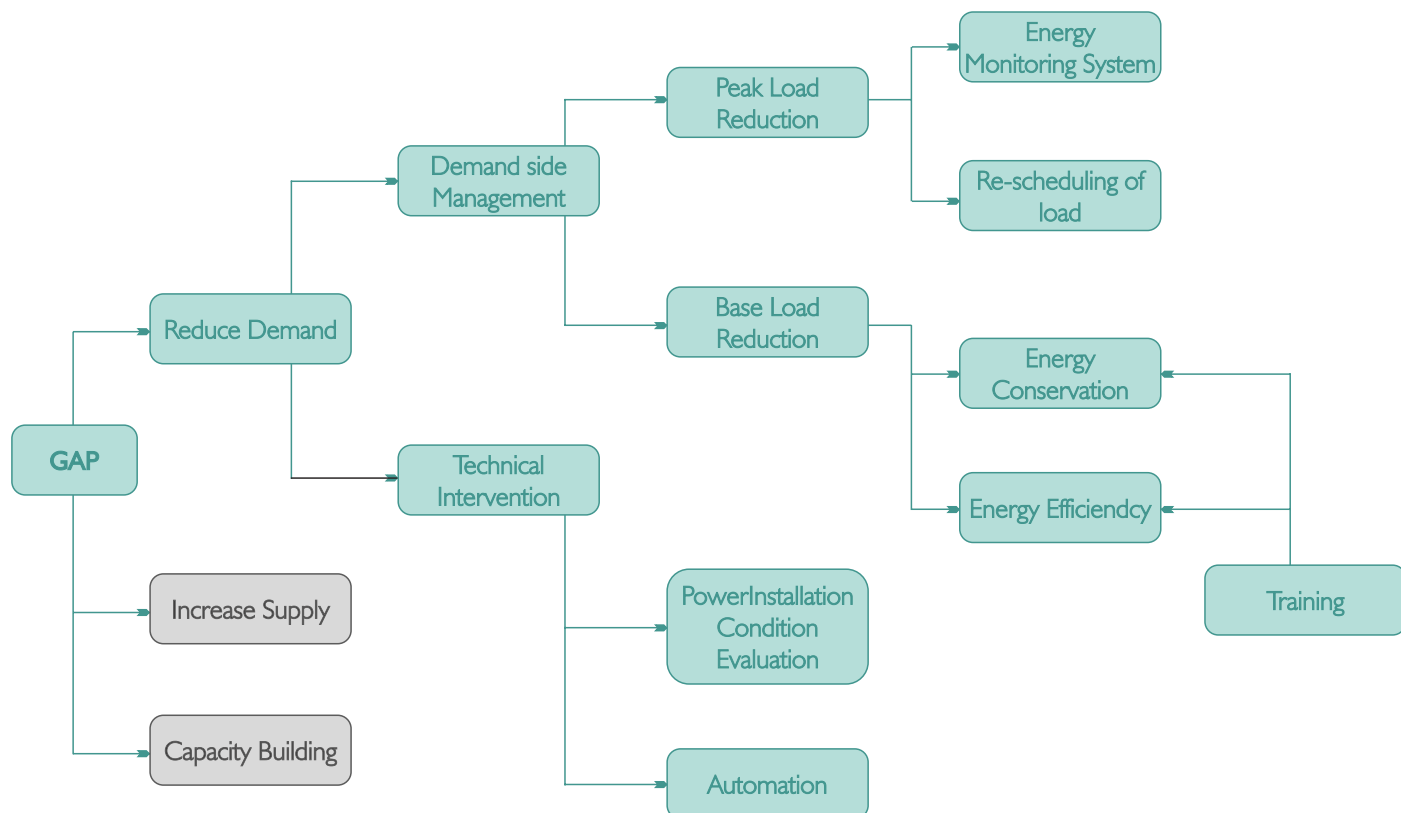
To balance our demand and supply of power, we must take into account the supply of power from the generation or HT grid to the specific machinery, increase supply by selecting secure & uninterrupted power supply, checking the voltage profile and going for cost effective power. While planning the supply of power, we should also consider the cost of infrastructure required to bring the power from the grid to the factory premises, power losses and any other concern to the environment. We should reduce demand by monitoring and controlling demand, optimizing energy consumption, improving productivity, building capacity and training human resources.







Energy cost is based on two part tariff – fixed charges and consumption charges. Billing parameters are based on FAC charges, TOU charges, penalties/incentives and electricity duty. If we plot a load curve for the measured power data for entire day for a week, we can observe from the graph that the power variations are with high troughs and crests which indicate fluctuations in the power received by the unit. The energy losses can be reduced by plotting the energy data against production and understanding the fixed energy consumption. One more graph can be plotted by plotting cumulative data of past 12 months of the production against cumulative data of past 12 months of the energy. With the help of these 2 graphs, power factor can be improved. To understand the demand side of power, month wise data of maximum load (KVA), connected load (KVA) should be plotted in to a graph and the actual gap regarding power issues should be identified.



Renewable Purchase Obligation (RPO) has been enforced wherein certain % of total power consumed by Obligated Entities should be renewable energy based. If RPO is not complied with, then amount equivalent to the number of RECs at Forbearance Price should be deposited by Obligated Entity. For complying with RPO, three options are available: 1) Invest in Renewable Energy Power Projects, 2) Purchase Renewable Energy Certificates and 3) Purchase Merchant Power.

Some of the solutions are suggested for power problems to be jointly considered by textile industry and government bodies. Textile industry should be given continuous and quality power supply. Government should ensure textile industry to have no power cuts and shut downs with uniform rates across country. Various sources of power and new energy development techniques should be explored. We should continuously monitor production and energy consumption and understand our needs.

### Conclusion

Looking at all these concerns, we need to devise a comprehensive strategy for a better Indian textile industry. The infrastructure requirements are huge and we need to

consider various land parcels; all equipped with infrastructure either for textile parks (or mini parks of 25 acres each) or through various industrial corporations. Govt. should give major emphasis on clearing all statutory requirements on fast track basis. In short it can be concluded as:

**ITP scheme:** ITP scheme is industry friendly, easy to implement and can generate interest in the industry. Hence this scheme should continue and generate investment and employment opportunities in the Indian textile industry. It also may have a module of land parcel of 25 acres which can serve as a Mini Textile park which can be created by existing textile entrepreneurs for their own expansions or for giving it to others as well.

**CETP:** Govt. should be completely involved in developing infrastructure. CETP should be made mandatory in any industrial park/ textile hub. CETPs may operate on BOOT principal.

**Power:** Special focus on power sector needs to be given to fulfill industrial need which is 24x7 especially for textile industry. Entrepreneurs should focus on various methodologies to reduce power tariff. Renewable Energy Obligation could be made mandatory in the coming days.

## TEXTILE EDUCATION & TEXTILE INDUSTRY... HOW TO BRIDGE THE GAP???



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Textile Graduate from VJTI

In recent years, textile industry is progressing with a positive growth and its 2<sup>nd</sup> to none other than China. Many new plants and textile hubs are investing in latest technology and state-of-the-art facilities. Corporate groups are investing in textiles, knowing its competitive advantage over other countries and understanding the ever changing global scenario.

**Still, why is there a disconnection in the textile education system and the textile industry? Why are young minds in the textile engineering colleges questioning their career choice?** They are disturbed and are unable to find the solution to this. On one hand, textile industry is deficient of textile engineers with desired skill levels and on the other textile engineering graduates are jobless. This is strange but true. Textile engineers, owing to the ignorance of the opportunities in textile industry, are shifting to different industries. This is creating a major loss of skilled and knowledgeable man power to the textile industry. In order to stop this loss, we all need to come forward and look at our basic education system from a different angle and help change the system and mindset of people who manage it.

### WHY IS THERE A GAP?

The gap between the Textile Education Institutions & Textile Industry is due to following reasons:

#### 1. Shift of industry from cities to D zones

There is a negative trend in the minds of people who are located in city mainly because of shifting of the industry from cities to D zones. This is because of the high infrastructure cost in cities like Mumbai, Ahmedabad, New Delhi etc. as compared to new textile hubs like Kolhapur, Ludhiana, Tirupur, Bhopal, Falta etc. However, this leads to negative publicity due to issues like land sale, union problems, strikes etc happening in big cities and backed by strong political activities.

#### 2. Education Institutions are away from textile industry

Textile institutions are situated in these big cities where mills are shutting down or shifting to new areas. Textile entrepreneurs are creating their empire at newly formed textile hubs and they are not bothering about their surroundings. They have their own compulsions, combinations and permutations and they do their own calculations based on business requirements. They have their own in-house training centres where they take new recruiters and train them as per their requirements irrespective of their knowledge of textile technology.

#### 3. Teachers and students are unaware of the industrial developments

The biggest worry in technical institutions is the right type of teachers who have practical knowledge and understanding of textile industry. There are very few institutions which are well-connected with the industry which have a strong hold on the education pattern which enables them to understand latest developments and requirements of the textile industry.

#### 4. Education pattern restricting students in the campus

With more theory base education pattern, students keep are bogged down and restricted to submissions of project work appearing for weekly exams. The concentration is more on age old traditional thinking of project work and securing higher marks in examinations by referring to text books and references in library than having connectivity with the industry.

#### 5. Not much research work

We are in traditional textile and clothing industry where there is

hardly any research work happening on functional improvements of textiles, more stress is on higher productivity and lower production cost. Even though it is a fashion industry, there is hardly any scope for creativity through innovative research work. It is more of colour and texture. Moreover, the fashion is coming from fashion hubs such as Milano, Paris and just getting copied over here in our part of the world.

#### 6. Students want jobs in cities whereas industry is in rural areas

Students prefer to stay in major cities where they can enjoy their free time with leisure and textile hubs are away from this glittering world.

#### 7. Students prefer white collar job whereas textile production houses are not that clean

In the textile industry one has to get dirty. This industry is full of dust, fly, fluff, etc. Technologists have to work with their own hands to fix mechanical problems. New generation prefers white collar job hence they prefer to switch over to IT and call centre jobs than textile jobs.

#### 8. Wide range of fields and areas of specialization

There is a very wide range of fields in the industry and hence students are ignorant as to which area of specialization to choose. A concise list is shown below:

**Production:** Involved in working directly on the machine

**Production planning:** Involved in planning the ways and means of production based on sales forecasting

**Consulting:** Involved in preparation of market research reports and techno-economic feasibility reports, assists in selecting technology, gives technical inputs for construction of textile units, etc

**Research and development:** Involved in developing new products and machines, improvise existing products and machines for maximising output and quality

**Sourcing:** Involved in deciding the quantity, quality and location of the raw material to be sourced from

**Marketing:** Involved in marketing of products, services and machines

**Maintenance:** Involved in fixing any problems related to machinery

**Quality:** Involved in testing and certification of products


**Merchandizing:** Involved in product design, selection, packaging, pricing and display that stimulates consumers

**Retailing:** Involved in conceptualizing and managing the stores

**Brand building:** Involved in creating a total brand experience at each point of customer

### CONCLUSIONS:

With the pointers below, we can have a drastic change in the education pattern for a better textile education and industry.

- ⊗ Scan industry specific needs - understand actual requirements by interacting with the industry.
- ⊗ Change education pattern - alter it as required by the industry adopt more practical approach.
- ⊗ On campus recruitments so students are aware of various options in the field.
- ⊗ Emphasis on liking of students this would facilitate students to work in their area of interest than entire syllabus of textile industry and have more choices.
- ⊗ Introduce courses as per the job role of that particular industry - this would be in line with ITI course but more specific.
- ⊗ Improve soft skills - develop few skill sets which are common to any job. This would also help them in getting higher responsibilities later in the career.
- ⊗ No more professors - facilitators. This would be a dramatic change. There is a need of industry experts creating new generation for the industry.
- ⊗ More importantly - Courses for facilitators. These facilitators needs to be trained properly so that they can "train the trainers" for the future. 



# Technical Textiles



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## INTRODUCTION

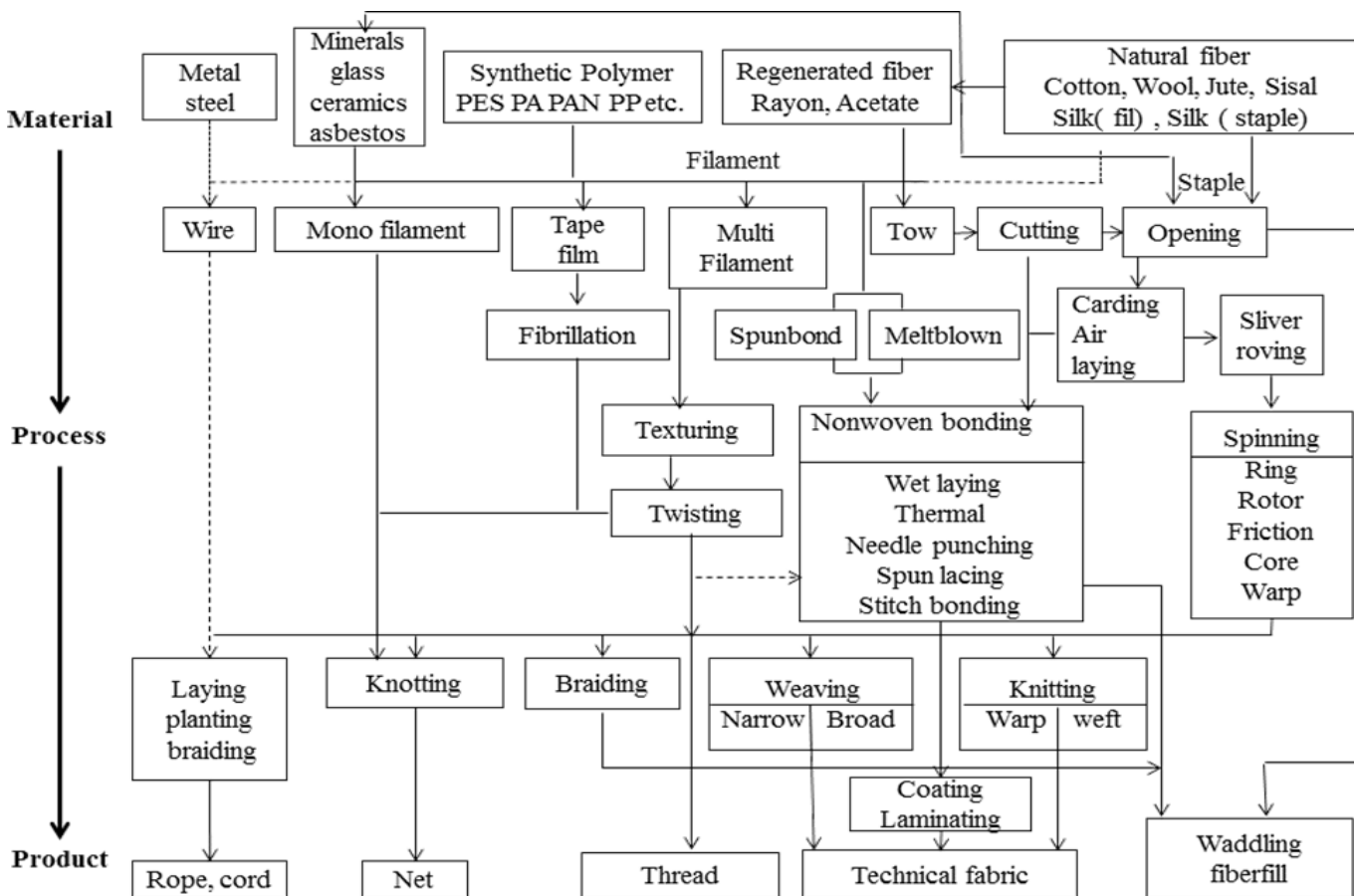
Technical textiles are 'advanced materials' for which the technical performance and physical properties are more important than features such as colour, pattern and price. This industry encompasses a vast array of materials, manufacturing processes and end use markets. Its growth and evolution is driven by the combination of sector lead by R&D and collaboration with other industries.

Technical textiles are used individually or as a component/part of another product. They can be used individually to satisfy specific functions, as a component or part of another product, to enhance the strength, performance or other functional properties of that product. They are also used as accessories in processes to manufacture other products. Other terms used for technical textiles are Industrial textiles, Functional textiles, Performance textiles, Engineering textiles, Hi-tech textiles etc.

Their wide range of applications, lack of competition and growing consumer and industrial demands make it a big opportunity area and an attractive option to invest in. Add to this, the factors conducive for the growth of manufacturing and consumption of technical textiles are also available within the country. Though India is the 2nd largest textile economy in the world after China; its contribution in the global technical textile industry is only 9% to the total consumption.

## TECHNICAL TEXTILE: MATERIAL, PROCESS, PRODUCT













Below is the chart showing the raw material and process required to produce different products of technical textiles:



PES: polyester, PA: polyamide, PAN: polycarbonate  
 Source: Handbook of Technical Textiles

## TECHNICAL TEXTILE SECTORS

Depending on the product characteristics, functional requirements and end-use applications, the highly diversified range of technical textile products have been grouped into 12 sectors:-

 <p><b>Agrotech</b></p>	 <p><b>Buildtech</b></p>
 <p><b>Clothtech</b></p>	 <p><b>Geotech</b></p>
 <p><b>Hometech</b></p>	 <p><b>Indutech</b></p>
 <p><b>Medtech</b></p>	 <p><b>Mobiltech</b></p>
 <p><b>Oekotech</b></p>	 <p><b>Packtech</b></p>
 <p><b>Protech</b></p>	 <p><b>Sporttech</b></p>



## MARKET OF TECHNICAL TEXTILES

The trend in the various sectors in the textile industry in many industrialized countries indicate that the use of conventional textiles has reached a static level and its manufacture has become highly competitive, often unviable and many companies are switching over to value-added technical textiles with capability to meet functional demands for precision applications.

As use of technical textiles is dictated by need, its pricing normally offers good margins. There is a steady growth of both consumption and production of technical textiles throughout the world. Sector-wise higher growth rates are for Indutech, Buildtech, Medtech, Geotech, Packtech and Agrotech.

Global		India	
Segment	% share	Segment	% share
Mobiltech	24	Packtech	35
Indutech	16	Clothtech	17
Sportech	15	Homotech	12
Others	45	Others	36
<b>Total</b>	<b>100</b>	<b>Total</b>	<b>100</b>

Globally, the consumption of the technical textiles is estimated to be around US\$ 139 billion in 2012. At present, USA is the market leader in technical textiles. The Indian Technical Textiles market has grown from Rs. 43,000 crores in 2007-08 to Rs. 63,000 crores in 2010-11 registering a CAGR of ~11%. The technical textiles segment in India has the potential to attract investment and create additional employment opportunities in coming years. Investments of US\$ 1.1 billion are expected by 2012 and employment is expected to increase to 1.2 million by 2012. It is forecasted to grow to Rs. 158,000 crores by 2016-17 with a projected growth percentage of 20% growth per annum to be achieved. There are over 3000 units manufacturing technical textiles in India, mostly in small-scale sector. About two-thirds of the production is of commodity products whereas only one-third is high-end.

The consumption of technical textiles is mainly concentrated in developed countries. In many developed countries technical textiles account for over 35% of the textile industry's output as against 19% for China and 5% for India. The technical textile industry in the developed world is maturing and the growth in



developed economies is expected to be moderate. In contrast, China, India and other countries in Asia, America and Eastern Europe are expected to experience healthy growth in the near future. The growth in Asia is expected to be 6.5% while it would be merely 2.2% in developed countries. India's consumption level is different than global level. The top three segments in the world vis-à-vis India are shown in the adjacent table.

India is limited to commodity products with very little presence in high tech segments. There is a general perception that technical textiles are predominantly produced in large scale sectors but it is true only to a limited extent. Technical textiles have been slowly but steadily gaining ground due to one or more of the reasons such as (i) Functional requirement (ii) Logistical convenience (iii) Health and safety (iv) Customization (v) Cost effectiveness (vi) User friendliness (vii) Durability and high strength (viii) Eco friendliness (ix) Light weight (x) Versatility

The accelerated growth of the Indian economy has also been impacting favourably on the growth of the technical textiles. With increase in investments in industry sectors, higher consumption and growing exports, the industrial sector is poised for a considerable growth. This will ultimately lead to increased demand of technical textiles products. Industry segment contributes to nearly 28% of the overall GDP and has seen excellent growth in past.

The income of Indian consumer is also growing very fast. This rise will enable them to make more discretionary expense on technical textile products viz. Homotech, Clothtech, Mobiltech, Sportech and Meditech. Per capita income of Indian consumer has increased from Rs. 46,492 in the year 2009-10 to 60,972 in the year 2011-12 at a CAGR of 15%. The fast growing middle class of 160 million with higher discretionary income is expected to increase to 267 million in 5 years. Significantly over 50% of the population is below 25 years – the vibrant segment for any market.

## GOVERNMENT INITIATIVES

Govt has taken initiatives to encourage growth of by providing interest subsidy and capital subsidy on the plant and equipments under TUFs. In order to provide infrastructure support at one place for thrust areas of technical textiles, the govt has already set up eight Centres of Excellence. These centres must be equipped with internationally accredited testing labs, training facilities for technicians from the industry, IT-enabled information centre and other requisite support to the technical textile entrepreneurs.

The eight Centres of Excellence are Bombay Textile Research Association (BTRA) in association with IIT, Mumbai for Geotech; Silk & Art Silk Manufacturing Industry Research Association (SASMIRA) for Agrotech; Northern India Textile Research Association (NITRA) for Protech and Southern India Textile Research Association (SITRA) for Medtech, both in association with IIT, Delhi; DKTE Textile & Engineering Institute for non-wovens, PSG College of Technology for industrial textiles, Ahmedabad Textile Industry's Research Association for composites and Wool Research Association for Sporttech. Ministry of Textiles has also launched the Technology Mission on Technical Textiles (TMTT).

## CONSTRAINTS FOR ENTREPRENEURS

In order to promote the production of technical textiles, the first and foremost need would be to attract entrepreneurs in the field of technical textiles. Entrepreneurs have so far kept away from the technical textiles in view of the deterrents such as below:

- Complex marketing aspects
- Huge capital cost in case of high-end technical products
- Requirement of huge working capital
- No experience for marketing tie-up
- Requirement of huge working capital
- Requirement of specific raw materials, machinery and equipment
- Absence of existing norms and mandatory requirements of technical textiles for specific end applications.

## SUMMARY

India is definitely the next destination hub for technical textiles - manufacturing & consumption which is still untapped. With the growing economy, wide range of applications, lack of competition and growing consumer and industrial demands, technical

textiles come out as a big opportunity area and an attractive option to invest in. There is a huge potential in India which is still untapped. A lot needs to be done at the Govt level, industry level and by financial and educational organizations to expedite the growth of this industry.

Some of the steps that are recommended to the Govt to foster the growth of technical textiles are:

- Increase awareness among consumers about technical textile products and their advantages such as better hygiene; cost effectiveness, protective usage etc.
- Introduce technical textile specific courses and specializations in the curriculum of various technical streams like textile, mechanical, and chemical engineering courses. This will result in the increased availability of skilled manpower for technical textiles.
- Frame rules for mandatory usage of technical textiles, such as fire-retardant fabric in cinema halls etc., seat belts and airbags in cars, to create urgency among both manufacturers and consumers to make use of these products.
- Provide subsidies to poor consumers e.g., farmers to buy Agrotech products.
- Establish guidelines and standards for the usage and manufacturing of products where the need to follow standards is necessary for correct usage.

Along with the encouragement from the Govt, the Indian Industrialists also have a large role to play to foster the growth of this industry. Some of the recommendations to the industry are (i) Strive for joint ventures and strategic alliances with international companies for transfer of technology and expertise in this sector (ii) Understand customer needs and cater to the fast growing domestic demand (iii) Invest in R & D, marketing and large scale projects to gain advantages of economies of scale (iv) Thrust upon supply chain effectiveness

Thus it can be summarized that there is a very huge potential in India to become not only a large market but also a manufacturing hub for technical textiles provided there are efforts on part of Govt, industry, academic and research organizations to ensure that the future of the Indian technical textile industry is smooth and fruitful.

## References:

- 1)Suvin Book of Knowledge
- 2)Handbook of Technical Textiles, Woodhead Publishing
- 3)Reports - David Rigby Associates
- 4)SASMIRA Texsummit 2007 report 