High-Speed Modern Weaving Facility

Textiles
Government of Gujarat
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What is Weaving?

- Weaving is the process of producing fabric by interlacing warp and weft threads. The machinery used in the process of weaving is known as weaving machine or loom.
- Dating all the way back to the Egyptian civilization, both the process and machines used in weaving have undergone phenomenal changes.
- The shuttle loom is the oldest type of weaving loom – it uses a shuttle which contains a bobbin of filling yarn that appears through a hole situated in the side. The shuttle is batted across the loom and during this process, it leaves a trail of filling.
- Shuttle looms can be effective and versatile – however, they have drawbacks such as being slow and noisy, the shuttle can sometimes cause abrasions on the warp yarns and at other times cases thread break.
- Modern shuttle-less looms overcome the problems faced by older shuttle looms.

Classification of Weaving Machines

- Weaving machines/looms fall into categories depending on the filling insertion mechanism utilized by the machine in the weaving process.
- Accordingly, the classification of weaving machines are as follows:
  - **Manual/Hand loom**
    - Primitive or vertical loom
    - Pit loom (Throw shuttle & Fly shuttle)
    - Frame loom (throw shuttle & fly shuttle)
    - Chittaranjan loom
  - **Power Loom** (Ordinary power loom & Automatic power loom)
  - **Modern Loom** – Air-jet, Water-Jet, Rapier, Projectile/missile loom, and Multiphase loom

Project Concept

- The proposed project involves setting up of a modern weaving facility at Savli, Baroda.
- The proposed facility will consist of modern power-loom weaving machinery and methods to produce textiles of the highest quality using machines such as Projectile, Rapier, Air-jet, Water-jet and Multiphase looms.
- The total cost of setting up of the proposed facility consisting of 4 Rapier looms is estimated to be INR 28.7 crores.

Source: [http://www.slideshare.net/88azmir/different-types-of-loom](http://www.slideshare.net/88azmir/different-types-of-loom); [http://textilelearner.blogspot.in/2013/07/different-types-of-loom-conventional.html](http://textilelearner.blogspot.in/2013/07/different-types-of-loom-conventional.html)
Modern Looms

Projectile Loom

- Projectile/missile looms are machines with a bullet shaped shuttle 90mm long and weighting ~40g called gripper projectile which is used to insert the weft thread into the warp thread.
- With this type of weaving machine – two or three cloths can be woven simultaneously. It is also possible to achieve weaving performances with breakage rate per square meter of cloth. 50% of the number of breaks would occur on a conventional loom.
- In projectile weaving machines there is lower warp breakage due to smaller warp shed, reeding with higher ration of air to wire (70:30), and beat up line being nearer to center of the reed between the two baulks.
- In the machines, projectile is passing through guides and therefore there is no reed to projectile or projectile to yarn contact.
- With the introduction of four/six colors weaving machine all the mechanical problems of the conventional pick & pick multicolored loom are eliminated.

Rapier Loom

- In rapier looms, the weft is inserted by the rapier in a mechanically modern and refined manner in comparison with the primitive methods of fabric production in which the weft was secured in a slot for a stick.
- The rapier loom doesn’t require dynamic forces or anything like the magnitude as those involved in the conventional loom.
- Weft insertion rate in a rapier loom is very much influenced by the method of weft control.
- Weft insertion rate is much higher when compared with conventional looms. Rigid rapiers can simultaneously be inserted in two sheds one above the other – useful for producing double plush in certain carpets.
- Looms which use rigid rapiers also eliminate the need to assist the rapier head through the warp shed.

Air-Jet Loom

- In air-jet looms the weft is inserted by means of an air-jet and is particularly useful as it can be used in weaving a wide variety of fabrics at a very high speed weft insertion rate of ~2000 mpm.
- As opposed to a conventional loom where a shuttle or shuttle like object is needed to insert the weft yarn, the air jet does away with shuttles and uses compressed air to insert the weft yarn.
- Air-jet looms have significantly higher weft insertion rate compared to conventional looms.
- The weft stop motion is machine controlled in air jets unlike conventional looms.
- In conventional loom, the mechanical or hand shuttle reach the weft thread to the fell of the cloth, but in air jet – compressed air is used to achieve the same and therefore – uniform let uip, take up, picking and bet up is possible. Air-jet looms also have automatic weft repair devices.

Source: http://textilelearner.blogspot.in/2013/07/different-types-of-loom-conventional.html
The first loom to use the water jet for insertion of weft was developed by Satyr. The weft and warp yarn must be insensitive i.e. hydrophobic in nature.

Thermoplastic yarns offer the advantages of severance of weft by a heated blade and the provision of a heat sevedge by fusing. The loom requires a miniature pump to feed water under pressure to the nozzle.

The phase number of a loom is defined as the average number of shuttles or weft carriers inserting weft simultaneously.

A multiphase loom with magnetic shuttle has spiral reed blade in line with the shuttle path which is used for beating-up.

The linear motor used in the loom for weft insertion. The loom has high efficiency, high speed and low weaving cost.

The multiphase loom can form many different sheds at different places, thereby enabling insertion of number of filling yarns one behind the other.

Analysis of the factors determining weft insertion rates of weaving machines shows that these factors are essentially the same on all looms in which shuttle or weft carriers are used – namely, conventional shuttle looms, gripper-shuttle looms, and multiphase looms.

Source: http://textilelearner.blogspot.in/2013/07/different-types-of-loom-conventional.html
Market Potential

Global Market Overview

► In 2013, world production of textile machinery annually was over USD 20 billion. The major manufacturers of textile machinery are Italy, Germany, France and China.

► Overall shipments of new textile machinery was slightly down in the year 2013, though remaining at a relatively high level.

► Worldwide shipments of shuttle-less looms fell slightly in 2013 from 86,450 machines to 83,420 – a decrease of 4%. The main cause was identified to be the decrease in shipments of water-jet looms.

► Rapier/projectile looms shipments increased by 2.5% from 23,250 in 2012 to 23,830 in 2013. Air-jet deliveries were also up in the year which increased by 7% from 2012.

► Main destination for shuttle-less looms was Asia where 76,390 or 92% of the looms were installed. China (66%), India (12%), Indonesia (3.7%) were major investors globally.

Indian Exports and Imports of Textile Machinery, Parts and Accessories

Indian imports for textile machinery parts and accessories are growing at a CAGR of 25% over the last few years, whereas exports are very low as compared to imports.

However, exports of textile machinery is also showing a positive trend.

Domestic demand for textile machinery and parts is increasing at a CAGR of 17% over the year 2013.

The domestic demand is increasing in the country, however, demand met by indigenous manufacturers is not even half of the total demand.

In Large part the problem is due to poor investment in R&D in textile machinery manufacturing industry.

Growth Drivers

- The power-loom industry has traditionally been a cornerstone of the Indian economy. The industry accounts for 11% of the industrial production or 4% of the GDP and 12% of total exports.
- In India, there are presently, 2.43 million registered looms which forms part of the power-loom industry.
- The power-loom industry accounted for around 58% of the total cloth production in India during 2014-15 and employed an estimated 6.1 million workers in the industry.
- The domestic weaving market is witnessing strong growth due to rapid increase in organized retail and disposable incomes. The market is estimated to reach USD 141 billion by the year 2021.

![Production in Power-loom sector](image)

**Strengths of the Indian Weaving Industry**

- India enjoys the benefit of having plentiful resources of raw materials. It is one of the largest producers of cotton yarn around the globe, and also there are good resources of fibres like polyester, silk, viscose, etc.
- There is a wide range of cotton fiber available, and has a rapidly developing synthetic fibre industry.
- India also has great competitiveness in spinning sector and has presence in almost all processes of the value chain.
- Availability of highly trained manpower is both, management and technical is available in India. Low wage rates are an advantage. The manufacturing cost of textile is reduced automatically due to lower wage rates.
- Installed capacity of spindles in India contributes to about 24% of the share around the globe. India therefore is one of the worlds biggest exporters of yarns.
- The apparel industry is the largest foreign exchange earning sector, contributing 12% of the country’s total exports.
- The garments industry is a very diverse industry in terms of size, manufacturing facilities, types of apparel produced, quality and quality of output, cost, requirement for fabric etc.
- The garments industry comprises of suppliers of ready made garments for both domestic and export market.

Source:

- [http://www.indiantextilemagazine.in/weaving/indian-weaving-industry-an-overview/](http://www.indiantextilemagazine.in/weaving/indian-weaving-industry-an-overview/)
Gujarat has a strong base across the entire textile value chain such as:

- Presently, over 1100 cotton ginning units are located in Gujarat – this number is set to increase to 1400 by 2017. Similarly spinning capacity is expected to double from current 2 million spindles to 4 million spindles in a year.
- Gujarat is the largest producer of man-made fiber and filament fabric with a 40% share in the country.
- Approximately one-third of the cotton in India is produced in Gujarat and it also accounts for more than half of the petrochemical output of India.
- Top Cotton producing state with a production of 12.5 million bales in FY 2015.
- Gujarat also has large number of manpower with required skill set attributable to better educational infrastructure and Industrial Training Institutes.

**Gujarat governments’ initiatives to flourish the textile industry**

The Government of Gujarat intends to invest ~US$3.28 billion in the textile industry by 2020. It aims to create 1 million jobs in the industry.

The Government is planning to introduce Technical Textile Mission to attract an investment of ~US$1.6 billion (~INR 100 billion) for establishing at least 2,000 technical textile manufacturing facilities.

Biotech Savli SEZ, spanning 14.73 hectare land, is located in Savli, Baroda, Further two new Technical Textile (TT) zones to be developed in Ahmedabad (110 Km from Baroda) and Surat district (150 km from Baroda).

Source
“Baseline survey of the Technical Textile industry in India”, Office of the Textile Commissioner, 29 March 2016
“Manufacturing Sector – Profile”, Vibrant Gujarat website, 7 October 2014
“Gujarat – Growth and Prosperity for All”, Vibrant Gujarat website, 25 August 2014
Gujarat - Competitive Advantage

High raw material availability

62% of the petrochemical fibres in India are manufactured in Gujarat. The petrochemical fibres include polyesters, poly-olefins, acrylic and polyamide which are widely used in manufacturing of technical textiles.

30% of the cotton produced in India comes from Gujarat. Surendranagar, Jamnagar, Rajkot, Bhavnagar and Amreli are the main cotton producing districts and all are located in close vicinity of Baroda.

The cotton production in Gujarat is also supported by its climatic and geographical conditions as the state has black soil mixed with lime and potash and ~50 cm rainfall that are optimum for cotton cultivation.

Gujarat offers an excellent educational infrastructure for the textile industry

- Gujarat has 28 Industrial Training Institutes (ITIs) that offer industrial training courses on Textile and Garment industry with an approximate intake of ~6,000 students per year.
- These institutes offers specialized courses in computer-aided dress making and dress design, pattern making and needle work.
- Maharaja Sayajirao University, one of the leading textile engineering university in India is located in Baroda.

Also Ahmedabad has many leading textile institutes which includes Ahmedabad Textile Industrial Research Association (ATIRA), Apparel and Leather Technics (ALT) Training College and National Institute of Design (NID).

Science and technology, and R&D activities of ATIRA extend over a wide field including – process optimization for improved process control in turn leading to better quality, cost reduction etc. ATIRA also looks at development of new products, processes and design of new instruments, equipment, and machinery.

Extension activities including consultancy, training for different levels from workers to top management in three categories, namely, General, Tailor-made, and In-house.

Source
“Gujarat – Growth and Prosperity for All”, Vibrant Gujarat website, 25 August 2014
“Manufacturing Sector – Profile”, Vibrant Gujarat website, 7 October 2014
Weaving Process

Weaving is an interlacement of warp ends (vertical) and weft yarn (horizontal). There are three stages of weaving as detailed below:

Warp Preparation / Warping

Warping is the first process of assembling individual ends into a sheet. The yarn to be warped from cone or cheese are placed in an orderly manner on a frame called creel.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Warper</td>
<td>In this process directly from the supply package either at one stage. Used in manufacture of coarse fabric, multilayer fabrics and industrial fabrics</td>
</tr>
<tr>
<td>Warping machine</td>
<td></td>
</tr>
<tr>
<td>Sizing</td>
<td>In this process – the warp is prepared which can withstand the stresses during weaving operation on a handloom or a power loom</td>
</tr>
<tr>
<td>Sectional Warping</td>
<td>Warping is done section by section with required number of ends per section</td>
</tr>
<tr>
<td>Warp-leasing</td>
<td>Preparing the warps for weaving by inserting the base. Establishing the warps ends in the sequence prescribed</td>
</tr>
<tr>
<td>Warp Tying Machine</td>
<td>It is required for tying the warp ends of already running sorts on the loom</td>
</tr>
</tbody>
</table>

Weft Preparation for shuttle loom

Weft yarn for shuttle loom is to be wound on the pirn using a winding machine called pirn-winding machine. For shuttleless looms the weft yarn is taken directly from the supply package either in cone or cheese form.

Weaving

Weaving is carried out using a machine called a loom. Looms fall broadly in two categories:

- Handlooms – weaving done by hand
- Powerlooms – weaving using power. Power looms are again categorized into the following:

<table>
<thead>
<tr>
<th>Type of Loom</th>
<th>Description</th>
</tr>
</thead>
</table>
| Shuttle loom | a) Plains looms  
b) Semi-automatic looms  
c) Automatic looms |
| Shuttleless loom | a) Projectile Weaving Machine  
b) Rapier Weaving Machine  
c) Airjet Weaving Machine  
d) Waterjet Weaving Machine  
e) Multiphase Weaving Machine |

Power-loom Process Flow

Yarn

Double Yarn

Dyeing & Washing (Hang Dyeing machine)

Drying

Winding

Warping

Power looms

Stitching

Finished Product
**Project Information**

**Location suggested: Savli GIDC, Vadodara**

- Savli GIDC in Vadodara district will be an ideal location to establish a plant for Technical Textile for Agri use.
- The site is owned and managed by Gujarat Industrial Development Corporation (GIDC).

<table>
<thead>
<tr>
<th>Savli GIDC: Key highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total area</strong></td>
</tr>
<tr>
<td><strong>Focus sectors</strong></td>
</tr>
</tbody>
</table>
Infrastructure Availability

Logistics & Connectivity

Baroda has an extensive outlay of existing infrastructure - rail, road and air - which make it an excellent investment destination.

**Rail**
- Baroda is connected via rail broad gauge to Delhi, Mumbai, Chennai, Bangalore and Ahmedabad.
- In 2016 annual rail budget, the Government of India announced establishing a Railway University in Baroda.

**Road**
- Baroda is well connected to all major locations such as Delhi, and Mumbai through the Delhi-Mumbai Industrial Corridor.
- NH 8 also connects Baroda with the major industrial centers in Gujarat, including Ahmedabad, Rajkot, Ankleshwar and Surat.

**Air**
- Baroda has its own domestic airport at Harni, which is well connected with the major metro cities in India such as Delhi, Mumbai, Chennai, Bangalore and Ahmedabad.

**Port**
- Savli (Baroda) is connected to the following ports:
  - Dahej – 150 Km
  - Kandla – 400 Km
  - Mumbai – 450 Km

Utility

**Water**
- Water supply for industrial purposes in the district can be obtained from three main sources, viz. Gujarat Water Supply and Sewerage Board (GWSSB), Irrigation canals and Sardar Sarovar Project.
- Sardar Sarovar envisages supply of water for drinking purposes, irrigation and industrial uses through branch canals.

**Power**
- Electricity is supplied from an existing 132 KVA sub-station operated by Gujarat Energy Transmission Corporation (GETCO) located in the premises.

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**Brief Industrial Profile of Vadodara District, MSME, Baseline survey of the Technical Textile industry in India**

Source

“Baseline survey of the Technical Textile industry in India”, Office of the Textile Commissioner, 29 March 2016


Key players and suppliers

### Major Textile Players

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wardhaman Textiles</td>
<td>Ludhiana, Punjab</td>
</tr>
<tr>
<td>Arvind Mills</td>
<td>Ahmedabad, Gujarat</td>
</tr>
<tr>
<td>Bombay Dyeing</td>
<td>Mumbai, Maharashtra</td>
</tr>
<tr>
<td>Raymonds</td>
<td>Mumbai, Maharashtra</td>
</tr>
<tr>
<td>Grasim</td>
<td>Mumbai, Maharashtra</td>
</tr>
<tr>
<td>Reliance Textiles</td>
<td>Ahmedabad, Gujarat</td>
</tr>
</tbody>
</table>

### Machinery suppliers

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Manufacturers of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kirloskar Toyota Textile Machinery Pvt. Ltd.</td>
<td>Karnataka</td>
<td>High-Speed Ring Spinning Frame</td>
</tr>
<tr>
<td>Rieter India</td>
<td>Satara</td>
<td>Fibre Preparation, Spinning Preparation, Ring Spinning, Compact Spinning, Air-Jet Spinning</td>
</tr>
<tr>
<td>Dornier machinery India private limited.</td>
<td>Mumbai</td>
<td>Rapier weaving machine, Air-jet weaving machine</td>
</tr>
<tr>
<td>Karl Mayer Textilmaschinenfabrik GmbH</td>
<td>Mumbai</td>
<td>Warp Knitting Machine</td>
</tr>
<tr>
<td>Itema Weaving (India) Private Limited</td>
<td>Mumbai</td>
<td>Projectile weaving machine, Rapier weaving machine, Air-Jet Weaving Machines, Multi-phase weaving machine, Custom-built weaving machines</td>
</tr>
<tr>
<td>Tsudakoma Corp</td>
<td>Mumbai</td>
<td>Airjet, Waterjet Weaving machines and Sizing machines for Technical Textiles / Industrial fabrics</td>
</tr>
<tr>
<td>Laxmi Machine Works</td>
<td>Coimbatore</td>
<td>Card Sliver System, Combining system, Ring Spinning System</td>
</tr>
</tbody>
</table>

### Potential collaboration opportunities

► Opportunity to collaborate with global technical textile players or work as contract manufacturers
► Players can partner with associations like The Centre of Excellence for Agrotextiles (COE-Agrotech), The Man-made Textiles Research Association (MANTRA), Surat Navsari Agriculture University (NAU), Dept. of Textile Technology, Indian Institute of Technology (IIT), Delhi.
► The major activities under COE-Agrotech are Setting up of a Demonstration Pilot Plant, creation of testing and accreditation of laboratory, setting up of information centre and training centre. It also assist in entrepreneurship development and provide facilities for incubation centre and development and market research.

Source
## Key considerations

### Raw material availability

- Over 75% of the fibers used in the production of technical textiles are man-made or synthetic fibers. The raw materials used in the manufacture of such fibers are dependent on fossil fuels, and, hence, their cost is high.
- The scarcity of these raw materials has also led to an increase in the price of synthetic and inorganic fibers, spun and filament yarns, and polymers.
- Major companies producing synthetic fibers in India include:
  - Reliance Industries Limited
  - Raymond synthetics
  - Indo Rama synthetics
  - JCT
  - Shree synthetics
  - Modipon
  - Sanghi polyester

### Lack of environmental and safety regulations

- Another major challenge faced by the Technical Textile market in India is the absence of environmental and safety regulations. No significant attempts have been made by the government to boost the market development of technical textiles.
- For example, there are no legislations for the mandatory use of fire retardant fabrics in high-rise buildings, and in public places such as exhibitions and cinema halls.

### Low investment in R&D and product innovation

Research and development, product innovation, quality management, testing, and evaluation hold the key to the success of capturing a substantial share of the competitive global market for technical textiles.
- High-quality testing facilities for accurate and relevant evaluation of technical textiles must be made available in India to satisfy the stringent and critical requirements of performance-related product parameters in the global market.

Source: Global Technical Textiles Market 2015-2019, Technavio via EMIS Database
Cost of setting up modern weaving facility at Savli, Baroda

The total cost of installation of 4 rapier loom is estimated at **INR 28.7 lakh**, which includes panel, switches, cabling. Other cost for implementation of the proposed rapier loom is estimated to be INR 27.68 lakhs – this includes he cost of equipment/machinery, cost of fabrication (and/or) commissioning charges.

Detailed financial analysis of Rapier loom (4 nos):

<table>
<thead>
<tr>
<th>Project components &amp; specifications</th>
<th>Cost (INR crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land (Area: 3.0 acres – 12,138 square meters) Rate: (INR1,400 per sq. mtr. as of May 2016)(^1)</td>
<td>1.70</td>
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<tr>
<td>Auto looms cost and compressors (4 nos)</td>
<td>24.60</td>
</tr>
<tr>
<td>Panel, switch and cabling, electricity modifications etc</td>
<td>1.40</td>
</tr>
<tr>
<td>Erection &amp; Commissioning</td>
<td>1</td>
</tr>
<tr>
<td>Total Investment</td>
<td>28.7</td>
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</table>

Financing Pattern

| Source: [http://www.dcmsme.gov.in/reports/solapurtextile/12autoloom04.pdf](http://www.dcmsme.gov.in/reports/solapurtextile/12autoloom04.pdf) |  |
## Projected Profitability

<table>
<thead>
<tr>
<th>Particulars/Years</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>Revenue through savings</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
</tr>
<tr>
<td>Total Revenue (A)</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
<td>12.83</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O&amp;M Expenses</td>
<td>1.08</td>
<td>1.13</td>
<td>1.19</td>
<td>1.25</td>
<td>1.31</td>
<td>1.38</td>
<td>1.45</td>
<td>1.52</td>
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<tr>
<td>Total Expenses (B)</td>
<td>1.08</td>
<td>1.13</td>
<td>1.19</td>
<td>1.25</td>
<td>1.31</td>
<td>1.38</td>
<td>1.45</td>
<td>1.52</td>
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<tr>
<td>PBDIT (A)-(B)</td>
<td>11.75</td>
<td>11.69</td>
<td>11.64</td>
<td>11.58</td>
<td>11.52</td>
<td>11.45</td>
<td>11.38</td>
<td>11.31</td>
</tr>
<tr>
<td>Interest</td>
<td>1.83</td>
<td>1.76</td>
<td>1.42</td>
<td>1.00</td>
<td>0.52</td>
<td>0.08</td>
<td>-</td>
<td>-</td>
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<tr>
<td>PBDT</td>
<td>9.91</td>
<td>9.93</td>
<td>10.22</td>
<td>10.58</td>
<td>11.00</td>
<td>11.37</td>
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<td>11.31</td>
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<tr>
<td>Depreciation</td>
<td>1.43</td>
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<tr>
<td>PBT</td>
<td>8.49</td>
<td>8.51</td>
<td>8.79</td>
<td>9.16</td>
<td>9.57</td>
<td>9.95</td>
<td>9.96</td>
<td>9.88</td>
</tr>
<tr>
<td>Income Tax</td>
<td>-</td>
<td>1.91</td>
<td>3.47</td>
<td>3.60</td>
<td>3.74</td>
<td>3.87</td>
<td>3.87</td>
<td>3.84</td>
</tr>
<tr>
<td>Profit after Tax (PAT)</td>
<td>8.49</td>
<td>6.60</td>
<td>5.32</td>
<td>5.56</td>
<td>5.83</td>
<td>6.08</td>
<td>6.09</td>
<td>6.04</td>
</tr>
</tbody>
</table>

Source: [http://www.dcmsme.gov.in/reports/solapurtex.html](http://www.dcmsme.gov.in/reports/solapurtex.html)
### Approvals & Incentives

#### Approvals

For approvals, the project report should be submitted to respective District Industries Centres (DICs). DIC will forward the proposal to Industries Commissioner who will submit the report to State Level Approver Committee (SLAC) for final approval.

#### Incentives from Government of Gujarat

- 5% interest subsidy on bank loans for five years for those who establish new plants for value addition chain like ginning, processing, weaving, knitting and machine carpeting.
- 7% interest subsidy on new plant and machinery for five years for cotton spinning, garment manufacturing and technology upgradation.
- Refund of value added tax (VAT) on expansion of new units in spinning and power tariff concession to cotton spinning and weaving units.
- Financial assistance for skill development centres, for technology acquisition and also for supporting energy and water conservation as well as for environmental compliance.

#### Incentives from Government of India

- 5% credit linked interest subsidy under TUFS (Technology Upgradation Fund Scheme) scheme on purchase of Technical textile machinery approved by government.
- Scheme for Integrated Textile Parks (SITP) : 40% capital subsidy to a maximum of INR40 crore on total project cost on projects approved by government. Also, 100% FDI allowed for textile sector.
- The basic custom duty on imported technical textile machinery has been reduced from 10% to 5% and support to start-ups.

**Source**


“Manufacturing Sector – Profile”, Vibrant Gujarat website, 7 October 2014
This project profile is based on preliminary study to facilitate prospective entrepreneurs to assess a prima facie scope. It is, however, advisable to get a detailed feasibility study prepared before taking a final investment decision.