RNI Regd. No.: DELENG/2003/12320
Postal Regn.No.: DL(S)-17/3036/2016-18
Posting Date: 3-4th

StitchWorld

July 2018 | Pages 48 | INR 150/- | Technology and Management in Woven and Knitted Product Industry | www.apparelresources.com

15 Understanding Car Seat Manufacturing HH Interior's Way

32 Big Brands are Leaving Money on the Cutting Table

38 Six Impressive Technologies in Flat Seaming

6 Reason, Why you Must VISIT GARTEX 2018!

Be a part of one-of-its-kind event completely dedicated to the garmenting & textile industry

A unique sourcing platform with specialised zones highlighting specific innovations

Interact with manufacturers /suppliers with different strengths, diversified product profile and expanded product range

Meet the industry specialists from international garmenting & textile manufacturing arena

Get an overview of the complete garmenting industry in this part of the world

Avail the access to conferences, workshops and related events during the three days of extreme business

India's Comprehensive Exhibition On
Garment & Textile Machinery, Fabrics, Accessories & Allied Industries

GARTEX 2018

Diversified Exhibit Segments

- GARMENTING & APPAREL MACHINERY
- EMBROIDERY ZONE
- FABRIC & ACCESSORIES PAVILION
- DIGITEX
- Denim SHOW

18 - 20 August, 2018

Hall no: 8, 9, 10 & 11
Pragati Maidan, New Delhi, India

Platinum Sponsor: mouvent, A Bobst Group company

VIP Lounge Platinum Sponsor: creora, it's in our every fiber

Supported by

Denim Trends Zone Sponsors: Arvind, Raymond UCO Denim Private Limited

Skill Development and Knowledge Partner: ATDC, The Apparel Training & Design Centre

* Children below 16 yrs not allowed.

Scan for Online Registration

Organizer
MEX Exhibitions Pvt. Ltd.
MEX Exhibitions Pvt. Ltd. + 91-11-46464848 info@mexexhibits.com www.gartexindia.com

StitchWorld
VOL. XVI • ISSUE 5
www.apparelresources.com
Technology and Management in Woven and Knitted Product Industry

Head Office
Apparel Resources Pvt. Ltd.
B-32, South Extension, Part-I,
New Delhi-110 049
Phone: 011-47390000
E-mail: editor@stitchworld.net,
contact@stitchworld.net
Web associate: www.apparelresources.com

Editorial Enquiry
E-mail: editor@stitchworld.net,
contact@stitchworld.net
Phone: 011-47390000

Printing
Ask Advertising Aids Pvt. Ltd.
88, DSIDC, Okhla Indl. Area, Phase-I,
New Delhi-110 020 Phone : 26816824

Tech Byte

8 DO YOU CONDUCT A PSYCHOMETRIC TEST ON THE APPLICANTS WHILE RECRUITING?

News Track

10 JAPAN: REGISTRATIONS OPEN FOR 12TH EDITION OF JIAM 2020

Product Management

15 UNDERSTANDING CAR SEAT MANUFACTURING HH INTERIOR'S WAY

Production Management

18 FUTURE OF APPAREL – DIGITAL APPAREL MICROFACTORY

32 BIG BRANDS ARE LEAVING MONEY ON THE CUTTING TABLE

Event

22 GARMENT TECH PROVIDER EASTMAN ARMS US MANUFACTURERS WITH SINGLE-PLY CUTTERS

23 VIBEMAC BETS ON MEXICO DENIM INDUSTRY WITH ITS RANGE OF JEANS AUTOMATS

24 DUERKOPP ADLER SUPPORTS 'MADE IN USA' WITH A STRONG DEALERSHIP NETWORK

26 MORGAN TECNICA TAKES ON THE US MARKET WITH ITS SINGLE-PLY CUTTING MACHINE

27 SEWN GARMENTS ARE NOT HANDCRAFTED, BONDED ONES ARE: H&H

28 NAVIS TUBETEX EXPANSION SPREE TOUCHES INNOVATION AND SUSTAINABILITY

29 LECTRA EMPOWERING THE FASHION INDUSTRY IN THE ERA OF INDUSTRY 4.0

15

Ajit K. Banga (R), Assistant Vice President (Operation) with Rohit Bhalla, Vice President, HH Interior & Auto Components Ltd., Faridabad

34

Sales assistants in store help shoppers in their shopping or in taking a decision

SW Poll

30 WILL MASS APPAREL MANUFACTURING RETURN TO THE USA?

Retail Technology

34 SMART GLASSES CHANGING THE DYNAMICS OF RETAIL SALES ASSISTANCE

Production Technology

38 SIX IMPRESSIVE TECHNOLOGIES IN FLAT SEAMING

Tech Track

41 USA: TUKATECH'S 3D TECHNOLOGY HELPS APPAREL MANUFACTURER LPH APPAREL SHORTEN PD TIME


It's time to become
FASHION/ABLE
The power of digitalization is in your hands with Lectra Fashion PLM 4.0. Start your journey to a digitalized supply chain and get closer to consumers than ever before. Respond to shifting demands, increase your agility and work smarter with real-time data to meet your customers' fashion desires. It's what we call being FASHION/ABLE.
Be FASHION/ABLE with Lectra Fashion PLM 4.0
Lectra Technologies India Private Limited
#29, Unit No. 306, Embassy Square
Infantry Road, Bangalore – 560001, India
E-mail: india.marketing@lectra.com, Tel. +91 80 40018009
LECTRA

EDITORIAL

Saving cost is one of the biggest agendas for every garment exporter today… Every company is looking at how to reduce its running cost and save enough so that the bottom line is healthier.

While some companies are working within the factory to squeeze out an extra penny, others are exploring new destinations that are cost-effective. All said and done…, a solution has to be found!

When the 'cost' bug hit the industry many years ago, we saw factories being shifted from established hubs to interiors outside the city limits. While many Delhi based companies opened factories in Manesar, the fate of most of them is a sad story today…, only a few found success like Sarita Handa; others have either rented out the premises or are operating at below optimal levels.

The biggest reasons that exporters quote when questioned about the failure, is difficulty in getting trained manpower and the travelling woes of the middle management leading to fast turnarounds.

Similarly, other hubs too saw movement to the interiors… Laguna went to Kanakapura on the outskirts of Bangalore, while GO GO International travelled to Holenarsipur, Hassan, again on the outskirts. How fruitful these moves have been, is debatable and open to interpretation.

Armed with past experiences, companies are now therefore more keen to travel to Tier-2 cities, being backed by State Government support. Here, besides the initiatives being offered, which are quite attractive, there are facilities like airports, schools, hospitals, etc, which a company needs to set up a people-oriented industry like garments.

I have been saying for long that moving to outskirts is not a very viable option because the ecosystem for conducive business is not available. Rather the smaller cities like Ranchi, Bhubaneswar, Gandhinagar are much better options.

The number of investments that we are seeing in these cities from companies like Shahi, Matrix, Pearl, Orient Craft, Texport, Arvind, Madura Garments, Page Apparel, Kishore Exports, Shakti Wear, Meenakshi Ltd., JP Sports Apparel to name a few, is impressive. I am sure once these factories set the trend and prove successful, many more investments can be expected.

While in India, we are still struggling to save cost mostly from workers' wages, the West is looking at high technology to get manufacturing back without the pressure of wages!

Exhibitors at Texprocess Americas this year echoed the future of apparel industry with the theme 'Digital Apparel Microfactory': A manufacturing set-up where various different technologies are combined together to fill customers' orders in quantities as low as one. It can be started in even a small room and has become the strength for manufacturers based in USA. This issue of *StitchWorld* highlights this trendsetting concept and how the companies are embracing it.

Exploring new product categories apart from apparel has always been *StitchWorld's* interest. This time, our team visited HH Interior's factory and explored the quality and manufacturing aspects of car seat covers. A must read…

Continuing with our Poll section, read interesting views from industry experts on the topic 'Will mass manufacturing return to the USA?'

Deepak Mohindra
Editor-in-Chief

Read and comment on my blog at
http://stitchworldmagazine.blogspot.com

TECH BYTES

Have you heard about psychometric test? Do you conduct a psychometric test on the applicants while recruiting? What does a psychometric test result indicate about a candidate? Should a psychometric test be conducted for only management employees or for all levels of workers including sewing machine operators?

Does psychometric score reflect any personality trait? What would you do if a candidate with a very good subject understanding is found to be weak in psychometric score?

Yes, ever since I started my professional career, I have been associated with conducting psychometric tests. We are a recruitment firm and 50 per cent of our clients conduct psychometric tests before confirming any new hires.

Since I am long associated with this, I have noticed that it doesn't have to do with the size of the company or the level of the position, rather it has more to do with how people-driven and process-driven are the company's ethos.

The first thing a psychometric test tells us is the consistency in thought process that a candidate possesses. Specifically, it points out to the ability to take risks and to be proactive at work.

It clearly identifies leadership skills and the type of leader an individual will make. More often, it reveals the natural traits of a candidate, so that the company can do a good fitment analysis.

And yes, psychometric tests should be done for all employees. However, there are some restrictions due to which the same test structure cannot be followed for all employees. Different tests will check for different things, thus there is always a need to customise tests according to employee groups.

An overall score cannot be treated as a cut-off or a good or bad score. We have to analyse the test to note, if the candidate has scored well on the personality traits that are critical to the job in question.

While conducting these tests, I will not look at overall score of the person. His/her subject matter understanding should be supported by some additional, positive personality traits, like stability or ability to work hard or team play to succeed in the job. If the person passes these parameters, only then I will hire him/her.

DEEPA SACHDEV

Principal, Human Capital, New Delhi (India)

Yes, I have heard of psychometric test and in fact, I had to take one for my interview with IKEA. This is a technique used by companies in conjunction with a face-to-face interview. It is used to measure knowledge, abilities, attitude, and personal traits of the employees to be hired. The test helps to see if the candidate can fit into the role. Also, it studies differences between individuals and enables them to get a deeper insight into personality traits, style of working, what motivates them etc. It is also an objective way to test candidates against each other.

I feel psychometric test should be used for higher levels of management at leadership levels. Domain skills and experience cannot be replaced by the test, especially in our garment industry. It should be used as a guideline only.

There is always a debate on what to do if the candidate is low on psychometric but good at the subject. I would rather select such a candidate as, in my field of quality, subject knowledge and experience are more important.

SATISH NAIK

Apparel Industry Consultant, India

There has been a proliferation in the usage of psychometric instruments in the corporate world in recent times. Each of these instruments

have their own 'scientific theory' with lots of data to back their 'reliability', 'validity' and their established ethnic norms. Almost all the instruments attempt to describe the person in terms of his or her behavioural preferences, as though the person taking the instrument can be described objectively. The reliability, and validity of data is only indicative of the accuracy of this objective prediction.

Most organisations use these psychometric instruments either as part of their recruitment process, or as part of their leadership/people development efforts. Some organisations also use these to profile the team composition as part of their team development efforts. In these applications, an implicit expectation of the organisation is an objective prediction of the individual's behavioural preferences/propensities. However, it is important to note that irrespective of established reliability and validity, the behavioural profile presented is only a probability, and one need not assign any certainty to that.

Approaching the psychometric instrument output with certain probability allows one to explore and learn more about the person; deterministic view towards these instruments (taking the profile presented by the instrument to be a true reflection of the individual) closes the door for these explorations, and ends up only in affirmations, negations and explanations.

Use of psychometric instruments in the recruitment process involves mapping the 'competencies' required for the role for which the candidate is being considered; and using the result from the instrument to assess the extent of fit between the required competencies for the role and the innate preference that the candidate shows for these from his instrument profile data.

This approach requires that the role competencies are well mapped, and that the organisation has developed the potential for understanding and mapping competencies for the various roles. Most instruments would caution against using the result from the instrument and its comparison with competency requirement as a basis for any direct recruitment decision. Instead, they encourage the organisations to use the output from the instrument as an input to validate and confirm coherence and disconnects that the instrument offers in relation to other data sources such as CV, reference checks, interviews etc. Often this is done as part of a last stage interview process.

Thus, the profile data from the instrument is at best used as a preparatory tool prior to the interview, for identifying aspects that need to be probed for clarifications. From my experience of using the psychometric instruments, I have found that these instruments provide additional data for consideration of decisions rather than aiding in 'objective' decisions.

The use of these instruments in people/leadership development interventions is also quite similar to the recruitment application, except that here, it is not used as data for recruitment decision process but as data for coaching and other such developmental interventions.

GANESH CHIDAMBARAKRISHNAN
Associate Consultant, Flame TAO Knoware, India

TechByte
StitchWorld AUGUST 2018 Question

Embroidery was once the strength of Indian garment and textile industry. However, despite being a sector having an extensive workforce of approximately 22 lakh, India is losing orders of embroidered garments to Bangladesh, Vietnam and Cambodia which, until a decade back, were considered laggards.

What could be the possible reasons for India's recently subdued performance in exporting embroidered garments?

Do you think India needs to revamp its embroidery industry by introducing skill-sets and by making better use of the available technology?

Write your comments to us by 10th July 2018 at: *editor@stitchworld.net* or post your views online through our website: www.apparelresources.com

Japan: Registrations open for 12th edition of JIAM 2020

The Japan Sewing Machine Manufacturers Association (JASMA) has recently announced that it has started accepting applications of exhibitors for the 12th edition of Japan International Apparel Machinery & Textile Industry trade show.

The exhibition, widely known as JIAM, will be held from May 20-23, 2020 at INTEX Osaka in Japan. The exhibitors from all across the globe will get a platform to showcase their latest technologies, new innovative products related to sewing, apparel manufacturing and complete textile value chain.

The four-day event will revolve around the theme – 'JIAM 2020, the Forefront of the Future Technology and Master Craftsmanship Collaboration'. According to the organisers, the industries in the world are rapidly adopting digitalisation by introducing concepts like IoT, Artificial Intelligence and big data. Therefore, JIAM 2020 will also promote the latest innovative solutions to fulfil the need of the apparel industry.

Further, the trade show will also focus on combining existing skill-sets with the latest technology. In addition, a wide range of products and services will be available not just for the apparel manufacturers but also for retailers and supply chains.

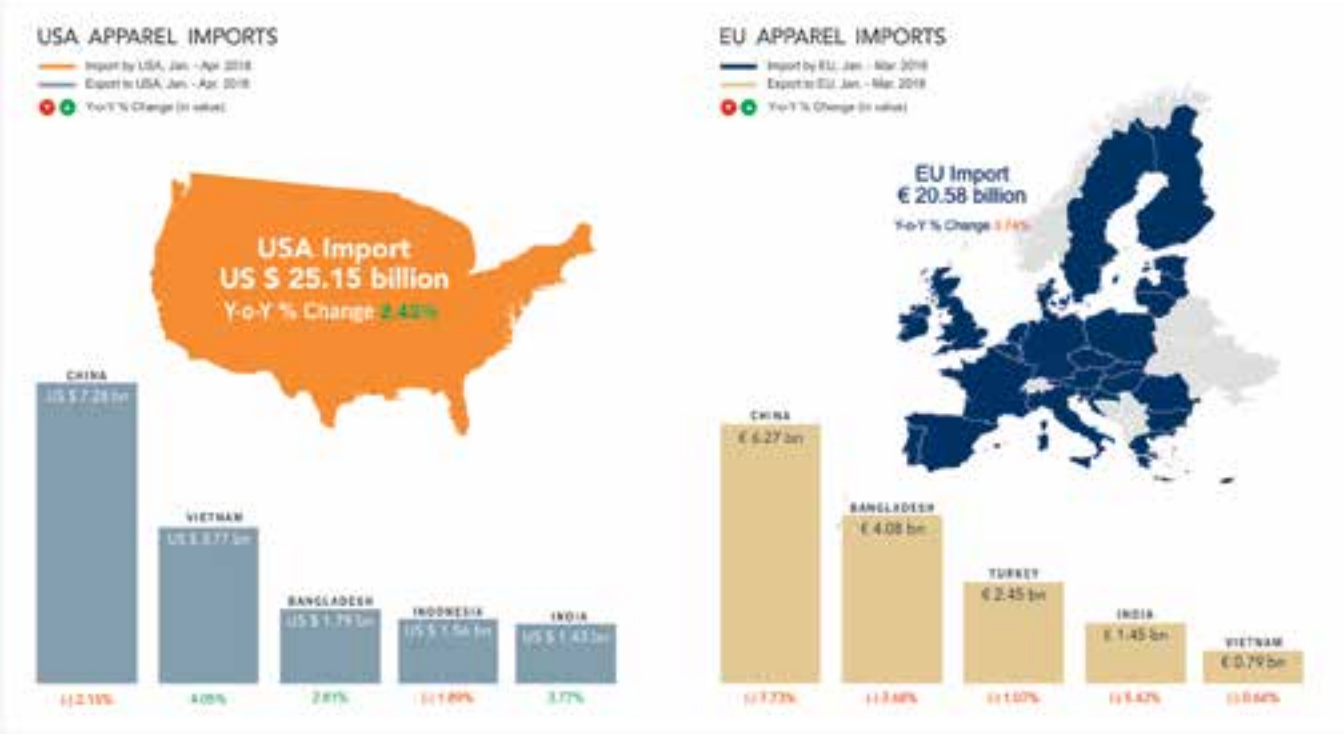
A Special Exhibitor Support Scheme(SESS) has been designed to assist both first time exhibitors as well as returning exhibitors. Moreover, Messe Frankfurt Japan Ltd. will also provide information and assistance to both the

exhibitors and the visitors while lending a helping hand to plan the event.

It is worth mentioning that Messe Frankfurt is a renowned name which holds a rich experience in organising international trade shows. The company will also promote JIAM 2020 by putting its global network to use.

JIAM's last edition in 2016 witnessed 11,590 Japanese visitors and 3,667 visitors from 72 countries and regions, including Bangladesh, China, India, South Korea, Republic of Sri Lanka, Taiwan, and Vietnam. Therefore, it is predicted that the upcoming edition will be a great opportunity for the exhibitors to explore the Japanese market.

TRADE INFORMATION



Bringing world class technology to the garment and textile industry

brother — Driving a New Era in Sewing Technology

S-7300A
Single Needle Direct Drive Lock Stitch with Electronic Feeding System and Thread Trimmer

S-7250A
Single Needle Direct Drive Lock Stitch with Electronic Feeding System and Thread Trimmer

PEGASUS

Safety Stitch Machines, Overedgers Double Chainstitch Machine

M900/DDM Series

- Quick and Easy Installation
- Sealed Motor Coil
- Dust Protection and Heat Prevention
- No Coupling
- Direct Transmission and Easy Setup
- High Power, 550W

Lo|ko

Mj-3400
Single Needle Lock Stitch Machine

ST-12
Digital Controlled Fully Programmable Button Feeder Attachment

St-10
Button Wrapping and Knotting Machine

ROTONDI group — A step ahead

Trouser Finisher with High Productivity for both Casual and Denim Trousers

TF/AL ELC
Trouser Finisher for Non-pleated Casual Wear

Steam Generator MINI 5

1980 SERIES
Rectangular Ironing Board, with Vacuum or Vacuum and Blowing

brother · PEGASUS · Sil Italy · ROTONDI · Lo|ko · me · Nippon
Eastman · Rehoo · JACKO · NISSIN · melco · MARTIN GROUP · LYGOLD

magnum

Authorised Distributor:

Magnum Resources Pvt. Ltd.

HEAD OFFICE: Sara House, B-8, Sector-4, Noida 201 301 (U.P.)
Phone: +91 120 4667272
Fax: +91 120 4667292
E-mail: info@magnumresources.co.in
www.magnumresources.co.in

LUDHIANA	: +91 161 5058963	accountldh@magnumresources.co.in
MUMBAI	: +91 9321742737	office.mumbai@magnumresources.co.in
KOLKATA	: +91 9830047753	manas@magnumresources.co.in
AHMEDABAD	: +91 9724449260	ahmedabad@magnumresources.co.in

India: Textile and garment tech fairs set to clash

From decades, the Indian garment industry has felt the need for world-class sourcing and technology events. But instead of working in that direction, each organiser is only concentrating on putting up their shows together, without any consideration of what the visitors/industry wants.

Not so surprising, this year as well, the clash of dates of similarly placed events is a concern for most of the industry stakeholders. The irony is that most of these events are well-established and many in the industry would like to participate/ visit all the fairs.

India International Garment Fair (IIGF), the only international apparel sourcing fair of India, scheduled to take place from 16th to 19th July at Greater Noida, is clashing with the prestigious National Garment Fair, Mumbai of CMAI (a major event for domestic brands), which is going to be held from 16th to 19th July in Mumbai.

Though the majority of participants and visitors are different for both the events, few exporters or domestic manufacturers are keen to participate in both. Besides, from 16th to 18th July, there is also the Fabric and Accessory (FNA) show scheduled to be held at Pragati Maidan in Delhi.

Not only the apparel sourcing fairs, the dates of technology-based events are also clashing, as both Garment Technology Expo (GTE), Bangalore, and Gartex, Delhi are scheduled to take place from18th to 20th August. Some of the participants seem to be common for the shows. Apart from established garment manufacturers, both events attract many new visitors from across the country.

Seeing the current scenario of the Indian textile and apparel export industry, it becomes extremely relevant for the organising bodies to host shows in a systematic manner, thus allowing players to showcase strength accordingly.

Tech fairs are the mirrors which reflect the potential of the textile and apparel market to the world

India: 14th ICAHT conference sets sight on 10 million new jobs in apparel industry

ICAHT conference will provide an important platform to discuss the various issues of the apparel industry

The national capital of India, New Delhi, will once again play host to the International Conference on Apparel & Home Textiles (ICAHT), to be held in association with Okhla Garment and Textile Cluster (OGTC). The 14th edition of the conference will take place on 8th September 2018 at the Indian Habitat Centre.

Notably, ICAHT is a platform where the owners of apparel export houses and mid-level management assemble under one roof to explore the strengths and weaknesses of manufacturers and barriers hampering the growth of apparel industry, besides other issues faced by the small-scale enterprises in the developing world.

This year, the event will be based on the theme – 'Creation of 10 million jobs in Apparel Sector by doubling the size of the industry'.

The conference is expected to enhance networking, collaboration, and combined efforts among all the industry stakeholders to identify major trends in apparel manufacturing.

Importantly, the conference is divided into two parts; in the first part, participants from all specialties and skills will give a 30-minute long presentation to all the attendees at the event.

> *The conference is expected to enhance networking, collaboration, and combined efforts among all the industry stakeholders to identify major trends in apparel manufacturing.*

In the second part, 90-minute workshops on Human Resources, Production and Merchandising will be held at the conference. Here, digitalising HR systems, optimising process via latest technology and a practical approach towards digital merchandising will be covered.

Meanwhile the topics that will be covered in the first half of the conference are further divided into three parts – pre-production, production and post-production – on which the speakers will provide their insights to the audience.

India: TÜV SÜD's Tirupur lab now offers chemical testing services

Chemical testing for all kinds of textile businesses are now available in Tirupur, one of the biggest hubs for India's textile and knitwear manufacturing industry, as TÜV SÜD – a German safety, testing and certification giant – has added the service to laboratory on Nehru Street, 15 Velampalayam, Tirupur. This was announced by Niranjan Nadkarni, CEO of South & South-East Asia, Middle East & Africa Region at TÜV SÜD.

"Owing to our global heritage of superior services and expertise, we are equipped to support clusters like Tirupur and its adjacent regions including Karur, Salem and Erode with the required technical know-how to meet rapidly changing requirements," stated Nadkarni in a statement issued by the company.

Equipped with state-of-the-art instrumentation, including UPLC-MS, GC-MS, UV-VIS spectroscopy, FTIR and ICP-OES, the testing lab will offer comprehensive textile, apparel and home furnishing testing services. These equipment are needed for testing key parameters such as pH levels as well as banned amines, phthalates, formaldehyde and heavy metals.

The arrival of chemical testing facility in the city is a boon for manufacturers and exporters carving a niche for Indian knitwear products in overseas and local markets. Those who have association with TÜV SÜD will be given several benefits. They will be offered assistance in improving production processes. It will also ensure ways on how to optimise costs and minimise risks and defects by ensuring their products' compliance with the guidelines.

Restricted Substance List (RSL) and Zero Discharge of Hazardous Chemicals (ZDHC) and other similar safety regulations will also be offered at the facility.

India: Patanjali bets big on apparel biz; opens sourcing office

Moving aggressively into apparel retail, Patanjali Ayurved Ltd. (Textile Division) is working on creating the right team and infrastructure for sourcing apparel.

Recently, the company opened its sourcing office in Noida, which is spread out in an area of 6,000 sq. feet and a strong 60-member team has also been hired. More hiring is under process.

KN Singh, who was Executive Director at Creative Group, Mumbai, is the CEO of Patanjali's sourcing operations. In fact, sources claim that a good number of professionals in the Patanjali sourcing team are from Creative Group, to mention two senior officials – Rahul Dwivedi, GM-Purchase & EA to CEO and Satinder Yadav, VP (Operations).

As the scale of sourcing is quite high, sourcing office has separate teams for different product categories, be it kidswear, womenswear, or menswear.

The sourcing office is spread out in an area of 6,000 sq. feet and has a strong 60-member team

Sources informed *Team StitchWorld* that the office of the company is very attractive and well-planned and activities are on to source nearly 11 lakh pieces before the launch, which is expected during the festive season.

Some of the top export houses across India are in touch with the company, however, for a few of them, domestic market is quite new. Though one of the senior officials of the company shared that there is no defined target for choosing a vendor, it was pointed out that small and big manufacturers that fit into the company's business parameters, can get associated to supply merchandise. Sources claim that all options of retail will be explored.

Patanjali Ayurved Ltd. already has an exclusive retail tie-up with Future Group for its products, sold at Big Bazaar outlets. According to media reports, the company aims to hit the ambitious target of Rs. 5,000 crore sales in the first year of operation. It is almost 2 years (September 2016) since Baba Ramdev, Founder of Patanjali Ayurved Ltd., had announced his intention of coming out with 'Paridhan', an Indian label. Though the project is a little delayed as earlier the company's swadeshi clothing line was expected to come out in April 2018, it is still very much on track and like all other products from the Group, apparel too is expected to shake up the market.

India: TANTU's sixth edition to be held on 15 September 2018

The 6th edition of TANTU seminar will roll out at the India International Center, New Delhi, on 15th September 2018. The theme of this year's seminar will be 'Art of Shirt Making'.

Men's shirt is probably one of the fewer garment products which remained the least affected by the drastic change in fashion concepts in the last 5 decades. From board meetings to school uniforms, shirts have always remained the most standardised piece of garment.

According to Technopak, domestic shirt market in India is estimated at US $ 5754 million and men's shirt shares 94 per cent of the same. Further, manufacturing in India has come a long way in dressing up the Indian men with some of the finest high-end shirts. "The first indigenously mass-produced quality men's shirt brand in India was 'Rombus' which was manufactured by Stencil Apparel in NCR," according to TANTU press release.

It's worth mentioning here that the global shirt market, is estimated to be US $ 58.5 billion (in terms of value) and 2.83 billion pieces (in terms of volume) by 2020, according to a market research company STATISTA. These figures, in every sense, indicate that there is immense opportunity for the manufacturers who cater to shirt segment.

However, despite the lucrative opportunities in the shirt segment, export of men's shirt from India is not appreciable as most of the reputed shirt brands in the world do not source the garment from India. A two-decade-old research indicates low productivity of shirt manufacturers, though the quality of Indian branded men's shirts is not bad.

The upcoming seminar by TANTU will revolve around the same issue and figure out what is stopping Indian manufacturers from capitalising on this vibrant shirt market. Is it quality, productivity, raw material or technology that is stopping Indian shirt manufacturers? In the first of its kind tell-a-tale panel discussion, experts at TANTU will be discussing the manufacturing technology and processes including pattern making, fit and construction technique of men's shirts. The experts from leading manufacturing and sourcing organisations from south-east Asia will grace the panel discussion.

"This time experts will come from Bangladesh too," informs Dr. Prabir Jana, Chairman and President of TANTU exclusively to *StitchWorld*.

> *The global shirt market, is estimated to be US $ 58.5 billion (in terms of value) and 2.83 billion pieces (in terms of volume) by 2020, according to a market research company STATISTA.*

On the other hand, technology suppliers will also present their innovative and latest offerings to augment the value of shirt. It may be noted here that Freudenberg Performance Materials, a part of EURO 7 billion Group based in Germany has come forward to associate with TANTU as Gold partner. Freudenberg is specialised in providing interlining solutions for shirt manufacturing.

TANTU is the alumni association (North India chapter) of two textile colleges of West Bengal. As a group of core professionals serving textile and allied industries, TANTU brings together experts and working professionals on a common platform to discuss, debate and deliberate on issues related to textile industry so that the industry accrues optimum benefit from the services of professionals and sustains in the competitive market.

UNDERSTANDING CAR SEAT MANUFACTURING HH INTERIOR'S WAY

Gone are the days when exterior design was the widely accepted norm for people to purchase a car. Nowadays, with people spending more time in their cars, they expect a more comfortable ride not just in terms of the vehicle run-time but also in terms of the tranquillity which they expect from the interiors. When there are talks about interior, no doubt, car seats play a major role in improving or deteriorating the aesthetics of a car. Besides aesthetics, there are other parameters too to be taken into account such as ergonomics, thermal and touch by which a user evaluates the car seat, and these parameters can be achieved if the seat covers are designed and manufactured with enormous functionality using technically advanced fabrics and high-end machines. *Team StitchWorld* recently visited **HH Interior and Auto Components Ltd., Faridabad (India)**, to understand the manufacturing and quality practices involved in car seat cover manufacturing and brings forth to you the significant points noted during the visit.

10 units all across India, with production of 4,000 seats per day and Rs. 180 crore turnover are enough to describe HHI's strength in car seat cover manufacturing. The company is a part of Krishna Maruti Ltd. (KML) which is a premium manufacturer of auto interiors and is one of the dedicated suppliers of car seats to leading Indian automobile brand Maruti Suzuki India Limited (MSIL). "Our 60 per cent to 70 per cent production is dedicated to MSIL only," avers **Ajit K. Banga, Assistant Vice President (Operation), HHI**.

The composition of a car seat takes three components. First of them is the metal structure; second is the moulded polyurethane foam that is used for filling; and third is the the seat cover with reinforcement material, where the actual stitching is involved. As far as the fabrics used in making seat covers are concerned, leather is an obvious and popular choice; however, in a country like India with hot climate, HHI prefers polyester over leather. "In new models of cars, there is very less demand of leather, therefore, we use polyester in almost 90 per cent of our car seat covers," claims Ajit.

Ajit K. Banga (R), Assistant Vice President (Operation) with Rohit Bhalla, Vice President, HH Interior & Auto Components Ltd., Faridabad

▲ Car seat cover manufacturing follows the same production process which is carried in an apparel manufacturing unit using similar sewing solutions. One set of car seat cover consists of 6 distinct components which are, 2 front seat cushions, 2 front seat backs, 1 rear seat cushion, 1 rear seat back, 4 head rest and 1 arm rest with a special provision for airbag.

According to Ajit, lamination on fabric is critical for car seat cover which, in HHI, differs from 3 mm to 5 mm according to the need of the cover. "However, with some advancements making their way into fabrics, we are planning to have seat covers even without lamination," asserts Ajit. Storage of raw material sometimes remains one of the biggest challenges for a manufacturer but to avoid this problem, HHI has placed in a proper system called FIFO (First In First Out) which is by far the best proven way of managing inventory according to Quality Management System.

"We receive and store our material as per the FIFO system as it is important to take care of the shelf life of fabric. The same principle applies to lamination material as it has 5 to 6 months of storage life, but, we are storing it only

Total Quality Management (TQM) is an integral part of HHI's working atmosphere. Using TQM's checkpoints, daily management sheet at dispatch area is maintained which helps HHI management to find out the disparity between target and actual dispatch.

Impressive practices and activities carried by HHI

1. MSIL remains shut two times, during June and December for 1 week each. In this period, HHI does preventive maintenance on its machines so that they can run throughout the 6 months' time without any breakdown.
2. Total Employee Engagement (TEI) is 100 per cent in HHI.
3. Small Group Improvement (SGI) activities are also followed in HHI which means every month the company organises one activity. May is celebrated as 5S month, whereas November is the Quality month.
4. Poster competition and slogan competition are organised every month to keep employees engaged.
5. Operator of the day, month, and year are also announced regularly. Punctuality, behaviour and quality of work are the main parameters to decide the winners.
6. Every month, brainstorming sessions are conducted at HHI where all employees give at least two suggestions to improve the working culture on shopfloor.
7. Total Quality Management (TQM) is an integral part of HHI's working atmosphere. Using TQM's checkpoints, daily management sheet at dispatch area is maintained which helps HHI management to find out the disparity between target and actual dispatch.
8. 4M (Man, Material, Machine and Method) management board is strictly maintained as part of QMS.

4M Change Control Board is regularly updated at HHI

Material dispatch area of HHI

for three days," boasts **Rohit Bhalla, Vice President, HHI**. With this practice, HHI claims to have 'zero' delivery failure in its Maruti lines.

Markedly, car seat cover manufacturing follows the same production process which is carried in an apparel manufacturing unit using similar sewing solutions. One set of car seat cover consists of 6 distinct components which are, 2 front seat cushions, 2 front seat backs, 1 rear seat cushion, 1 rear seat back, 4 head rest, and 1 arm rest with a special provision for airbag. To stitch them together, the manufacturer requires heavy duty single needle lockstitch machines with compound feed and at HHI, Juki UBT machines are used in all of its lines.

Just like sewing solutions, car seat manufacturing also suffers from quality bottlenecks but HHI has answers to overcome these quality challenges. According to Ajit, most of the defects

The seat cover further has an inner layer of foam, which varies from few millimetres to 12 mm, and absorbs the seat surface irregularities, improves the comfort (compressibility, resilience) and indicates the stitches of the sewing lines with an adequate depth. Reinforcement material is used in the seat cover to give dimensional stability to the sandwich structure, facilitating the sewing and seam resistance.

that are identified in a car seat are the fabric defects and these can be controlled at the mill stage, while stitching defects can be in the form of stitch loose, stitch jump, margin fault, loose thread, fabric fault, three notches out, wire missing, pitch of the fabric, faulty stitching and notch mismatch.

Matching V-notches is very important to avoid wrinkles on the seat cover and to match V-notches, it is advised to run sewing machine at a low speed or at the prescribed RPM or else wrinkles are bound to come. HHI has a tolerance of 0 to 5 mm for V-notches which is followed rigorously to tackle errors and defects. "There are two holes which match with head rest part having centre distance from 8 mm to 20 mm depending upon the type of car seat cover. If V-notches do not match, these holes will also not match. We have put up types of defects on the inspection boards at the end of each line board so that while inspecting, the operator can check for defects. If line defects are 8 to 10 per day, then no rejection at final stage occurs," explains Ajit, emphasising on the stringent quality processes followed at HHI.

Further, explaining about the cutting process, Ajit comments that cutting is the heart of the seat cover and if anything goes wrong during the cutting process, subsequent processes will also go in vain. HHI has a set parameter of cutting a fabric layer of 25 mm at a time so that all sides of the panel pieces are within the prescribed measurements only. "To achieve effective cutting, we use Lectra cutters and obtain around 87 per cent of efficiency," says Ajit unveiling that 2 per cent of fabric is being saved in each project.

However, skilled labour is still a challenge for the company due to its non-availability in Gurgaon and Manesar locations where HHI has 2 different units. Attrition rate in these locations is around 15 per cent to 20 per cent, whereas in Faridabad, it's just 5 per cent. As Ajit reasons, "There are more factories in Gurgaon and Manesar not just of car seat manufacturing but also of those dealing in apparel manufacturing, so workers tend to shuffle which is a problem."

To tackle this situation, HHI is planning to recruit some people from institutions like ATDC. "We are looking to hire 20 persons from ATDC in our inspection department. All should be diploma holders. Further, we are also planning to open our own training centre to permanently avoid this chaotic situation," concludes Ajit on an optimistic note.

Till 2020, a target of 20 lakh cars is what Maruti Suzuki India Ltd. is aiming at, so it's obvious that car seat cover market will grow accordingly.

HHI uses Lectra cutter and obtains 87 per cent marker efficiency

At HHI, hourly inspection is the key to control defects

One of the sewing lines at HHI

FUTURE OF APPAREL – DIGITAL APPAREL MICROFACTORY

Apparel manufacturers across the world still function according to the traditional manufacturing business model, where the manufacturers first manufacture large quantities and then sell it to brands and retailers. In this business model, manufacturers have to incur all costs beforehand. And then wait for the clothing made to be sold in such quantities that the invested money can be recouped. This process involves months of designing and prototyping garments, skilled labour to sew the garments, shipping large orders, and carrying huge inventories. All these cumulatively imply that the profit per cent is much lower than expected…

The new business model, On-demand manufacturing, relieves manufacturers of all the stress and hassles. A transformative concept in itself, this model enables the customer to see a design or garment first, buy it, pay for it and then the manufacturing process starts. This means eliminating all risks for manufacturers and delivering them the profits upfront.

'Microfactory' is what makes this possible. A microfactory is a brand new manufacturing set-up that combines the latest and innovative design, production and finishing technologies from different companies to fill customers' orders in quantities as low as one. From what has been observed till now, the following three characteristics of microfactory make it unique:

Small and scalable: A microfactory can be started in a small facility, as small as a room. Depending on the production requirement, the space requirement can be increased.

Efficient: All intelligent technology running in the factory make production efficient, thus requiring fewer consumables and fewer skilled seamstresses.

Run it yourself: With high production efficiency, one can now take control of manufacturing, with no need of outsourcing manufacturing anymore. USA is working on the same model and is aiming to bring back jobs in apparel making soon.

Altogether, microfactory can be defined as the production of customised products in a competitive way, near to the point of use to meet the customers' demand through the digital networking of automated processes. Various companies join forces with each other to make a microfactory operational. Several working models of this concept have been shown in various fairs in recent years. Assyst, Caddon Printing and Imaging, Ergosoft, Mimaki, Coldenhove, Monti Antonio, Zund, Duerkopp Adler, PFAFF, Veit and Seripress were the partners which made 'microfactory' concept a success in Texprocess Germany 2017. This year in Texprocess Americas, Gerber Technology, Kornit Digital, and Henderson Sewing Machine were seen doing the same.

While the participating companies can vary according to the requirements, the process happens in four stages:

Design: The process starts with the creation of designs, followed by the development of the design in CAD. The colour management is taken care of thereafter. The design is then prepared for cutting and assembly with the aid of a 3D simulation.

▲ A microfactory is a brand new manufacturing set-up that combines the latest and innovative design, production and finishing technologies from different companies to fill customers' orders in quantities as low as one.

Print: The second step is to print design files on fabric rolls using digital printing machine. After printing, fabric is then heated to permanently transfer design on fabric through sublimation process.

Cut: The printed fabric is then passed on to the single-ply digital cutting machine which intelligently cuts nested pieces and eliminates manual cutting.

Sew: As cut pieces come out, they are delivered for the next operation of sewing. Automated or semi-automated sewing systems are used, so there is no need of skilled seamstress. In some cases, sewing can be replaced by welding and bonding process.

How it happened in Texprocess 2017?

Assyst Vidya 3D-simulation software helped in creating the virtual garment. The data which emerged from it was immediately merged with the data for subsequent processes. Then the large-format inkjet printing, involving sublimation printing on polyester and pigment printing on cotton and mixed fibres by Mimaki along with Ergosoft RIP software solution was done. Colour management

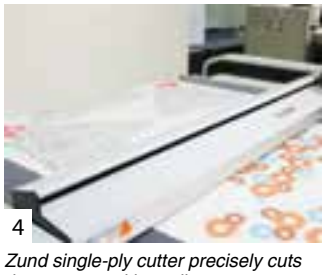
was taken care of by Caddon Printing and Imaging. Coldenhove and Monti Antonio were the ones ensuring optimum printing results at this station. Coldenhove digital sublimation transfer paper offers consistency, the highest yield, best printability and runnability. Monti Antonio offers flat presses for printing substrates and fabrics in cut pieces.

Proceeding to cutting, a feeder system at the Zund cutter ensured that the material was transported as smoothly as possible and without distortion. Camera systems recognised the cutting points, as a result of which the path the cutter was to take was optimised and a top-quality cut could be achieved. Duerkopp Adler and PFAFF sewing machines were used to assemble the cut pieces. After sewing, garment was sent for finishing to Veit hand-ironing and steam generation technology. In the last step (Labelling), the garments were provided with logos and graphic details which were washable, could be ironed and were suitable for dryers with the help of Seripress.

1 *Assyst Vidya 3D-simulation software creates virtual design of the garment*

2 *Colour accuracy is guaranteed due to the use of the multispectral technology by Caddon*

3 *Mimaki large format printer prints the design on the fabric*



4 *Zund single-ply cutter precisely cuts the patterns with quality*

5 *Duerkopp Adler and PFAFF machines are then used for sewing and welding process*

6 *Lastly, the finishing process is achieved by Veit hand-ironing*

Calling itself to be the first of its kind in the industry, Nextwave is the lead product integrator for the on-demand apparel microfactory. The company offers full-product solutions and demonstrations of the microfactory.

How it has happened in Texprocess 2018?

Digital workflow process at this year's microfactory in Texprocess started with Gerber Technology's AccuMark® and AccuMark 3D for Product Design. A design file was optimised by leveraging custom graphics and 3D simulation, then converting patterns into a marker file, to be further sent for digital printing. Digital printing partner Kornit Digital allowed designs to be directly printed on fabric with its patented Fixation on the Fly (FOF) inline pre-treatment process. Allegro' waterless solution left a low eco-footprint by eliminating steps such as pre-treatment, washing, and steaming. Once the fabric was printed, Gerber's Z1 single-ply cutter with ContourVision™ came into play. An automated vision-aided scan-to-cut system processed rolls of custom printed textiles by automatically generating cut files to drive the process. Henderson Sewing Machine has been the sewing partner to this digital microfactory. An autonomous mobile robot, Omron Robot, collected bundled cut parts of the cushion cover to be stitched and transported them to a robotic sewing station at the Henderson Sewing Designed Gantry Robotic Sewing Station.

Nextwave providing tools and knowledge to leverage microfactory advantages

Calling itself to be the first of its kind in the industry, Nextwave is the lead product integrator for the on-demand apparel microfactory. The company offers full-product solutions and demonstrations of the microfactory. It has partnered with EFI Optitex, EFI Fiery System, EFI Reggiani, Zund, and Klieverik.

EFI Optitex 2D and 3D solutions allow preparation of designs and pattern making. In the next step, preparation of printing data, EFI Fiery converts design into printing data to be sent to digital printer. EFI Reggiani printing solutions offers digital printing process with full range of water based inks. It can print 500 garments/hour. Afterwards, the roll of fabric is heated on Klieverik heat press to permanently transfer design on fabric through sublimation process. Then, fabric is passed on to Zund digital cutter which intelligently cuts nested pieces. This cutter has modular design and adapts to any fabric, thus eliminating manual cutting.

As cut pieces come out, these are clamped to the state-of-the-art Eton UPS which automatically delivers cut pieces to the next operation. For sewing, Henderson sewing machines are implemented.

Not only this, Nextwave provides its services as personal consultant for on-demand manufacturing, and it also has a running apparel microfactory in Atlanta, USA. Its fully functional solution allows customers and designers to run small sample runs or scale to production.

1 *Gerber's Accumark 3D is used to create designs and marker files*

2 *Kornit Digital Allegro directly prints on the fabric using no water at all*

3 *Gerber Z1 single-ply cutter with ContourVision cuts fabric panels*

4 *'Gerbie' Omron robot powered by Henderson Sewing Machine transports cut panels to sewing section*

5 *Henderson Sewing Machine designed Gantry Robotic Sewing Station were available for sewing*

6 *The final product (a cushion in this case) is ready*

Everything You Wish Everywhere You Are

For over 50 years, **FKgroup has been a top reference for cutting room automation**, in Italy and throughout the World, wherever you are.

SINCE 1961

A continued evolution, innovation and progress.

www.fkgroup.com

FKgroup®

Made in Italy

Garment tech provider Eastman arms US manufacturers with single-ply cutters

Ever since US President Donald Trump emphasised on the 'Made in USA' fashion, apparel manufacturing has made a comeback in the country and has turned everyone's heads. A number of factors have supported this wave, such as changing customers' needs at fast pace, agile production, speedy delivery, and the rising labour wages in Asian apparel manufacturing hubs.

Unlike Asian hubs, United States however is not following the concept of mass production, but a concept that is more sustainable and as per the customer needs. On-demand manufacturing, which can be defined as the manufacturing process wherein goods are produced when, or as they are required, is driving the apparel manufacturing in USA.

Starting the sourcing and production process once after the order is received not only saves the time spent on sample approval and designing, fabric wastage and long lead time, but also allows the manufacturers to keep up with the trendy designs or prints or styles and at the same time helps them attain the big profit.

Amazon has 'killed' shopping malls. It has hurt retail stores like Macy's and JCPenney which used to place large quantities of orders. That's so outdated now; retailers nowadays don't want to keep huge inventories. So, they have now started placing small orders which have to be delivered quickly.

Technology plays a major role in this type of manufacturing process. Eastman – the manufacturer of cutting room solutions for the apparel and other sewn products industry, has been banking on the technology needs of these US manufacturers with its single-ply automatic cutting machine. "We have very standard technology for the standard apparel manufacturing companies unlike Industry 4.0 compliant machines, which are expensive and are only affordable by few bigger factories," says **Wade Stevenson, Export President, Eastman Machine Company.**

"Amazon has 'killed' shopping malls. It has hurt retail stores like Macy's and JCPenney which used to place large quantities of orders. That's so outdated now; retailers nowadays don't want to keep huge inventories. So, they have now started placing small orders which have to be delivered quickly," explains Wade.

These single-ply cutters have a huge demand among manufacturers working in North and South America, especially Central America and Mexico because of

Wade Stevenson (C), Export President with Robert L. Stevenson (R), President/CEO and R.Trevor Stevenson, Vice President, Eastman Machine Company

obvious advantages. Quick, fast and efficient production of small order quantities (and not hundreds and thousands of T-shirts!!!) make these cutters' the manufacturer's favourite.

"They don't need to cut several layers of fabric because Amazon and other retailers, such as Zara and H&M, are focusing on JIT production and a shorter delivery time. It dramatically changes the way apparel manufacturing is done," Wade further states. Eastman single-ply cutters are simple, competent and easy to use. They also help in saving the fabric because of automatic nesting that is much more precise than manual cutting machine. Along with the cutting precision, these cutters are relatively less expensive than the labour employed and the cost associated with it.

The company has its customers in cities like Los Angeles, Texas, Mexico. Apart from garments, another category that has been witnessing surge in US is technical textiles. Automotive industry like Boeing, car seat covers, etc. are increasing their manufacturing share in USA. As Wade concludes with a futuristic vision, "The apparel business has not moved significantly here, but was it possible for a garment company in USA to survive earlier? The answer is 'No'. But today, it has been made possible because of Trump policy."

Vibemac bets on Mexico denim industry with its range of jeans automats

Denim has been everyone's favourite since ages and Mexicans' affinity towards denim cannot be questioned due to their long-standing tradition in denim manufacturing. Statistics show that standard and premium denim saw the fastest growth in the year 2016, increasing by 8 per cent in current value terms. This further proves Mexico as a hub of love and knowledge for denim.

Why Mexico is the seventh largest exporter of denim in the world…; the answer lies in the benefits that the country has to offer. Fifteen free-trade agreements with 45 countries, nine commercial agreements in Latin America and 31 agreements for reciprocal investment protection make production viable. A high quantity of ports and airports and highways further add to the advantages.

It is seen that Asian hubs are not as cheap when it comes to transporting cost and time involved. Mexico, on the other hand, is able to provide short lead time, speed to market, low cost of labour compared to US, and proximity to market compared to Asian countries.,

Moreover, the denim manufacturers have invested in new technology due to high national and international demand. Talking of denim and technology, one cannot miss the name of Vibemac – one of the biggest names in jeans automation.

Vibemac which has its markets established in India, Bangladesh, and Vietnam, also has its offerings for Mexico. "We are having a great growth in Mexico. Another new potential market for us is Columbia," says **Ing. Mauricio Misas, Commercial Department, Maquitalia.** Maquitalia is looking after sales of Vibemac products in USA. Manufacturers in Mexico have been seen to be more receptive towards technology which is reaping them the benefits.

> *It is seen that Asian hubs are not as cheap when it comes to transporting cost and time involved. Mexico, on the other hand, is able to provide short lead time, speed to market.*

Mauricio further informs, "We are getting inquiries for a complete line rather than the individual machines. It is good for our business."

With around 2,000 jeans manufacturing companies in Mexico, the daily average production capacity of denim ranges from about 3,000 pieces to 10,000 pieces.

Elena Guerreschi (L), CEO with Farhadur Rahman Jewel, Manager, Vibemac spa.

Duerkopp Adler supports 'Made in USA' with a strong dealership network

Revival of manufacturing in USA has not only given the industry an opportunity to stand back on its feet but has also helped in employment creation for the locals. Machine manufacturers, in the wake of this huge shift, are now focusing upon USA as a new and upcoming market. Duerkopp Adler, the German pioneer in automated and engineered workstations, is one of them.

"Not only garments, but the upholstery, shoes and automotive industry are also emerging," states **Dietrich Eickhoff, Managing Director/ CEO, ShangGong Europe (SGE)**. The rise of manufacturing has called for on-demand and customised manufacturing with speedy delivery, because of which the demand for technology is on the rise.

Dietrich Eickhoff (R), MD/CEO, ShangGong Europe in conversation with colleagues

Another machine manufacturer exploring the US market is Adidas Speedfactory which has opened another factory in Atlanta, USA. With Speedfactory, Adidas is trying to focus on mass volumes with low prices at the same time. Use of advanced technology and automation has allowed US manufacturing companies to generate business in a short time. However, contradicting to the growing manufacturing graph here, Dietrich opines, "These businesses are not the substitute to what the good old days of USA were in terms of production. Mass production will not ever come back to the USA."

In his words, the manufacturers will have their niche primarily in on-demand and customised products. The hubs that are supporting the 'Made in USA' movement are Mexico, Guatemala, Colombia, and Brazil.

Duerkopp Adler has been serving the American market since '80s. However, Dietrich shares, "It used to be a major market for us, but became difficult over years due to worldwide financial crisis. We had more than 120 people here as well as dealers in this area." At present, only 28 people are handling the company's operations in the country.

Machine manufacturers, in the wake of this huge shift, are now focusing upon USA as a new and upcoming market. Duerkopp Adler, the German pioneer in automated and engineered workstations, is one of them.

The company has also set up a distribution network for sales and after-sales service of customers and has 14 dealers in Canada, Honduras, Mexico, Puerto Rico and USA.

The company has also set up a distribution network for sales and after-sales service of customers and has 14 dealers in Canada, Honduras, Mexico, Puerto Rico and USA.

Trust the Best...

km

KMC - Series
Multi-ply Auto Cutter Made in Japan
Model: KMC-520/720H/920H

- Automatic cutting quality control
- Belt type of sharpener
- Variable vacuum power control with inverter
- Easy operation
- Sensor type safety stop device

High Speed
High Quality
High Efficiency

Heat Transfer Press with
Label Pick Up system
Model: HP-10LP

- Auto label pick up systems.
- Digital control of pressure and temperature.
- Teflon and aluminum press plate.
- Fully automatic air drivery.

Twin Head Conveyor Type Needle Detector
Model: HN-2870C

- Two head sensor.
- New sensitivity level monitor.
- Detection position indicator.
- Blue back LCD panel

HASHIMA

HASHIMA (S) PTE LTD.
India Liaison Office (Bangalore)
Foreign Company Reg. No. F03053, Suit No. 102, No. 4,
Regency Enclave, Magrath Road, Bangalore - 560 025.
Tel : (080) 41540315, Fax : (080) 25592002
E-mail : info@hashima.co.in

HASHIMA (S) PTE LTD.
Singapore Office:
#12, Tannery Road, # 04-05, HB Center Singapore 347722
Tel : (65) 62858131, Fax : (65) 62858132
E-mail : info@hashima.com.sg

Morgan Tecnica takes on the US market with its single-ply cutting machine

Anandkumar D (C), MD, Morgan Dynamics with his colleagues

Whatever industry it may be, the future is going to be very challenging. To sustain the business and to remain competitive, everyone is going for technology, particularly automation. Garment industry is no exception. The same applies for reviving garment manufacturing in USA and its neighbouring regions.

Morgan Tecnica, a complete cutting room solution provider, has aptly realised the needs and demands of its customer base in USA. Ply 1 is the company's single-ply cutter, that very well adapts to the on-demand manufacturing concept.

With a new generation of linear motors, Ply 1 is able to achieve cutting speed of 180 m/min., making it the fastest in the country. Faster cutting is further coupled with high productivity and high cutting precision. It also does not burn a hole in the pocket, thanks to its low power consumption feature that consumes an average of 3.5 kW and low maintenance requirement.

"Ply 1 does not limit its applications to apparel industry, it is also suitable for technical textile and composites, upholstery and automotive industry," says **Anandkumar D, MD, Morgan Dynamics**.

With a new generation of linear motors, Ply 1 is able to achieve cutting speed of 180 m/min. making it the fastest in the country. Faster cutting is further coupled with high productivity and high cutting precision.

When machines are integrated, user-friendly and managed from beginning to end, then only the data collection and exchange between these machines will benefit the customers. In other cases, there are troves of isolated data, that cannot be interpreted and utilised.

Growing fast in this market, Morgan has further plans to focus more on automation of product development process. "All the processes before sewing will be automated, that's why we are constantly working on improving our software solution," informs Anandkumar. The company offers a range of software solutions like PLM, virtual prototyping and virtual fitting software, cut order plan software, visual nesting software.

Talking of connected machines and its benefits, Anandkumar makes a statement, "Companies present in the market have a niche in single entity which is able to collect data, but the customers are not benefited by it. If the data exchange at each process is not seamless, it is of no use." Morgan Tecnica is the complete solution provider with offerings like automatic cutting machine, automatic spreading machine, labellers, plotters, and pin tables.

When machines are integrated, user-friendly and managed from beginning to end, then only the data collection and exchange between these machines will benefit the customers. In other cases, there are troves of isolated data, double entries, manual entries, which represents data that cannot be interpreted and utilised.

"Seamless connection between machines is extremely important and that is what we are expert in," concludes Anandkumar.

Sewn garments are not handcrafted, bonded ones are: H&H

Bonding applications have been finding their place in apparel products while ditching the traditional sewing; thanks to the growing trend of fitness among consumers. Bonding and welding of seams in fitness apparel, be it athleticwear, yogawear, sportswear or athleisure, not only enhances the aesthetics but also the functional aspect of the garments as well.

Comfortability of a garment matters a lot. How the garment hugs the body, how it feels to the body form inside, etc., are the major factors that a wearer takes into account while buying a sportswear. If a garment is too tight or has uncleaned seams, it rubs on the skin. Bonding, in this case, helps to remove all such problems.

It provides the necessary stretch and recovery feature to the garment and helps in controlling the shape of the muscles as well. "That is why, despite higher pricing, bonding is much more preferred in sportswear," claims **Anshuman Dash, Marketing Director of H&H**.

Sewing has always been connected with the skill of the sewing operator, and the common notion that prevails is that the golden hands of the operators make the magic. But according to Anshuman, bonding is handcrafted and not sewing.

He explains, "In sewing process, the machine guides the operator while creating the seam. But in the case of bonding, we have to deskill the operation. Moreover, if anything goes wrong, the operator can open the seam and stitch it again, but there is no going back in bonding. So, one has to be 100 per cent sure of the seams before exposing it to the machine."

Once the bonding is done, there is no checking or rework process. Bonding requires a number of spot marking on garments that guide the operator to precisely create the seam. Despite all the advantages that bonding has to offer, it is still not achieving that popularity. One reason is the lack of proper knowledge that a garment of 100% cotton cannot be bonded. "People think that it only works with polyester and that's not true," informs Anshuman.

Mass manufacturing of products calls for sewing large number of pieces in less time. Bonding needs patience… It delivers the quality as required, but the speed and time required cannot be altered. This gives bonding a low edge compared to sewing. "It is popular in outerwear because outerwear fabric is sometimes difficult to stitch. For outerwear manufacturers, bonding is a faster process, but the same thing in the manufacturing of T-shirts increases time and price," explains Anshuman.

Talking of the US market, Anshuman tells that H&H started selling machines in the country two years back. Selling few machines, the company did not change much any marketing policy for US but has recently made some modifications. "We have changed our policy on how to make small units," concludes Anshuman.

Comfortability of a garment matters a lot. How the garment hugs the body, how it feels to the body form inside, etc., are the major factors that a wearer takes into account while buying a sportswear. Bonding, in this case, helps to remove all such problems.

Despite all the advantages that bonding has to offer, it is still not achieving that much popularity. One reason is the lack of proper knowledge.

Anshuman Dash (second from left), Marketing Director, H&H with his teammates

Navis TubeTex expansion spree touches innovation and sustainability

Navis TubeTex, a finishing machinery manufacturer, has made sustainability the centre-stage of its new business moves, whether it's an expansion, an acquisition or a new machine launch. The company has recently taken control of two companies: Consultex Spray Systems and Tandematic.

Markedly, Consultex Spray Systems produces spray systems that are used in textile, film, non- woven, paper, and battery industries. And, Tandematic is the world leader of low tension feeding systems, stenter auxiliaries, web guiding, trimming, and selvedge decurling.

"The purchase of Tandematic has complemented our product line, while Consultex will allow us to add new customer base and new markets. In future, we are looking forward to provide services that enhance customers' operations," avers **Will Motchar, President and CEO of Navis TubeTex**.

The company is looking to explore new applications for chemical sprays. Consultex has opened some new markets for Navis such as the plastic industry. For example, plastic pouches or bags in which food or groceries are packed need to have an anti-bacterial spray.

Another major accomplishment for the company is the development of a new dyeing machine. The new machine allows dyeing in a pad rather than a pressure vessel. Developed in Lexington, USA, it will be the first machine that will be installed in a factory operating in Bangladesh. "The concept of this machine is environment-friendly, as it uses less water, less chemicals, less salts and less dyes," explains Will.

Innovation, apart from sustainability, is another prime identity of Navis Tubetex. Known for its engineering, the company will launch a new stenter frame with new airflow system at ITMA to be held in 2019. The new stenter frame will first test run at a factory and then it will be exhibited at the fair.

Based in Lexington, North Carolina, Navis TubeTex designs, engineers and manufactures the world's leading machinery for the global knit, woven, non-woven, technical, and geotextile industries. It has its major markets in India, Bangladesh, Vietnam, Central America, and regions like Honduras, El Salvador and Dominican Republic.

While talking to *StitchWorld*, Will further affirms, "We always look for opportunities and other products that offers us to be more sustainable; less use of resources is what we look for."

Based in Lexington, North Carolina, Navis TubeTex designs, engineers and manufactures the world's leading machinery for the global knit, woven, non-woven, technical, and geotextile industries. It has its major markets in India, Bangladesh, Vietnam, Central America, and regions like Honduras, El Salvador and Dominican Republic.

Will Motchar, (second from left), President and CEO, Navis TubeTex with his team members

Lectra empowering the fashion industry in the era of Industry 4.0

There is a need to understand the history behind the Industry 4.0 revolution which became a catchphrase in no time. The first industrial revolution marked the beginning of production mechanically with steam generators in the eighteenth century. With time passing by, electricity took over steam generators in the twentieth century. Further moving, 1970s saw a notable change in manufacturing with automation taking a front seat driven by industrial computing.

The next stage of manufacturing, smart and digitally connected, heralded the dawn of the fourth industrial revolution, or Industry 4.0. Use of innovative, technically advanced and internet-connected machinery to digitise and automate the manufacturing process and to monitor it in real-time, is what is called 'smart manufacturing'.

"Industry 4.0 is not just about manufacturing – it concerns the entire fashion eco-system, from high-end brands to fast-fashion retailers. It will reshape the entire marketplace and change how companies work and respond to customer demands," believes **Jason Adams, North America President, Lectra**.

The four basic pillars that hold this concept right are Digital to Real Life, Augmented Reality (AR), Big Data, and Data Analytics. Using 3D printing and robotics to produce faster is the pressure manufacturers are facing today. Use of digital 3D software for creating virtual prototype samples and faster sample approvals call for digital solutions. Keeping inventory and maintaining it on a day-to-day basis with manual records is a painstaking process. Use of AR helps avoid errors and supports in managing inventory records in real-time, saving labour time and efforts.

The new, fully-automated cutting room solution by Lectra offers advantages such as greater agility, throughput and cost-efficiency.

Companies have troves of information compiled on an hourly basis daily. Centralised storage of data (or big data) such as production status and customer data can be facilitated with the help of IoT that can later be aggregated. What's the use of data if it's not computed and simply goes in waste… Data Analytics helps compute necessary information out of raw data that can help top management in better decision-making.

Lectra has unveiled its latest Cutting Room 4.0 as a partner to help companies become 4.0 ready. The new innovation for on-demand manufacturing, provides a combination that helps in transferring data digitally among IT systems and cutting room, a complete cutting line – from loading to off-loading – which helps in achieving enhanced throughput and agility.

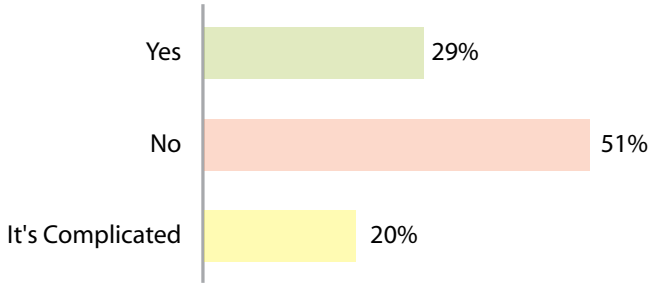
"Used effectively, the apparel manufacturing industry can deliver error-free and defect-free products to the retailers," informs Jason.

The new, fully-automated cutting room solution by Lectra offers advantages such as greater agility, throughput, cost-efficiency and, in particular, scalability to manufacturers in order to respond seamlessly to small batches of orders and shorter lead times.

Jason Adams, North America President, Lectra, preparing to unveil Lectra cutting room 4.0

WILL MASS APPAREL MANUFACTURING RETURN TO THE USA?

Recent developments in 'On-Demand' apparel manufacturing in the USA have sent a strong message to the rest of the world that the US is doing better than expected. However, when it comes to 'Mass Apparel Manufacturing', the situation becomes doubtful.



(Results are based on the opinion of technology suppliers and garment manufacturers across the world.)

Yes

"It's possible only with massive investment in new technologies to replace the antiquated manufacturing systems. As labour is already tight in the US, automation of labour, mostly sewing, is the key. IoT/digital transformation of factories is also needed (which is happening too) to compete with low-wage countries and the USA manufacturers have to be price-competitive while offering lower development costs, quicker delivery, and lower transport costs. Plus, the cost of doing business in Asian countries is not going down. Look at China. I saw a recent statistics which showed that Chinese labour is now more expensive than Mexico."

Greg Hathcox
Co-Founder and Senior Vice President, TexTempo (USA)

No

"Mass manufacturing is unlikely to return to the USA. There are various reasons behind it as concepts like on-demand, made-to-measure, and bespoke tailoring are rapidly increasing in the USA; factory area is not large; micro-factories are being set up and most of the manufacturing units are working with just 40-100 sewing machines which do not give positive vibes when we talk about mass manufacturing."

Deepak Mohindra
Editor-In-Chief (Apparel Online and StitchWorld), Apparel Resources (India)

It's Complicated

"We believe the old factories with hundreds of workers making '3 in a package' T-shirts and tube socks will never be seen again in the US. However, what will eventually rise are small nimble 'mass-customisation' factories capable of a wide range of products designed or personalised by the customer. Think of these factories as large computers, able to make clothing the way the customer wants, in their exact size, and delivering it directly at their door. Clearly the industry is in turmoil and ripe for business model changes – we have clung to 'that's the way we have always done it' for far too long now".

J. Kirby Best
Chairman, Onpoint Manufacturing, Inc. (USA)

"First of all, USA lacks a unified infrastructure to accomplish more aspects of apparel production. For example, China and India have areas that encompass textile production, dye houses, and cut/sew manufacturers. It can sort of be all done in the whole shebang. While in USA, we would have to send goods back and forth to create various steps. By the time it completes, we might as well have made them in an overseas country. Once we have more facilities, the production will begin to flow back."

Katherine Schildmeyer
Independent Fashion Design Consultant (USA)

STAGE

The ERP Software
for the
Apparel Industry

GST Ready

Business

- Costing & Budgeting
- Order Entry
- Fabric / Yarn & Trims Estimation
- Process Estimation
- Purchase
- Process Orders
- Production Orders (Own Unit or Job Work)
- Inventory
- Packing
- Shipping Documentation
- Accounts & Finance
- Sampling
- T & A

Production

- Production Planning
- Time Study (OB)
- Cutting & Bundle Ticketing
- Barcoding
- Cut Panel Processing
- Accounts Integration
- Production Tracking
- Piece Rate & Incentive
- Garment QC
- Finishing
- Machine Repairs & Maintenance
- Payroll
- Order Closing (Mat. Utilization, P&L)

Retail

- Style Bank
- Make to Stock
- Retail Orders
- Stock Allocation
- Scan & Pack
- Despatch
- Invoice
- Accounts Integration
- Point of Sale
- Returns

Processing

- Knitting
- Weaving
- Dyeing
- Printing
- Embroidery
- Washing
- Socks Knitting
- Other Processes

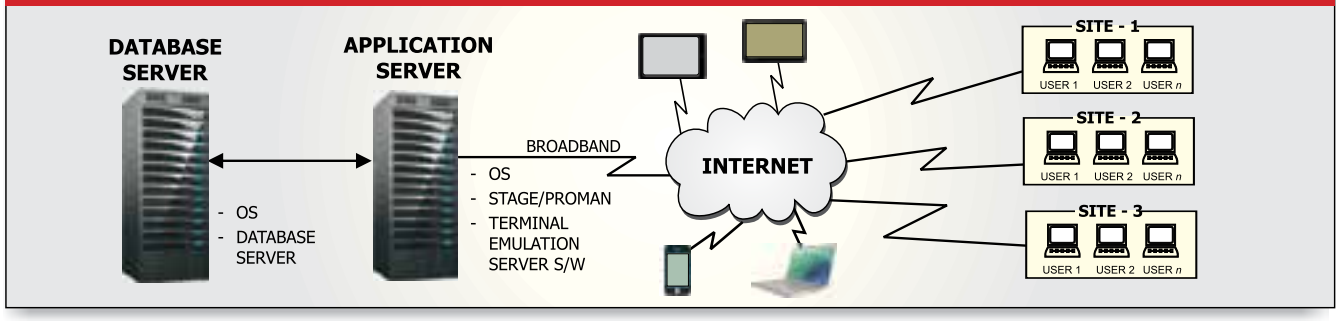
www.STAGEerp.com

Email: kavya@STAGEerp.com
Phone : +91 44 26631206

Comprehensive MIS Reporting

Planning boards for: Sewing, Knitting / Weaving, Fabric Dyeing

STAGE ENTERPRISE ON YOUR OWN CLOUD !



STAGE streamlines your business activities
Focuses on extracting every dollar possible in every department

Helping businesses for over two decades...

BIG BRANDS ARE LEAVING MONEY ON THE CUTTING TABLE

Keeping up with consumer demand is a problem for retailers globally. They want products fast, cheap, and well-made, and this pressure trickles down through every part of the supply chain. To cope up, vendors have sought the most efficient production techniques in pursuit of agility, and brands like H&M, Levi's, Marks & Spencer and VF Corporation, have begun to re-examine their quality control standard operating procedures.

To maintain consistent product quality standards, many brands have quality control teams, whose job is to design, mandate, and audit processes for vendors to follow throughout production. In some ways, these quality control teams are the gatekeepers of the next order from that vendor. As such, vendors throughout the world must follow brands' quality control manuals, even if the procedures described do nothing to add value.

One example of this is mandatory fabric relaxation. Many fabrics, especially knits, need to be carefully handled to account for stretch that can be warped and affects the overall drape and fit of the final product. But at times, before the fabric pieces are sent through the sewing line, the fabric rolls are mishandled during spreading.

"Walk into Sri Lanka, Bangladesh, India, Pakistan, or any country where a lot of these garments are made, and everybody will tell you, 'You've got to relax the fabric, this is a mandate,'" explains **Ram Sareen, Head Coach and Founder of Tukatech**, a fashion technology company. He continues, "This is perfectly alright. Material handling standards are important. But do brands know what is going to the final product?"

Typical 'relaxation' mandates that a factory takes a perfectly rolled fabric, open it onto a table, and leave it there for a day or two to settle. In this process,not only is the integrity of fabric harmed due to the handling and friction, but also one to two days are lost in the production cycle.

When it is time for production spreading, that fabric is usually handled by at least eight, and sometimes by as many as fourteen or fifteen people, who catch and pull the fabric out of proportion as they lay it down. This creates uneven stretch about the fabric, and completely negates any relaxation that might have happened while the fabric was lying in a pile the day before. Factories are following the procedures as they are given, but sometimes these practices diminish the very quality they are seeking.

Ram Sareen, Head Coach and Founder, Tukatech

Typical 'relaxation' mandates require that a factory takes a perfectly rolled fabric, open it onto a table, and leave it there for a day or two to settle. In this process,not only is the integrity of fabric harmed due to the handling and friction, but also one or two days are lost in the production cycle.

The same practices are often applied uniformly across all types of fabric, even if the necessity is not there. For example, fabric handling procedures for knit fabrics may be applied to denim, simply because it is a 'stretch' denim. Sareen explains, "The stretch for denim is only in the width. You can relax the denim for ten years and it is never going to come back in length." These procedures become ingrained in local production culture, and changing these fixed processes becomes very difficult.

Quality control teams are adept at implementing procedures based on brand policies and manuals, but need to assess the actual application and effects of those procedures. As Ram Sareen aptly states, "Large retailers and brands have been

Companies often place fabric on the floor which leads to compromised quality

It is often seen that about 8-10 workers handle fabric spreading which increases manual dependency

chasing the cheap needle to stay competitive, but now they need to focus attention on implementing more efficient production practices. Have big brands missed the most glaring loss of production resources?"

Labour in the above countries is cheap, but labour accounts for less than 20 per cent of the total production cost. The cost of fabric, on the other hand, equates to 60-75 per cent of the garment cost. It is in the best interest of both brands and vendors to focus on handling fabric carefully, so that the human and material resources are not wasted, and the number of steps and time for manufacturing are reduced.

Simplifying the fabric spreading process means reduction in the cost of labour, better product quality, and a shorter lead time. "I've seen a team of fourteen maximise their spreading capacity at 2,000 yards," explains Sareen. When fabric spreading is done automatically with a machine, or even on a mechanised trolley system, the capacity increases. "One person using a US $ 1,500 push trolley can spread 4,000-5,000 yards in an eight-hour shift."

What is more, automatic fabric spreading ensures that every inch of fabric is aligned and gently handled from the time the roll is opened, until the pieces are cut and ready for sewing. Automatic fabric spreading machines come with tension-free mechanisms to unwind material from the roll, and constantly monitor the tension during spreading to keep consistent tension throughout the fabric. This means that relaxation for most types of fabric can be reduced or even eliminated from the production process, which saves one or two days, plus the required labour cost, and potential for lost fabric integrity.

In addition to automatic fabric spreading, CAD systems help automate fabric planning and utilisation, as well as other pre-production practices. Accounting for fabric shrinkage, for instance, automatically adjusts the piece geometry, even for very tricky fabrics. Cut-planning applications then run order scenarios to ensure the best lay plans, and nesting algorithms calculate the best utilisation of the width of the fabric actually received. Such practices could save three to five days, 20 per cent of staff, and 3-12 per cent of fabric, as well as result in better quality garments.

Ram Sareen describes that even though vendors seem to understand the value of automated cutting rooms, changing the procedures requires external inputs. He witnessed this in a staff meeting at a factory recently. "The moment we get into engineering the cutting room, everyone puts their hands up, saying,'We have to check with our buyer!'" This means that embracing automation must come from the top and then move downwards. "I think some training needs to be done in the buyers' offices. The brands and retailers need to visit the vendors and see how automation affects the time and quality savings in the cutting rooms and use that knowledge to update their standard operating procedures, like others have begun to do."

Too many workers handling fabric sometimes creates uneven stretch in fabric

In case of automatic spreading, the number of workers required to handle the fabric reduces to one

Brand and retailers need to understand how automation saves time and improves quality in the cutting room

▲ Automatic fabric spreading machines come with tension-free mechanisms to unwind material from the roll, and constantly monitor the tension during spreading to keep consistent tension throughout the fabric. This means that relaxation for most types of fabric can be reduced or even eliminated from the production process, which saves one or two days.

It is important to recognise that players at all levels in the supply chain have the same goal: agile production capabilities. Trying to speed up cumbersome processes is like training a bull to do gymnastics: it's just not going to work. Choosing vendors based solely on cheap labour only goes so far to result in overall cost savings, especially when production methods themselves leave much to be improved upon.

SMART GLASSES CHANGING THE DYNAMICS OF RETAIL SALES ASSISTANCE

It is important for a retailer to understand what the customer seeks and how to try to exceed his expectations. Customer's expectations of how they should be able to interact with retailers has changed dramatically in the last few years. Driven by an increasingly connected world that knows no time constraints for online shopping, customers are demanding the same access to a retailer's service and support operations. **Divya Bhutani, a student of Masters of Fashion Technology, NIFT Delhi** uncovers the digital technology empowering the function of sales assistance in retail.

In a technologically advanced digital world, retailers and brands try to enhance customers' experience digitally based on their interests. Improving sales assistance can mould a shopper's experience into a good one. Today we can see a completely new generation of shoppers who actually demand less friction and more convenience in their shopping experience. Sales associates are the people that communicate with shoppers and ensure a smooth sales process and process transactions. These sales assistants can also influence the purchase decision of a customer. A good interaction also results in a revisit of the customer to the store.

Helping customers in finding what they are looking for, describing product features, demonstrating their use, showing various models and colours, handling returns and exchanges of merchandise and maintaining stock level, are the main responsibilities of a sales assistant.

Smart phone apps benefiting retailers

To ensure maximum customer engagement, retail stores have to make sure that all the aces are in their place. In order to meet the demands of the customer, retailers have built increasingly complex websites to market and support their offering, but while doing so, they have obscured the ability of the customers to access that information quickly and easily. The end result is that the customers look and possibly purchase from another company that is able to meet their needs of instant access to information and resolution.

THEN: Sales assistants in store used to help shoppers in their shopping or in taking a decision

NOW: Smart glasses enables shoppers to browse through the store virtually and get all the information needed about the product

▲ An optical head-mounted display designed in the shape of eyeglasses is a game-changing gadget for retail technology. With this gadget, the wearer can communicate with the internet via the voice commands.

The idea of apps in smartphone simplifies the complexities brought up by websites during shopping. As a shopper always carries his smartphone along with him, he ensures that all the information and support are delivered to him in the predicted way and he is benefited from the same.

An app named Target (for retailer Target) helps customers find the right product with its best My List Feature. Customers can make a list before they shop and the app will search for the product's availability and aisled location. It also includes a store locator, barcode scanner to get details of products and coupons for daily deals.

Similarly, another app named American Apparel App solves so many queries of a customer. The app American Apparel scans barcodes and images to get full access to full outfits, changing colour lines, and also provides additional videos and fashion

advice which can be shared with one's friends.

Still a balance needs to be maintained between a completely automated and human-assisted service for the retail industry…

Customers, however, still desire for personal customer service. The fact that still holds true is that an all automated device cannot completely replace the value that a human touch generates. Thus, having a combination of technology with human touch is the ideal solution. Nowadays, because of increasing diversity of products, customers often seek assistance in locating a product or getting detailed information about a preferred product. With the advent of the digital era, retailers often find themselves in a fix trying to get an ideal mix of technology and the human factor.

Smart glasses – Wearable tech become sales assistants

An optical head-mounted display designed in the shape of eyeglasses is a game-changing gadget for retail technology. With this gadget, the wearer can communicate with the internet via the voice commands. When a shopper browses through the website, a click-to-call button takes him/her to a virtual store. The customer can then connect with the sales representative at the store. They switch their smart glasses on and in a few seconds, they can see the products through the eyes of the sales person who showcases the products via real-time video while talking.

Earlier in 2015, these glasses failed the retail test because of the criticism faced to make them a customer's device but this time in 2017, they have come back with a bang. Also, this time, the glasses seem to be embracing those which are less glamorous, but which are arguably of more practical use.

The display resolution of smart glasses is equivalent to the resolution of a 25-inch-high definition screen from 8 feet away. They can be controlled by voice recognition which one triggers by saying 'OK'. Also, the touch pad on the right arm of the smart glass when swiped or tapped will work as an input. These smart glasses come with a good full day battery life which can enhance the customer's experience, and can sometime last for hours.

One such eyewear is offered by Google, named as Google glass. It offers client-specific suggestions very easily. For example, take Glass's image-recognition ability and link it to a Google account that, in turn, is directly connected to your past internet search history, email, comments, product reviews and Facebook likes. One only needs a Wi-Fi connection or Bluetooth device to make this glass work.

For more on Google glass, refer this link: https://www.youtube.com/watch?v=TkfF-WGUisw

Advantages of a Smart glass over sales person

Assuming company's total annual sales to be Rs. 50,00,000.

1. Easy navigation of products

Better experience and fast query solving helps customer stay and increase in sales. Let us assume the annual sales on busy days (except Fridays & Saturdays) (= Rs. 70,00,000) increases by 10%.

Earnings increase by:

Rs. 7,00,000 per year

Rs. 58,333.33 per month

Rs. 1917.81 per day

2. Elimination of sales persons

Considering average workers per hour to be 10 and hours open/week to be 80.

Total annual hours = (average workers per hour * hours open per week * number of weeks)

= (10 * 80 * 52) = 41600

If the average hourly labour cost is Rs. 40, the annual labour cost comes out to be Rs. 1,664,000.

Assuming reduced number of hours to be 50% of the total hours, the profits earned are:

Rs. 8,32,000 per year

Rs. 69,333 per month

Rs. 2,279 per day

3. Close-out requirements prevent employee theft

Assuming 4% of total annual sales is prevented from employee theft, the money saved would be:

Rs. 2,00,000, per year

Rs. 16,667, per year

Rs. 548, per day

Adopting this kind of virtual assistance not only results in sales but also in reduction in the required number of labour hours by an estimate of 50 per cent of the total hours needed. The rate of employee theft at retail store also sees a drop.

Calculation of RoI for basic level and advance level of technology (Smart Glass)

To calculate Return on Investment (RoI), the following assumptions have been made. Annual sales of the retail store are assumed to be Rs. 50 lakh and Rs. 70 lakh on busy days. The number of sales persons working is taken to be 10.

Analysis

Thus calculation of RoI shows that advance technology can pay for itself in three years, which is a positive sign.

While it is true that assistance in a retail store cannot be completely replaced by the digital world, certain intervention is still necessary to enhance the user's experience. Companies like Google and Amazon are trying to give the best possible experience to their customers. Technologies, if adopted in the requisite manner understanding the footfall of customers in the store and type of merchandise being sold, can give a huge amount of savings. Considering that RoI calculation for a new technology is a must activity, taking risks at a big level can also result in a downfall.

RoI comparision between smart glass and sales person (in Rs.)

Total Cost Analysis

Smart Glass(advance technology)

Cost of one Google glass	52,000
Total cost for 25 glasses	13,00,000
Cost of System in 1st year	1,300,000

Sales person (basic technology)

Labour cost per day	350
Benefits	70
Total salary per day	420
Salary per year/per person	151,200
Total salary per year of 10 sales person	1,512,000

Return on Investment Summary

Smart Glass (advance technology)

Total savings (and added earnings) over 1 year

Increase in sales	7,00,000
Savings by reducing sales person	8,32,000
Close-out requirements prevent theft	2,00,000
Total return	**17,32,000**

Sales person (Basic technology)

Increased sale	17,50,000 (25% of total sales)
Theft	2,00,000 (4% of total sales)
Total return	**15,50,000**

Estimated Return on Investment

	Smart Glass (Advance technology)	Sales person (Basic technology)
	Over 1 year	Over 1 year
Total estimated saving	17,32,000	1,5,50,000
Less: Total cost of system	13,00,000	15,12,000
Net savings	4,32,000	38,000
Estimated Return on Investment (%)	**33%**	**3%**

How long will it take you to pay back the system?

	Smart Glass (advance technology)	Sales person (basic technology)
Estimated Savings in 1 year	4,32,000	38,000
Savings per day	11,83.56	104.11
Total Cost of System for 1 year	13,00,000	151,200
Payback Period	**1,098 Days (36 Months)**	**1,452 days (48 months)**

For every rupee you invest, how much money do you get back?

	Smart Glass (Advance technology)	Sales person (Basic technology)
Total cost of system for 1 year	15,00,000	151,200
Total savings in 1 year	4,32,000	38,000
	0.33 back per rupee invested	**0.25 back per rupee invested**

SIX IMPRESSIVE TECHNOLOGIES IN FLAT SEAMING

The process of joining two or more soft yet bulky fabrics together using overlap seam or butt seam is important to reduce the thickness of seam. While sewing the fabric, edge/s are trimmed proportionately to give an aesthetic appearance in face as well as on the back. This seam is called flat seaming which is widely being used in the high-end manufacturing of knitwear products such as athletic apparels, underwear, lingerie and briefs. Though there are a number of sewing machines available in the market for flat seaming, it is never easy to opt for any of them until one knows what benefits these machines can provide to anybody. *Team StitchWorld* delves deep into these available options and finds out the six best flat seamers which have already made their own space in the global apparel industry.

Megasew MJ101TX

Megasew, a Taiwan-based sewing machine provider, has already beckoned the Globe strongly with its fourth generation MJ101TX which is a 4-needle 6-thread feed off the arm ultra-high-speed flat seaming machine. Suitable for knitwear stitching, the main feature of MJ101TX is its unique design which has not seen any changes for last 50 years since the inception of its first generation.

Today, machine operators in the garment industry have to focus on increasing needle time in order to enhance efficiency. Hence, it is a mandate for them to maintain ergonomic posture throughout the day. Using MJ101TX machine, the operators need not force their bodies forward and bend their head towards left to view stitching area. The unique design of the machine saves operators from the heating and vibration that the machine produces while performing operation. According to Megasew, sewing view of the operator is wide enough in this machine whereas, other brands who are providing same machines, have very narrow sewing view which troubles the operators.

Adding to this, Megasew boasts that the 'Triple Differential Ratio Feeding' mechanism in the machine can overcome the challenges taking place during multiple stretching of different kinds of fabrics. The company claims that its competitors just have single differential in their flat seamers while, with MJ101TX, the denser seam with more flexibility can be achieved as it's easier to adjust the SPI.

Furthermore, the adjustment of coarse stitch or fine stitch has become easier as with MJ101TX, the mechanism of opening screw on the left side and moving Feed Rocker Link in the normal flat seaming machines has now been re-engineered by Megasew. The mechanism is now incorporated on the right side of MJ101TX and, with this change, the stitch adjustment has become more visible and viable.

Adding to this, Megasew boasts that the 'Triple Differential Ratio Feeding' mechanism in the machine can overcome the challenges taking place during multiple stretching of different kinds of fabrics. The company claims that its competitors just have single differential in their flat seamers while, with MJ101TX, the denser seam with more flexibility can be achieved as it's easier to adjust the SPI.

Megasew MJ101TX

Pegasus FS-700P

Pegasus is a leading Japanese manufacturer of industrial sewing machines. The brand's offering FS-700P series is extensively used across the globe for sewing knit garments. FS-700P series is a 4-needle, feed-off-the-arm, interlock-stitch machine for flat seaming which is the world's first

Pegasus FS-700P

machine bed equipped with a completely enclosed needle-drive mechanism.

The machine comes equipped with 'Oil Barrier' technology which is intended to prevent oil leakage and oil splashes to the various areas around the machine with the help of attached oil seal. In addition, this series responds to difficult-to-sew fabric and/or new highly stretchable material, such as swimsuits with no yarn distortion on the fabric.

Further, the uniquely designed presser foot has the groove on its underside which helps the operator to simplify the sewing on the cross seam sections of the overlapped areas of the garment. Therefore, the overlapped areas in tape binding and lace attaching operations on the fabric, such as briefs and panties, are flatly and beautifully finished, so the wearer feels gentle on the skin without any uncomfortable touch.

Apart from the above mentioned features, Pegasus claims to have certain other significant features which increase the quality of the sewn products. Floating Foot Mechanism is one of them using which fine adjustments for the clearance between the presser foot and the needle plate can be made and that too effortlessly with the adjustment nut set according to the fabric thickness. This mechanism eliminates seam jamming and fabric damage usually caused due to the feed dog, therefore, high sewing quality in minimum of time can be achieved.

Yamato FD62DRY

Japanese pioneer Yamato is specialist in providing sewing technology for knitwear. The company's FD-62DRY is an advanced 4-needle 6-thread feed off the arm, double-edge trimming flat seamer sewing machine.

▲ In Yamato FD62DRY, ergonomic standards have also been given importance for the design of the machine as supporting block has been equipped between the machine and the operator that offers wider working space for easy fabric control, especially on large-scale manufacturing where one operation is being repeated in the N number of garments.

Yamato FD62DRY

According to Yamato, the machine is developed to obtain optimal overlapping of knit fabrics specially in athletic apparels even when the joining fabrics are of contrast colours. Additionally pucker-free flat finish can be achieved for long distance closing seams along the lengthwise grain of fabric.

Marketed as a machine studded with 'Magic DRY' technology, FD-62DRY has a completely sealed structure with no opening above the sewing area which blocks oil leakage. Special seals have been installed on each moving shaft and bar to isolate lubricated internal mechanism from dusty outer environment. The end of shafts are also covered so that there are no chances of oil leakage by any means which help obtain oil-stain free sewn garments which further result in reduced downtime, increased durability and improved flatlock seam.

Further, ergonomic standards have also been given importance for the design of the machine as supporting block has been equipped between the machine and the operator that offers wider working space for easy fabric control, especially on large-scale manufacturing where one operation is being repeated in the N number of garments.

Another technical feature of the machine is that it automatically counts the stitches and cuts the thread at the end of sewing with the help of 'Photo-cell' sensor named AS. This cell counts the programmable stitches and starts/stops sewing automatically when required, therefore, minimising thread consumption.

Juki MF-3620

Juki needs no introduction as the company is a prominent and established name in sewing technology. With a vast product portfolio, Juki caters to almost every segment of the garment industry and its MF-3620 Series is a 4-needle 6-thread feed off the arm flat seaming machine. The machine consumes only about half the power of the conventional models compared to the model equipped with the clutch motor as per Juki's claim.

A mounting base for the direct-drive type machine head is provided as standard with a hand pulley. Various subclass models have also been added; one model is best-suited to the sewing of hard-to-sew

Juki MF-3620

materials with multi-directional elasticity such as swimwear, while another model is for the prevention of uneven feed of the tape-attached parts of boxer briefs and running shirts to provide more consistent seam quality.

In addition, the multipurpose type subclass model which is able to perform both one-side cutting and both-sides cutting has also been added, intended for sewing plants engaged in the sewing of diversified products.

Just like all other flat seamer, Juki's machine too has the oil-leakage prevention provision which is, by far, considered to be the utmost need of a sewing machine. The frame of MF-3620 is shielded and is equipped with mechanisms for micro-quantity lubrication and Juki's unique forced oil circulation. The thread take-up mechanism arranged on the outside of the arm prevents the entry of oil splashes and dust.

The MF-3620 is also configured with oil-thrower mechanism to protect the looper section from oil infiltration. Excess oil is speedily reclaimed via the new oil groove.

Furthermore, the presser foot of this flat seamer is equipped with a cloth cutting mechanism. This presser foot ensures a smoother feed of the fabric and helps reduce the load applied to it.

Siruba D007R

Taiwanese sewing machinery frontrunner Siruba has matured to cater to all requirements of the sewing room, from overlocks and interlocks to multiple needles and lockstitch machines. Flat seaming technology is also something the company can claim to have a strong hold in as its D007R series of machine has already gained a lot of attention from the industry.

▲ In a major development, the majority of the machine parts of Kansai are DLC (Diamond Like Carbon) coated. This coating prevents machine parts from breakage and wear & tear. DLC is claimed to be done only in the Kansai machines making them better than the other available brands in the market, according to the company.

Siruba D007R

Kansai Special NFS Series

D007R series include various subclasses of 4-needles 6-thread feed off the arm flat seaming machines which are useful in overlapping different fabrics used in athletic apparels, kidswear, and undergarments.

According to Siruba, compact servo-motor directly drives the main shaft with special connector design. It features less weight, agile drive, anti-vibration, low noise, powerful output and precise seaming. The machine comes with a patented electric presser foot lifter mechanism due to which the solenoid is concealed in holding base, saving pneumatic volume and accessories.

Moreover, minimisation in cylinder circumference (as minimum as 150 mm) at the needles allows for sewing small tubular work such as sleeves' seaming of kidswear with high efficiency, without breaking operation at curves. This helps in saving time and labour and promotes higher productivity.

Siruba's 'Forced Lubrication' and 'Forced Oil Collect' systems with filter eliminate oil stains in the sewn garments as these systems block every possible oil leakage around the sewing area.

Kansai Special NFS Series

Morimoto Mfg. Co., Ltd., a Japanese pioneer in sewing technology, is a key contributor in uplifting the knitting industry with its cost-competitive sewing solutions under the brand Kansai Special. Its NFS series is 4-needle, 6 thread, feed-off-the-arm, top and bottom cover stitch machine which is suitable for overlapping of high quality knitwear fabrics in products such as underwear, active sportswear, and swimwear.

In this series, single side cut or both side cut are possible and this system guarantees, according to Kansai, flat and neat finish for optimum texture of the seam so that the wearer does not get rubbed on the skin due to uneven or rough seam.

The knife of the presser foot in the series comes in two variations: LM and MH. MH's knife is much more wider than LM's knife; so it is easier to cut the heavy fabrics on the machine having MH type of presser foot.

Further, a cushion pad has also been added so that the operator can stay free from the machine vibrations and oil stains. In a major development, the majority of the machine parts of Kansai are DLC (Diamond Like Carbon) coated. This coating prevents machine parts from breakage and wear & tear. DLC is claimed to be done only in the Kansai machines making them better than the other available brands in the market, according to the company.

USA: Tukatech's 3D technology helps apparel manufacturer LPH Apparel shorten PD Time

Based in California, LPH Apparel Inc. has chosen Tukatech's apparel solutions to boost the fit development process and shorten the product development time. Tukatech's offering Tuka3D has been implemented at LPH Apparel manufacturing facility in California. The implementation of the 3D technology has helped the apparel manufacturer immensely.

LPH Apparel has used Tukatech's 3D technology for its own brand LA DRFT which offers a range of hoodies, T-shirts, shorts, and accessories for men and women. "We recently did a big presentation of our product lines at Walmart's Corporate Office with our products plugged in with the 3D concept. The winning point was that they were already looking to do this program. They were impressed that their vendor had already adopted the technology," shared Gaurav Bhargava, President, LPH Apparel Inc. with *StitchWorld*.

TUKA3D is a 3D enabled apparel design and development software. An easy-to-use software, it allows to develop fit samples and customise them in 3D without the need of a physical sample. It prevents wastage of fabric and accessories, and also cuts down on the approval time.

"This technology has helped us in shortening the product development time with our global partners. Apparel fitting has now become much more easier and efficient. And this has enabled us to act fast, produce fast and deliver fast," added Gaurav.

Use of virtual samples for faster fit process is definitely the future. CAD and 3D software help apparel manufacturers based in USA to virtually bring the reality to buyers, and thus expedite the decision process.

India: German knitting machinery manufacturer Karl Mayer introduces TERRY.ECO concept

Germany-based knitting machinery maker Karl Mayer recently held two 'Tricot Circle' events in India, at Daman and Amritsar. The company presented its TERRY.ECO concept for the first time in the country.

Markedly, TERRY.ECO is a highly efficient concept for warp knitting and can help produce up to 1,800 kg terry fabrics by roughly consuming 87 per cent less energy per production of a fabric.

TERRY.ECO can produce up to 1800 kg terry fabrics by consuming 87 per cent less energy per production of a fabric

> *Karl Mayer recently held two 'Tricot Circle' events in India, at Daman and Amritsar.*

India notably became one of the three most important markets when the country ordered more machines than ever before from the German company back in 2015.

Mark Smith, Sales Manager, Karl Mayer said, "The country has a population of around 1.3 billion and everyone needs clothes and we are trying to thrive on this developing economy and as a manufacturer, we think we are in an ideal position to deliver the best quality machines."

Around 135 participants also showed interest in topics such as textile product innovations of the HKS series for the athleisure sector, to smartly designed, chic RSJ goods for sports and leisure to the virtual showroom of KARL MAYER. The feedback from the audience and the talks during the breaks made the KARL MAYER representatives optimistic.

Notably, the German manufacturer contributes to the Indian textile industry by organising such events where the textile specialists from the country deliberate on innovative ideas in the warp knitting sector.

Brazil: Groz-Beckert to exhibit latest knitting technology at Febratex 2018

Groz-Beckert, a global leader supplying industrial machine needles, is all set to exhibit its latest legwear circular knitting technology at the upcoming 16th edition of Febratex, a textile event, slated to be held from 21st to 24th August 2018 at German Village Park, Brazil.

At the event, Groz-Beckert will demonstrate knitting innovations in socks and other hosiery products apart from legwear, showcasing a broad line of needles and system elements for up to 10 different models.

In the circular and flat knitting zone, the company will also put up its all-innovative three acrylic glass transparent knitting machines with detachable components. The development of their Litespeed Needle – Litespeed Plus, which is an optimised needle function that reduces the machine's temperature and helps saving energy significantly during the knitting process, will also be displayed.

Groz-Beckert will showcase its all-innovative three acrylic glass transparent knitting machines at Febratex

Groz-Beckert will also be providing the visitors at Febratex 2018 with latest tech innovations in weaving and sewing segments.

In weaving, the company will exhibit its KnotMaster AS/3, a high-performance warp tying machine that can produce cotton and wool, synthetic, mixed and elastic yarns. Whereas in sewing, Groz-Beckert will display the Smart Ideal Needle Handling (INH) concept.

The patented process ensures hustle-free handling of damaged sewing needles and enables digital documentation of all needle breakages and changes.

The popular needle manufacturer will be available at Booth No. 58-61.

Japan: Book on the evolution of knitting tech supplier Shima Seiki released

Japanese computerised knitting manufacturing giant, Shima Seiki has launched a new book that describes the invention and evolution of the company's flagship WHOLEGARMENT knitting machines series. The book named, *'WHOLEGARMENT – The Philosophy and Technology of a Fashion Revolution'*, is written by Dr. Masahiro Shima, Founder and Chairman of the company.

The new book, published by LID Publishing, entails the story of the inventor himself and how his company brought a revolutionary change in the fashion industry.

The book by by Dr. Masahiro Shima, talks about Shima Seiki's WHOLEGAREMENT knitting machines

Notably, the success story of Shima Seiki began in 1962 when Masahiro laid the foundation of the company with the sole aim of developing a fully automated seamless glove-knitting machine.

With time, Shima Seiki proliferated its product range, adding flat knitting machines and entered into the era of computerisation. As a result, the company started focusing on computer-aided knit design and programming and revolutionised the world of knitting with the introduction of WHOLEGARMENT knitting machine in 1995.

> *The new book entails the story of the inventor himself and how his company brought a revolutionary change in the fashion industry.*

Today, WHOLEGARMENT knitting machines produce knitwear for major high-street brands as well as high-end fashion houses. The WHOLEGARMENT book narrates the story of how Masahiro Shima developed both technology and philosophy and connected them to build the empire of Shima Seiki, the market leaders of today in knitting.

Italy: Knitting machine manufacturer Santoni to focus on footwear with X MACHINE

Santoni, the Italian knitting machinery manufacturer, in joint efforts with Lonati, an Italian hosiery equipment manufacturer, has come up with innovative X MACHINE that can knit countless intarsia items for seamless uppers.

This innovative machine is the result of efforts of R&D department of two companies with a special focus on footwear and counters the challenges existing in the market. It allows having distinct mapped areas according to the type of yarn used and according to the various structure combinations, so as to produce a product ready for the application of the sole, which is the last production stage of a shoe.

The production time offered by X MACHINE ranges from 5 to 7 min. per piece. It will also help in minimising cost with the quality, reliability and ease of use it has to offer.

The shoe uppers have dedicated areas aimed at matching unlimited patterns and colour combinations, including three-dimensional areas and eyelets for the laces, giving these uppers a unique shape. The fully electronic X MACHINE offers infinite patterning possibilities and colour combinations. It also includes a revolutionary intarsia system that allows creating unprecedented 3D patterns.

Another machine designed by Santoni to cater to the challenges of the footwear market, is MEC-MOR circular knitting machine. Considered the most complete knitting machine in motion, it solves problems like cutting of the lateral selvedges and rolling up of the knitted fabric for the final phase of the footwear production process.

Adding to this, in terms of productivity, the machine ensures maximum precision and performance of seamless uppers because of the large number of feeds.

The production time offered by X MACHINE ranges from 5 to 7 minutes per piece

USA: Softwear Automation, Avery Dennison to 'digitise' apparel production

Digital apparel manufacturing will help Softwear Automation and Avery Dennison to achieve customisation and speedy delivery

Softwear Automation Inc., a US-based robotic sewing company, has joined forces with Avery Dennison, a leader in functional materials and labelling solutions, with an objective to enable apparel manufacturers to create a fully-digital supply chain.

Digital apparel manufacturing will help the makers achieve customisation and speedy delivery expectations of the customers. Notably, being able to cater to the growing and changing customer demands is the new success mantra for the apparel firms.

Avery Dennison, with this new business partnership, is leading the groundbreaking change in the apparel industry, marking a milestone in innovation and keeping up with its history of pushing boundaries and creating positive change across the supply chain. "Innovation is in our DNA, and this partnership, combined with our expertise and unique position in the value chain, is part of our broader strategy to help factories and brands get their customers the products they want, when they want it," said Michael Colarossi, Vice President of Innovation, Product Line Management and Sustainability, Avery Dennison.

Through the collaboration, the companies feel that digitising the apparel production processes will shorten the supply chain and make it a viable option for manufacturing on-demand, made-to-measure garments. "We have to rethink how we deliver apparel to customers to match their demand for speed, variation and quality," stresses Palaniswamy Rajan, Chairman and CEO of Softwear Automation.

Apart from automation, the new partnership also brings out the sustainability aspect in apparel production. Colarossi thinks that if a product is made only as per the need and is consumed, the amount of waste and greenhouse gases generated could be significantly lesser than what is produced today.

"We can solve a lot of what ails fashion if we only make goods when the order is made. Local, on-demand, made-to-measure manufacturing presents an enormous economic opportunity to tackle the priorities that will help make fashion more sustainable as outlined by the Global Fashion Agenda and The Boston Consulting Group," said Pete Santora, Chief Commercial Officer – Softwear Automation.

SAFE CHEMICALS MAKE YOUR GARMENTS SUSTAINABLE AND HEALTHY

Chemical finishes on our garments deliver certain characteristics to the garments, whether aesthetic or functional. For example, water-repellency, reducing the abrasiveness of yarns, moisture wicking, etc., are some of the features that a chemical places on a garment. But only few realise its hazardous effects on the environment and human health. These chemicals often end up in water bodies polluting them owing to the several washes that they undergo. The issue has raised a concern among brands and consumers from quite some time and calls for innovative solutions or substitutes for these chemicals.

Safer Made, in collaboration with Fashion for Good, has released a new report titled 'Safer Chemistry Innovation in the Textile and Apparel Industry', which addresses innovation areas in textile and apparel industry to introduce safer chemistry innovation in the commercial reality. Safer Made invests in companies that remove or reduce the use of harmful chemicals in products or manufacturing processes. This initiative will help the textile and apparel industry facing increased pressure and scrutiny from consumers, advocacy groups, and regulatory agencies to address the use of hazardous chemicals.

▲ Cotton, the second-most used fibre after polyester, uses as much as 20,000 litres of water to produce one kilogram of fibre, according to the World Wildlife Fund. Due to this, other natural fibres such as rayon, tencel, hemp are gaining popularity as they do not significantly affect the environment.

The specified report identifies five innovation areas within the textile and apparel industry that give safe chemistry solutions, which are New Materials, New Safer Chemistries, Waterless Processing, Fibre Recycling, and Supply Chain Information Management Tools.

New Materials

It is evident that choice of materials used to manufacture a garment can define the effect of harmful chemicals. Materials derived from renewable sources or from recycled feedstocks have the potential to lower the carbon lifecycle, water and chemistry impacts when compared to traditional materials. Sadly, there has been no new developments in textile materials with new performance characteristics.

If the industry has new materials on board, it gives the manufacturers an opportunity to replace harmful materials with something that is safer and performs better. Moreover, the conscious consumers of today have created a demand for sustainable materials. Catering to this trend, a number of young brands are focusing on natural materials and dyes as a key differentiator.

Looking at the statistics, polyester consumption contributed to 55 per cent of the global mill consumption share of all major fibres in 2015, which is almost double of cotton (27 per cent). The report highlights that most of the polyester used by the industry is from virgin feedstock; and only a small percentage of polyester is sourced from recycled PET drink bottle. And the microfibres that are released with every wash of a garment pose a serious environmental threat.

However, there are companies that are working on developing new types of polyester which are more environment-friendly. Poole Company is making biodegradable polyester that can be blended with natural fibres and can be degraded in the environment at the end of the product's life. Some brands are adding bio-based content in PET polyester. Sundried, a UK-based sportswear brand, adds coffee grounds in recycled PET polyester.

Other such companies engaged in new synthetic fibre development are AlgiKnit, AMSilk, Bionic, Bolt Threads, Fulgar, Green Banana Paper, Mango Materials, Spiber, Virent, etc.

Cotton the second-most used fibre after polyster, uses as much as 20,000 litres of water to produce one kilogram of fibre, according to the World Wildlife Fund. Due to this, other natural fibres such as rayon, tencel, hemp are gaining popularity as they do not significantly affect the environment. Lenzing, a cellulosic fibre producer, launched ECOVERO, a product that uses sustainable wood feedstock and cleaner production process. Further, a team of researchers at the University of Cambridge have created a fibre that has the strength and flexibility of spider silk and is made from a material called hydrogel, containing silica and cellulose.

New Safer Chemistries

Chemicals are applied to yarns and fabrics during dyeing and finishing in order to colour fabrics and give them functional properties such as water resistance, moisture resistance, flame resistance, or stain resistance. These finishes call for innovation which is giving an opportunity to established chemical suppliers and young companies to develop possible solutions. Green Theme International, a young company, is developing highly durable water-repellency performance without using fluorocarbons.

Another area is synthetic dyes which can be replaced by bio-based dyes. Today there are many other chemical suppliers of dyes, and most of them have launched more sustainable product lines: Archroma (Earthcolors), Huntsman (Avitera), Garmon (Nimbus) and DyStar (Cadira and Lava).

A company called, Nature Coatings, uses waste from wood industry to create carbon black alternative that does not hurt the environment.

Waterless Processing

Textile industry can be considered as one which uses large amount of water for various processes such as cleaning yarn, fabric, and apparel through the production cycle. Chemicals mixed with water pose a bigger threat to the environment. In this case, waterless processes may allow use of new chemicals, thus minimising the concern related to the use of chemicals.

Dyeing is one process where reducing usage of water can help the industry a lot. One way is cationization of cotton, where cotton yarns, fibres and fabrics are treated with a caustic amination agent. The treated cotton has a positively charged surface that binds better to dye, which is commonly negatively charged.

Solution pigmenting or dope dyeing for synthetic fibres is another approach in which dye is added to the bulk polymer before it is extruded to the synthetic filaments. This type or process can be applied to fibres like rayon.

For sustainable finishing, companies like APJet and MTIX have developed alternative ways to apply chemistry to textiles without using water. They both rely on the generation of atmospheric plasma near the surface of the fabric to bond finishing chemicals. Plasma coating has been used in the electronics industry for many years and is being explored for use in textile finishing.

Fibre Recycling

Using recycled fibres instead of virgin fibres can do wonders and can reduce the amount of water used and the textiles that end up in landfills. Fibres that can be recycled are cotton, polyester, nylon, and fibre blends.

However, recycling cotton comes with a drawback which shortens the fibre length after being recycled, and thus the result is weaker cotton yarns. Mills try to address this drawback by blending these shorter recycled fibres with longer virgin cotton and/ or polyester filament to improve strength and durability.

Besides, implementing standards and certifications or use of RFID tagging or DNA might not provide a clear insight of a supply chain. To counter such challenges, several companies are currently trying to apply the open-ledger blockchain concept to trace items and provide information to consumers. A Transparent Company is an example of one such company working on the blockchain concept.

Polyester fibres made from PET bottles have recently achieved a great adoptability in apparel. According to 2017 Textile Exchange Preferred Fiber Market Report, the use of recycled PET in apparel grew by 58 per cent between 2015 and 2016.

Coming to nylon, it can be recycled through chemical de-polymerization to yield a solution of monomers that are purified and re-polymerized to produce a virgin-like material.

But, recycling fibre blends is more challenging that recycling a single fibre. There are two methods to recycle fibre blends: mechanical and chemical. Shredding the fabric is the mechanical method which is thereafter used in low-value applications.

In chemical process, ionic liquids or other solvents are used to dissolve the fabric, and then phase-transfer agents and other separation methods are used to separate the polyester from the dissolved cellulose. The cellulose can then be extruded and spun into a new synthetic cellulose-based material.

Information Systems that support Supply Chain and Chemicals Management

Increased visibility into the entire textile supply chain can put brands and industry stakeholders in a position where they will have to judiciously use chemicals of concern.

Chemicals Management Information Systems are software tools supporting consulting and verification services that allow brands to make their M/RSLs operational, and to monitor compliance within their supply chain. There are several companies working in this space, including Stacks Data (formerly known as PeerAspect), Scivera and ToxNot.

MAKE US THE BEST TECHNOLOGY
SOLUTIONS PROVIDER IN OUR FIELD

BKS BUKANGS

BUTTON FEEDER

BONDING & SEAM SEALING TECHNOLOGY BY

H&H SINCE 1993

H&H Asia Group Ltd.

H&H - China origin leading manufacturer of machines for Seam Sealing, Heat Transfers and Seam bonding applications. The technology used for Pro-Tech Wear, Outer Wear, Intimate Wear..... seams protection as well aesthetic look.

LOADING, FUSING, STACKERS A COMBINED TECHNOLOGY BY

MARTIN GROUP
FUSING MACHINES

Martin Group

MARTIN - An Italian product Manufactures machines for Continuous Fusing applications, Panel sublimation, Transfers and Accessories to improve productivity in fusing.

SAKHO®

SAKHO ENTERPRISES: No. 4,1st Floor, 1st Cross, 4th Block, SSI Area Rajajinagar, Bangalore-560010. Tel : **080-23106406**

Akesh Kumar **+91 98714 80747** akesh@sakhogroup.com I Anshuman Dash **+91 99010 88911** anshuman@hh.com.hk
Sriram Rengarajan **+91 93425 88914** sriram@hh.com.hk I Gururaja Seshagiri **+91 98867 76303** guru@hh.com.hk
Umesh Bammanwadi **+91 78992 13382** umesh@hh.com.hk

Eastman®

Featuring Spreading Machines
Automatic & Semi-Auto Spreading

PRECISELY WHAT YOU NEED

FAST AND EFFICIENT SPREADING

The Eastman ES-660 Series Spreading System is suitable for all types of knit and woven fabrics and offers multiple functions for fast and easy spreading heights up to 20cm.

- One-way (face-up) or zig zag (face-to-face) options
- Several sizes available
- Heavy-Duty roll weight options
- Automatic and semi-automatic spreading machines
- Spreading speeds up to 97m/min
- Synchronized for fabric feeding and spreading with an adjustable tension controller
- LCD available in several languages

QUALITY Since Eastman 1888 GUARANTEED

- Denim
- Traditional Textiles
- Technical Fabrics
- Composites
- And More!

www.eastmancuts.com

OTHER EASTMAN SOLUTIONS

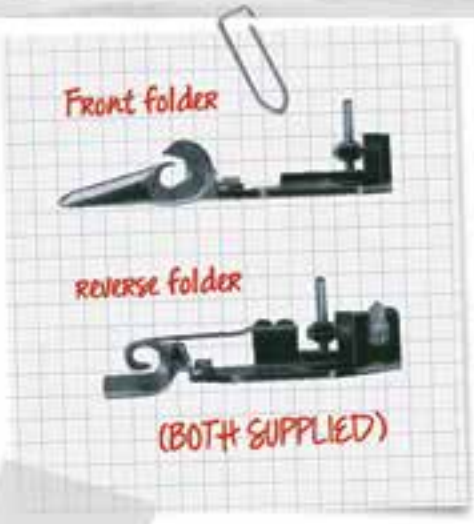
*Up to 7cm of compressed material. Material dependent.

Eastman Machine Company (USA)
779 Washington Street, Buffalo, NY
sales@eastmancuts.com
www.eastmancuts.com

Eastman C.R.A. (Hong Kong) Ltd.
Mr. Rico Ip, (852) 2391 1533/5
rico@eastmanhk.com.hk
www.eastman-ningbo.com

Eastman Liaison Office – India
Mr. Syed Hafeez - +91-9845539295
hafeez@eastman-india.com

Eastman Liaison Office - Bangladesh
Mr. Ali Shaheen, +880-1787664238
shaheen@eastman-bangladesh.com.bd



3022 BHE

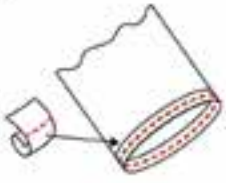
Automatic Bottom Hemming Unit

from chainstitch to lockstitch and viceversa with conversion kit SUPPLIED

electronic regulation of stitch length

SPECIFICATIONS

- **Max Sewing Speed**: 4000 rpm chainstitch
  3500 rpm lockstitch
- **Standard Stitch Length**: from 0,9 to 9 mm
- **Hem Width**: from 9 to 30 mm (optional 42 mm)
- **Sewing Head**: Vi.Be.Mac.
- **Air consumption**: 2 L/min



RECOMMENDED AWESOME BY VIBEMAC

NEWS OF THE MODEL:

- ✔ Lockstitch and Chainstitch kits supplied with the machine: machine configured as customer's request
- ✔ Front and reverse folders included
- ✔ Both needle plates for lockstitch and chainstitch supplied
- ✔ Fast & Easy to convert only 20/25 minutes
- ✔ Maximum flexibility for every style
- ✔ New stand with a special cilynder inside the column that makes machine floating for easy adjustment in heigh

Follow us!!

vbm distributes: VI.BE.MAC. VINCO SEWING jeanstech

VI.BE.MAC. Spa: Via Monte Pastello 7/1, 37057 S. Giovanni Lupatoto (VR), Italy - Ph: +39 045 8778151/52 - www.vibemac.com

For info, write an email @ **sales@vbm-grp.com**

or contact vbm local branches @ the adresses: sales@vbm-ae.com (UAE) | sales@vbm-bd.com (BANGLADESH) | sales@vbm-br.com (BRAZIL) | sales@vbm-cn.com (CHINA) | sales@vbm-co.com (COLOMBIA) | sales@vbm-eg.com (EGYPT) | sales@vbm-et.com (ETHIOPIA) | sales.t1@vbm-id.com (INDONESIA) | sales@vbm-in.com, sales.t1@vbm-in.com (INDIA) | sales@vbm-jo.com (JORDAN) | sales@vbm-lk.com (SRILANKA) | sales@vbm-mx.com (MEXICO) | sales@vbm-pk.com, sales.t1@vbm-pk.com (PAKISTAN) | sales@vbm-ro.com (ROMANIA) | sales@vbm-rs.com (SERBIA) | sales.t1@vbm-tr.com (TURKEY) | sales@vbm-ua.com (UKRAINE) | sales@vbm-vn.com (VIETNAM) | sales@vbm-za.com (SOUTH AFRICA)