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Design moves into the next dimension



Assyst-Bullmer

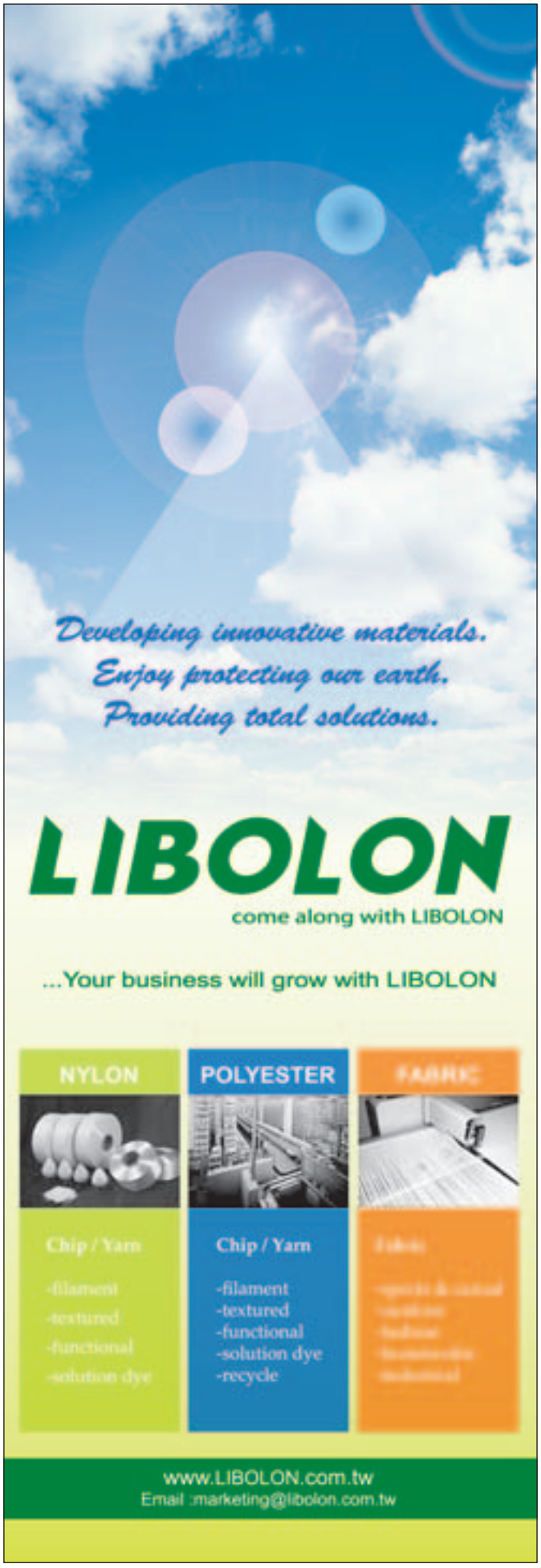
It is news to nobody that the apparel industry in the 21st century is a far cry from that of 20 years ago. The era of producing two collections a year has passed. Companies now work in a much more pressured environment as they are forced to constantly launch new products and designs to catch the eye of savvy consumers, whilst all the while reducing costs and turnaround times from the design phase to the final product. Competition is fierce and whilst quality remains paramount to many, companies with the best product can still fail if they do not get it to market fast enough. Therefore any product that can speed up this process and improve collaboration between the different stages of design and production can only be positive and 3D prototyping could be just the answer many are seeking… as long as they can be convinced to embrace it.

Whilst it is true that some companies involved in this field have enjoyed great success—over 150 brands including big names such as Benetton, adidas, Triumph, Ocean Sky, Delta, Beach Patrol, VF, Nan Yung, and Russell Athletic already use Israel-based Browzwear International's V-Stitcher technology—the adoption of 3D prototyping has been slower than many envisaged. This is due to several factors including designers and model makers being wary of losing control over the design cycle and managers' reticence to invest in new systems that could alter well-established operational processes. Therefore, although 3D processing models have existed for some time, their use often remains limited. But, with the constant development being seen in this area, 3D prototyping could soon be employed far more widely.

Remote communication

CAD/CAM companies now offer full 3D packages to streamline the entire development cycle enabling designers to simulate properties such as texture, drape and fit on a virtual human body. Browzwear International's V-Stitcher and US-based Gerber Technology's latest AccuMarkPattern Design Software both allow designers to create virtual garments from 2D patterns and then view them on a 3D human form (avatar) for precise fittings, thus reducing design cycle times and cutting costs.

One major advantage of 3D prototyping is the opportunities it opens up in online collaboration between designers and customers. Live meetings can now be held via the internet within individual organisations and with clients and suppliers, allowing immediate fit evaluation, feedback and modification. Using Gerber's V-Styler, designers can make detailed high tech presentations of their design ideas in a true-to-life visualisation which simulates the drape of fabric on a garment in 3D, design colours and textures and creates detailed virtual samples. Pattern modifications can then be made using its AccuMark V-Stitcher, thus reducing the number





With Assyst-Bullmer's vidya system the pattern maker can visualise new models on a 3D dummy in the desired size and in a variety of adjustable poses.

Assyst-Bullmer

of physical samples required. Gerber's AccuMark allows designers to show changes on the avatar in real time, whilst its C-Me free viewer enables remote presentations of collections or real-time collaborative fitting and design sessions with buyers, suppliers and retailers at any time in the pre-production, production or merchandising process. This is an invaluable tool in the modern industry when you consider that customers, suppliers and manufacturing facilities can be based thousands of miles apart.

All in the details

German CAD/CAM developer Assyst-Bullmer has also recently made the leap from conventional 2D cut design to the world of 3D, and the company has high hopes for its new system, vidya. According to the company, the primary approach to rationalising cutter technology processes lies in the prototyping, and it believes its latest offering can reduce costs and time by being able to assess and modify the behaviour of a fabric and the fit of a garment before a physical model is ever created.

Using vidya, the pattern maker can visualise new models on a 3D dummy in the desired size and in a variety of adjustable poses. The garment can also be selectively displayed in the distance or stretched in order to examine the behaviour of the fabric on the wearer's body. Fit problems due to the fabric stretching, incorrect seams or where the drape needs to be improved are all then highlighted and alterations can then be made using a virtual tape measure and pins. The pattern maker can also make detailed changes on the 2D pattern sections and simply add them to the 3D mannequin on screen. Pattern pieces are automatically checked for consistency allowing possible flaws, which could have been missed by the human designer, to be detected before the pattern is cut. Other factors such as the behaviour of different materials and processing parameters including seam type, top stitching as well as weave and strain resistance due to padding or additional seams are all represented without the need to ever pick up a pair of scissors



In response to customer demand Browzear has expanded its garment library.

Browzwear

or waste a single piece of fabric.

This ability to be able to correct possible problems before a 'real' sample is made is proving popular with the apparel manufacturers that have embraced 3D prototyping and these customers are now demanding systems that evaluate ever-more aspects of the garment. In response to requests made by its V-Stitcher customers, Browzwear recently launched a new version of its system, V-Stitcher 4.1, which provides an extended library, additional information on possible pressure points in a garment—a particularly relevant factor when designing sportswear—and can even carry out neck stretch tests on the apparel without the need to produce a physical product.

Time is money

France's Lectra also recently launched a new system, Modaris 3D Fit, having spent eight years on research and development before bringing it to the market.

Providing a library of 120 fabrics and their characteristics, 2D patterns, and both standard and configurable dummies, Modaris 3D Fit allows the fit of a garment to be validated for colour, balance, sewing lines, and proportions all the while considering the product specifications, and creative and production constraints. As with Browzwear, Gerber and Assyst-Bullmer's solutions, it is also said to shorten lead times and reduce the number of physical prototypes whilst enhancing collaboration between pattern makers, designers, product developers, and sales teams, therefore reducing development costs.

The decision makers in the apparel sector are all too aware that cutting lead times and production costs is vital for survival in the modern industry and 3D prototyping would appear to be a valid option for improving speed, collaboration, and general efficiency at the critical design stage, as well as cutting costs. As Astrid Marlier, Lectra's product manager for pattern making and marker making for the fashion market, comments, "More than half of a garment's cost depends on decisions made during the design and development phase. Thus, prototyping plays an important part in the success of a collection."

