Mass customisation

What if the customer had the choice?

The steadily growing availability of mass customised consumer goods (and some services) has become a major aspect of retail activity in the 21st century. But what does it mean for the sports manufacturing industry and the associated retail outlets? On the one hand, manufacturing base specifications in batch quantities and then providing customisation to order - accepting that there will be additional costs, and profits, in allowing the end user to personalise their purchase by specifying the colour, style, design and decoration from a predetermined list of options. On the other, manufacturing fully on a more substantial scale, retaining the margins associated with mass production (even though they may be lower per unit), but unable to supply a final product that meets anything more than the most generalised demands. Although apparel comprises the majority of mass customised products, the concept stretches far beyond one industry – to automobiles, eyeglasses, aeronautics, toys (for example Barbie dolls), computers and furniture.

The benefit of mass customisation for the operation

For the manufacturer, mass customisation offers the ability to produce a unique product from the base specification; one that cannot be copied by the competition and one that enables him to charge a premium in offering a personal privilege to the customer. The retailer shares in the premium as an increase in the margin and is grateful for the reduction in risk in that the product is unlikely to be returned as unsatisfactory. Discounted stock is reduced accordingly and the seasonal 'overs' sale is reserved for the totally mass-produced items purchased as part of the ever-present calculated retail risk. Recent research has shown that a substantial proportion of retail customers are now prepared to wait for their selected garments and other products to be manufactured to their personal choice.

The purchase might be a tailored suit ordered for an important formal function; body-moulding activity wear that includes an individual selection of performance functions such as an antimicrobial action or protection from UV radiation; a sofa for the family living room or the leather interior of a prized sailboat. Whatever the product, mass customisation allows the consumer to 'buy in' emotionally to the purchase because they had a hand in its creation.

Support the customer to support their customers

Success in mass customisation is achieved by producing items quickly; therefore it is critical that the manufacturer finds ways to reduce the time scale of product development cycles whenever possible. For years Gerber Technology, an international supplier of CAD/CAM systems and IT, has furnished a complete line of automated solutions for a wide variety of end-uses. Mass customisation, however, returns many aspects of high automation to the drawing board as manufacturers face the day-to-day challenges associated with customising their products. But



WebDraping enables the consumer to customise casual or sports clothing. Through the drag-and-drop function on the manufacturers website the choices include colour, fabric, and style details. Photo: Gerber Technology.

Customer support

The Penn Nyla knitting operation, based in Nottingham, UK, has released details of its own contribution to mass customisation. The company has installed a 'rascheltronic' process, which it describes as a computer-generated jacquard, that enables the implementation of individual designs to almost any level of variation. The process is particularly effective when applied to polyester/Lycra knits, where the elastane control effect can be enhanced or relaxed as necessary. Penn Nyla's suggested applications include swimwear and underwear fabric where the control areas can be adjusted to match personalised requirements.

can the IT sector, and Gerber in particular, meet the first challenge – and radically adjust its thinking to encompass mass production with a succession of singular outputs?

Gerber's spokeswoman, Yvonne Heinen-Foudeh, gave us the answer to that and several subsequent queries: "Most certainly we can, and as an example quote the availability of our line of single-ply cutters. These have been developed specifically to help manufacturers quickly, precisely and efficiently cut a wide variety of materials one at a time - fabric for upholstery, aluminium for awnings, wear-resistant fabric for boat sails, leather for airplane seating and thousands of other materials. The Gerber CAD (Computer Assisted Design) software range exists to simplify and accelerate conceptual design, pattern-making and marking/nesting tasks."

Communication is an obvious point of possible contention in the application of mass customisation techniques and systems, but delivery points for information are crucial to an operation that may be taking place across several continents. "WebPDM provides a direct communication link between brand owners and contractors. With it, all involved parties are immediately aware of any changes in product specifications, costing information and materials availability – preventing costly communication errors and delivery disruptions."

Heinen-Foudeh added, "Our Made-to-Measure (MTM) system is an order-entry system that automatically imports details about a customer, measurements in particular, to manufacturing to ensure the perfect fitting activewear or any other apparel from a retail store, mail order catalogue or Internet web page. The information is transferred to a mainframe computer where it is quickly processed and moved on to all the relevant parties."

Using the Internet is fast becoming second nature to Gerber operatives and the company has just launched an auction website as a means of offering pre-owned and refurbished CAD/CAM products on a global basis.

The value factor in the operation means that smaller companies with budget limitations, which might have had to wait several years before their turnover justified such a purchase as new, can now afford to be on the technology ladder much, much earlier.