Peter Tredwin is a passionate proponent of Mass Customisation and firmly believes that the sports activewear industry has much to benefit from enthusiastically adopting the new technologies. The consumer of the 21st century is no longer going to be satisfied with size - the demand will be for personal fit as well as individuality.

What goes around comes around

Have things really changed in our business or has our world simply come full circle? After all, if you go back far enough in history, our industry started out with customised apparel. Typically lavish creations using spectacular fabrics and trims, exclusively for the rich. There wasn't a middle-class as we know it today. You were rich, or richer, poor or poorer. The latter had little choice but to use what was available. As things progressed, hand woven or knitted fabrics were fashioned into garments to suit an individual's specific needs. Mass Customisation (MC) was born.

Jump forward some centuries and it is apparent that the mega-trend we know today as MC was not invented, it was reinvented. Throughout the process of reinvention there is one common denominator… technology. It enabled mass production, fast fashion and MC. Where would we be without Mr Howe's sewing machine, the first CAD systems from Camsco or Hughes or Joe Gerber's numerically controlled cutting machine? Since those early pioneering days we have seen little true invention. Sewing machines became faster and more sophisticated. CAD systems got smarter and faster and much more affordable, to the point where today even a very small business should not, frankly cannot, survive without such technology. Numerically controlled cutters were reinvented to cope with virtually every fabric, man made or natural.



MC means single ply manufacturing



CAD conceptual design

Choice isn't new, it was merely reinvented to serve those who demand choice and fit, versus what pattern makers call size. For the masses there will always be an M&S or Wal-Mart. The contradictory desires for inexpensive clothing versus personal choice, individualisation, uniqueness, fit and form, delivered fast, are here to stay. Today's fickle, spoilt consumer demands these things as a right and I believe such demands will get louder and less negotiable in the future. If you wish to jump on this inevitable band wagon, do so now, because tomorrow will be too late. In the sports activewear business, tomorrow should always be considered too late.

What size are you?

The mega-trend MC is one vehicle to deliver what I believe are, in today's society, eminently reasonable consumer demands. MC describes the transition from traditional thinking, "size," to new thinking, "fit." Or, to put it bluntly, from "take it or leave it" to "I'll have it my way." MC is exactly what the name portrays. It is an otherwise mass-produced product (or service) modified by the end user (typically from a menu of options determined by the manufacturer) to create a unique, customised product.

A compelling aspect of MC is that it can provide the opportunity to please all of the people, all of the time. Manufacturers and retailers improve profit margins, differentiate from competition and reduce inventory risks. The consumer gets uniqueness, freedom of choice, perfect fit/form, competitive cost, and fast delivery. Consumers choose, possibly even design the fabric. They help design the product, perhaps accessorise it, determine

the look, fit and form. They are involved throughout the entire process. They have "buy in," and therefore are much less likely to return the product. (Why would they wish to return a product that at least in part, they created?)

The difference between "size" and "fit" is simple yet profound. Size is that generic, perhaps intimidating, one or two-digit number found on the tag of your chosen sports garment. It is determined by the designers and pattern makers who created the product.



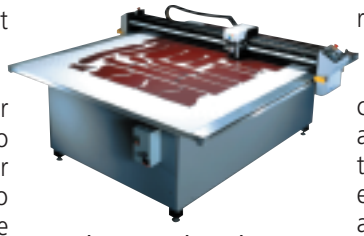
CAD systems are mandatory for cost effective MC

Size is supposed to indicate that the product will fit. Does it? Size may be all right as a guide; it represents a fixed range of choices where individuals may be satisfied. But it is an approximation, a rounding up or down of one's real dimensions. "Size" obliterates the fine distinctions of individual shape, posture and life style. "Size" really only allows garments to be standardised and mass-produced.

The relation between size and fit is too often misconceived, confused, off the mark. Taken to the extreme, you may consider "size" an arrogant statement by the supplier of the product. I do. I have unique body dimensions and emotional preferences. Only I know how I want to use and display the product. I am a one-of-a-kind individual. Aren't you also "different?"

Single-piece production to meet personal criteria

When selecting an item of sports wear we are interested in not just how the product technically corresponds to our body measurements. We are just as much, perhaps more, interested in how the product meets our personal criteria for look and feel, its capacity to exemplify our chosen lifestyle, or to reflect the image we choose to portray to the world. In the sports wear business image is critical. I reside in Taos, New Mexico, home to one of the finest ski resorts in North America. I can ski in jeans and sweater and get down the hill just fine, but if I really want to be a player on the mountain, society dictates I must have the right gear. It is the same when I use my off road motorbike or play tennis - a favourite tee shirt and a pair of broken-in sneakers would suffice in theory but practice dictates otherwise. When skin diving I would like to disguise my unfortunately too large "L" frame with an XL or even XXL wet suit, but society doesn't allow this. It is not always me that demands choices, society also does!



Product needs to be cut as singles

What if a lady plays inadequate tennis or can only ski the bunny slopes? Maybe she feels better if she has her attire personalised to make the best of what she does have. Ladies, if you look good in shorter shorts, or a sexy tennis dress, go for it! That outfit will make a statement about you and your life style. "Fit" must be determined by you. It is a statement of being what you are and how you wish to be perceived. "Size" = "close enough." "Fit" = individuality, personal choice, unique desires, requirements and ambitions.

MC is challenging. It typically means single-piece production. For many manufacturers this requires a new approach to how, maybe even where, they manufacture. MC customers can be discriminating and are demanding. Good (not necessarily the best) quality products, offered at a fair, competitive cost, delivered not just fast, but faster, are mandatory conditions of being an MC winner.

Is MC only for the rich? Today MC does tend to address the desires of more affluent people, those who can afford to invest in choice, perfect fit and form and quicker, personalised service. That situation is, however, changing fast. Tomorrow's opportunities for mass customisation could, should and in my view will, mean anything for almost everybody, anywhere. Rich and poor alike desire choice and individuality - it is your job to help everyone realise those eminently reasonable goals.

Avoiding 'mess' customisation

There are many MC opportunities and countless more loom on the horizon. Our minds may immediately go to MC tailored clothing? In the sportswear business the range is astonishing. From T-shirts exhibiting a picture of a new grandchild or a baseball cap individually introducing me as "Peter." At the other end of the scale how about those engaged in extreme sports such as motor racing, high-speed professional skating, skiing and snowboarding, etc? Where will they get their outfits? Not from the corner store - such clothing is, for the most part, MC.

But how does one avoid what could become "Mess" Customisation? Would you like to make a profit in the process? I suggest you take advantage of the technology available today and the technology that is poised to happen.

Maximising the benefits of MC demands automation, and not just any automation but state-of-the-art systems and services which operate/communicate seamlessly as a total MC process, rather than isolated islands of technology.

To be an MC winner, you need to communicate with your employees, suppliers, contractors, retailers and consumers as if they were co-located in your facility. It doesn't matter where they are or in which time zone...your

computer doesn't see borders and doesn't sleep. There is no room for compromise on this - fast communication and the action this demands is the name of the game.

Where does fit data come from? Consider capturing body measurements via 3D full body scanners, even if this is emerging technology. Technical challenges exist, but they will be solved quickly, as optics and CAD technology learn to communicate better and faster. Scanners will interpret not only pure body size, but also the subtle, nonetheless critical, issues of posture. Emotional, personal issues must also be overcome so that consumers are convinced that only cameras and computers are viewing your important little places and that this intimate information is secure. Smart cards will take care of some of these things, but widespread implementation of body scanning is going to be a protracted process. It will take education and training for both users and operators. Digital body measurement makes sense, so it will happen. Unlike the tape measure, scan data does not lie and it will get better, faster and more emotionally acceptable to hundreds of millions of consumers all over the world.

Keep pre-production digital: CAD/CAM technology is the only option. Why not have designers collaborate on a single design? I think it unreasonable to expect that a single person, however smart and creative, can have all the right ideas and answers, all of the time. First patterns, test markers and "virtual samples," can and should be done digitally.

See patterns taken from 2D to 3D, "stitched" together digitally, fabric created and added, colours changed and the product accessorised; see the entire digital creation draped on a virtual 3D mannequin you have sized to your exact body dimensions and aesthetically created in your own image. You have avoided the historically essential creation of a very expensive "hard" sample and this technology is available now to all who have the vision, business acumen and common sense to take advantage of it.

Just ask yourself the following questions: Shouldn't you in real time be sharing product specifications anywhere and everywhere in the world where you have business partners? Shouldn't you be designing, making patterns and creating economical markers wherever it makes most geographic and business sense? Shouldn't you be sending marker and cut file data electronically to the best cutting room locations, where numerically-controlled systems cut perfect pieces to feed seemingly insatiable sewing facilities? Shouldn't that numerically-controlled cutter provide the best cut-order planning to use somewhere else? Shouldn't you be able to capture the expertise of your best employees and systems and provide their skills as training wizards for newer employees, wherever they are in the world?

To maximise MC opportunities you must be globally mobile, universally connected, and reinvented in the way you conduct business. Today's readily available technology can help make this happen. Everything should, actually must, be connected and shared.



Nike's ID system aims to maximise customer satisfaction by accepting personal preferences

The challenge of POS

We are in a new industrial revolution where communications and information technology will irrevocably change the way we conduct business. Those who do not adapt will, I predict, go the way of last year's snow ...and be gone forever.

However, it is the Point of Sale (POS) which is, in my opinion, the most challenging aspect of MC. You need to reduce lost sales due to out-of-stock merchandise, incorrect size, colour, etc. You would like to quickly, easily and inexpensively customise the colour, style and fit of your products for each customer. Do this and imagine the advantages you will have versus your competitors. Available software instantly captures and reports single product sales, permitting online replacement of goods that are 'hot' and POS software can and should be used to "data-mine." You can predict buying patterns and habits not only for a retail outlet, but also for a single customer buying from a store, or when shopping from a catalogue or off the Web.

The POS challenge is people, particularly those in brick and mortar establishments, who are going to need to be properly trained, motivated and rewarded. Indeed, poor POS is why I think so many companies embrace E-commerce. Despite recent hiccups, E-commerce is here to stay. In the future, more modest and realistic expansion and more prudent control of assets will prevail. The Web will grow, prosper and become an ever more important part of everyone's daily life, most of all for young people. They are already computer savvy and demand choice as of right. They are tomorrow's buyers of mass customisation.

Peter J. Tredwin is a consultant specialising in Mass Customisation and pre-production automation. His career spans over 30 years serving the high-tech needs of the apparel and allied industries.