



A cut above

Technology for cutting automotive leather is advancing all the time. There are powerful benefits to be gained from adopting the newest automated, computerised cutting systems, but, as this article suggests, if tanners are to make investment in this new technology effective, substantial change in the way their cutting teams work and think will be necessary.

For the last two years at least, it has been a good time to be involved in producing leather for car interiors. Car companies, the original equipment manufacturers (OEMs), are increasing their production around the world to keep up with demands from consumers, especially in China and other fast developing economies as well as in a resurgent US market. Specialist research firm IHS said at the start of 2015 that it expects global vehicle sales of 88.6 million this year, an increase of 2.4% on its estimated total for 2014 of nearly 86.5 million. This would make 2015 the fifth consecutive year of growth following the low point of the global economic downturn in 2009.

China will lead this year's growth. IHS analysts expect light vehicle sales in China to grow by 7% in 2015 to 25.2 million units, of which two million will be in the premium segment (important in the context of this article because premium and luxury vehicles tend to use a high volume of leather in their interiors). The corresponding figure in the US will be 16.9 million units, IHS has forecast.

This growth would be good news for leather even if the share leather enjoys of all the surface materials that go into car interiors at the moment stays constant; seating systems manufacturer Lear Corporation puts this at between 4% and 5% of the total. Some industry commentators believe leather is becoming increasingly popular because consumers like it. OEMs have to pay more to put leather into seats, steering wheels, door panels and so on, but the increased prices they can convince consumers to pay for these options compensate the car brands for the extra expense many times over. Either way, more of the world's finite volume of hides are going to go into automotive leather. The United Nations Food and Agriculture Organization (FAO) puts the total volume of hides available to tanners at 160 million in 2014 and, with beef consumption likely to remain flat, it predicts that the figure in 2020 will still be 160 million. Estimates at the moment are that 26 million of these hides are being used to make leather for cars, a share of just over 16%. In 2020, the industry commentators we have spoken to believe this figure will increase by more than 50% to reach 40 million hides by 2020, putting automotive's share of the overall market at 25%.

Add value, strengthen ties

Tanners have told *World Leather* that their passion and purpose is to transform these hides into the much-imitated-but-never-equalled material that is leather. With a decline in demand among large-scale footwear producers in the last year or so, extra orders from automotive companies, either the OEMs or their tier-one seating suppliers, will be welcome. However, OEMs have made it increasingly clear that they would like tanners to ship cut parts or even complete kits, meeting the particular requirements of each of their models, instead of whole finished hides. In some cases, a full set of cut leather pieces for a car





interior can contain 150 different components. Even the 0.5 square-metres of leather that goes into a steering wheel is likely to be shipped in four pieces. It's a complex operation and one that tanners insist adds little on its own to tanners' profitability, but customers want it and it can add value to and cement relationships between tanners and OEMs. Tanners understand very well the importance of adding value. They calculate that to take a raw hide and process it to wet blue stage is to add around 25% to the value of that material. Turn it into finished leather and you will add another 75% or 80% to its value, and in some niche markets, such as luxury automotive, that figure would probably be closer to 100%.

There appears to be a consensus among the tanners we have talked to about this that a cutting operation does little to add further value, at least for them. "When you cut, you come up against low-cost competitors," tanners say, "some of whom carry out leather cutting at prices that are genuinely astonishing. There are locations where you cannot imagine operators investing in the necessary raw material, machinery and expert labour that

they would need to produce high quality leather, but when it comes to cutting that leather, you can cut it anywhere."

Nevertheless, everyone in the business recognises that the skill and knowledge required to mark up the defects on a hide accurately reside in tanneries. The experts that tanners employ to spot these defects and assess how they affect each hide's suitability, which can vary from OEM to OEM and from model to model, play a critical role in keeping cutting yields (and margins) healthy. When nesting takes place, it must take the marked-up defects into account. This is done by software these days, of course, with some systems then projecting an image of where cutting dies must go, for operatives to put each metal die in the correct position, before the press rolls and the pieces are cut. Other systems are automated and require no projection and no cutting dies. The technology providers who manufacture these automated cutting systems are the ones who hope that a greater emphasis on cutting in tanneries will give them the opportunity to start or re-start a dialogue with tanners about upgrading the systems they run in their cutting rooms.



A BMW plant in China. Analysts expect light vehicle sales in China to grow by 7% in 2015 to 25.2 million units, of which two million will be in the premium segment, which consumes important volumes of leather.

CREDIT: BMW



The need to adapt faster

One of the strongest arguments in favour of a shift to automation is that it offers tanners greater flexibility, versatility and speed of response to the needs of OEMs. This is important in the automotive market today because, after years of working hard to simplify their supply chains, OEMs now seem keen on regional variations, market-specific options and customisation. Local adaptations extend to interiors, too, making it harder than ever to keep sets of dies for cutting up to date. Fully automated, fully digitised, computer-controlled cutting systems can make it easier for tanners to adapt their cutting-plant operations to the changing needs of their customers than they would be able to do using more traditional systems that combine cutting tables, dies and presses or rolling plates. One specialist automotive tanner in southern Europe says an example of a simple-sounding request that it had to respond to involved an OEM asking for a change to the interior in a particular model to offer drivers a place to put their iPhones while driving. In the end, this resulted in the whole of the car interior having to be redesigned. A computerised cutting system can take a change like this in its stride. And cutting plants that have the capacity to modify quickly and easily the pieces they cut from finished hides stand a strong chance of being able to attract new automotive customers and grow their share of the market.

Other benefits that the technology providers flag up include the possibility of tanners offering a cutting service to automotive customers for the first time. Another is that any who might have been reluctant to move upmarket and begin sourcing and tanning expensive, higher quality hides can have confidence that the automated cutting solutions will help them achieve a return on that investment by making it easier for them to obtain the yields they need and make fewer costly mistakes. At the other end of the raw material spectrum, tanners working with poorer quality hides should find that the more advanced a software application is, the better it should be at including every possible square-centimetre

Designers deciding where in the car upholstery to put a special pocket for the driver's smart phone may sound simple enough, but one recent project led to a complete redesign of the interior.

CREDIT: GEORGE DOLGIKH/SHUTTERSTOCK

of finished leather at the time of nesting, helping in the objective of achieving yield targets and reducing waste.

Everyone with a vested interest in cutting operations for automotive leather agrees that good yield management is the key to success. No technology provider argues that automated cutting systems should replace the people with the expert eye, who can detect any flaw in any hide and interpret what it means, but they do believe that if their solutions can make nesting and yield management more accurate, they are a worthwhile investment.

At the same time, technology providers at this end of the cutting system market argue that their solutions do nothing to undermine the skills and knowledge of the people who work in the tannery. Instead, they say the combination of their technology and tanners' expertise offers "an optimised solution", the best of both worlds.

Total cost of ownership

They know from their own conversations with tanners that doubts remain about automation. It's expensive technology and die-cutting still works well for many. Technology providers do not play down the cost of their latest digitised solutions, acknowledging that, for global groups in particular who have a number of cutting plants sharing the workload, multiple machines would be required, meaning a substantial investment and much boardroom deliberation before placing an order. Some tanners insist die-cutting gives greater productivity, others say they simply prefer to stick with what they know. Automated cutting systems are not new, of course. Earlier versions came onto the market about 20 years ago, although the companies that



produced them acknowledge that these early system failed to live up to expectations in many cases. This happened not just in leather, but in other application areas too. In leather, however, people stick around for a long time and have long memories, so that, unlike in other target industries, when, a few years ago, the technology providers sought to begin a new dialogue about new automated cutting systems, they found themselves talking to people who had “heard it all before”. Time has moved on and the new systems are more flexible and offer greater accuracy than earlier versions. It is essential for operators to learn the system well, but once they have they can lay out hides on the cutting table in the correct way and then carry out most of the rest of the cutting operation using only one tool, a mouse. It does take time for the system to calculate how to handle each hide and for the knives to start cutting, which is why many tanners find die-cutting more productive.

The response to this from the digital side of the argument is that this perception of increased productivity has some validity but fails to take into account total cost of ownership. New sets of dies every time an OEM introduces a new model or a change to the interior layout of an existing one (as in the iPhone example) do not come cheaply. Laying the dies out and collecting them after cutting is a multi-person job. Carrying the sets of metal dies back and forth between storage shelves and cutting tables is the equivalent of an operator lifting 1,500 kilogrammes in the course of a single day's work, one furniture company has calculated.

As they are fully digitised, automated cutting systems capture data constantly, providing details of yield, costings, traceability, quality of raw material, time to cut, suitability for a particular OEM or particular models, and so on. This data can help tanners monitor their productivity and performance, but increasingly it is information that data-hungry OEMs want and, increasingly, expect to see. It will link smoothly into order management, enterprise resource planning and a range of other back-office tools. There is even speculation in the industry that OEMs may insist on seeing it in future, making collection of this data a prerequisite for doing business with them. Tanners say they are already feeling this pressure.

All of this could drive tanners towards investment in automated cutting systems, but it would be inaccurate to say no degree of reluctance would remain. Companies in the leather industry say that if OEMs try to treat leather in the same way they do other materials they buy, including plastic and metal, they will be making a mistake. The process steps for producing plastic, for example, are predictable and well documented and calculating cycle times and the price of the finished product is relatively straightforward. Making leather, in contrast, involves around 50 production steps and each one can have an important influence on the quality of the finished product; all 50 steps are needed. If powerful customers, insistent on “managing by numbers”, invite tanners to try to cut corners to make their production “fit in better” with the rest of the automotive supply chain, they will be asking too much and it will be further evidence that, in the twenty-first century, the customer is not always right any more.

A whole new logic

Benefits can accrue from investment in automated cutting technology, but not, as mentioned, at the flick of a switch. Quite the reverse. In their new conversations with tanners, technology providers this time around are keen to emphasise the need for change-management to go along with the technology. Processes and work-flows will alter and will enforce on any tanner



Automotive companies are making their offering to consumers more varied and customised than ever before, which means a faster response is needed from all suppliers, including tanners.

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investing in the technology what one cutting systems expert describes as “a whole new logic”. Technology providers have professional services teams who will work elbow-to-elbow with cutting-plant operators and management teams to show them how best to make use of the system. There has to be an acceptance among user organisations, they say, that you cannot just turn the machine on and start saving money instantly.

Parallels in other industries

Fortunately, there are strong parallels between the way tanners can address this and the experience of fabric manufacturers, whose world changed around 2012. Until then, producers of fabric for automotive upholstery were often, like their rivals in the tanning business, traditional companies who had a set way of doing things and were resistant to change. But in the last three years, many of the fabric producers that have managed to remain competitive have done so by embracing change and adopting the required “new logic”. They have changed sufficiently to allow the new technology to help them increase their responsiveness and their productivity to the levels required to continue in their market today. Investing in the technology and in the change-management expertise that came with it ceased to be a question of cost for them, but became instead a question of survival. Technology providers believe the same could happen to tanners and they argue that tanners need to move now to make themselves ready today for what is certain to come tomorrow: more exacting demands from OEMs and more intense competition to meet them. ☉