



Leather cutting “two industrial revolutions” behind the times

Speaking at the 2016 Automotive Leather conference that his company, a specialist provider of automated leather cutting technology, organised in Bordeaux in April, Roy Shurling, Director of Lectra North America, said he believes leather cutting is “two industrial revolutions back”.



The teams of people at tanneries or at tier-one seating suppliers who cut hides into kits for car interiors have a lot of ground to make up, according to Roy Shurling, the director of Lectra North America. He believes leather cutting is “two industrial revolutions back” from other parts of the automotive supply chain. Some might look at this as being a reflection of the traditional values of the leather sector and a testament to the artisan skills required to handle this most noble of all the materials that go into cars. Others may take the view that, in a competitive environment such as today's, a reluctance to embrace cutting-edge technology will open doors for leather's competition, the companies that invite car brands (OEMs) to look no further than plastic for all their interior needs.

Mr Shurling says that in 2015, 90% of the hides cut for car seats worldwide were cut with metal dies, which is the traditional way of carrying out the work. Skilled operators place dies of different shapes onto a hide, in keeping with the pattern that nesting technology has worked out to be the best way to get the best yield from each hide. When the dies are in place, a high-pressure platform presses down on them and cuts through the hide to produce pieces of leather that OEMs will use to cover seats, door-panels, dashboards, steering-wheels and other parts of their vehicle interiors.

OEMs are under pressure to increase the number of models they bring out. An SUV from Porsche is something many industry observers thought they would never see, but now models such as the Macan GTS are extremely popular.

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Mind the gap

The 90% figure comes from Willy van Looy, global director of advanced manufacturing engineering and cut-and-sew operations at specialist automotive interiors company Johnson Controls (which is preparing to spin off its automotive seating business into a new company called Adient). Mr Shurling insists that even the most skillful and knowledgeable tanners or cut-and-sew service providers who insist on using dies have no way of eliminating gaps of about three millimetres between each die. “Eliminate those gaps and you can save about 1.5% of every hide,” he says.

Something Roy Shurling insists on is that no segment of the automotive supply chain (tanners, tier-ones or even OEMs) can change things alone; it's everyone “working together in a collaborative mode” that will bring the big steps forward, he says. “I love the example of the Fiat 500,” he explains. “With the colour selections on the exterior, plus the interior of the car, plus



BMW Individual 3 Sedan (F30) – Interior: BMW individual fine-grain extended Merino leather Opal White. CREDIT: BMW

the stitching, plus other options, you have 500,000 ways to express yourself, meaning there are 500,000 different variations of the Fiat 500. That's huge." Leather is a big part of this; Mr Shurling says Fiat is "really selling" the idea of leather as luxury in this programme, and takes the view that this shows clearly that all companies "inside the eco-system" are going to have to deal with high levels of complexity.

Reverse gear on prices

This might be fine if OEMs were able just to keep charging consumers more and more money for the privilege of having their personal preferences catered for, but the Lectra director believes the reverse is happening. "Just look at the BMW 3 Series," he says. "If you look at the last three models in the series, the price went up, barely, from one model to the next and then it actually went down. Do you think the content of those models is the same? Absolutely not. Each model has more content, more premium features, and the price is going down. Customers want more content, but the pressure on costs is increasing."

Looking at this and at the example of the Fiat 500, Roy Shurling says there are "two huge pressures" on the market now. There are more variables and more models than ever and suppliers have to carry out the development for each of them.

"If you use the same methodology as you have in the past, you will not be able to keep up with customer demand," he warns. "To be able to deal with this in production, you need to improve your flexibility and agility. These are not easy challenges and the trend [towards greater variety and greater choice] is accelerating. For example, I never thought I'd see in my lifetime Porsche make an SUV. And now the SUV is one of Porsche's most popular sellers."

Automotive is a paradox

Mr Shurling admits that, as far as Lectra is concerned, automotive is "a paradox". Inside the automotive supply chain, a lot of connections are digital and automated, he says, and he offers welding and painting as examples, explaining that they are almost entirely handled by robotics and computer-aided design. In 2000, 10% of all the soft fabric (textiles) used to cover car seats was cut digitally, and Roy Shurling insists that even this small percentage was only there because of early adoption of digital cutting technology in Japan. That was good. What is less good, in his opinion, is that many operators in Japan have held back from upgrading and are still using the machines they bought as many as 20 years ago.

By 2015, the total percentage of fabric cut digitally had surpassed 80%. "There has been a huge digital transformation



The Fiat 500, now theoretically available in 500,000 options. It's a complex world for automotive suppliers.

CREDIT: FIAT GROUP

inside the automotive industry in the last 15 years," he says. "But it's not only about making savings. Johnson Controls has been one of my best customers for over 20 years and Willy van Looy has made it clear to me that his operation is more flexible thanks to digital cutting technology. Moving to a digital system has enabled his company to become more responsive to its customers."

The story among tanners and cut-and-sew operators who work with leather is different, though. As mentioned above, only 10% of all the hides going into automotive in 2015 were cut digitally, meaning leather now is where fabric was at the start of the century. "The top six tanners in the world cut 94 million square-metres of leather per year," the Lectra director goes on. "If you take an average of 4.5 or 5 square-metres per hide, it's 22 million hides per year. This represents more than 50% of all the hides cut for this industry, and those top six all use die-cutting." This is the reason for his statement that leather-cutting is behind the times by two "industrial revolutions". His company anticipates that demand in the automotive industry for leather is going to go up between now and 2020, and that demand for using the leather in flexible ways (in terms of colours, customisation and so on) is going to become much greater. This, he believes, is the strongest argument in favour of adopting new technology to carry out this work.

Hard, physical work

Savings are part of the picture, too, though. Mr Shurling pays tribute to the skill of the people who mark hides for cutting in a manual operation and to the hard physical work of the people who carry the dies around, place them carefully onto the marked areas and remove them after cutting. Some tanners have long argued that, with the right people in place, they can achieve a faster flow-through of hides using this method in their cutting operations, but he says one Lectra customer has calculated that one worker in this type of operation may have to lift as much as 1,500 kilos of steel in the course of a working day, such is the level of die-shifting required. Technology can help prevent injuries and save labour. It can save money too, the argument continues. "This is where it starts to unravel," Mr Shurling says. "Even when workers leave no space between dies, when the dies are touching, you get the three-millimetre gap on the hide each time. There is no way to avoid it. Plus, dies cost money too; they cost money to produce. If you move to digital cutting, you gain flexibility and agility, you save time and you get a lot less variability in the cutting. It's a business model transformation and carrying it out is going to be disruptive to your business; it takes time, resources and it takes real dedication. You have to have to want to change. But, if you do it, the value is huge." 🌐