DVN-I
Automotive Interior

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Editorial

Geneva: By Necessity, The First Digital Auto Show

BMW Group CEO Olivier Zipse and Design SVP Adian van Hooydonk during BMW's Press Livestream

The 90th annual Geneva motor show was cancelled three days before its press-preview opening date, on concerns over the spread of the coronavirus that causes COVID-19. Nevertheless, in this week's edition of DVN-Interior you'll find almost everything you wanted to know about what would have been presented.

Most Automakers livestreamed their launches and communications at the date and time originally planned for press days, with some exploring ideas on alternative ways to showcase their products.

Our in-depth piece this week covers most of the new models, interior news will cover cars with interesting published innovative interior technology, and The Design Lounge is focusing on directional concepts, and what they tell us about interior evolutions.

Until recently, makers still found in this type of event a vector of image allowing them to take advantage of the media exposure to publicize their latest models to the greatest number of people. But that was before the advent and explosive uptake over the last decade's time of social media, which facilitates day-to-day communication, community building and maintenance, and targeted advertising in ways that speak often and directly to individuals. Moreover, some brands now prefer to organize their own presentations so as not to be "drowned" in the media flow of trade fairs.

With travel and transport costs to and from the location, the booth (and its fixtures, fittings, lighting, and decor), the logistics and the staff, being present at a show is very expensive for a manufacturer—the cost can run into the double digits of millions of euros or dollars. So even before the cancellation, many makers decided not to participate. Ford, Nissan, Jaguar, Land Rover, Peugeot, Citroën, DS, Opel, and Lamborghini all made up their minds to sit out; they considered the return on investment unfavorable.

Organizers of traditional auto shows are experimenting with formula changes in an attempt to launch a new dynamic: Tokyo became a techno recreation park, NAIAS in Detroit changes from dreary winter to bright summer dates, IAA in Frankfurt goes to Munich and re-centers around mobility, Paris Mondial changes concept…the list goes on.

As good things come from bad, let's hope Geneva reinvents itself for 2021!

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

EVs Rule Geneva E-Show

This is a critical year for automakers in Europe, as 2020 is the base benchmark year of EU fleetwide average emission targets for new cars at 95 g/km CO_2—down from the 2019 average of 121.8 g/km.

In that respect, what is shown at Geneva should display products supporting automakers to achieving the tough new target. As cars need re-engineering for electric (or at least for more electrified) motive power, it's an opportunity to re-engineer, re-design, re-think, and re-work the interior. Interior architecture, connectivity, HMI, comfort, audio, climate, and all other aspects are up for reconsideration to cater for evolving use cases.

Let's take a look at some key vehicles, starting with the Car of the Year

Peugeot 208: Car of the Year 2020

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Jury President Frank Janssen with Peugeot XVP Jean Philippe Imparato

Last year the Jaguar I-Pace EV was the winner. The Car of the Year jury comprised 60 European journalists. Their verdict, considered behind closed doors and announced over the internet on account of the closed show: the Peugeot 208, available in a 100% electric version. It won with 281 points, ahead of the Tesla 3 (242 points) and the Porsche Taycan (222 points). These were the only three electric models among the seven finalists winnowed down from 30 models including nine electrics at the start of consideration. Last year's winner was also an EV, the Jaguar I-Pace.

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A few days after its COTY win was announced, the Peugeot 208 made it into the Top 3 for World Car Design of the Year along with the Mazda 3 Porsche Taycan.

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The new Peugeot 208 has a strong personality that reveals itself at first glance. Its low silhouette, long hood and sensual curves reveal an athletic spirit. Its interior reveals the Peugeot i-Cockpit® 3Di. It gives a new experience of agile and intuitive driving with the compact steering wheel bearing integral controls, the configurable 3D digital handset, the large 10'' HDi touch screen and the 7 piano-keylike toggle "i-switches". You can personalize your interior atmosphere thanks to the 8-color poly ambient lighting for even more modernity.

The e-208 also takes advantage of the technical advances of the eCMPi platform which gives it an optimized architecture, a rear space as spacious as that in the combustion-engined car, and the same driving position.

Fiat 500e

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Fiat chief Olivier Francois acknowledged that the new 500e was partly motivated by CO_2 regulations. The new electric 500 is expected to be built on a new, bespoke electric-car platform, which could be shared with other small Fiat EVs. This new platform and its related architecture so far don’t appear to show benefits in interior packaging.

There are spy shots on the web showing a reworked dashboard with a larger infotainment screen and rotary gear selector. The overall feel could legitimately be called more grown-up, but it's still playful with a pattern of the word "Fiat" stitched into the seats.

Fiat will make 80,000 500e cars a year, starting in the second quarter of 2020.

Renault Twingo ZE

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The combustion Twingo was introduced in 1993. Look for the ZE ("Zero Emissions") on the badge to denote the electric version. Media sources indicate that it will share the same platform as the Smart EQ ForFour. The range could be around 180 km—not much, but still consistent with Europe's class of electric city cars. That said, the Renault Zoe, one of Europe's most popular EVs has much longer range.

There aren't many changes to the interior, and despite a bigger battery, Renault didn't give up any occupant or cargo space.

The EV includes specific and extraverted interior color scheme, overstitching on the seats, and a unique acoustic package to fully enjoy an electric dive. The pedal shaft is also trimmed with a "Z.E." motif, like an invitation to try out the various driving modes.

Since 2019, the center console now includes a storage space designed to accommodate a smartphone in a vertical position. It is now the only model in its class to come with a high-definition 7" touch screen, with access to Renault's Easy Link multimedia system, which includes numerous connected services to make driving a car easier—especially an electric one.

Golf GTE

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Part of VW's big plan for electrification, The Golf GTE's predictive hybrid system uses artificial intelligence combining GPS data and road profile analysis to adapt the car's drive mode. Above 130 km/h, the car automatically switches to hybrid mode and also saves the battery on demand, so that you can drive electrically in the city, even after a long journey.

Specific to the GTE, the Digital Cockpit and its color scheme, and the 10" infotainment system screen display the efficiency and autonomy of the compact plug-in hybrid. The optional IQ. DRIVE offers the possibility of assisted driving up to 210 km/h via Travel Assist (intervention on the steering wheel, accelerations and braking).

The GTE's cabin combines a classy, grown-up design with a sporty steering wheel and some tartan seats borrowed from the GTI. All the materials you'll touch regularly feel solid and supple.

Mercedes E Class

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Mercedes introduced, through a streaming conference with CEO Ola Källenius and Development VP Markus Schäfer, the significantly refreshed E-class (E is a convenient letter here, not meaning electric, though there is a plug-in hybrid E 350e version). The refresh includes the entire E-Class line up, with all body types and motorizations. It includes new interior trimmings, and next step of digitalization and connectivity is included in the new release of the MBUX HMI, including OTA (over the air) capabilities. The interior is intuitive and aesthetic, with new driving assistance, including a steering wheel that uses capacitive sensing to check for hands on the wheel.

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Mercedes' ambition is to be CO_2-neutral by 2039, and they also introduced the new CCLA 250e Shooting Brake, with plug in hybrid version for both diesel and gasoline with minimum 60 km electric in WLTP. Drivers can force the system into a driving mode that prioritizes electric power unless the person depresses the accelerator enough that the computer decides the combustion engine is necessary. Mercedes says 90 percent of everyday driving can be done purely using electric power. The Shooting Brake is a more spacious and more practical version of the CLA sedan. On paper, it offers more boot space than a C-Class estate, but the sloping roofline limits rear-seat headroom and compromises total load capacity.

Interior News

Audi Seat Cloth From PET Bottles

Audi is offering seat upholstery made from recycled PET bottles in the fourth generation of their A3 model.

Up to 89% of the textile consists of recycled PET (polyethylene terephthalate) bottles transformed into yarn, with Audi promising the same quality standards as conventional materials. Approximatively 45 PET bottles with 1.5 liters of capacity are used per seating system with an additional 62 for the carpet.

Other components are being made from secondary raw materials including insulating materials and absorbers, the side panel trims of the luggage compartment, the loading floor and mats.

Audi is working on having 100% seat upholstery made of completely recyclable material. The woven backing layer bonded to the surface material poses a challenge. They are working on replacing this with recyclable polyester.

Germany has already an efficient empty bottle recovery system: the bottle goes in a reverse vending machine, and the customer gets €0.25. Then, still in the shop, the disposable bottles are compressed to save space and facilitate truck transport. Once they have arrived at the recycling plant, they are sorted by color, size and quality. Foreign matter such as the cap is separated. A mill then crushes the bottles into flakes, which are washed, dried and melted down. Nozzles shape continuous plastic strands out of the mass. Once they have dried, a machine chops them into small bits called granulate or recyclate. This then is extruded to create threads. Wound onto coils, these are used in the final stage to manufacture materials.

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New Volvo Interiors: A Breath of Fresh Air

Volvo has updated their S90 and V90 models with features including a new interior air filter to clear out tiny particles. The Advanced Air Cleaner, which was developed for the Chinese market and is now being rolled out globally, has a PM2.5 particle sensor.

The driver can monitor interior air quality via the center screen and the filter can clean the cabin air of almost all tiny particles within a few minutes.

Clean Zone is a fully automatic IAQ (interior air quality) system that separates gases and particles to reduce the levels of odors and contaminants in the passenger compartment. If the air quality sensor senses that the outside air is dirty, the air intake is closed and air recirculation is activated.

In case of driving through a tunnel, and its sensors detect high levels of exhaust fumes, the car automatically closes its air intakes and then switches to air recirculation. All air, even if it is being recirculated, passes through a filter that reduces the level of dust, pollen and other particles. An active charcoal layer acts on chemical odors, and filters out harmful substances such as exhaust gas.

New DS 9 Premium Sedan Launched

The official presentation of the DS 9 happened in parallel to Geneva, after several delays linked to the end of the Chang'an PSA Automobiles (CAPSA) joint venture, then sanitary issues at Auto Guangzhou in China. The 9 is produced in the Shenzhen Baoneng plant where China-market DS cars are built, based on the EMP2 modular technical platform of Groupe PSA in its longest version, which is also used for the Peugeot 508.

The DS 9 has the same 4.93 × 1.85 m dimensions as the Citroën C6 discontinued eight years ago, and the Audi A6. Its design language is characterized by some retro-inspired touches. The rear turn signal repeaters integrated into the C-pillars are notably a tribute to the iconic Citroën DS.

The dashboard and interior are based on those of the DS 7 Crossback, with the only real obvious differences being the door panels, interior vents and a storage space beneath the standard central infotainment display. As on other DS models, buyers will have several interior 'inspiration' themes to choose from, each introducing different leathers, materials and interior colors. These are based on the familiar lineup of Bastille and Rivoli themes using grained leather; the Performance Line, which uses black Alcantara; and Opera, which uses red Nappa leather with watch-strap style patterning on the seats. It includes a nice BRM R180 clock on the dash.

DS refers to the 9's interior as a lounge, a claim it backs up by pointing out the long wheelbase (2.9 m) clears up a generous amount of space for the rear-seat passengers. The dashboard is dominated by a touchscreen for the infotainment system, and there's a second, driver-configurable screen behind the steering wheel. L^2 driver-assistance technology, night vision, and active LED headlamps appear on the list of available features, while a camera tracks the driver's every minute move to detect signs of fatigue, like excessive blinking. It generates an audio alert with display on the screen. It is launched as a plug-in hybrid with 50 km EV capabilities.

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Affordable GM Menlo EV Gives 400-km Range

GM has officially launched a new electric car, the Chevrolet Menlo. It promises a 400-km range and a confirmed starting price of roughly $23,000. But it's only for sale in China, according to a press release.

GM's Menlo moves toward "all-electric" strategy. GM previously outlined an "All-Electric Path to Zero Emissions" in October 2017, and declared a new electric strategy to launch 20 all-electric vehicles by 2023.

GM also promised to launch two new electric cars based on the model for the Bolt EV within the next 18 months: the Baojun E200 and the Buick Velite 6 EV, both produced via joint-venture partnerships in China.

The Menlo's interior has a stylish multi-layer center console. A 10.1" ultra-thin suspension type center control LCD touchscreen, 8-inch full-color TFT LCD instrument panel and multifunctional dual-width steering wheel offer a sense of science and technology while inspiring driving passion. The car comes with 28 storage spaces and up to 1,100 liters of cargo space. Its 1.15-m^2 panoramic roof contributes to the feeling of spaciousness. Laminated glass provides sound insulation and heat insulation, while effectively blocking 96% of UV rays. Heat insulation is more important for an EV, as it reduces the need for energy-sucking A/C usage.

Lexus Safety Tech Migrates into Toyota Models

One of Toyota's core philosophies is Kaizen ("As no process can ever be declared perfect, there is always room for improvement!"). In Japan the number of fatal accidents involving drivers age 75 or older more than doubled from 381 deaths in 2007 to 791 in 2019, Toyota said, citing drivers mistaking the accelerator for the brake as a leading cause. They're determined to do something about it. Specifically, Toyota is migrating Lexus active safety technologies to Toyota as part of the Toyota Safety Sense suite of driver-assist systems. The idea is to introduce new technologies in the upmarket premium brand, where costs can better be absorbed, and then fan distributed out to volume models.

The systems will enable Toyota-brand vehicles to automatically steer around pedestrians, slow around corners and even pull over by themselves if the driver is incapacitated. Toyota vehicles will start getting these technologies this summer in Japan. Different regulations and driving conditions mean it may take longer to export the technology out of Japan.

DVN-I's interior focus is aimed at reducing injury to occupants and pedestrians in the event that a collision cannot be avoided. Well-designed body structure and restraint systems have been developed. Front, side, head and knee protection airbags have been introduced across the car range, along with seat belt pre-tensioners and force limiters. Now Toyota is working to reduce not only life-threatening injuries but also less severe injuries that can impair the quality of life, such as whiplash. More advanced airbag systems, such as knee and chest/abdomen/waist airbags, are also being introduced

Toyota Safety Sense launched in 2015 and received a second-generation upgrade in 2018 with such advanced capabilities as nighttime pre-crash braking for pedestrians, pre-crash braking for bicyclists, lane-tracing assist and road sign recognition.

The Lexus version, called Lexus Safety System +A, has three functions that will now migrate to Toyota: an emergency steering assist will help automatically steer a car around a pedestrian, and a second function will automatically reduce a car's speed while going around curves using radar cruise control. The latter helps the vehicle keep its lane.

Also coming is a driver emergency-stop assist system. That technology automatically slows a vehicle to a stop and calls for help when it detects a problem with the driver, such as sudden unconsciousness or other health issues.

Separately, Toyota also said they will deploy a recently developed system that suppresses unintended acceleration when the driver mistakenly punches the accelerator.

As an example, Toyota is adding new systems to the redesigned Yaris small car arriving his year. They include a pre-crash emergency braking system that works in intersections, and an automatic parking system that self-parks the Yaris by controlling the steering, brake and accelerator. A driver only needs to put the car in reverse, and the system does the rest.

NIO EC6 Goes into Production

NIO is positioned as a premium EV brand in China, with pricing on par with Tesla's offerings. All of NIO's battery packs have liquid thermal management systems and are physically the same size. They have to be interchangeable because of NIOs battery swap stations.

The company is betting a lot on the EC6, their third mass-produced model designed two years ago and now going into production at the JAC-NIO plant. Its success will cement the company's philosophy of EV luxury and performance. The Chinese domestic market insists on spacious interiors, something NIO has managed well so far

The EC6 continues along that line and offers high-performance and a luxurious interior, with room for five, sport front seats, decluttered dashboard without buttons, two digital displays, Nomi car assistant, and trunk space up to almost 1,300 liters.

News Mobility

Microlino's New City Bubble Car

The Microlino is a complete redesign of the original concept revealed in 2015, and demonstrated today for the first time in public, in parallel as well from the cancelled Geneva show.

The Microlino is a compact, urban electric automobile from the Swiss manufacturer Micro Mobility Systems. It was presented in its series version at the 2015 Geneva Show for the first time.

Inspired by BMW's Isetta of 1955, it is 2.44 m long and 1.5 m wide and weighs 500 kg including battery.

The interior has also been completely redesigned. The Microlino steering column is now fixed and no longer connected to the front door. That allows the door to open further, facilitating ingress and egress. The two-seater offers more comfort and the dash is entirely digital now. The dashboard can be customized with occupants' own smartphone, Bluetooth speakers, and other accessories. An aluminum bar that runs from side to side pays homage to the Micro kick scooter that gave the company their start.

Despite a max speed of 90 km/h, it doesn't require a special motorcycle license in Europe since it's classified as a tricycle (two-wheeled electric motorbikes require a special license above 45 km/h). Range is 125 or 200 km, color matches the city (Red is Milano, Paris is Mint, Amsterdam Orange, and so on for each European hub)

Pricing starts at €12,000.

Citroën Ami: A City EV With a New Business Model

Citroën's Ami 6 sedan and Ami 8 wagon were four-door B-segment family cars offered from 1961 to 1978. Now, Citroën is launching the Ami, a new ~€6000 mini electric car that can cost just €20 per month and can be legally driven by a 14-year-old in France.

Direct descendant of the 2019 Ami-One concept, this new Citroën Ami is a real EV. It is actually a quadricycle, a micro-city car that offers 2 seating positions. The Citroën Ami displays very reduced dimensions, just 2.4 m long, 1.39 m wide, and 1.52 m high.

For motive power there's a 6-kW (about 8 hp) motor allowing speed of 45 km/h. The battery has a capacity of 5.5 kWh, for a range of 70 km, and a full recharge performed in 3 hours on a household outlet.

This car will obviously be visible in some Citroën dealerships, but also in the FNAC and Darty stores, which are strong music and household retailers.

Finally, Citroën will also offer a car-sharing option, via the PSA Free2Move App. The Citroën Ami can thus be used from €0.26/minute, after a non-binding subscription offered at €9.90/month. The first deliveries are scheduled for June.

Despite its small size, the Ami still provides a few interesting features like a glass roof and a heated interior cabin.

The Design Lounge

Renault Morphoz: A Shape-Shifting Concept

These directional concept vehicles are created to give the public a preview of what direction each automaker is considering. These vehicles are used to gather feedback on a direction each automaker may propose. Due to cancellation of the Geneva show, automakers have been busy preparing their concept vehicles for their debut but now, out of necessity, have had to create a decentralized media roll out

The 'expanding' Morphoz car transforms from city to country modes that increase interior space and battery capacity.

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Renault Morphoz directional concept

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The center tunnel lengthens the rear interior and cargo volume for more comfort and capacity while also allowing the large bucket type seat the space to be reversible for long-distance travel.

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Each of these substantial buckets also incorporate speakers and ambient/task interior lighting between the headrests and seatback.

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In theme with the morphing concept, the cluster/UX/HMI/ display folds into the instrument panel creating a clean uncluttered look while the full-length center console also expands and contracts.

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With the cluster/display/UX/HMI panel in use, edge lighting effects on the panel and steering wheel highlight the control interfaces.

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Primary driving controls and displays are integrated into the oblong deep-dish steering wheel that also eliminated the switches on the spokes found today.

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Finally, the use of matte wood on the center tunnel, instrument and door panels, that contrasts the gloss black touch panels, add a warmth to the interior environment.

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Hyundai Prophecy: Sporty EV Concept

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Hyundai is showing a radical departure from their current form language with a very sporty 4-door car with Porsche 911-inspired proportions.

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Hyundai Prophecy - production preview concept

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Inside, using a plaid fabric gives reference to the Porsches of old but also uses lighting integrated into the door inserts, as a contrast for a more modern aesthetic.

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Completely removing the steering wheel and providing joystick-type driving controls has freed up the cluster/UX/HMI away from the floating-tablet aesthetic to a more cinematic view at the base of the windshield.

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Using teals and blues for the colorway, a softer more friendly aesthetic supports the more rounded forms used throughout the interior.

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This more rounded form language is also used to visually split the seating surfaces and have the lower cushions integrate with the floor and carpet. This allows the teal colorway to form a contrasting 'racetrack' around the interior perimeter.

DS Aerolounge: Sport Utility Sedan Concept

DS' aesthetic signature, with their latest concept vehicles, incorporate a more angular and dynamic look for exterior and interior designs.

DS Aerolounge - directional concept

The Aerolounge has created an interior space with a high-cowl instrument panel like that in cars from the 1960s.

The main cluster/UX/HMI displays are now hidden underneath a 'bridge' between two door mounted displays—also used as sideview camera readouts—while also creating visual surface interest with crisp origami-type forms.

Buttons, switches, and the typical door pulls are absent with only concave and convex shapes defining the door panels.

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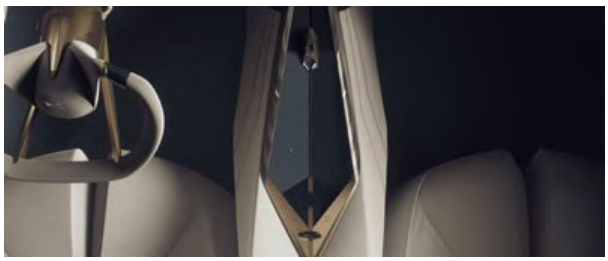
This high-cowl proportion make a clearer separation from the interior vs. exterior of the vehicle that encompasses the occupants with large, crisp, soft forms.

- 

The angular and planar surfacing also translates into metal and gloss black details.

General News

Benteler, Bosch in Pininfarina Pact

Benteler and Bosch are entering a strategic partnership with legendary Italian automotive company Pininfarina, who will complement the pact with expertise in top-notch styling and engineering, and upper body integration with the chassis. Jointly the three firms will cover the entire development process for electric vehicles until start of production, including the building of prototypes. The advantage for electric-vehicle manufacturers is their ability to quickly implement their prototypes in many different variations and designs, saving them both time and money.

Sage to Buy Adient Fabrics Business

SAGE
Automotive Interiors

Sage Automotive Interiors has entered an agreement to buy Adient automotive fabrics manufacturing business, including the lamination business, for $175m.

Sage Automotive Interiors, officially established in 2009 by former Milliken executives, is a portfolio company of Asahi Kasei and a global supplier of technical textiles for the automotive industry. The company develops and produces automotive interior surfaces such as seating, door panels and automobile headliners. Throughout the 2000s, Sage invested in new technology for yarn manufacturing, texturing, knitting, coating and face finishing, and in 2011, invested in weaving technology.

Adient, founded as a spinoff from Johnson Controls in 2016, is the world's largest auto seat manufacturer. Their fabric division comes originally from the acquisition of French manufacturer of automotive interiors textiles Michel Thierry, of Laroque d'Olmes, France in 2010.

Despite the specifics of the case, it confirms the difficulties for Seating suppliers, including seating covers to integrate a fabric supplier. It is probably linked to the difference in technology, development cycle, and real design and engineering decisionmakers at automakers.