DVN-I
Automotive Interior

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Editorial

DAs Or AVs For Christmas?

With the Los Angeles auto show in the rearview mirror and CES looming large just beyond the holiday season, I thought it might be interesting to take a look at consumer opinions about autonomous vehicles. Are buyers and drivers ready to put an autonomous vehicle at the top of their wish list, or do they hanker for more driving assistance technology?

SAE put out a new report just recently, concurrently with surveys on the subject by other groups. In this week's in-depth article, you'll read about the responses these surveys garnered. Without spilling the beans early, let's just say it's tempting to throw all-in towards AVs, but DAs have a lot of mileage left in them. That meshes with how industry leaders are conceptualizing the foreseeable-future market with something of a split between L≤3 private cars, and L≥4 commercial vehicles.

This is a great opportunity for automotive interior innovations! Public perception of AVs is largely dependent on how much control drivers think they will keep, so new technologies and features will have to be even more human centric, which in turn emphasizes the value of what this newsletter is all about: the future is *augmented features*, helping drivers without making them obsolete…at least not just yet.

If you haven't yet been to the new **DVN-Interior website**, do give it a look; For those among you who have subscribed as DVN-Interior members, you can **download our new report** published this week about Interior Lighting.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Lighting Technology

Drivers Still Want to Drive

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Some years back, most industry leaders said they expected autonomous vehicles to be common on highways in the early 2020s. Does that seem likely? No, not really, now that the early hype has faded. With a more informed conversation around AI in the enterprise, executives are walking back their initial statements because they understand how technically difficult it is, and how L4+ works only with a public mobility business model.

Carlos Tavares, head of the pending PSA-FCA company, has been consistently saying fully autonomous cars may never make a mass-market breakthrough, because the technology will be too expensive for retail buyers. Tavares thinks full AVs will remain the preserve of those who could afford to employ a [human] driver anyway. He says his company will continue to work on advanced driver assistants, up to L3 (the car can steer and brake itself on some roads but requires the driver to still pay attention and take control of the vehicle at regular intervals), but not to L4 or L5.

Respondents are generally enthusiastic about self-driving cars, according to SAE in a US survey published last month, but consumer perception of AVs has cooled off lately.

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73% of SAE survey respondents said they prefer to share control with their vehicle, and fully 92% said they want final say by means of an emergency override/stop control in an AV.

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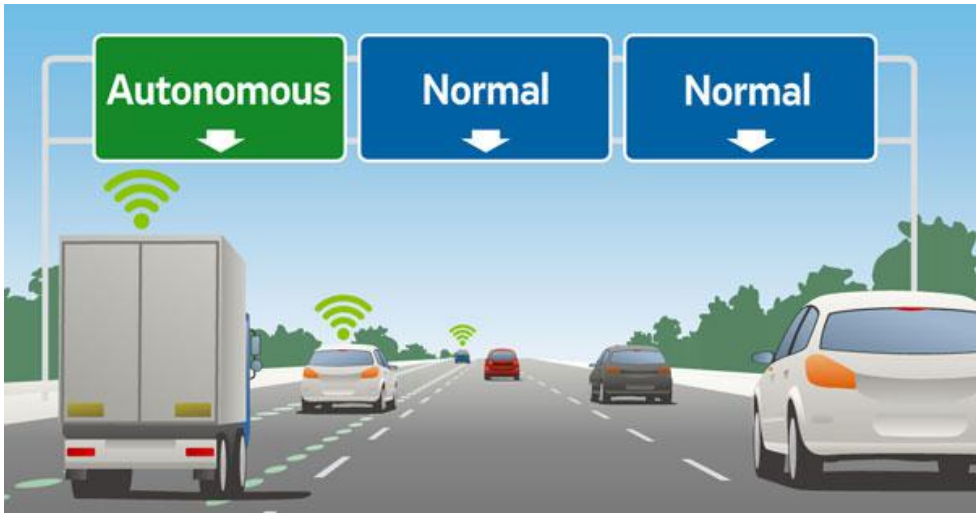
Data for the SAE Demo Days survey was collected from close to 1,400 respondents at four demonstrations totaling 2,000 self-driving vehicle rides, performed by Perrone Robotics. The demos took place between November 2017 and April 2019 in Los Angeles, Tampa, Detroit and Babcock Ranch, Florida. Demo Days examined pre- and post-ride survey responses, which included a mix of brand, consumer-use and mobility opinion-based questions. Participants experienced L3 and L4 features, such as a vehicle starting, stopping, accelerating and decelerating on its own. There was a human safety driver inside each vehicle.

- 

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82% of respondents said they were initially enthusiastic for self-driving cars, 77% said they would seek out a ride in an AV in the future, and 76% said they thought the self-driving vehicle experience was comparable or better than human-driven rides. 37% thought the greatest benefit of self-driving vehicles would be to eliminate or reduce deaths because of accidents, 31% said it would be to increase mobility for the elderly and disabled, and 12% said it would be to reduce travel times.

Surveys like this show public perception of AVs is largely dependent on how much control will be retained versus relinquished. So far, at least, drivers don't want to give up driving—they want to delegate parts of the task, while maintaining supervision over it. Bolstering that result, 72% of participants said they see vehicles with ADAS as having similar features as AVs. It looks a lot like what people want is to progressively get exposed to ADAS technologies, and get accustomed to not doing the whole driving task all by themselves.

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Looking at the demographics, men were much likelier than women to express interest in AVs. Past surveys have concluded that parents are very skittish about letting their children go alone in an AV—an interesting sentiment, given the very high crash involvement of young, inexperienced human drivers.

Other studies, such as J.D. Power's Q3 Mobility Confidence Index study, also find a cooling-off of interest in AV technology. The J.D. Power study, released recently, says people have a "low level of confidence" about the real future of self-driving vehicles. Then again, these are people who tend not to know much about what they're being asked to weigh in on. Over 67% of respondents in the JDP survey said they have little or no knowledge about self-driving technology, and over half said they aren't likely ever to purchase or lease an AV.

And another survey, this one by OC&C Strategy Consultants, finds consumers are more enthusiastic for new technology in China than in the US or Europe. Over 90% of Chinese residents said they would at least consider an electric car, for example, while only about half of surveyed consumers in the U.S. held the same opinion—the figure is between 64 and 77 per cent in Europe.

Car buyers in the United States, Germany, France, and the United Kingdom also want to stay with the present private-ownership way of doing things, while over 90% of Chinese consumers are open to fully-shared mobility options, according to the survey. This feeds into the difficult case for private ownership of AVs.

In parallel with these thoughts and feelings about AVs, another interesting perception among consumers is that today's complex vehicles make their owners struggle to master the technology involved. As makers equip new vehicles with more and ever more technology, the headaches grow for owners. Audio, communication,

entertainment, and navigation (ACEN) systems take up five of the 10 most problem-prone areas owners cite in their new vehicles, according to the J.D. Power 2019 UK Vehicle Dependability Study released late last month.

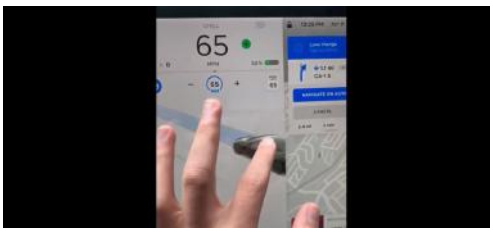
The study measures 177 problem symptoms in eight categories: vehicle exterior; driving experience; features/controls/displays (FCD); audio/communication/entertainment/navigation (ACEN); seats; heating, ventilation and air conditioning (HVAC); vehicle interior; and engine and transmission. The ACEN category averages 16.6 problems per 100 overall, a slight improvement from 2018, but issues with built-in Bluetooth, built-in voice recognition, navigation systems, and poor radio reception mean ACEN remains one of the most troublesome categories.

As technology in vehicles increasingly serves as a lever for brand differentiation, new problem areas arise. In premium cars, the systems that worsened the most since last survey are navigation systems; in mass-market segments it was voice recognition. And the average problem rate for ADAS like blind spot monitoring, collision avoidance, and lane departure warning is 2.4%, on average of 1.8% for mass-market brands and 4% for premium brands—which further highlights the apparent relationship between technology content and problematicity. Those numbers are notably higher than the 1.5% rate for lower-tech systems like alarms, keyless entry, and cruise control.

All in all, these results suggest the auto industry should invest more in perfecting ADAS, interior convenience, and services to help drivers and occupants to feel relieved from tasks and cognitive load.

Interior News

Tesla Adds Driving Visualizations



Tesla is adding new stop sign and traffic light 3D renderings to its Autopilot visualization, as an increase in their cars' support for drivers in urban settings.

Tesla cars' sensor network and machine vision system renders the vehicle's surroundings on the screen. It's certainly no substitute for drivers keeping their eyes on the roadway and environment, but it's seen as a confidence builder for Autopilot as a whole. The visualizations have improved over time, with more of the environment rendered realistically and accurately. For example, trucks, SUVs, motorcycles, traffic cones, and pedestrians have been added to the system's repertoire. Last summer, Tesla released an update with the capability to zoom in and out, as well as moving the visualization around to see 360 degrees around the car.

The new renders, which involve intersections, come as Tesla is supposed to introduce more advanced driver-assist features meant to help city driving as Autopilot does for highway driving.

It would be part of what CEO Elon Musk calls the “feature complete” version of its full self-driving, which Tesla says they aim to push by the end of this year—quite an ambitious goal.

Car Parts from Coffee Beans

McDonald’s (they sell a lot of coffee) and Ford (they sell a lot of cars) have joined forces to channel Micky D's coffee-roasting waste into feedstock for Ford parts.

During the roasting process, the outer skin, known as "chaff", falls off the coffee bean. Ford devised a way to take that coffee chaff and convert it into a durable material that can be used to reinforce certain vehicle parts. The coffee chaff is heated at high temperatures under low oxygen and mixed with plastic and other additives to be turned into pellets. The resulting pellets can be formed into various shapes.

Ford says that the chaff composite material meets specifications that it needs for parts like headlamp housings, interior parts, and underhood components. Components made with the material are about 20% lighter and usually require about 25% less energy during the molding process.

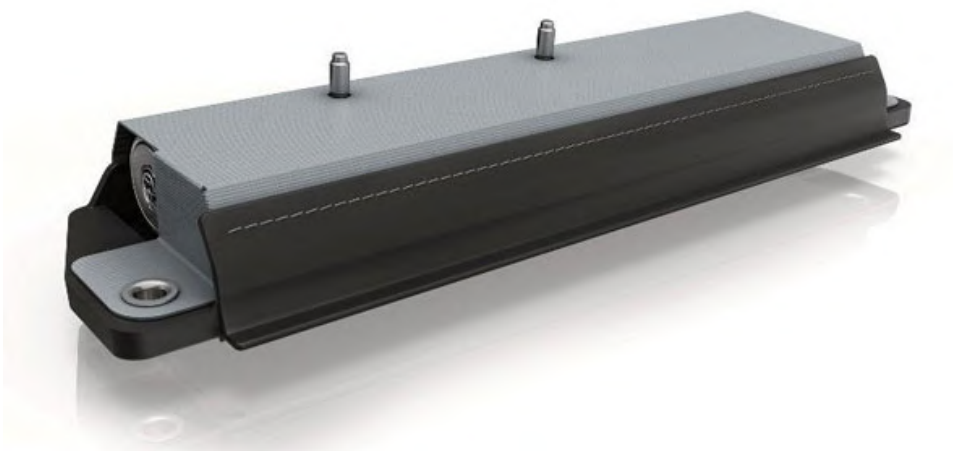
Ford also reports that the heat properties of the parts are significantly better than parts made out of conventional materials. This is the first time that Ford has used coffee chaff to produce car parts. McDonald’s has announced that it will direct a significant portion of its coffee chaff to North America for Ford to use.

Ford is working to increase the use of recycled and renewable plastics in their vehicles globally. They already recycle water bottles for vehicle carpeting, and use soybeans to make seat foam, among other things. McDonald's is working towards sourcing 100% of their guest packaging from renewable, recycled, or certified sources by 2025. The two companies will continue to look for more ways to use waste as a resource on the way to meeting sustainability goals.

ZF's Smallest-Ever Airbag

ZF says their new knee airbag, which they've been developing for about four years, is the lightest in the industry; it uses a fabric housing rather than a metal one. The complete knee airbag module weighs less than 700 grams, and takes up less space in the dashboard.

In a collision, a knee airbag unfolds between the dashboard and the shin, up to the knees. It stays there and ensures that the lower extremities contribute to holding back the body. As vehicle occupants will be in less and less predictable positions as their range of activities is expanded by increasing vehicle autonomy, it is likely that airbags will increasingly be integrated into the seat. Mass and package size will therefore become even more crucial than they already are. Of course, this also emphasizes need for the safety system to be able to accurately keep track of occupant positions.



Faraday Future Reveals Generous FF 91 Interior

The Faraday Future FF 91 was first shown almost three years ago. There was a great deal of buzz, but also some skepticism; the car has yet to enter production, and the business model remains a bit murky. But Faraday Future is still hard at work, as it seems. The company has released new images of the interior, calling it the "third internet living space".

Large screens dominate the dashboard with a tablet-like infotainment display in the center and another screen in the dash for the passenger. Another screen sits high on the dash in front of the steering wheel, integrating the instrument cluster information. Faraday also integrates screens into the doors that house the controls for seat setting, climate control, individual sound zones, and more.

The rear treats passengers to even more luxury with heated, cooled, massaging "zero-gravity" seats. Faraday claims they offer a 60-degree recline angle, and offer lower leg, lumbar, and upper back adjustments. Each seat is 14-way adjustable with 4-way lumbar support. There's also a "Spa Mode" that can change the lighting and audio.

An internet-enabled living space has to be able to reach the internet, so Faraday is putting three modems int. One is dedicated to vehicle diagnostics and over-the-air updates while the other two focus on handling data for in-vehicle connectivity and entertainment, including streaming video. There's a 27-inch screen that flips down from the roof, too.

Business-Class Luxury in New Renault Espace

The latest Renault Espace will have important new interior features when it reaches the market in the spring of 2020. Renault has introduced the luxury-focused updates for this "lounge on wheels" on the back of the success of the model's top-of-the-line trim level, Initiale Paris, which has accounted for more than 60% of Espace sales since the current car was introduced in 2015.

Beginning with the dashboard, the top versions of the high-end crossover offer a full digital display on a customizable 10.2" screen, including an immersive 3D navigation option. The driver display screen is supplemented by a HUD.

The new Espace, still available in 5- or 7-seat configurations, also features the Renault Easy Connect ecosystem, which comprises a set of apps such as My Renault, the new

Renault Easy Link multimedia system and connected services such as automatic updates and remote vehicle control.

Renault says the Easy Link system offers a brand-new, user-friendly and customizable interface akin to that of a smartphone. Its 9.3” portrait screen is slightly angled toward the driver, expanding the dashboard and giving the passenger compartment a modern look. Included are a phone system compatible with Android Auto and Apple CarPlay as well as a satnav with Google address search, fuel prices, and traffic information in real time.

The top Initiale Paris trim is said to offer "business-class comfort". Highlights are double-stitched Nappa leather upholstery, 10-way power-adjustable massaging, heated and ventilated front seats and laminated side windows to keep out noise. New types of upholstery are offered across the whole range, with a choice of various materials such as fabric, mixed and Riviera leather, and a new black color scheme.

The center console has been redesigned, featuring a new closed storage area which includes cupholders, two USB plugs, and a jack plug to the right of the gear lever. The electrically controlled e-shifter lever leaves a space for smartphones under the console, which contains a wireless inductive charging pad. There’s a rotating dial to access Easy Link and a new Auto-Hold control knob. This feature keeps the vehicle stationary when the parking brake is not applied. For improved ergonomics, the ventilation dials now feature a digital display for adjusting the temperature.

There's also an audio upgrade from long-time Renault partner Bose, which has enhanced its premium audio system for the new car to provide a more immediate and clearer listening experience no matter where passengers are seated in the vehicle. With 12 powerful speakers, the system is said to provide a three-way sound system like that of a high-end home hi-fi system. There is now a choice of five acoustic environments that can be adjusted to each type of sound and the number of passengers.

CO2 Reductions From Sustainable Plastics

Car interiors could soon benefit from new research into more environmentally sustainable plastic. A new method for the use of carbon dioxide as a raw material has been ranked among the year’s best innovations in Germany, with a team from materials manufacturer Covestro and the technical university RWTH Aachen (pictured) making it to the final round of the renowned German President’s Award for Innovation in Science and Technology. The new technologies make CO_2 usable in plastics production and thereby reduce the dependency on fossil-fuel resources like petroleum.

“We are very happy that we made it to the final round,” said Covestro CEO Dr Markus Steilemann. “The idea behind CO_2 innovation fits in perfectly with the times. Fossil-based sources such as crude oil can no longer be the industry’s central resource if the world is heading toward a future that is low in greenhouse gases.

“The award has encouraged us to continue working intensively on developing innovative solutions for greater sustainability in many areas,” Steilemann continued. “Together with partners from the business and scientific community, we will continue to forge ahead with the development of alternative resources such as CO_2. As a chemicals and research location, Germany can make a name for itself in this field.”

The benefits of the breakthrough are threefold. First, the use of CO_2 partially replaces conventional oil as the sole source of carbon. At the same time, it also makes it possible to produce plastics whose components can be recycled more easily. In addition, the circular economy will benefit from the reuse of CO_2.

It’s expected that with the new technology platform, CO_2 can be used to develop a wide range of high-quality plastics. Chemical precursors with CO_2 (polyols) are already on the market for producing soft foams (polyurethane) for mattresses and soft furniture. A new material dubbed cardyon is also being used for sports flooring. Further areas of application include automotive interiors, elastic textile fibers and insulation.

ICT Group Software for Porsche IP

Porsche’s first fully electric vehicle, the Taycan, features software developed by the Dutch-based ICT Group in the instrument panel and in the operation of touch panels for comfort functions.

The instrument cluster is displayed on a large, curved LCD screen behind the steering wheel. Drivers can use control buttons on the steering wheel to select the information they want to see on the cluster in addition to the speedometer. This includes meters that show how fast the car is accelerating, battery status and a navigation screen. In total the cluster offers some 30 applications with screens.

It also developed the software required for two touch panels that operate the comfort functions in the center console. The touch panel with haptic feedback is located in front of the center armrest and enables the driver to access functions such as the phone, radio and navigation without having to move his or her hand to the main instrument panel. Rear-seat passengers have their own touch-panel controls.

ICT Group says they were chosen for the Taycan because of their extensive experience with the AUTOSAR standard, which offers a platform for embedded software development, as well as of the Volkswagen Group-specific BAP communication protocol.

“We have already shown our knowledge of both standards and our ability to integrate them,” said Eeuwke Wielinga, R&D engineering director at ICT Group.

“What’s more, we have proven that our work processes are in compliance with the Automotive SPICE standard and take into account functional safety requirements in accordance with ISO 26262. This is a requirement in order to be permitted to develop automotive-grade software for the automobile industry.”

News Mobility

Mitsubishi MiEVs for Japan Post

Japan Post has ordered 1,200 Mitsubishi Minicab MiEVs for city deliveries. These Kei-class vans will mean Japan Post will have electrified 4% of its fleet. The first 400 units will be delivered by the end of March 2020, then the remaining 800 by the end of March 2021. The purchase supports on overall strategy of downtown last mile delivery, where electric power and efficient on-board mail run preparation are the key differentiators.

The Minicab MiEV is an electric version of the Mitsubishi Minicab model, which was introduced several years ago using Mitsubishi i-MiEV components. Just like the i-MiEV, it's equipped with rear-wheel drive units (30 kW and 196 Nm) and can go up to 94 miles (151 km) in the Japanese test cycle, take a passenger and up to 350 kg of cargo, representing the equivalent of approximately 18 000 letters per delivery, or a neighborhood of 10,000 citizens.

Chris Bangle's EV Concept for China

Chris Bangle, the controversial former BMW Design chief, has created wwhat he calls the Revolutionary Electric Dream Space, or REDS. China High-Tech Group Corporation (CHTC) asked Bangle to design a prototype for young, affluent Chinese professionals looking for a fourth space outside their homes, jobs, and social haunts. The REDS owes its looks to the fact that it's a part-time car and a full-time living space.

And it’s even stranger than it looks. It's 27 cm longer than a Smart Fortwo, 25 cm narrower, and 20 cm taller, with a wheelbase fully 43 cm shorter at 144 cm. However, while the Smart holds two adults, the REDS can seat four full-grown men while driving, or five when parked. Bangle skewed the front seats in relation to the rear seat, so two rear passengers can stretch their legs between the front seats; when parked, the rear bench can hold three people.

The driver's seat swivels 180 degrees and the steering wheel flips up. The retractable 17” infotainment screen extends to its full height. A table descends from the ceiling of the cabin. Anyone in the front passenger's seat can get a remote-controlled foot massage. The rear tailgate can serve as a bench. Those kinds of details help create the exterior lines: The forward-slanting windshield makes room for the flipped-up steering wheel; the bulbous window at the leading edge of the solar-panel-covered roof allows the driver to see elevated items like stoplights; the canted rear glass makes more headroom and mimics the front.

The fully functioning, aluminum-bodied runabout is rear-wheel drive, and Bangle says it will do 120 km/h (just shy of 75 mph) which is China's maximum highway speed limit. Other technical specs haven't been released —battery capacity, for example, or range. The plan is to thoroughly test the prototype with an eye on production in two years or so by REDSPACE, CHTC's newly established car company.

Toyota Pours Money into US AV Shuttle Company

May Mobility, a U.S. self-driving shuttle company, has raised $50m in its latest round of financing with a substantial chunk coming from one of the world's biggest automakers. Toyota was the largest investor in the Series B round. Though the company's exact investment was not disclosed, its involvement marks another signal of its interest in business models that stretch beyond traditional vehicle sales.

"May Mobility already has a track record of commercializing autonomous driving shuttles in the U.S., and we see this as an exciting opportunity to collaborate with a seasoned partner in this area," Keiji Yamamoto, Toyota operating officer and president of the company's in-house connected services, said in a statement.

May Mobility, which is based in Ann Arbor, Michigan, has pilot projects deployed in Detroit, Grand Rapids, Michigan, and Providence, Rhode Island. A test program in Columbus, Ohio, concluded this fall.

Overall, the company has raised $83.6m since its founding in January 2017, according to Crunchbase records. The latest funding round will fund hiring on the company's engineering and mobility teams and help expand deployments of the company's 6-seater shuttles.

Toyota's involvement raises the possibility that future pilot projects and deployments would be located in Japan, said Alisyn Malek, COO at May Mobility. But there are no concrete plans, and the company's immediate expansion efforts will be focused in the United States.

Toyota AI Ventures, the automaker's venture-capital arm, was an early investor in May Mobility. It participated in the latest funding round with an investment separate from the one made by its parent company. This marks the first time that Toyota has made an investment in one of the venture fund's holdings.

Other return investors include BMW iVentures, Millennium Technology Value Partners and Cyrus Capital Partners. Sparx Group is a new investor in the Series B round.

Beyond its autonomous-driving technology, one factor attracting investment is May Mobility's business model, which focuses on first-mile-last-mile links for commuters near urban cores. Rather than selling its shuttles to customers, it provides a turnkey service that supplies the vehicles and handles ongoing fleet maintenance.

The Design Lounge

Eames & Saarinen's New-Tech Revival

As we are nearing the end of 2019, it seems like an appropriate time to overview a major interior design trend: newly enthusiastic interest in seat forms, styles, materials and constructions.

A key influencer has been the iconic furniture designs form Charles Eames and Eero Saarinen. Although they have inspired designers for the past 50 years the latest theme variations, shown by nearly every OEM, also incorporate a modern twist while also incorporating technologies enabled by suppliers from all over the globe.

This is not retro design but inspiration adapted towards the modern autonomous vehicle concepts.

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Vitra has reintroduced these design icons to the modern marketplace.

Forming of the Fiberglass chair structure was a key technological innovation for this Eames design, also seen in Saarinens work at the time.

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- Mr. & Mrs. Chair by George Mulhauser

The iconic Eames Lounge Chair highlighted the technologies required to produce ‘bent plywood’ for the masses.

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Finally, the classic Aluminum framed line of chairs that applied new casting and suspension technologies to achieve the thin profiled aesthetic.

Included in every one of these iconic designs, a new technological enabler was developed forming the core of the function and aesthetics: plywood forming, fiberglass pressing, and aluminum casting. Though the aesthetics can be translated into automotive interior design, the technological/functional element would not bring value within the automotive environment as comfort, safety and impact regulations (airbag integration, heating and cooling seats, head impact/whiplash protection…), not to mention the adaptability required, run contrary to the core technologies used for these design icons.

Because of this, only the aesthetic aspects of concavity, thinness and a 'formed' look can be translated into a modern interior environment.

Over the years, innovations form industry suppliers have applied technologies to the automakers, helping to create new aesthetic solutions. The key focus was on trim solutions. Some examples from around the globe:

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From Europe, the original Renault Twingo, with its seat sleeping position

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From Japan, the Nisan 240 SX

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From Japan, the Nisan 240 SX

A commonality of these supplier solutions was the integration of the trim cover with the seating foam that allowed the creation of concave surfaces as seen in the creating from Eames and Saarinen.

Unfortunately, these technologies could also not incorporate the latest interior seating needs of heating, ventilation and safety technologies needed in today's modern automobile and as such disappeared from the marketplace.

This has not eliminated the automakers' cravings for the Eames and Sarrinen aesthetic solutions. On the contrary, as the autonomous vehicle is being developed the aesthetic solutions that are inspired form these design icons are more critical than ever in visualizing the 'lounge' aesthetic of the autonomous interior.

As seen by these examples below:

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Daimler has used this inspiration for their latest show properties:

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Infiniti has also taken inspiration from the iconic designs
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…as has BMW…
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…Fiat…

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…Cupra…

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…Ford…

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…Kia…

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…Hyundai…

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…and Chery.

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The automotive supplier industry has enabled modern solutions that also incorporate the comfort and safety requirements as seen by:

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  Faurecia

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  Faurecia

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  Magna
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  Magna
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  Adient

Lastly a completely new techonogy, 3D knitting or FlyKnit has been borrowed from the shoe industry and Nike in particular:

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  Nike Flyknit

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  Nike Flyknit

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PSA Instinct

Inspired from the classic design icons from Eames and Saarinen in combination with these new supplier technologies, we will be looking forward to seeing the next step implementation regarding seating and the autonomous vehicle.

General News

Hyundai Transys, Brose in Future-Seat Pact

Hyundai Transys, an auto parts affiliate of Hyundai Motor Group, has signed an agreement with Germany's Brose Fahrzeugteile to develop seats for future vehicles.

Under the memorandum of understanding, the two sides will join hands to develop lightweight vehicle seats that can be operated through smart technologies with advanced materials, according to Hyundai Transys

The two companies plan to roll out their high-tech seats for electric vehicles and self-driving cars from 2024, Hyundai Transys said.

Hyundai Transys was established in January after a merger between Hyundai Dymos and Hyundai Powertech, both affiliates of Hyundai Motor Group. It currently makes seats for various sedan and SUV models from Hyundai, as well as for the automaker's luxury brand Genesis.

Brose, founded in 1909, is a €6.2bn automotive parts suppliers, developing and producing, among others, adjustment systems for seats, door and liftgate, and electric motor and drives.

Devialet, Faurecia Partner for Premium Audio

Faurecia,and Devialet, the French company behind many acclaimed innovations in sound technology, announced a partnership to develop high-quality sound solutions for automakers.

Devialet brings technologies and expertise across acoustic architecture, loudspeakers and signal processing, over 160 patents, and a premium consumer brand. Faurecia brings its overall electronic design and system integration capabilities as well as its sound domain controller technology.

As a first demonstration of their partnership, during next month's CES in Las Vegas Faurecia and Devialet will enable visitors to explore how Faurecia integrates advanced Devialet audio processing into an on-the-road vehicle. Faurecia will also host a dedicated sound room at the event, offering visitors an immersive experience of Devialet sound staging and reproduction expertise with the company’s multi-award-winning Phantom speaker.

Yann Brillat-Savarin, Group Strategy Executive Vice-President at Faurecia, says he is "delighted to partner with Devialet allowing us to address a complete range of audio solutions, from personalized sound systems to branded audio solutions. From software to technologies integrated in the vehicle’s surfaces and structure, Faurecia and Devialet will enable passengers to enjoy a more immersive and personalized on-board experience, whatever type of music or content they are listening to".

Franck Lebouchard, Chief Executive Officer at Devialet adds: “We’re proud to be reinventing car audio with Faurecia, using breakthroughs in audio hardware, software and acoustics to deliver a truly immersive experience and unmatched emotional impact through sound. This partnership is a perfect illustration of what Devialet stands for: putting our technology and expertise at the service of purposeful innovation and bringing incredible sound to the widest possible audience.”

VW Seeks Sitech Seating Business Partner

Volkswagen is looking for a partner for its Sitech seating business to share development costs for new technologies.

Thomas Schmall, head of VW Group Components division, sees a chance for Sitech to develop seating solutions for autonomous cars, where occupants may not be in the conventional position facing forward when a crash occurs.

"It sounds simple, just some upholstery really, but a car seat is actually a complex product," Schmall said. "We are currently sifting through the market in the search for a partner for Sitech that can help us acquire the necessary expertise," he tol*d Automotive News Europe*.

Schmall said VW does not plan to exit the seating business but rather place its Sitech subsidiary on a more solid financial foundation.

A Sitech partnership could follow the example of the VW's cooperation with Japanese supplier NSK. VW and NSK in June announced a development partnership between their steering divisions.

Analysts have criticized VW’s insistence to maintain ownership over Sitech at a time when interior suppliers such as Johnson Controls International hived off its seating business, which is now trades as Adient. The automotive seating market's major players include Adient along with Lear, Faurecia and Toyota Boshoku. Analysts estimate the global seating market was worth $78 billion last year.

Sitech employs 5,300 people and manufactures seats and seating components in seven factories in Germany, Poland and China. It is one of VW Group Components' five business fields and is headed by Ingo Fleischer.