DVN-I
Automotive Interior

Thu, 21 October 2021 Weekly Newsletter NEWSLETTER #83

Editorial

Challenges In New And Sustainable Car Interior Materials

There's no single day without an announcement mentioning innovative use of renewable or recycled materials within the automotive interior industry. Automakers and suppliers are practically falling over themselves to compete for the most ecologically-sound sources for interior materials—flax, coffee beans, sugar beet pulp, reeds, rattan…it begins to feel like paging through a botanical dictionary.

This back-to-the-land sourcing competition spurs major innovation activity, which grows the industry on a virtuous path. But there are still major challenges in front of all these inventors. It's grand to come up with new materials, but then they have to be made suitable for use in cars. That means design, packaging, integrability, and cost to name just a few of the most important factors. Then the value chain has to be developed in terms of supplier capability and capacity, within a reasonably local footprint. With a lot of traditional materials (wood) and

components (chips) growing scarce for different reasons, we see here the height of the bar to pass.

New and sustainable materials will be comprehensively addressed in a dedicated session at the next DVN Interior Workshop on 26-27 April 2022—more information to come; stay tuned. To make sure you'll attend, don't forget to **join us** if you're not yet a member of the DVN-I community.

Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

New Materials For Interior Sustainability

LENZING'S CELLULOSIC FIBERS; RINSPEED'S BIODEGRADABLE SEAT COVERS (RINSPEED IMAGE)

Car interiors represent a major challenge in terms of sustainability, and future carbon neutrality. Interiors also play a major role in consumer perception of sustainability through how materials and surfaces look and feel.

Background

While most of the metal components were already being recovered, European directives now have set a high bar for the recycling of plastic, which is the predominant material in car interiors. Plastics represent about 12 to 15 per cent of the weight of today's vehicle, which translates to 150-200 kg of plastic per vehicle, with a big chunk of it in the cabin.

EuRIC is calling on lawmakers to set a binding target for postconsumer thermoplastics—polymers that can be continually melted and recast—in new cars of 25 per cent by 2025, 30 per cent by 2030, and 35 per cent by 2035. (EuRIC isThe European Recycling Industries' Confederation, an umbrella organization for European Recycling Industries. EuRIC acting as the interface between the industry and the European Union).

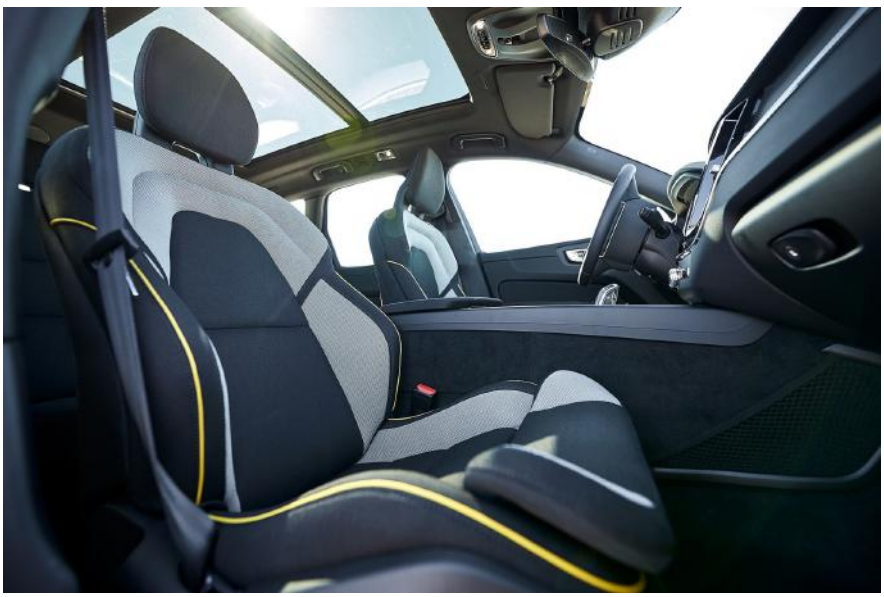
The industry is challenging these targets at the moment. An ACEA representative says "Setting fixed targets for recycled plastic content in new automotive parts is not advisable, because recycled plastic can only be used as a substitute if recyclers can guarantee that it has the exact same technical and quality properties as the virgin material".

Even if the use of recycled plastic in cars is nothing new, automotive plastics recycling is still in its relative infancy, as plastic recycling is challenging in terms of disassembly; much of the plastic in vehicles is made of composite materials, including a variety of different polymers, glass and various fibers, overmolded inserts, and more and more electronic parts. So there's a lot of logistical, technical, and cost challenge to it. According to Volkswagen, there are 39 different types of basic plastics used in the average car, and more than 70 per cent of the plastic is derived from four main polymers: PP-polypropylene, PU-polyurethane, PA-polyamide, and PVC-polyvinyl chloride.

Besides recycling, and reuse of recycled plastic, another path the industry is following is the use of material from renewable sources, under the condition its feedstock is food waste, for example, and not using land which would have been more appropriate to feed humans.

In that respect, most of the industry is developing new materials and processes to minimize carbon footprint and to get different appearance and behavior. Let's have a look at the latest announcements made by automakers and suppliers:

Volvo



VOLVO IMAGE

Volvo announced in 2018 that from 2025 at least 25 per cent of plastics in their cars will come from recycled materials. They already use renewable materials for carpet, which has fibers made from PET plastic bottles, and old Volvo car seats are reused as sound-absorbing material under the hood; fishing nets and ropes get used to make the tunnel console between the passenger and driver seats.

Polestar

Polestar, the high-end EV brand co-owned by Volvo Cars and their Chinese owner Geely, is experimenting with a natural-fiber based material from a company called Bcomp. The material is made from **flax**, which can be sustainably grown. Flax is ideal for crop rotation programs and does not compete with food crops.

SUSTAINABLE SEAT MATERIAL (POLESTAR IMAGE)

They also use a "3D-knit" material in seat back, so named because a single thread can be used to make three-dimensional shapes, with a yarn made from recycled PET plastic bottles.

VW

VW announced last week their "SyKuRA" project—**Sy**stemisches **Ku**nststoff **R**ecycling aus **A**ltfahrzeugen, or Systematic Plastic Recycling from Old Cars), to make more and better use of plastic components and to help protect the environment in the process. This project, wherein VW is joined by the Öko-Institut, the chemical company BASF, processing specialist SICON, and the Clausthal University of Technology, intends to address today's plastic thermal recycling challenges.

VW ID.3 FRONT SEAT WITH DINAMICA TRIM

As stated by their Design Color & Trim division, the new ID family of EVs is designed as sustainably as possible, and without any animal products. Example: Dinamica (ArtVelours) is a microfiber fabric that feels like suede. It has a matte, coarse surface and is very soft. In the ID cars, they combine it with smooth imitation leather, generating value and recognizability throughout the entire car range.

As artificial leather is today made of petrol-based materials, they progressively substitute it with organic-based materials such as coffee silverskin, which is a by-product of coffee roasting supplied by the Heimbs coffee roasting house based in Braunschweig, who produce it at an industrial scale.

In the ID family, the overhead, fabrics, carpets, seats, door panels, and finishes are made from a sustainable material that comprises up to 100 per cent recycled materials such as drink bottles. As an example: either 140 recycled 1.5-liter plastic bottles or 380 recycled 500-ml plastic bottles are used in the ID.4.

Škoda

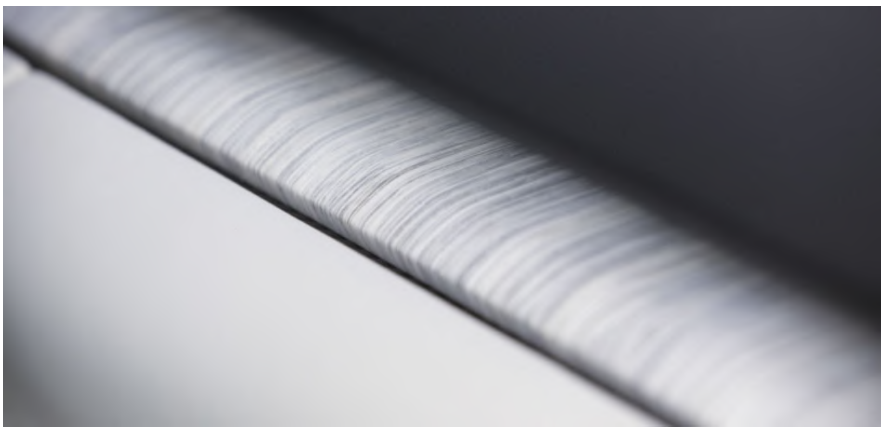
VW Group brand Škoda, in a collaborative project with the Technical University of Liberec, has developed a sustainable interior raw material. Based on sugar beet pulp, it can be used for door trims or decorative dashboard inlays and is dyed using a special process to produce design accents for the interior.

Škoda is also researching other sustainable materials such as one based on the reed plant miscanthus. The fibers from the reed can be processed into a material suitable for application to interior panels.

Door panels and pillars within the Škoda Octavia are also finished with miscanthus-based fabric, and sugar beet shavings have been used for the door panels and dashboard.

Another example, 30 per cent of the seat covers in the design selection for the Škoda Enyaq iV are made using 100 per cent new wool, certified in accordance with the Woolmark Company, while the other 70 per cent is made using polyester from recycled PET bottles.

Nio



KARUUN® MATERIAL SURFACE (OUT FOR SPACE IMAGE)

Nio says their ET7 EV will be the first production car to feature new, natural technical material karuun®, an eco-friendly alternative to plastics. Developed in Germany by startup Out for Space, karuun is made from sustainable rattan. Available as either a structural block, veneer,

or 3D form, it is a lighter-weight (on average 400 kg/m^3) alternative to plastic with a significantly lower CO_2 footprint than PC, ABS, or even hardwood alternatives. It is used for the middle layer of the dash and front doors. It also features in the rear of the cabin, providing a continuous and cohesive feel throughout.

Lanxess

Lanxess, a specialty chemicals company based in Cologne, Germany, spun off from Bayer in 2004. Now they have a new product in the Tepex range of continuous-fiber-reinforced thermoplastic composites, with a combination of natural flax fibers with bio-based polylactic acid as a matrix material, to end up with a composite manufactured entirely from natural sources.

Flax fibers have a significantly lower density than glass fibers, so the composite is noticeably lighter than a glass-fiber-reinforced equivalent.

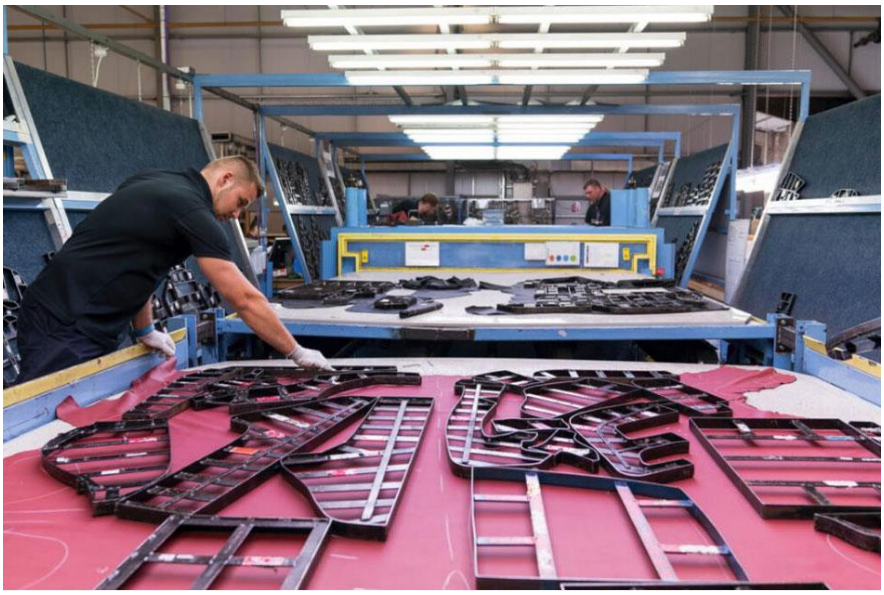
This new biocomposite can be completely recycled like pure-thermoplastic systems, as part of closed-loop material cycles. Recycled material is readily regranulated and easily injection-molded or extruded for new materials.

Covestro/Adient

Starting next month, Adient will be integrating Cardyon®, a polyol made using Covestro's CO_2 technology, as a sustainable feedstock for the production of hot-cure molded polyurethane foam. Adient uses these foams as cushioning in their automotive seating systems, integrating up to 20 per cent of CO_2 into polyol production. This is possible by dint of an innovative catalyst developed together with RWTH Aachen University and the CAT Catalytic Center.

Bridge of Weir

Another example of process improvement is one in the leather tanning industry, which has long been creating unwanted waste.



LEATHER HIDE CUTTING PREPARATION (BRIDGE OF WEIR IMAGE)

Bridge of Weir Leather (BoW), a tannery based in Renfrewshire, Scotland, is implementing a range of new technologies and processes to make its operations as environmentally sustainable as possible and has completed a full lifecycle analysis (LCA) of their portfolio products, which can then be used by its automotive interior customers to assess their own sustainability impact.

Typically hides move around the world: a factory in Italy, then China or somewhere else, moving all over the planet in various networks and supply chains. They take it all in and process it from the raw hide to the finished product, and even cut pieces all in one factory.

The co-products come out of production in the early stages, and go off into the food sector, as sausage skins or gelatin, carrying a carbon allocation with them. They also convert their own waste into heat and put it back into their own factory.

Conclusion

Not a day passes without announcement mentioning innovative use of renewable or recycled materials. However, there's no real road map demonstrating that the industry will achieve the target one day, not least because this target is not agreed upon yet by all the parties in the industry.

Designing materials is one only part of the equation. Designing the automobile is another part of it, like having panels or doors from just one material, reducing the number of possible variations, and optimizing the value chain logistics through local supplies. Single-origin synthetics that are easy to recycle are also worth using.

Everyone's going to have to pitch in and do their part. The Plestar 0 project aims to emit zero tonnes (0t) of carbon dioxide equivalent (CO_2e), for example, eventually. A Polestar representative said "Just like JFK, we don't know how to land on the moon but we know that we need to do it"— referring to US President Kennedy's 1961 speech wherein he pledged to put a man on the moon within a decade. And that happened…so can this!

Interior News

Faurecia Scoops PACE Award for Display Tech

INTERIOR NEWS

FAURECIA IMAGE

Faurecia has earned a 2021 Automotive News PACE Award for their IRYStec Perceptual Display Platform Vision (PDP Vision). IRYStec, a software startup based in Montreal, Canada, was acquired by Faurecia in July 2020 and integrated into their Faurecia Clarion Electronics business group. They develop advanced technologies to improve both display experience and energy efficiency.

PDP Vision is the world's first software platform using perception and physiology to optimize infotainment display screens. Recently launched on the Mercedes E-Class convertible, Faurecia's technology improves screen quality and visibility for the driver, providing a safer and more comfortable user experience while reducing power consumption.

Tara Akhavan, Founder and General Manager of IRYStec, says "Several years ago, we recognized that automotive content representation on the screen is unable to dynamically change as lighting conditions change and as the eyes of vehicle drivers change. With IRYStec, our goal is to create a technology that makes screens more visible, smarter and more aware of the environmental conditions as well as personalized to the viewer's visual system".

Grupo Antolin, Zonair3D for IAQ

INTERIOR NEWS

Zonair3D was born in 2006 in Barcelona as a company focused on the innovation of pure air technology. They market an air purification solution called Air Move+. Grupo Antolin will contribute their experience and capacity for the development and integration of innovative solutions for interior air quality (IAQ) inside cars.

Air Move+ is an innovative purification solution that has been specifically designed to be installed in vehicles to prevent diseases related to the inhalation of contaminants, VOCs, particles, and pathogens. It allows pure air to be continuously recirculated in seconds, giving occupants a virus-and-bacteria-free safe environment as well as preventing them getting ill from inhaling contaminants while inside the vehicle.

Grupo Antolin, global supplier of technological solutions for car interiors, and Zonair3D signed an international collaboration deal for Air Move+ marketing as an aftermarket product for vehicles already in circulation. Zonair3D will be in charge of the worldwide distribution of the new system; Antolin brings knowledge and expertise for integration into new-car interiors.

The air purification solution will be offered for all types of private and professional vehicles. In addition, the Zonair3D system incorporates in the last filtration stage a fabric made of nanofibers developed by the Spanish National Research Council (CSIC). This layer forms a network of microscopic fibers that inactivate viruses and bacteria.

Mobis' New Foldable Steering Wheel

INTERIOR NEWS

HYUNDAI MOBIS IMAGE

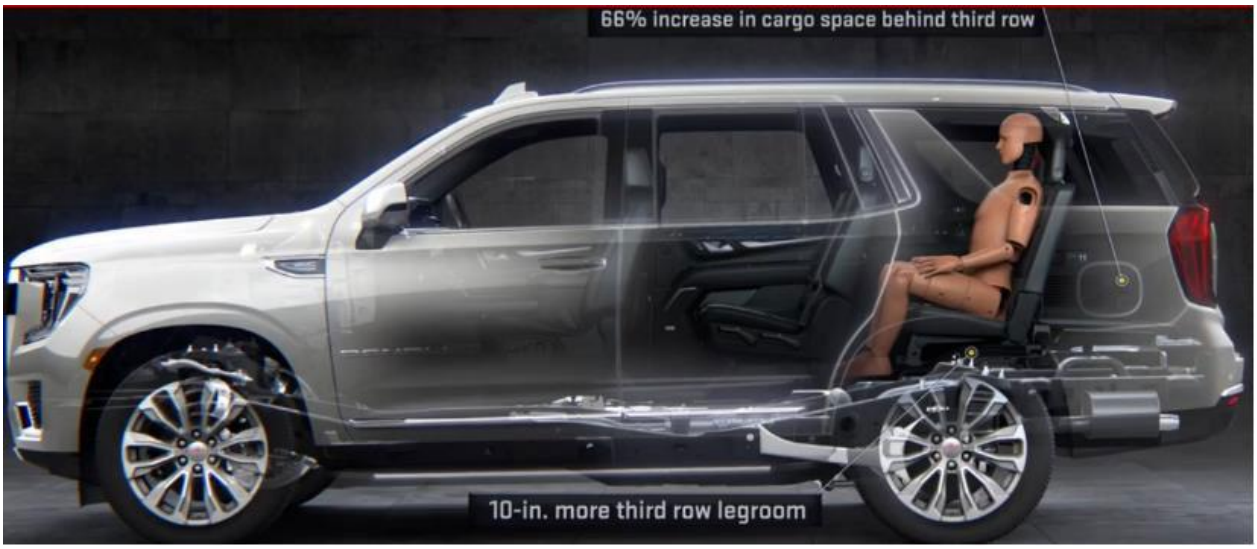
Hyundai Mobis has revealed their latest innovation: a foldable twin-stick-shaped steering… er…grip (it's not a wheel). Clearly intended to cater for self-driving cars, it seems pretty useful even in a purely human-driven car if the human driver happens to want a nap while parked. Mobis says this foldable steering wheel system will give more comfort to drivers as it can free up more space in the driver's seat. Its opens new interior architecture and HMI perspective for next-generation vehicles.

The Korea Herald mentioned that Hyundai Mobis worked on developing this technology and achieved success after two years. This is said to be a totally new technology that has never been marketed globally before, but the firm is now filing for patents and the product may possibly be sold worldwide in the near future.

The foldable steering wheel can move forwards and backward up to 25 cm to give the driver more space to rest while the vehicle is in autonomous driving mode. The driver's seat could also be turned around to 180 degrees, while the wheel is folded to face the passengers in the rear seat.

GMC Yukon Denali Has True Third Row Seats

INTERIOR NEWS



GM IMAGE

Even if the New GMC Yukon is a bit atypical because of its dimensions—5.13 m long; 2 m wide; 1.96 m high; 2.95 m wheelbase; a big, big American—its architecture allows to package a true third row into the vehicle for 25 cm of additional leg room versus the outgoing model, to make it a real 7-adults seater. That's rather unique, as most vehicles exaggerate the utility of their third row. It even features 66 per cent more cargo space behind the third-row seating. Total available cargo volume is rated at 4m^3 with the seats folded flat.

It is possible to drop both second and third rows to a fold-flat position from the rear of the vehicle. The third row also has a power up option, though the second row requires manual labor to put it back in place.

The GMC Yukon Denali XL has been recognized on this year's Wards 10 Best Interiors list, thanks to content and attention to detail, such as open-pore teakwood inlays along the dashboard and door panels, metallic trim elements treated with a shiny surface named "Galvano" perforated-leather seats with stitching offset by dark accent piping, and different grades of leather for various surfaces.

The interior also includes heated and cooled front seats, heated second-row buckets, and plenty of connectivity technology such as wireless Apple CarPlay and Android Auto capability, a 15" multicolor HUD, the large10.2" infotainment screen, and a 14-speaker Bose audio system.

Toyota's New Multimedia System: Screens Everywhere!

INTERIOR NEWS

The 2022 Toyota Tundra will be the first to benefit from Toyota's all-new Audio Multimedia system, designed and engineered by Toyota's Connected Technologies arm based since 2017 in Plano, Texas. It will be based on a new HMI enabling interaction via sight, touch, and voice control, using a newly designed touchscreen. Processing time is five time faster than the previous system's.

Standard models feature an 8" touchscreen, while a 14" screen with an improved resolution can be selected as an option. This also includes more responsive touch functionalities. All models will benefit from wireless Apple CarPlay and Android Auto compatibility as standard equipment.

In addition to the centrally-mounted touchscreen, Tundra drivers will have vehicle data displayed on two all-new instrument panels. An available 12.3" thin film transistor (TFT) screen or a combination meter with a 4.1" digital multi-information screen (MID) provides drivers with analog readouts. Alongside vehicle information, the screens can be used for access to navigation, audio controls, off-road features, towing functions, and safety features.

Featuring a digital tachometer and speedometer, the 12.3" screen enables drivers to customize the displayed information, such as tow gauges, pitch and roll displays or engine performance gauges.

Furthermore, the 4.1" combination meter benefits from multiple screen options including navigation, audio selections and vehicle diagnostics among others. Around the MID screen are analog gauges that display tachometer, speedometer, oil, and fuel level.

Two integrated cabin microphones enable both drivers and front passengers to make use of voice commands for interacting with the vehicle and its infotainment system.

In-Car Payment: Extended HMI?

INTERIOR NEWS

DAIMLER IMAGE

In future, the car will pay its own bills. The driver will then neither need change for the parking ticket machine nor will he have to stand in line at the gas station cash register. Daimler, for example, sees automated payment from the point of view of convenience and luxury, and is pushing ahead with the development primarily for this reason and sees "in-car payment" as a central building block of the connected future of automobiles. We could even see it as an extension of car HMI, machine being extended to car related services,

Today, the infotainment system of new Mercedes models already enables payment directly from the car, but only after a complicated authentication. From the first half of 2022, the vehicle will be able to identify the person behind the wheel more easily by comparing their biometric profile. Codes and passwords will then no longer be necessary. Initially, the service is to be established together with Visa, with other payment service providers to follow.

Mercedes is far from alone when it comes to convenient payment. "Invisible payment" services have already been launched on mobile phones. For example, it is already possible to pay in many shops using Apple Pay without having to take out a bank card or cash. Amazon's "Amazon Go" concept is also focusing on moving the unpleasant part of the payment process away from the customer and into the background. They promise increased convenience, and they hope for more and bigger purchases and stronger customer loyalty.

It is precisely this customer loyalty effect that makes it interesting for car manufacturers and other representatives of the industry. Once you have become accustomed to seamless payment in the car via fingerprint or facial recognition, you will not switch to another make without feeling annoyed. Those who pay invisibly at one gas station or parking lot will come back again. Chevrolet and Shell therefore already offer their joint customers an automatic payment system for the refueling process.

In addition to fuel and parking bills, premium manufacturers such as Audi, BMW, Mercedes and Porsche already offer downloadable services and equipment in their new cars. For example, if you are driving abroad, you can download the digital maps of your destination region onto your navigation device for a short time for a fee or equipment details can be activated after purchase. The third important field of application for in-car payments is mobility services, such as unlocking a car-sharing car or paying for a ride-hailing service.

Automated payments could become a gigantic business. The consulting agency Juniper estimates the sales volume for 2025 at the equivalent of around €75bn. But before the car always pays everywhere, there is still a lot to be done. The technology must be simple, work intuitively, and be secure.

The Design Lounge

Startup Design Challenges • Tesla

THE DESIGN LOUNGE

TESLA MODEL 3

The challenges of introducing new vehicles onto the market are very different between startup and established automaker design studios. Brand image and design themes needs to be created for the startup while continuity of the brand needs to be balanced with the latest design trends for an established automaker.

In this Design Lounge, we will review how Tesla evolved and established their design themes and brand identity.

TESLA MODEL S: ORIGINAL (LEFT); UPDATED (RIGHT)

The original exterior design of the Tesla Model S had a very traditional 'grill' graphic, as many other automaker studios are also applying today, that was then eliminated to produce a more distinct front 'face' used in all of Tesla's vehicles today.

TESLA MODEL X

TESLA MODEL 3

With the original Models S interior, Tesla also referenced the overall layout used by traditional ICE manufacturers with the differentiator being the large portrait format center console display eliminating the myriad of buttons and small displays used by the traditional automaker studios.

Although unique as a technology application, it wasn't until the introduction of the Model 3 with the landscape format display and the elimination of visual HVAC ducts that Tesla's interior brand image and form language were established.

ORIGINAL TESLA MODEL S

UPDATED TESLA MODEL S

Being a startup automaker, Tesla needed to find this interior form language, theme and experience. Comparing the last updated Model S to the original design we can clearly see how dominant the latest version (without or without the steering yoke), has that distinct Tesla minimalist environment now defining their interior form language, theme and experience.

ORIGINAL TESLA MODEL S

UPDATED TESLA MODEL S

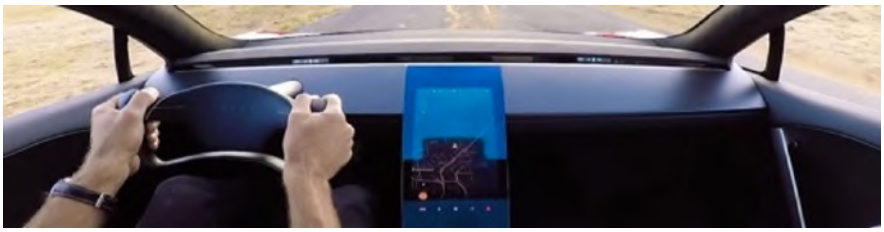
Regarding seating, thematically nothing has changed; there's just been a bit of refinement. The door panels and decorative wood inserts are altogether different now. Surprisingly more traditional than the original Model S/X and less dynamic.

As a startup, the task to define the brands image through design theme is crucial for its initial success. Now however, Tesla's design department must expand their product line into other

segments like the truck and SUV market.

PROMISES, PROMISES: THE TESLA CYBERTRUCK CONCEPT

The startup task has now ended for Tesla design and a more established automaker studios approach is required which evolves and further re-enforces the brands image with visual cues, forms/graphics and materials.



TESLA ROADSTER CONCEPT

In the next Design Lounge issue, we will look how an established automaker, Renault, has revised their design themes for the BEV age.

News Mobility

_ Car interiors Unplugged.

NEWS MOBILITY

1958 GM FIREBIRD III CONCEPT (GM HERITAGE CENTER IMAGE)

33. 2050 is not valid anymore_

The final chapter of our series portraying automotive interiors as an evolution of our habitat

"The superb double shield canopy, red-leathered interior, has been stitched and assembled inside a four-wheeled titanium hull with exceedingly pronounced vertical and horizontal fins, a total of nine. Furthermore, two massive body panels emerge as air-drag brakes to slow down the vehicle from high speeds. An ultra-sonic key signaled the doors open and …no steering system! Driver and passenger seated in separate transparent cockpit hubs connect through a common interior. They switch roles at any time over steering, braking and acceleration by a Uni-Control-Joystick on the center-console. Few inches from seatbacks, is a gas turbine while a secondary gasoline engine, up front, is powering all accessories: rear facing camera, air-conditioning, power steering, self-leveling suspension, antilock braking systems, cruise control and a motorized luggage compartment. The jet-engine operates at nearly 1000°F to an overall impressive fuel efficiency equivalent of any conventional car. Capable of using different types of fuel from whiskey to kerosene, preferably the latter, it is the first car with an onboard computer. Equipped with sensors, automatically follows a series

of electric wires implanted in the roadway, featuring a guidance system, labeled "highway of the future". That, would send signals to other cars and avoid accidents, addressing vehicle infrastructure integration, ensuring absolute safety at more than twice the highway speed! You are ready now for the driving thrill of your life." *(ref. Motorama 1959)*

Well, that is how was meant to be, but in fact, all this is happening in miniature, on my desk. I am in front of an elaborate model of a show car of the 1950s and, the effect it had on me when I was 8 years old is still the same, today. While gas turbine technology was never made truly practical in passenger cars, the most revelatory technologies, these of the secondary systems, prevail to this day. General Motors never intended production but to showcase technology and design, painting a dazzling future that was just over the horizon. Its intricacy in know-how created a lot of buzz, smoke, noise and even one accident. Nowadays is silent, on my desk, but still magnificent as an illustration of a dream, in fact, an ongoing dream… Human kind is always fascinated with things that move and turn under their own power. We just love them and always will.

This model sums up not just automotive design in Warren MI, but indeed in the entire western world between 1953 and 1959. In the course of these years, thanks to tremendous economic, social and technological advances, the view of the world was completely transformed and they were all (show-cars) a key element of our vision to the future. Paradoxically, a miniature made it as far away from any tech centers of North America, highways or automotive culture hubs and it is highly unlikely GM designers that constructed it, have ever imagined it in that region of the world. But there was more, my friends and I would race it against other miniature cars; the winner often was the one with the best story. Those were the ones that had first invented, in their stories, many of today's cars back there and then. It was not just important for what it was but also because it reflected the glory of an era, feeding endlessly our imagination. Far more than kid's toys, it imitated life by technological means, materializing our understanding of the world as in a performing machine. These childlike ideas have in large measure, shaped us. They hold a special place not only as great works of art and triumphs of industrial vision but also as records of distinct and magic moments in mobility history.

Magic, it may have been; but if we fast forward today, many wild mobility theories that are anticipated, to equally convey a brighter future, relate to electric, sustainable, connected and autonomous concept cars. Indeed, between now and then, technologies allude to very similar uncertainties and solutions proposed; not much difference, except one: humans now occupy a different place in the mobile adventure.

It is a bewildering fact that the early, broadly passionate, coexistence between the man and the machine, established in previous years, has completely disappeared from our memory and vision. Most of us have almost forgotten that once, we had admired simply the speed and been supremely in-charge as pilots and makers of our own trajectories. Why is this strange amnesia? Probably, because the latter relationship is dominated by numbers, statistics and measures, as a necessary passage to the understanding of the world under new circumstances, with all its dehumanizing implications.

The Firebird-series of GM prototypes, speak as powerfully today as they did when first hit the road towards the 1950s motor shows. To many, they are not only supreme sculptures but a reminder that motion is a highly physical act that requires 'skill and muscle'. The new terms of engagement are being defined as we speak...

_____*INDUSTRIOUS*__

Concluding Notes

With enough propulsion to drive a man to the moon (which indeed happened about ten years later) the miniature is subject to the dream of mobility by expanding driving emotions and minimizing distance through speed. Motion here is illustrated as a participatory intention. Both individuals are looking forward, admiring, but also playing a part in the mobile act. This is a sophisticated machine to produce motion; whether driver or co-driver both become "the craftsmen of motion". It is about 'fabricating motion', 'inhabiting motion' and equally co-

participating in the making of.Architecture of mobile objects for about a century is built on "direction"; people look forward to the road hands-on in a direct engagement with the traveling experience. At the very moment we delegate 'destination' everything changes so that the vehicle does not need to look like anything we know. However, as far as humans are engaged there is a necessity to accommodate for human-body and this is an anthropologic aspect of mobility.

Projections on factual data and statistic certainties dominate future scenarios; the difficulty is to make them breath enthusiasm. Just like back there and then. Of course, this is how man has always anticipated future, but we have to make sure of being present at the very stage were vision and creativity are about to kick in.

Honda: Air Taxis, Rockets, and Avatars

NEWS MOBILITY

HONDA IMAGE

Honda wants to expand their product and business field. Over the next six years, they'll invest JPY ¥5tn (about €38.5bn) in research and development, including for new drives and technology for autonomous driving. Last week they presented further details on their development plans.

Among other things, Honda plans to develop and operate an electrically powered, vertical take-off air taxi. Honda wants to use the vertical take-off vehicle to transport passengers within cities. In the long term, a gas turbine hybrid drive should also enable overland transport. The air taxis could go into commercial operation from 2030. Honda is building small business jets with five seats for some time.

These plans to take to the air sound relatively down-to-earth compared to the other plans. Honda has also included robots and rockets in its development strategy. The robot is to be a kind of avatar with which people are to experience mobility "without the limitations of time and space". The so-called Honda Avatar Robot is to be seen as a technology demonstrator as early as 2024. According to a press release, Honda is aiming for a practical application in the next decade. This "second self" of a user should be able to carry out tasks and "realistically experience situations". A robotic hand with several fingers, various robotics technologies and artificial intelligence for remote control functions are to help.

The mental journey into the future goes even further. Small rockets are intended to serve as launch vehicles for small satellites. Some of the rocket components are to land back on earth afterwards and be usable again.

Also, not for Earth is a planned renewable energy system on the lunar surface. Honda wants to use its fuel cell and water electrolysis technology to generate electricity as well as oxygen. The resulting hydrogen will power rockets.

All these developments reflect perfectly Honda's motto: The Power of Dreams.

General News

Stellantis Torino Plant to be EV Hub

GENERAL NEWS

2021 MASERATI GHIBLI HYBRID, THE BRAND'S FIRST ELECTRIFIED MODEL (STELLANTIS IMAGE)

Stellantis, made up of 14 motor brands including Chrysler, Peugeot, Fiat, Citroën and Jeep, plans to convert their factory in Turin, Italy into an electric vehicle (EV) hub.

The Mirafiori plant, which already produces the Fiat 500 EV, will produce a new electric platform to build the Maserati models between 2022 and 2024. Stellantis has said that Maserati will be all-electric by 2025. The Maserati Ghibli and Quattroporte, now produced in the Grugliasco plant, located 4km away, will move to Mirafiori by 2024, with no impact on employment.

With the process, Stellantis will make the factory a center of electrification for the group. They'll start to design the new electric platform for Maserati models, improve performance at all their Italian plants, and give Italy a strategic role among the group's main domestic European markets. Italian newspaper La Repubblica reported that Stellantis could increase production of the ICE Fiat 500 at Mirafiori by shifting some volumes back there from Tychy, Poland.

So far, it's good to see the transition to EV development and manufacturing is organized pretty smoothly. As the industry is shifting to electric, similar moves are happening with many automakers, especially in historical location, like Renault in the North of France, and many others.

Geneva Motor Show Postponed To 2023

GENERAL NEWS

The pandemic—still not done harassing us—means the first major European car show of the year will not take place in 2022 either, as too many carmakers had already cancelled. The carmakers had other priorities due to the chip crisis, and then travel restrictions due to the Corona pandemic also made it difficult for visitors and exhibitors to travel. BMW, Ford, and Stellantis had begged off, and Mercedes' appearance was in question.

Sandro Mesquita, head of the fair, announced that Audi, Renault, Seat and Škoda wanted to come to Geneva. Chinese EV manufacturer BYD and American Fisker had also planned to appear.

"The pandemic is not under control and poses a major threat to large indoor events such as the Geneva Motor Show," said the chairman of the organizing committee, Maurice Turrettini. The last two editions of the otherwise annual show had already fallen victim to the pandemic. The next Geneva Motor Show is scheduled for spring 2023.