

Automotive News

JUNE 27, 2022

Entire contents © 2022 Crain Communications Inc. All rights reserved.

\$169/YEAR; \$6/COPY



Bruton Smith helped make stock car racing a multibillion-dollar business.

Smith a 'visionary' in retail and racing

Sonic founder was a giant of NASCAR

Melissa Burden
mburden@crain.com

Bruton Smith, a pioneer-turned-titan in both auto retailing and motorsports, leveraged small roles selling cars and promoting dirt-track races as a youth to create two moneymaking business giants.

Smith, founder of Sonic Automotive Inc., NASCAR Hall of Famer, racetrack owner and philanthropist, died Wednesday, June 22, at 95.

Smith launched Sonic, of Charlotte, N.C., as a public company in November



Penske: Smith set new paths

1997 with 20 dealerships. It is the seventh-largest U.S. auto retailer today, with 111 dealerships after completing the mega acquisition of RFJ Auto Partners Holdings Inc. in 2021. Sonic also owns and operates the EchoPark

standalone brand of used-vehicle-only stores. Smith, a giant in racing circles who helped turn stock car racing into a multibillion-dollar business, also started Speedway Motorsports Inc., the first motorsports company to go public in 1995. (It went private in 2019.) In 1992, he became the first track owner to erect and shine lights on the course for night races.

Penske Automotive Group Inc. CEO Roger Penske described Smith as an innovator and leader.

"We shared a passion for motorsports

see SMITH, Page 41

SPECIAL SECTION | THE SUPPLY CHAIN OF THE FUTURE

Suppliers now — and suppliers ahead

The 2022 top suppliers ranking finds many of them behind on profits | PAGE 3 | while the big picture on supply chains reveals that a world of change is coming. | PAGES 17-29 |

FUTURE FOCUSED

Seating, interior supplier Toyota Boshoku innovates to grow sales for autonomous era

Toyota Boshoku branding chief Richard Chung, with the MX221 concept: "We want to create new demand."

TOYOTA BOSHOKU "DIVERSATILITY RIDE HAULING CONCEPT"

AUTOMOTIVE NEWS ILLUSTRATION

Hans Greimel
hgreimel@crain.com

TOYOTA CITY, Japan — Imagine zipping down the highway of tomorrow in a self-driving pod car. You're on a long-haul, cross-country trip; you don't have time to stop for a restaurant.

With the push of a button, the meal is ordered. Before long, a drone catches up to your speeding vehicle. It hovers near a roof portal, and in comes a boxed lunch of club sandwiches.

This vision for meals on wheels is far out, but suppliers are conceptualizing, developing and gearing up to produce such products and technologies. In Japan, Toyota Boshoku Corp., one of the world's biggest auto suppliers, sees innovations such as this, and dozens of others, as a road to growth.

If conventional wisdom holds, the coming age of autonomous ride-sharing and robotaxis spells big

challenges for automakers and parts suppliers alike. With more people hailing rides and being chauffeured around, fewer will be buying their own cars. Vehicle sales as we know them could shift into reverse.

In response, Toyota Boshoku, the main seating and interior systems supplier for Toyota Motor Corp., is thinking unconventionally. Rather than potentially losing business in the new era, it sees big gains.

"Our challenge is, how do we get in that pie, expand our business and still be a significant player?" Richard Chung, chief branding officer and chief for interior space for Boshoku's Interior Space Visioning Center, told *Automotive News*.

"We want to be known as the interior space creator in the mobility world."

The strategy banks on the assumption that the

Fini: Japanese suppliers can lag

Michael Martinez
mdmartinez@crain.com

Record gasoline prices have some U.S. consumers considering electric vehicles earlier than anticipated, but the surge has not roiled the industry or prompted the kind of seismic shift in buying habits seen during previous price increases.

In 2008, the cost of gasoline peaked at more than \$4 per gallon, and consumers abandoned hulking SUVs and pickups in droves. Automakers scrambled to retrofit factories to produce smaller, fuel-efficient sedans.

Today — even with the national average recently topping \$5 for the first time — there's been no such panic.

Aside from a proliferation of electrified options, experts point to a significant improvement in the fuel economy of most internal-combustion vehicles, including large pickups and utilities. A 2022 four-wheel-drive Ford F-150, for example, is rated at 21 mpg combined, 50 percent better than a comparable 2008 model.

Although recession fears are mounting, the economy is in a much stronger position than it was in 2008. Unlike that time, top executives from Ford Motor Co. and General Motors say there's robust demand for new vehicles, at a time when the global semiconductor shortage has kept inventories low.

"We're in a very different situation now," Ed Kim, vice president of industry

Merkle: "So much pent-up demand"

see BOSHOKU, Page 28

see GAS, Page 43



National average fuel prices in the U.S. are near or above \$5 a gallon.

Gas prices not denting demand for new cars

Better efficiency stalls shift from SUVs, trucks

Michael Martinez
mdmartinez@crain.com

Record gasoline prices have some U.S. consumers considering electric vehicles earlier than anticipated, but the surge has not roiled the industry or prompted the kind of seismic shift in buying habits seen during previous price increases.

In 2008, the cost of gasoline peaked at more than \$4 per gallon, and consumers abandoned hulking SUVs and pickups in droves. Automakers scrambled to retrofit factories to produce smaller, fuel-efficient sedans.

Today — even with the national average recently topping \$5 for the first time — there's been no such panic.

Aside from a proliferation of electrified options, experts point to a significant improvement in the fuel economy of most internal-combustion vehicles, including large pickups and utilities. A 2022 four-wheel-drive Ford F-150, for example, is rated at 21 mpg combined, 50 percent better than a comparable 2008 model.

Although recession fears are mounting, the economy is in a much stronger position than it was in 2008. Unlike that time, top executives from Ford Motor Co. and General Motors say there's robust demand for new vehicles, at a time when the global semiconductor shortage has kept inventories low.

"We're in a very different situation now," Ed Kim, vice president of industry

see GAS, Page 43

INDUSTRY innovations

Industry Innovations is a monthly gallery of ideas and technologies that are shaping the way vehicles and components are designed and manufactured.

Schaeffler hones a better wheel bearing

Design cuts friction, improves EV efficiency

John Irwin
jirwin@crain.com

A new wheel bearing from German supplier Schaeffler could lead to efficiency improvements in battery-electric vehicles.

The supplier's new TriFinity design differs from standard two-row ball bearings or two-row tapered wheel bearings on

the market today by generating less friction, said Michael Eastman, regional head of Schaeffler's wheel bearings business unit. This is done through a unique, three-row ball bearing design that is no larger than a standard two-row bearing but can transfer bigger axle loads, last longer and have less friction, according to Schaeffler.

"The concept was initially focused on

trying to improve capacity density," Eastman told *Automotive News*.

"The initial concept wasn't developed with BEVs in mind," he said. But "the TriFinity bearing was really optimized around the idea that we need to do more on the friction side to benefit these larger electric vehicles. There's a ton of hype around electric pickups in the North American market, and that was really where our focus was."

The innovation comes as suppliers and

automakers look for ideas to increase BEV efficiency and address range anxiety, a potential hurdle to wider EV adoption.

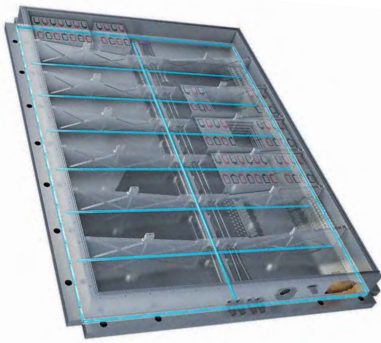
Beyond BEVs

Changing a vehicle's wheel bearing design might seem like a minor alteration in the grand scheme of things, but the results add up. Eastman said the compa-



TriFinity: No larger than a standard two-row bearing

see **BEARING**, next page



DuPont created versions of bonding adhesives that improved an EV's structural integrity while being able to adhere to steel and aluminum.

DuPont wants EV adhesives to do more

Automakers give bonding materials new roles

John Irwin
jirwin@crain.com

Few vehicle components will be left unchanged as the auto industry electrifies—and that applies even to the adhesives that hold those parts together.

DuPont, a global chemical company and one of the auto industry's largest suppliers, has developed a line of advanced adhesives for electric vehicle batteries it says can help automakers reduce weight, improve safety, allow for more flexible designs and even improve performance and driving range.

The adhesives are in use on a range of EVs and hybrid vehicles, including those made by Audi and Polestar. Christophe van Herreweghe, DuPont global strategy and marketing director, said the company has lined up a "healthy pipeline" of customers for the adhesives as more EVs come to market in the coming years.

"We built up our own knowledge, and when we had requests from the market, we're able to educate our customers," he said. "We have, step by step, grown together, and this is why we have materials that are in line with what the customers want."

see **DUPONT**, next page



7 Series takes back-seat entertainment to new level

BMW's redesigned 2023 7 Series has upped the ante on in-vehicle entertainment with an optional Theater Screen system that transforms the rear compartment into a media room on wheels. A 31-inch multimedia display

delivers content in 8K resolution and runs on the Amazon Fire TV operating system. The screen lies flat against the sedan's panoramic sunroof when not in use. But at the press of a button, it drops down behind the front-seat backrests. A pair of electric motors control the screen's orientation, allowing it to fold and slide back and forth on articulated rails. The display has three

viewing angles that can be controlled with a 5.5-inch touch screen built into the rear doors. When the screen is in use, shades for the side and rear windows and the panoramic sunroof are closed, and ambient lighting in the rear is dimmed. A 36-speaker audio system packs a 1,965-watt amplifier and uses exciters in the seats with "magnetically controlled vibrations" to improve bass frequencies even at low volumes.

—Urvaksh Karkaria



DUPONT

Supplier keeping a close eye on EV developments

continued from previous page

Customer needs can vary from vehicle to vehicle, but EV batteries generally require a different approach to adhesives than parts used in a traditional internal combustion engine vehicle.

DuPont recently published a case study of work it did with a German automaker, which it did not identify, that was looking for ways to reinforce the battery pack on an electric luxury sedan and increase its structural integrity.

The project required the companies to figure out ways to make the battery pack more crash-durable and to find an adhesive that could work with more than one material at once.

On that project, DuPont created versions of its Betamate and Betaforce bonding adhesives that improved the sedan's structural integrity while being able to adhere to steel and aluminum.

"It's not only about making a material and saying, 'Here you go, have a nice day,'" van Herreweghe said. "It's also making that material work with automakers' processes."

Driving range

On another project, DuPont worked with Audi



For the Audi E-tron, a version of DuPont's Betaforce adhesive was developed specifically to ensure the vehicle's battery pack stays within certain temperature ranges when operating and charging.

to develop a bonding material for the E-tron electric crossover that could help boost its driving range and aid with thermal management. DuPont was involved early on as Audi developed the vehicle, van Herreweghe said.

For the E-tron, a new version of the Betaforce adhesive was developed specifically to ensure its battery pack stays at around 77 degrees Fahrenheit and below 140 degrees Fahrenheit when charging.

That thermal management helps the vehicle's battery system "deliver a range of more than [249 miles] and support super-fast 150kW charging, freeing drivers from 'range anxiety,'" DuPont wrote of the project.

Investments

DuPont is now investing in its manufacturing capabilities as automakers roll out dozens of EV models. Last year, the company said it would

"It's not only about making a material and saying, 'Here you go, have a nice day.' It's also making that material work with automakers' processes."

Christophe van Herreweghe, global strategy and marketing director, DuPont

spend about \$30 million to build a facility for adhesives production in China, and it invested \$5 million at factories in Germany and Switzerland for automotive adhesives production.

It's continuing to develop new versions of its existing products.

The company last year introduced its Betaseal 900EI battery pack sealing and bonding adhesive, which DuPont said gives battery packs "reliable environmental sealing and durable bonding" while providing "electrical insulation for sensitive battery components." It is now in production and "prototyping with multiple global automotive manufacturers," the company said.

As it develops solutions for the near term, the company is also keeping an eye on emerging battery technologies to ensure that it will have solutions that work with new chemistries and designs, van Herreweghe said. **AN**

BEARING

'A little more capacity into the same package'

continued from previous page

ny's testing shows that it can reduce friction by up to half compared with a typical bearing used now.

The reduced weight and a 24 percent improvement in load capacity means that the TriFinity bearing can help to reduce the vehicle's electricity consumption, according to the company.

"Having said that, BEVs are not the only place it can be used," Eastman said. "The friction benefit is there whether it's a battery-electric vehicle, a

hybrid vehicle or a standard internal combustion-engine vehicle."

Redesigns

Eastman said the bearing can also benefit automakers looking to redesign existing internal combustion engine vehicles to offer hybrid or BEV variations. TriFinity takes up the same amount of space as standard two-row versions or can be even smaller.

"Maybe OEMs don't want to go through a complete redesign of the entire wheel bearing. If that has to grow, then everything surrounding it — the knuckle, the brakes, everything — has to change, too," he said. "The TriFinity bearing helps us to put a little more capacity into the same package."

"The friction benefit is there whether it's a battery-electric vehicle, a hybrid vehicle or a standard internal combustion-engine vehicle."

Michael Eastman, regional head of Schaeffler's wheel bearings business unit

Eastman said the initial concept for the design emerged in 2009, but work on it began in earnest around 2019 by teams in North America and Europe.

The bearing will go into production late this

year or in early 2023. Eastman said Schaeffler has entered into a contract to supply it to an automaker, but he declined to name the company.

The rollout comes shortly after Schaeffler established a new business division dedicated to bearings this year, helmed in North America by Eastman.

The company believes there is growth potential in the segment as the industry continues to electrify.

"There's a laser focus within this division on the bearings themselves and leveraging synergies across the different applications and product types," he said. "We have to be able to make sure we're using resources as efficiently as possible, that we're developing best practices and developing solutions that the market and our customers need." **AN**

THE EV REVOLUTION IS IN KENTUCKY

- Among nation's lowest industrial electric costs
- Ideal central location
- Nation-leading infrastructure and logistics
- Highly skilled automotive workforce
- Build-Ready sites
- Over \$6.1 B in EV investment

COME GET PLUGGED IN



(800) 626-2930
CED.ky.gov

TEAM  KENTUCKY
CABINET FOR ECONOMIC DEVELOPMENT

