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AUTOS INDUSTRY

Will Tech Leave Detroit in the Dust?

As IPO proposals value Uber at an eye-popping $120 billion, auto makers are racing to gain ground in everything from car sharing to driverless technology. At stake: who will control the future of transportation

By Mike Colias, Tim Higgins and William Boston
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General Motors plans to roll out a robo-taxi service next year that will let urbanites hail a driverless Chevrolet Bolt. Ford is overhauling a dilapidated Detroit train station to become a tech hub aimed at attracting software superstars. Daimler wants to merge one of its divisions with archrival BMW to create a juggernaut for services like ride hailing and car sharing.

And Toyota says it's evolving into an entirely different company, one that focuses more on services that move people around. "It's a matter of surviving or dying," says Chief Executive Akio Toyoda.

The global auto industry thinks it sees the future, and it will require a transformation without precedent in business history: The giant industrial sector has to turn itself into a nimble provider of software and services.

This week brought yet another signal of the forces it's up against: Uber Technologies Inc., which has chalked up about $4.8 billion in operating losses over the last six quarters, is laying plans for an initial public offering that bankers think could value it at $120 billion. That's more than General Motors Co., Ford Motor Co. F +2.37% ▲ and Fiat Chrysler Automobiles NV combined.

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Self-driving Uber vehicles at a 2016 media preview at Uber's Advanced Technologies Center in Pittsburgh. PHOTO: AP

executives say they need to avoid a nightmare tech scenario that's become a common refrain at industry gatherings. They don't want to become the next "handset makers"—commodity suppliers of hardware, helplessly watching all the profits flow to software makers like Apple Inc. and Alphabet Inc., the parent of Google. Both companies are investing in software for driverless cars.

"We are transforming our hardware-based company into a business that piece by piece will press further into the service economy," said Jürgen Stackmann, a Volkswagen AG board member in charge of sales, in an interview with The Wall Street Journal this week.

Industries from Hollywood to publishing to retail are similarly trying to transform themselves into tech businesses as they confront disruptions from Silicon Valley.

Matthias Mueller, CEO of Volkswagen (at right), and Shahar Walser, founder of ride-hailing start-up Gett, in June 2016 in Berlin, after signing an agreement for Volkswagen to invest about $300 million in the company. **PHOTO:** BERND VON JUTRCZENKA/ZUMA PRESS

In the auto industry, executives must confront entrenched corporate cultures and limited budgets in a business that is low margin and highly vulnerable to downturns in the economy. They must sustain profits in the traditional, capital-draining business of cranking out millions of cars each year, as they simultaneously try to invest in costly future technologies—financial constraints not faced by tech rivals.

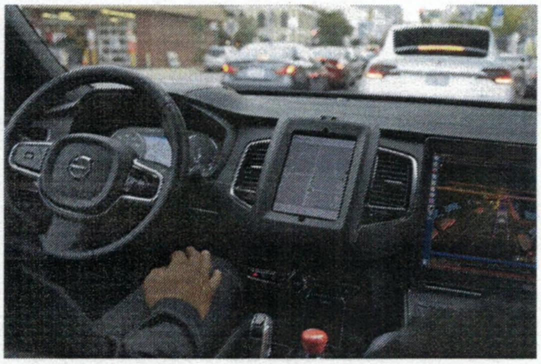
Even with financial backing, car companies will still need to change mindsets internally and get different parts of the company working collaboratively to support the new ventures, said Doug Betts, a veteran auto industry executive who also spent nearly two years working at Apple Inc.

"Typically, car companies are not very good at that," said Mr. Betts, now a senior vice president of global automotive operations at J.D. Power. "There are these really strong and huge silos that over 100 years have gotten good at what they do and also good at throwing rocks at everybody else."

Software expertise is also a weakness, Mr. Betts said, because auto makers have long depended on their suppliers to write code rather than building that talent internally.

Auto makers point out that they have one advantage that newcomers to the industry don't: vehicles.

"Ultimately, you can have the best services platform there is, but if you don't have the vehicles to operate on it, that won't do you much good," said Sam Abuelsamid, a senior analyst with Navigant research. "That's where the manufacturers have an ace in the hole."



An Uber car in driverless mode waits in traffic during a test drive in San Francisco in December 2016. **PHOTO:** AP

Many analysts believe businesses like Uber and Alphabet's self-driving tech subsidiary Waymo LLC won't have the appetite to get into the low-margin, capital-intensive business of car manufacturing.

Some auto executives say they can hold on to their roles as hardware providers while also tapping into the growth of more-profitable services. Mr. Stackmann said VW can earn millions more customers than it currently has by offering transportation as a service through a network of connected cars.

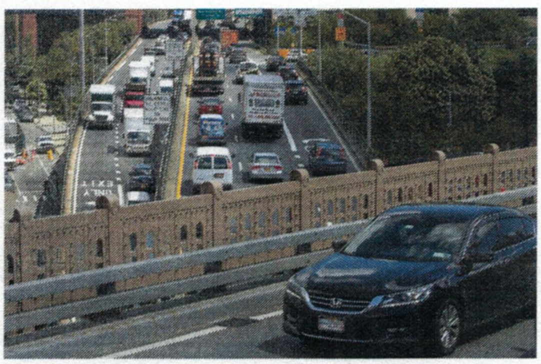
“They talk about scalability, but where is the added value from Uber?” he said. “We have a technical foundation and will build connectivity into our vehicles to connect them and our customers to our ecosystem. In the long term, the question will be: Why do you need Uber?”

Uber’s $120 billion valuation isn’t guaranteed. It was among proposals recently submitted to the company by investment banks looking to represent the ride-hailing firm in an initial public offering that could take place early next year, according to people familiar with the matter. The valuation takes into account a range of factors, including Uber’s food delivery business and ownership stakes in Didi in China and Grab in Singapore.

The figure stands in stark contrast to the downbeat outlook in Detroit, where shares of Ford and GM are stuck at multi-year lows, even though the two car makers have rung up more than $50 billion in operating profit since the start of 2016.

Tasha Keeney, an analyst with ARK Invest, which owns shares in GM, Alphabet and Tesla Inc., said $120 billion “seems very overpriced.” Though she sees strong consumer interest in ride hailing, she said the challenges Uber has confronted in its autonomous-car program could hinder its growth longer-term, especially as rivals advance the technology faster, building robo-taxi fleets that compete with its business.

Auto industry executives have long seen tech-industry threats coming. The valuation of Elon Musk’s Tesla has soared in recent years, pulling even with GM’s, as it has shown it can create a fiercely loyal customer base for electric cars. Google began working on autonomous-vehicle technology in 2009 and its self-driving car unit Waymo is today considered a leader in the technology.



Traffic moves along the Brooklyn-Queens Expressway in New York. More people are moving to large, congested cities, and technology is giving them more options for getting around without owning a car. PHOTO: GETTY IMAGES

Meanwhile, more people are moving to large, congested cities, and technology is giving them more options for getting around without owning a car.

While demand for new cars and trucks remains robust and selling them will remain a core part of the industry’s business in the years to come, many executives believe the long-term profit growth is limited as new forms of transportation proliferate and more car owners ditch their vehicles for shared ones, hurting sales.

Car companies are trying to diversify into new business models that, much like Uber, sell transportation as a service. Revenue is generated by usage as opposed to a one-time vehicle sale, and because the service isn’t as capital-intensive as building and selling cars, executives believe it can ultimately command higher margins.

They envision networks of automated vehicles, which riders could hail via smartphones, similar to the way Uber and Lyft Inc. operate now but without drivers. By 2030, such fleets could account for one-quarter of miles driven in the U.S., Boston Consulting Group estimates. Intel Corp. , the chip-maker whose processors are being used in some autonomous vehicles, foresees this new, so-called passenger economy—when today’s drivers become passengers in driverless cars, shuttles and other vehicles—generating as much as $800 billion by 2035 and $7 trillion by 2050.

To make the shift, many car makers are restructuring their businesses, aiming to free up capital to make the new investments. Some auto companies, like GM, Ford and Toyota Motor Corp

General Motors Chief Executive Mary Barra with a Chevrolet Bolt at GM's Orion Assembly plant in Orion, Mich., last year. **PHOTO:** REBECCA COOK/REUTERS

TM **+0.44%** ▲ , are investing in new tech startups, purchasing artificial-intelligence and robotics firms, and hiring thousands of workers in tech hubs in California and Tel Aviv, Israel. Several car companies have acquired or invested in makers of lidar, laser-based sensors that help driverless cars navigate. The auto makers are tapping the tech world for software-engineering talent, a skill traditionally in short supply in the car business.

GM Cruise, the car maker's autonomous-car unit, has grown from a 40-employee startup acquisition in early 2016 to more than 900 people in San Francisco. In May, the company established GM Cruise as a standalone entity to attract outside investment. The move cleared the way for a $2.25 billion infusion from Japan's SoftBank Group Corp.'s tech-focused Vision Fund, which should provide the working capital it needs to launch the driverless taxi service it hopes to debut in some U.S. cities next year. Executives at GM believe such a network could in the long-term generate profit margins of up to 30%, versus the nearly 9% margin it posted globally last year.

Many companies are also striking alliances with each other and their would-be tech rivals to spread the risk and costs of developing these new ventures.

Honda Motor Co. this month pledged to invest $2.75 billion in GM Cruise and help develop the technology. Rival German car makers BMW AG and Mercedes-Benz parent Daimler AG DMLRY **0.78%** ▲ have proposed a joint venture to combine the companies' car-sharing and ride-hailing services.

"Obviously, every company would like to do everything by themselves...except that we can't," said Carlos Ghosn, chief of the three-way Renault-Nissan-Mitsubishi alliance, during an event this month.

A vehicle sports the logo of ride-hailing service Mytaxi in Hamburg, Germany, in 2016. **PHOTO:** KRISZTIAN BOCSI/BLOOMBERG NEWS

Daimler AG plans to create a separate business unit called Daimler Mobility AG next year focused on on-demand transportation. An Uber-like ride-hailing service Daimler started a decade ago, Mytaxi, has grown popular in Europe. The mobility unit could eventually become a candidate for an IPO as the car company seeks to tap the huge market valuation enjoyed by Uber, analysts say.

"As pioneers in automotive engineering, we will not leave the task of shaping future urban mobility to others," Daimler Chief Executive Dieter Zetsche said last spring.

Toyota is slimming down its core business units to free up cash for investments. The Japanese car maker is also investing in Uber, pledging to integrate its autonomous driving technology into Uber's own self-driving prototype.

Over the last year, GM has taken journalists and investors through a factory in suburban Detroit, where workers plan to build self-driving Chevrolet Bolt electric cars that have no steering wheels or brake pedals. The message: It has the manufacturing might to crank out thousands of robot cars, while tech rivals like Alphabet's Waymo unit must equip their autonomous systems onto vehicles they purchase from traditional car companies. Waymo has said it will start an autonomous car service sometime this year.

"We are the only company that has all of the necessary assets under one roof," GM Chief Executive Mary Barra told analysts earlier this year.

—Sean McLain contributed to this article.

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