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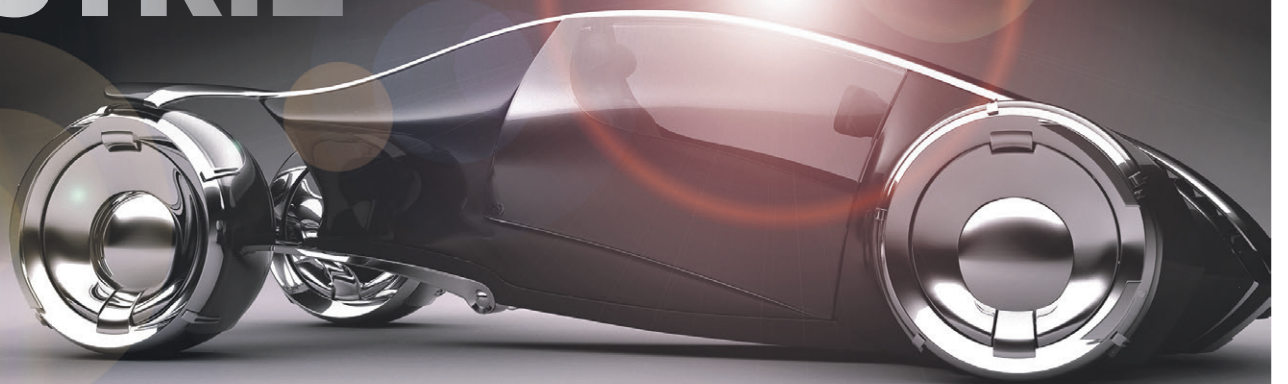
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DIE ZUKUNFT DER AUTOMOBIL INDUSTRIE



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by Patrick Ayad & Lance Bultena

The global automotive industry has for decades been significant for both economic and emotional reasons. The car is often the largest purchase a consumer makes other than their home. Estimates suggest there are about 1.2 billion cars in service globally valued at about US\$20 trillion. By any standard the global automotive industry is a colossus. We are 'attached' to our cars. They are marketed and sold as much through emotion as their operating specifications. The driving experience, not merely the transportation function, is greatly valued by many and provides a sense of independence.

These economic and societal factors have not changed for at least the past 75 years. While car styling changed regularly, capabilities expanded, and quality improved at a fundamental level, the motor vehicle was a constant. The economics of the industry has also been predictable. The vehicles were made by a few large companies that are well-known brands. Those vehicles are heavily advertised and then sold or leased to individuals. Once the vehicle is sold the manufacturer has, except for aftersales services, little additional revenue from that vehicle. Vast industries exist for individuals to maintain, fuel and even park those vehicles.

But the automotive industry will transform quickly over the next decade or so. The technology coming into vehicles will fundamentally alter not just the vehicle itself, but the ownership model and the many commercial enterprises associated with the automotive industry. Almost all analysts believe the autonomous drive vehicle, and even the flying car, will be a part of our future. Estimates vary on how soon human drivers will surrender completely to machine-driven vehicles, but few doubt the transition will occur. Already many models have technology that assists the driver in the driving function. The modern motor vehicle is also increasingly 'connected'. That connectivity can not only enhance the vehicle's capacity but it also allows the collection of data and the sale of services to car occupants. The data and services are tantalising new revenue streams.

These technological and capacity advances and the prospect of new revenue streams associated with the motor vehicle have many hurtling towards the automotive industry. Well-known technology companies are working on driverless cars, as are the incumbent manufacturers. A host of companies are developing hardware and soft-

ware platforms to facilitate that development. New economic relationships and corporate deals are reported frequently as companies position themselves for the future. Electronics and computer code are already an increasing part of the cost of a vehicle and all expect that percentage to increase. The potential gains are astounding.

The prospect of truly driverless cars that are connected will also fundamentally alter the ownership model. On average cars are driven under an hour a day. In other words, globally, US\$20 trillion in assets have a utilisation rate of about 4 per cent. If the driverless car is owned by car services and summoned on demand by those needing transportation services the utilisation rate could increase substantially and the cost per unit of distance or time should drop dramatically as utilisation rates increase. Dramatic savings are achieved because a human driver does not need to be paid.

If fleet ownership displaces a significant percentage of sales to individuals that will not only change the marketing and distribution model, it should change the car itself. A fleet owner with a high utilisation rate is less sensitive to entry cost and will care more about durability and low running costs. Many believe this dynamic operating in conjunction with strict rules for fuel economy and greenhouse gas emissions will lead electric motors to displace the internal combustion engine. If car ownership shifts eventually to a fleet model built around electric vehicles so many of the industries built on car ownership by individuals will change. That list includes everything from gas stations, aftermarket parts sales, car repair and even businesses like car washes.

Changes of this magnitude do not happen instantly or easily. The technology will have to continue to improve. While early gains are coming fast, solving all the technological problems to enable truly driverless cars is a daunting task.



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Regulatory changes will be needed as well. Many regulatory structures and liability rules are based on the assumption of a human driver. Safety rules mandate equipment for a human driver. Even now some of that equipment is not needed. Eventually rules for everything from the steering wheel on will need reconsideration. Before full autonomy is achieved regulators will want to evaluate when humans drive and when the car drives and how that exchange occurs. Current safety rules are designed around crash survivability. When cars seek to avoid accidents rather than survive them the intellectual framework for the rules will need to shift. And there will be ethical challenges. Cars that are at least as much computer systems as mechanical devices may require new certification procedures. And, as these vehicles will be always connected their cybersecurity will need to be protected and the privacy of the data generated controlled.

While there are technological and regulatory hurdles to overcome it is evident that almost all industry participants foresee fundamental transformation in the future. The deal flow within the automotive industry already reflects this expectation. This trend will continue and accelerate.

Learn more about the global legal opportunities and challenges in the automotive industry in our Q&A style publication "Getting the deal through - Automotive" (<https://gettingthedealthrough.com/area/95/automotive/>), powered by Hogan Lovells.

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