TODAY'S BARRIERS TO VEHICLE INNOVATION WILL SHAPE THE AUTO INDUSTRY OF TOMORROW

By Laura Marcero

Innovations from voice assistants to subscription models and social media platforms each gained traction among consumers before business and industry audiences embraced them. For electric and autonomous vehicles, due to persistent economic, technology and infrastructure challenges, the near-term use cases favor commercial buyers. As automotive leaders invest in strategies around electric and autonomous vehicles, it's evident that mass consumer adoption will not be the first frontier.

What's Holding Back Electric and Autonomous Vehicle Adoption

Consumer transportation habits, from the vehicles they choose to whether they own a vehicle at all, are driven by a simple need: to get from point A to point B safely, quickly and cost effectively. Electric and autonomous vehicles do not yet satisfy these criteria.

As oil prices remain low, mobility options such as ride-hailing expand and average electric vehicle prices stand over $60,000 (compared to around $37,000 for car sales overall), generating widespread demand will prove difficult. Consumers have also yet to buy-in to the driverless concept, with 68 percent saying they'd feel uncomfortable in a fully autonomous car. From a technology perspective, there are still advances to be made in battery range (and resistance to extreme weather conditions), safety protocol and consumer privacy.

Most critically, the infrastructure to support these vehicle innovations is underdeveloped. U.S. gas stations outnumbered electric charging stations seven to one as of late 2018, with funding for future growth fragmented across traditional automakers, startups and utilities. Furthermore, accommodating a critical mass of autonomous cars will require radical urban planning to transform roads, traffic signals and parking structures.

Solving for any of these issues depends on extensive coordination across the public and private sectors. In the interim, auto manufacturers need to ensure there is demand for the new models they bring to market.

Commercial Opportunities for Electric and Autonomous Vehicles

Even as certain factors inhibit mass consumer adoption of electric and autonomous vehicles, opportunity exists in niche applications of new

vehicle technology. Auto manufacturers may find willing early adopters – and partners – in specific industries, including:

- **Ride-hailing:** Lyft and Uber manage multiple initiatives aimed at achieving carbon neutrality and encouraging driver adoption of electric vehicles. Through Lyft's Green Mode pilot, the company is partnering with Avis to expand its fleet of electric vehicles that drivers can rent. By working directly with auto manufacturers, ride-hailing vendors could develop more robust incentives to spur electric adoption and support driver recruitment.
- **Logistics:** Logistics have always been a capital and labor-intensive business. Recent trends including a severe driver shortage (particularly for long-haul shipping) and significant last-mile delivery costs shrink operators' margins further. For these organizations, autonomous vehicles could bring efficiency gains and a material impact on the bottom line. Supplementing existing fleets with driverless vehicles can alleviate scheduling constraints and insurance expenses, providing the flexibility to manage deliveries around the clock.
- **Retail:** With nearly four in 10 consumers expecting brands to offer free, two-day shipping, autonomous vehicles could help retailers scale and expedite their delivery capabilities. Chains including Walmart and Kroger have invested in autonomous vehicle pilots to transform grocery delivery, but the technology could lend itself equally to apparel brands, restaurants and drug stores. Beyond accommodating consumers' specific orders, retailers may eventually rely on driverless vehicles to reimagine the entire shopping experience – something Toyota, 7-Eleven and Starbucks are experimenting with in Japan.

How to Plan for the Future

Consumer adoption of electric and autonomous vehicles may be farther out than originally estimated, but auto manufacturers that develop a path forward today will be equipped to compete tomorrow. As leaders approach the planning process, it's critical to think beyond the current boundaries of your organization. Removing the barriers that currently inhibit widespread electric and autonomous vehicle adoption will depend on collaboration within and outside the industry.

This will push auto organizations to consider:

- **Formal partnerships:** With electric and autonomous vehicles, the technology embedded throughout matters more than what's under the hood. And while companies such as Google or Microsoft have ample technical expertise and resources, they are not yet set up to handle mass production. Manufacturers may increasingly turn to joint ventures with large and specialized technology players alike (including those focused on lidar, batteries or vehicle-to-everything platforms) to future-proof their supplier networks. Advances in driverless systems could also encourage more collaboration between manufacturers, as brands such as Volvo take steps to license their IP to competitors.
- **Corporate spin-offs:** Major auto manufacturers and technology companies have already created standalone units to oversee vehicle research and development, including General Motor's Cruise Automation (valued at nearly $15 billion) and Google's Waymo (valued at over $100 million). These structures, along with existing manufacturer alliances to fund battery and autonomous vehicle innovation, allow organizations to shield other areas of operation from risk. But auto leaders need a vision for what these teams will look like five and 10 years from now. As consumer preferences and manufacturer line-ups evolve, today's innovation units could be spun out into fully independent brands.
- **New dealership use cases:** Dealerships play a vital role in today's auto supply chain, with almost half of their average gross

revenue driven by services, parts and body shop departments. Increased electric and autonomous vehicle adoption, however, will shift maintenance needs from engines and oil changes to battery repair and IT troubleshooting. Manufacturers will need to ensure their dealer networks evolve with their products. As more software-enabled vehicles come to market, dealerships may need to borrow from Apple's Genius Bar model – bringing in employees of whichever vendor owns the underlying technology to manage customer service needs. With less space required for service and showrooming, dealerships could also repurpose existing space for electric vehicle charging and autonomous fleet parking.

Hype around electric and autonomous vehicles continues to dominate conversations across the auto industry. With future profitability and shareholder value at stake, leaders need a detailed vision for connecting innovation investments to revenue.

By confronting the reality that consumers will not be the first mainstream adopters of emerging vehicle technology – and why – the auto industry can truly begin to reinvent itself.

Key Takeaways

To maintain and grow revenue as auto manufacturers' focus shifts on electric and autonomous vehicles, organizations should:

Think differently.

Identify specific markets that stand to benefit from electric and autonomous vehicles in the near term, as the infrastructure and technology behind them continue to develop.

Plan differently.

Consider how collaboration with non-traditional partners, including organizations in adjacent industries or current competitors, may help position your organization for the future.

Act differently.

Embrace the possibility that your organization's role in the automotive value chain may shift, finding ways to repurpose existing assets – or nurture new ones – to open up new markets, generate revenue and manage risk.

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