The impending death of the parking industry is highly overrated. As technology and automotive companies have poured money into autonomous driving development, self-driving cars have caught the attention of investors and captured the imagination of the general population. Seemingly each day, press coverage of developments in the evolving self-driving industry come with predictions of the imminent demise of the needs of consumers to use parking facilities. Well, wait a minute. There's more to the story.
Many of the headlines grabbed by autonomous vehicle proponents whose views paint a rosy picture of a world in which self-driving cars will soon make the roads safer, free-up congestion, provide low-cost—some even suggest free—transportation as a service, resulting in consumers opting out of car ownership with parking demand going to zero.

This article focuses on self-driving cars rather than the more generic “autonomous vehicles,” since various levels of vehicle autonomy exist which can lead to confusion. Within this article, “self-driving” refers to vehicles that do not have human driver controls and that can operate without a human driver, but only in certain environments and under certain conditions.

For example, a vehicle may be limited to a geographical area or driving in particular weather conditions.

**Timeline for Deployment of Self-Driving Vehicles Varies**

Mass adoption timelines such as by 2020 or 2025 make headlines.

Late last year, one transportation network executive predicted private car ownership will all but end in major U.S. cities by 2026.

Such claims should be examined closely as policy, regulation and infrastructure does not exist to support driverless cars.

Technology must be developed and refined, laws and regulations must be written or revised and impacted industries must adapt.

To evaluate the technology challenges, let’s compare self-driving cars to the personal computer industry, since computerization is at the heart of autonomous driving capability.

Personal computers hit the mainstream marketplace in the mid-1980s. We’d all agree that the technology is far advanced now from what it was three decades ago. Still, while the capabilities have improved, users experience frustrations with applications getting hung, the need to download operating system and application upgrades and, and the requirement to periodically reboot to reset the computer.

**Computerization Adds Complexity and Risk**

Self-driving vehicles will have much of the complexity of traditional vehicles with the additional complexity of the computerized self-driving technology. This computer infrastructure must
integrate digital maps, onboard sensors, physical safety sensors, cyber-security systems, artificial intelligence, autonomous driving software and computerized self-diagnostics.

When you must reboot your personal computer five minutes into an important presentation, it frustrates and embarrasses you. Rebooting a self-driving car traveling across a busy city street isn’t an option.

For a self-driving car, the computer engineers and software developers must develop sufficient redundancy and fail-safe technology so as not to endanger human lives. Resolving the technology challenges to safely navigate roads will be a tremendous achievement and take time.

**Laws and Regulations Are Complex**

A second area of complexity to be addressed is that of laws and regulations. Regulations will come from the federal, state and municipal governments. Laws and regulations will need to be worked out with suppliers, consumers, public safety organizations, insurance companies and other stakeholders. This process, too, will take time. Governments move at a pace all their own.

Some self-driving visionaries tout networks of cars interconnected through the airwaves enabling narrower lanes, decreased distances between vehicles, even the elimination of traffic signs and signals as interconnected cars coordinate movements.

This reliance on a high bandwidth, high-availability network has its own development requirements—standards to be defined, mobile technology advances, competing companies working together and more. To achieve what people envision requires all vehicles to be connected through a wireless network or connected networks. Again, numerous details to work through and significant investment to make before this ever comes to pass.

Our view is we’ll see many self-driving cars on the road long before we see cities where the cars are all connected wirelessly to coordinate their movements.

**Will Manufacturers Insure Self-Driving Cars?**

Insurance is yet another area impacted by self-driving cars. Some suggest that the manufacturers should insure self-driving vehicles since the owners are not responsible for driving the car. That’s a great point; however, the owner is responsible for the car’s upkeep. It’ll be interesting to see how this issue develops, particularly given that insurance is regulated at the state level.

**Parking Industry Has Time to Adapt**

Our outlook aligns with that of IHS Markits, a leading provider of business information and analysis for the automotive industry. In June 2016, IHS Markits predicted the U.S. will lead early deployment with several thousand autonomous vehicles sold in 2020 with global sales increasing to 600,000 units by 2025.

Per their forecast, U.S. sales of autonomous vehicles would grow to 4.5 million annually in 2035 (the level of autonomy was not specified). To put the volume of sales in context, annual sales of new automobiles in the U.S. are currently at 17 million. Even if sales of new automobiles stayed flat through 2035, the 4.5 million forecasted autonomous vehicles would represent approximately 25 percent of new vehicle sales, meaning that about 75 percent of new vehicles sold would not be autonomous.
Assuming IHS Markit’s forecast is accurate and given the average age of a car is approximately 11 years, human driven vehicles will likely represent the majority of cars on the road through at least 2050.

This view of a timeline for self-driving adoption is not a “worst-case” view.

Rather, a pragmatic assessment of the complexity involved in the technology and building new regulations and business models warrant a longer timeline than many self-driving industry advocates herald.

For parking investors, owners and operators, the timeline represents slower change to the parking industry than what has been in the news headlines.

We encourage you to consider the case outlined here as well as that espoused by others and determine what course of action to take with your parking interests.

In part two of this series, we’ll discuss how self-driving cars will impact traffic trends in cities and how that may influence the parking industry.

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There are two common myths that foretell of the impending death of the parking industry as self-driving cars hit the marketplace:

**Myth:** Privately owned, self-driving cars don’t need parking. Owners will send their self-driving cars home after their morning commute or rent them out to transportation network companies (TNC), such as Uber and Lyft.

**Reality:** For many private owners, sending a car home will be inconvenient, expensive and perceived as risky. Sending the car home doubles the mileage for the commute, adding to maintenance, charging and potential insurance costs.

A self-driving car parked at home is not readily
accessible if one's schedule changes, such as an unexpected call to pick up a sick child from school. Then, toward the end of the workday, the car will have to drive itself from home to pick up its owner.

In an ideal world, the garage at home would be secure when a self-driving car leaves unattended, and the self-driving car would never get stuck in traffic, always arriving at the precisely the appointed time, and the human owner would be available to be picked up exactly at that moment.

Roadways Cannot Support Mobile Parking Lots

But we live in an unpredictable world. It's one thing if a single self-driving car rides around the city streets wasting time and resources waiting for its owner. It's quite another if that number is in the hundreds or thousands of vehicles riding around waiting on their owners to get out of meetings, complete their shopping or finish their meals at restaurants.

City streets don't have the capacity to support vehicles essentially using the roadways as mobile parking lots.

Some people assert that private owners of self-driving cars won't send their cars home at all, they'll just rent their vehicles out to TNCs.

An executive at one large TNC has stated his company is going in a different direction, preferring fleet ownership over rentals. He cited logistical issues as a reason.

Average Car Owner Will Not Want to Rent Their Vehicle

From the individual owner's perspective, consider that the car might be returned with the battery drained and require charging before it could make the trip home. Or, the car may be unkempt from callous, unsupervised riders. People who can afford self-driving cars will not want the inconvenience of having to charge the car or clean it before riding in it.

Here, too, the pickup of the owner may be problematic if the self-driving car is late, or the owner isn't available when expected. One results in an inconvenience to the owner, the other results in the car driving around until the owner is available.

For the reasons cited above, the most likely scenario for private owners of self-driving cars is they'll choose to have their cars park nearby so long as affordable parking is available.

Myth: Fleets of TNC-owned self-driving cars will supplant private transportation, and these fleets will troll the streets continuously eliminating demand for parking.

Reality: This myth overlooks that these fleet vehicles, like all electric
vehicles, will require charging, likely for a number of hours a day and maybe more than once a day. These fleet cars will also need to be cleaned regularly and serviced periodically. The conclusion is that TNCs will need facilities for charging, cleaning and servicing vehicles.

**Rider Demand Varies Throughout the Day**

Rider demand is not even throughout the day. Typical city traffic patterns on weekdays reflect peaks during the morning rush hour and then again for the evening rush hour. Midday demand is about two-thirds of that of rush hour. Then after the evening rush hour, traffic decreases steadily through the evening until the early hours of the morning when demand is a fraction of that of rush hour.

City governments may step in if their streets become clogged with empty self-driving TNC cars riding around waiting on passengers.

In February 2017, Bruce Schaller, an urban transportation policy expert released a report entitled *UNSUSTAINABLE? The Growth of App-Based Ride Services and Traffic, Travel, and the Future of New York City.*

In the report, Schaller noted that TNCs added nearly 50,000 vehicles to New York City’s roads in the past three years with more than 600 million additional miles driven.

Even if city governments don’t intervene, operational efficiency will influence the number of TNC vehicles on the road during off-peak hours. Empty cars driving on the streets don’t bring in revenue and drive up expenses.

A likely scenario is that TNC operators, either by choice or by influence from city hall, will look for places to park surplus cars during non-peak periods.

Some prognosticators have predicted that TNC operators would send their vehicles out of the city, even out of the suburbs, to rural parking facilities during non-peak times.

Such an arrangement is not practical as the time and distance involved sending empty vehicles to remote facilities for charging or for service represents lost economic opportunity. More likely, TNC operators will seek facilities as close as possible to where their riders are.

**Parking Owners Could Profit By Adapting Their Facilities**

Recently, Waymo, the company created from Google’s self-driving car project, contracted with Avis Budget Group for fleet support and maintenance services. While Waymo is not a TNC, their relationship with Avis Budget demonstrates that owners of fleet vehicles will look for third-party partners to help meet their needs. With locations near population and business centers, existing parking facilities would likely appeal to TNCs as candidate properties for converting for use to park, charge, clean and service their fleets of electric vehicles.

John Roy, a nationally recognized parking consultant, investor, broker and co-founder of JNL Parking, recently said, “Over the course of the past century, parking for people’s main source of transportation has evolved to accommodate changes, first with the transition from horse and buggy to the automobile, then continuing as cities grew and the nation’s transportation eco-system developed. Parking facilities adapted and have become today’s highly automated, efficient operations. In the long-term, parking structures will not be eliminated, but will rather morph into a new use that may not be entirely evident at this moment.”

As self-driving cars come onto our nation’s roadways, parking owners and operators will need to evolve to meet the changing needs of transportation systems and altered customer behaviors.

Parking professionals must stay abreast of developments in the cities where they do business, and plan accordingly and remain relevant and profitable.

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