

# Apple delivers the driverless connected vehicle

At the threshold of Silicon Valley 4.0 (roughly 2022), people will be connected everywhere, but traversing the space between us won't have been innovated upon in roughly a century. We won't be truly mobile until cars receive the full and complete benefits of computing and connecting. The company that changes that may well be the same company that has kicked off two of Silicon Valley's three consumer cycles (Apple II, iPhone): Apple.

In a tilt mirroring the Apple vs. everyone-else-enabled-by-Google battlefield of smartphones, Apple will go up against competitors using Google's self-driving car platform. Players like Tesla (or Mercedes, et. al.) may take on for cars the role Samsung has played for Google in mobile phones.

This prediction brings up at least three questions:

1. Why Apple (instead of Google, Tesla, BMW, Mercedes, etc.)? While it will have to eek out a come-from-behind win (especially in manufacturing and batteries), Apple has design, consumer-grade system integration, market scale, supply chain buying power, cash reserve, brand, and go-to-market advantages over all others. Although traditional car companies including Mercedes, Volkswagen Group, BMW, and others are pursuing independent work on autonomous cars from offices in Silicon Valley, their resourcing (tens to low hundreds of people) is already eclipsed by that of [Apple's supposed effort](#) (1,000+ ... to begin with) as well as that of Google. And Apple and Google's efforts don't have to phone home to HQ in Stuttgart, Wolfsburg, Munich, Detroit, or Tokyo for permission and resources.
2. Why end-product (a la iPhone) instead of platform (a la CarPlay)? The abject failure that has historically ensued when Apple allowed others to build crucial consumer products on its foundational technologies (see [Mac clones](#) and [MOTO ROKR E1](#)) has caused Cupertino to steer clear of this kind of reliance for nearly a decade.
3. Why 2022 if Google has self-driving cars in Mountain View today? The key to autonomous transportation is getting to 100 percent door-to-door autonomy, including the complex environment of surface streets and neighborhoods ([National Highway Traffic Safety Administration Level 4 to be official](#)). Even Google and Tesla, the leaders in autonomous driving, are not predicting 100 percent driverless vehicles until 2020. Knowing how these things go in Silicon Valley, we'll give them an extra two years.

## The challenges for Apple

Even with those issues addressed, there are still at least three big reasons for Apple specifically not to touch the personal transportation category:

1. It involves a new class — and scale — of manufacturing: Apple has spent the last two decades building smaller and smaller. Why start stamping square feet of metal?
2. Cars would yield lower-than-traditional (for Apple) per-unit profit margin percentage: Even BMW only makes a 10 percent margin at the corporate level. Rough for a company like Apple that likes things much closer to 50 percent.
3. The move would require Apple to develop a new retail presence: A traditional "car dealership" (even without inventory, assuming a build-to-order model) would mean a new set of real estate for Apple. It is, however, plausible that the company would simply

show the car in existing retail and handle test-drives by “coming to you.”

## Benefits will win out

In the end, however, several benefits will push Apple into this space:

1. Enriching people's lives: Apple won't be able to culturally resist increasing physical connections between people by bringing the psychological, physical, and actual costs of driving to zero.
2. Saving people's lives: Ninety percent of car accidents globally are caused by human error ([resulting in 1.2 million annual road fatalities and over 20 million injuries, with 45–60 percent of fatalities occurring in single-vehicle accidents](#) most rapidly addressed by driverless cars). Announcing that Apple has built a product to genuinely combat the leading cause of death among 15–29 year-olds and the [30 percent of road fatalities caused by drunk driving and 18 percent caused by distraction](#) will go down as Tim Cook's “iPhone keynote,” Jony Ive's magnum opus, and Apple's final disruption (until it figures out teleportation in 2122).
3. It's very accretive, even to a business as large as Apple's: Driverless transportation could become a \$2.5K margin-per-unit business (a BMW-like 10 percent on a \$30K car) for Apple with a total available market of 40 million units per year globally (cars are roughly half of total global light vehicle sales, [7–8 million in the U.S. alone](#)). They will do to some combination of Lexus, BMW, Mercedes, Audi, and Acura ([each of which has 1.3 million to 1.8 million vehicle sales per year](#)) what they did to BlackBerry, Nokia, and Motorola in phones. At 2 million+ units per year, they could build a \$50 billion+ annual revenue business with \$5 billion+ of margin contribution.
4. Bonus reason: Keeping Chief Design Officer Jony Ive interested in being [driven to work](#) for another 10 years. The irony.

## What the Apple Car could be

Apple will start with a fully driverless electric two-door for round-trip commutes under 150 miles (the iPhone of driverless transportation).

That would contain the initial challenge of building a breakthrough platform, make it economically accessible to premium my-first-car consumers, and be one of the quicker ways to affect safety (27 percent of road fatalities involve drivers under 25 — the same percentage as all drivers 30–50).

They can follow that with a longer-distance sedan or cross-over utility vehicle several years later (the iPad-equivalent).

Imagine a driverless car windshield on the right (credit: Apple). If Apple takes advantage of the opportunity to make the windshields of driverless cars controllably translucent (and combines that with either integrated LCDs or short-throw projectors from the dashboard), we may even come to think of their driverless cars as simply the biggest screens in their product family. Distances of road trips will be measured not in miles, but in the number of Pixar movies or episodes of HBO's Silicon Valley Season 9 we watch.

## Silicon Valley 4.0 winners and losers

Apple (product), Google (platform), Facebook (people's time and location), and Uber ("ground traffic control" for the transportation-as-a-service economy as fleets of driverless vehicles plug into the system) can win big.

Lexus, BMW, Mercedes, Audi, and Acura (and over time, possibly even Honda, Toyota, and Ford) may lose a third or more of their collective market share as likely only one of them will become a stand-out in the enabled-by-Google ecosystem.

This feeling of being truly mobile will become mainstream just in time for Silicon Valley's 50th anniversary in 2027. But don't worry. You won't have to drive your kids to this birthday party. Your Apple Car can do that for you.