

WHITE PAPER: AUTOMOTIVE IN THE SHARING ECONOMY

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Today's Millennial generation isn't buying cars or getting driver's licenses. So why aren't the OEMs worried? Brendan McNally finds out.

With the Millennial generation just now moving into their prime earning years, they are beginning to demonstrate how different they are from Generation X and the Baby Boomers.

Already it's becoming clear they are spurring a profound disruption that will, in the near-term, dramatically reshape key aspects of the American economy. And probably nowhere will the disruption be greater than with the automotive industry.

For more than a hundred years, owning and driving one's own car has been a cornerstone of the 'American Dream'. But if recent studies are to be believed, more and more Millennials aren't buying into that part of the dream. They're holding off on buying cars and each year fewer and fewer bother getting driver's licenses. What doesn't diminish, however, is their need for mobility. To meet this and other changes taking place right now, the automotive industry is undergoing a fundamental redefinition from simply building cars to 'providing mobility.'

Unlike Baby Boomers and Gen-Xers, who grew up during times of relative prosperity, Millennials have come of age in an era of marked economic decline and limited opportunity. Many have known nothing but freelance contracting jobs and have little expectation of the situation ever changing. Under such circumstances, many consider home ownership an unrealistic goal. As for buying a new car? With an income flow tending toward the irregular, many probably view owning a car as both too expensive and too big a drain on their monthly earnings.

Although popular culture likes presenting American Millennials as narcissistic and seeking instant gratification, studies show them to be surprisingly pragmatic, financially responsible, highly flexible and often willing to make significant sacrifices in order to meet their long-term goals. According to a recent Goldman Sachs study, many Millennials in their twenties are still living with their parents and are putting off significant milestones such as love, marriage and having children.

But perhaps what really separates Millennials from their predecessors is their cognitive ability to keep separate the idea of owning something with that of having access to the capability which that thing represents. The most obvious example might be with music. For Baby Boomers and Gen-Xers,

recorded music isn't really real unless it is in some tangible form, such as a CD, a cassette, or a vinyl LP. Likewise with books and films. Unless they can hold it in their hands and display it on a shelf, it's simply too ephemeral to be considered real. Millennials, on the other hand, don't require music or movies or books to possess physical forms. Music, movies and books are simply something to download from the web onto a computer or mobile device. Millennials don't care about the object, they just want the capability.

This preference of access over ownership is fostering the rapid growth of what is called the 'sharing economy'. It exists in many forms and is defined as "a class of economic arrangements in which

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participants share access to products or services rather than having individual ownership". Its big advantage is that it allows the optimum use of resources through the redistribution, sharing and reuse of excess capacity in goods and services. It exists in many forms and is often done on a peer-to-peer basis. Young people wishing to travel, while not having to shell out all their money on hotel rooms, have turned to 'couch surfing,' for a fraction of the cost of a hotel. This phenomenon has existed for years, of course, with connections made via bulletin boards and newspaper classified ads. Couch-surfing has given rise to Airbnb, and along with it, dozens of other companies all dedicated to facilitating peer-to-peer arrangements, for things ranging from dog vacations, bike rentals, food purchasing, to wi-fi sharing. These are proving so popular that the global sharing economy is currently put at \$15Bn (£10.42Bn) and is expected to balloon to \$335Bn over the next ten years.

Of course what's driving the value of the sharing economy upwards so dramatically isn't companies providing dog vacations or wi-fi sharing but those offering mobility, specifically car- and ride-sharing.

Ride-sharing

Uber and Lyft, both headquartered in San Francisco, provide ride-sharing. Though they are, by far, the best-known ride-share providers, there are easily dozens more like them. Uber was founded six years ago with a handful of cars it didn't own and drivers who weren't employees. At the time, its founder Travis Kalanick described Uber as "more a lifestyle than a company". What it really was, was an app that could be downloaded onto a smartphone which would efficiently enable riders to find drivers and drivers to find riders. Today it operates in over 300 cities worldwide with over 200,000 drivers who have by now provided over a billion rides to millions of people who have downloaded the Uber app on their smartphones. Their last known private valuation put them at \$62.5Bn. Nevertheless, Uber still possesses almost no hard assets, other than an algorithm that connects customers with drivers. Recent investment includes \$1.2Bn from the Chinese web services company Baidu, which, among other things, plans to improve Uber's integration with their own mapping apps.

Lyft's business model is much the same as Uber's, although it is still a much smaller operation and has not yet spread globally. It has recently received \$2Bn from investors, including \$500M from General Motors. Lyft has also received sizeable investment from the Chinese ecommerce firm Alibaba. While Uber and Lyft are clearly competing with each other, it is, however, a war fought mainly at the top. Lyft's and Uber's driver are all independent operators and no small number drive for both companies. Their real competition are the taxicab companies, which, they'll tell you, have operated as near- monopolies for years, owing to favourable regulations and often very cosy, informal relations with members of the local governments and licensing authorities. As a result, Uber and Lyft have repeatedly had their legality challenged. In a number of markets, Uber and Lyft drivers were barred from getting multi-visit access permits that regular taxicabs were issued for bringing passengers to and from local airports. Courts, however, have repeatedly found in favour of the ride-share operations. Yellow Cab, Uber's main opponent in San Francisco fought a hard battle against the ride-shares and has ultimately lost. Having been saddled with several multi-million dollar accident liability cases, they have recently filed for bankruptcy protection, although they claim their aim is solely to reorganise their debts. Yellow Cab has also adopted a number of strategies used by ride-shares such as smartphone hailing.

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“Ride-sharing will work if you can come in with a lower price point and get the user to the front of the line,” says David Mahfouda, CEO of Bandwagon, which has developed an algorithm that provides shared-rides that are nearly as fast as ones for single passengers. “If you can save them \$20, they'll take the chance.” Daniel Ramot agrees, He is the co-founder of VIA Transportation, which provides shared rides in luxury cars. “Would people prefer to have the vehicle to themselves? Sure,” he says. “But they're perfectly willing to share if they system is efficient and they know they won't be waiting for passengers. We make sure that they have a comfortable vehicle, one that's more comfortable and gives a better ride than your average Yellow Cab.” Ramot says VIA has provided over a million rides to customers in New York City over the last two years.

Car-sharing

Just as ride-sharing was predated by taxicabs, car-sharing's predecessors are car rental firms like Hertz, Avis, and Alamo. These are large companies with giant vehicle fleets and customers that usually the vehicles usually for several days at a time and, sometimes, for considerably longer periods.

Reservations usually would be made days or weeks in advance and the vehicles picked up either at airports or special downtown locations. Car-sharing, on the other hand, takes place on the spot with little, if any prior arrangement other than being previously vetted via the downloaded app. The other thing that makes car-sharing different from “car rental” is that they are mostly used for single, point-to-point rides. Using their smartphone app, a customer can locate a parked vehicle, unlock it, and drive it for as long as they want, then park it, get out and the transaction is completed. They pay only for the capability they use. The smartphone app extracts payment usually on a minutes-used basis. Dr. Susan Shaheen, co-director of the University of California at Berkeley's Transportation Sustainability Research Center and a leading researcher on car sharing and the 'sharing economy,' sees the growing trend towards vehicle-sharing as a very good thing. “Our research shows that each shared car takes between nine and thirteen vehicles off the road,” she says. “These include vehicles that get sold and those whose purchase is postponed. Households with more than one car that engage in car-sharing will usually get rid of at least one vehicle.” With this reduction of vehicles on the road, she says, comes a sharp reduction in emission of greenhouse gasses.

Compared with the number of vehicles involved in ride-sharing, the number involved in car-sharing is still quite small. A recent TSRC study conducted during the fall of 2014 put the number of car-sharing cars in the US at a mere 19,115. It is, however, roughly double the number that was in operation five years earlier. Even so, those vehicles were shared by a whopping 996,000 users. It's steady, though certainly not explosive, growth. Shaheen expects that will happen soon. “Right now a lot of things are beginning to converge,” she says. One being the way smartphones and downloaded apps are facilitating point-to-point car-sharing, which she says is a “big growth accelerator now the technology makes possible point-to-point mobility”.

A lot of the people involved in car- and ride-sharing are younger and well-educated and living in urban settings,” Shaheen says. “As far as we're concerned, it's already been accepted by the Millennials. Our

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question is when is it going to start reflecting Baby Boomers and Gen-Xers?"

But while ride-sharing can be made to work in nearly any metropolitan area, car-sharing requires an alchemy of very specific, favourable conditions to succeed. In San Francisco last autumn, at almost exactly the same time that Yellow Cab's crisis was grabbing media headlines, DriveNow, a car-sharing joint venture between the BMW Group and Sixt AG, very quietly suspended its electric vehicle car-sharing operation in San Francisco. DriveNow had proven to be a very successful concept in Europe where they've been operating a fleet of 3,000 electric cars in a number of European cities, including Berlin, Vienna, Copenhagen and London. They'd hoped to use San Francisco as a beachhead to enter the North American market. The problem was, they had not been able to get a change in parking permit regulations that would allow their cars to be parked on the streets without having to feed parking meters. In San Francisco, as in many American cities, parking and parking meters is a lucrative 'rice bowl' for certain municipal parties that they are loathe to part with, even if it might be for the greater good of getting cars off the street. It was enough to strangle DriveNow's efforts.

"We fully expect to return once the city reforms its parking policies to allow for one-way car-sharing," said DriveNow CEO Richard Steinberg. "In the meanwhile, we are focusing our efforts on new cities where our transportation solutions can flourish." DriveNow was hoping to make Seattle the second city in its North American strategy. DriveNow and other car-sharing companies were seeking legislation from the city government for up to 2,000 free floating parking permits that would allow them payment-free access to parking meter spots as well as in restricted neighbourhood parking zones.

A ride-sharing company that has been successful is Car2go, a subsidiary of Daimler AG. Much like DriveNow, Car2go's originated in Europe but, instead of making their bridgehead in San Francisco, they started their North American presence in Austin, Texas. They have since spread to over a dozen North American cities, including San Diego, Seattle, Denver, Toronto, Vancouver, Brooklyn, Arlington, and Washington, DC.

"We're looking at cities with a robust public transportation infrastructure," says Josh Moskowitz, regional director at Car2go. "Along with that is the right kind of population density and urban environment containing destination centres." In order to be a good fit, the candidate city also needs to be a place where the people are used to taking public transportation and not necessarily having their own cars. One of the reasons for this, he says, is because many rides begin or end nearby public transit hubs, such as subway stations.

"The key to success is on-street parking," Moskowitz adds. "The best advertising is the vehicle itself, because all the vehicles have the logos on them prominently." In order to do that, they need to have cooperation from the city government and other major stakeholders. They need to be able to park either in restricted residential zone or in places where there are parking meters without having to feed the meters.

"We only go to cities in which the mayor and city government and major stakeholders are interested in

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working with us,” says Moskowitz. “Each city is unique and it's a different conversation in each city. Austin has been a fantastic city to start off in. They welcomed us with open arms.”

Moskowitz says most users want the vehicles for a point-to-point ride. As long as it's done within the operating area, that's fine. If, on the other hand, the driver is in Brooklyn and wants to take the vehicle to Manhattan, they're responsible for bringing it back to Brooklyn. He believes the operation will soon extend to Queens and, ultimately, to Manhattan, although he would not hazard a guess when that might take place.

Despite that, as Susan Shaheen claims, car-sharing takes cars off the road and keeps others from being bought, OEMs see it as in their interest to get behind it. GM president, Dan Ammann, put it this way during a recent conference call: “We see car-sharing as much more of an opportunity to GM than a threat. Cars used by single owners or families sit idle 95% of the time. Vehicles that are shared are used more and, therefore, will turnover more. Higher vehicle turnover means increased turnover for carmakers like GM.” Ammann estimated that 5-6M people currently use ride-sharing and car-sharing worldwide. He said he expects the number will expand four- or five-fold by the end of the decade. For OEMs, the advantages of having a car-sharing arm are obvious. In every city where the car-share operates, they have several hundred vehicles on the ground and generating revenue. Moskowitz says Car2go never enters a market with less than 200 vehicles. If successful, the number quickly expands to easily twice that number. Since the vehicles being used are often electric, or special vehicles, such as the Daimler Smart Car that Car2Go uses, it also introduces the customer base to a type of car that they might otherwise dismiss without further thought. Car2go exclusively uses Smart Cars, though currently in Vancouver, they are experimenting with a small number of higher-end Mercedes.

According to Moskowitz: “People so closely associate us with Smart Car, that more than once people have gone into a Daimler showroom where Smart Cars were on display, and attempted to rent one.” Car-sharing might be in its infancy but all signs indicate the OEMs will waste little time establishing, ramping-up and making it operational wherever feasible. Many OEMs either have some pilot car-sharing programme being stood up or they are re-imagining themselves away from being simply car manufacturers.

In addition to investing \$500M in Lyft, GM has recently launched its own car-sharing service called Maven. It's starting with 21 spots in Ann Arbor, Michigan. At the same time GM is folding into Maven its existing car-sharing pilot operations in New York and Chicago. At the same time GM has been acquiring talent and key intellectual property recently defunct ride-sharing service, SideCar. While announcing Maven, Julia Steyn, GM's vice-president for urban mobility, predicted that 30M people will be using car-sharing within the next few years.

The Ford Motor Company is rebranding itself to “Ford Mobility,” with the new “FordPass” brand as an umbrella for mobility services. They have launched what they are calling their Smart Mobility Initiative where they are offering incentives, including financing to 14,000 Bay Area Ford owners to make their vehicles available for car-sharing by the day, hour and week. All this, though, is being overshadowed by the rumour that Ford is secretly working with Google to develop a driverless car.

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Shortly after announcing GM's half billion dollar investment in Lyft, Ammann stated that he expects automated vehicles will be first deployed through a ride-sourcing platform rather than directly to consumers. In a sense, the driverless car is as much at the heart of the rise of ride- and car-sharing as is the Millennial shift from ownership to capability. Ride-sharing and Car-sharing might now be two very separate enterprise categories but they likely converge once driverless cars become fully operational. Recently US Department of Transportation Secretary Anthony Fox announced that the upcoming FY2017 Federal budget will contain a \$4Bn funding proposal designed to accelerate development of safe vehicle automation, through a number of real world pilot projects. It's a clear sign that driverless cars will be operational sooner than later.

It's likely the OEMs recognise the need to have their sharing capabilities up and running in time to meet it because the real game changer isn't going to be getting people to buy self-driving cars as much as it will be to get them to use self-driving cars that they don't own.