

THE DRIVERLESS WORLD

THE IMPACT OF AUTONOMOUS VEHICLES ON MODERN CITIES



The Driverless World

by Daniel Mellish and Jodie Walker

It would be hard to imagine a time without cars on our roads. They have changed our lives in many ways, especially in terms of where we choose to live.

In a similar way, it is hard to imagine a time when we will be able to jump into a car and go anywhere we desire, without having to be driven by someone or drive it ourselves.

Autonomous vehicles are a reality and could impact our lives in even more ways than the initial cars did. They have the potential to be adopted by all demographics and ages in society. They will affect the use of land and current infrastructure, as well as property desirability and value.

Autonomous vehicles use sensors to measure distances and distinguish objects, as well as GPS technology to determine where they are positioned. Machine learning will likely help to integrate all the data collected, so that eventually these vehicles will not require a driver to operate them.

Driverless cars currently pose ethical, social, and economic questions that have mostly been unanswered since they are still in testing stages. Despite heavy scrutiny from the public and various regulatory agencies, numerous autonomous vehicle programs have combined to attract over \$80 billion in investment from 2014 to 2017, according to the Brookings Institution. Some of the major players in the field include Google, Apple, Intel, and Uber, and it is estimated that one in four cars will be self-driving by 2030.

Autonomous vehicles are a part of our future, whether we like the idea of them or not. They will likely impact all of us in some way. This issue of The Secret Agent Report will look at the potential impact autonomous vehicles may have on the city and on property prices.

MOBILITY-AS-A-SERVICE

Many cities in Australia, particularly regional ones, are impossible to traverse without a car. To participate in daily life means owning a car and dealing with congestion, parking issues and of course their maintenance.



Modular Parklet by Cyclehoop, the first of its kind in the UK
Photo taken from cyclehoop.com

A driverless future seems ideal in many ways. It's easy to picture a world where car ownership is minimal to non-existent. Uber and ride sharing services have been a step towards this.

Robotaxis, unhindered by the labour cost of a human driver, are the next level to Uber. They will deliver rides cheaply and safely and because of this, the utilisation rate will be high. Ultimately, they could replace car ownership, taxis and even Uber.

A major consequence of this is that cities will no longer have to devote such huge portions of land to idle vehicles.

To a degree, this is already happening. San Francisco is almost a decade into a study that lets locals convert their car space into a 'parklet' whereby that parking space is converted into neighbourhood amenities such as seating, landscaping, or art.

This model of shared transportation is already available in areas of the United States. For example, Waymo customers are able to hail an autonomous vehicle, and simulations have suggested that running such a network would be the same or less than the cost of current car ownership. Some city councils have doubled down on this vision of the future. In Chandler, Arizona, they have amended city zoning laws to allow for up to a 40% reduction in available parking spaces. A

further reduction in parking spaces would theoretically allow for larger urban dwellings and more public amenities such as parks and green spaces.

In Melbourne's inner Northern suburbs of Brunswick and Coburg, minimum parking requirements for new developments might soon be replaced with maximum car parking rates. This would encourage residents to reduce car ownership, creating more space and resulting in reduced congestion on the roads.

TWO FUTURES

Car culture has resulted in heavily congested roads, the marginalisation of public transport, and an increase in urban sprawl. Research conducted by The Economist suggests that the rise in the use of autonomous vehicles could 'either reverse or accelerate each of these trends'. Traffic could either be reduced or increased; public transport could either be more or less accessible; cities could become denser or sprawl could increase.

An increase in the number of robotaxis on the road could increase the occupancy rates of vehicles, thereby lowering the total number of vehicles on the road and lowering congestion. However, such ease of travel may spur people to travel more, thereby cancelling out the benefit. Further, remaining on the road at the slowest possible speed will likely be far cheaper for such vehicles than parking. In this way, there will be an incentive for autonomous vehicles to congest the road. The

extent of this effect could be controlled by local governments by the introduction of tolls and congestion fees to discourage the behaviour.

Research conducted by UC Davis indicated that among those that use Uber, bus use fell by 6% and tram use fell by 3%. In other words, public transport use has fallen due to the introduction of ride sharing services. It is expected that Robotaxis would reduce the price of ride sharing like Uber since it would create more competition. As a consequence they could draw even more users away from public transport. Such reduced ridership may result in lower public spending on transport infrastructure, leading in turn to an underfunded, over-utilised service that disproportionately affects the poor and the elderly.

On the other hand, autonomous vehicles could be used for the 'last mile' which would greatly enhance the effectiveness of public transport in more regional areas. Further, governments could provide robotaxis for public transport use. Such a trial is underway in Helsinki, where a driverless bus is used to take riders from major transport hubs to popular destinations.

The proliferation of autonomous vehicles may lead to the recovery of car spaces which would enable the development of denser population centres.

This conversion has already begun as many new high-rises and apartment complexes offer fewer parking spaces but do accommodate pick-up and drop-off zones for ride-hailing vehicles.

EFFECT ON PROPERTY PRICES

The impact of autonomous vehicles on the property market remains to be seen. It seems that a lot of the potential impact will be decided by local government regulations and could be different state by state. For example, tolls and congestion fees would determine the impact that autonomous vehicles have on city congestion, which would affect the demand for city properties. While the price movement will vary based on numerous other factors, property prices are likely to be affected by autonomous vehicles because they will change people's requirements for what they need in a property.

For example, many people would not consider certain properties in inner city Melbourne because of lack of car parking. If autonomous vehicles became the norm, this may mean more people would be comfortable getting rid of their car and therefore the number of inner city properties that would meet their requirements would increase. This could further add to the already high demand for inner city properties.

The Commons is the first green apartment building in Brunswick developed without car parking.

Photo from nightingalehousing.org



Further, there may be an increased demand for many of the newer apartments that are being built without car spaces or, for terrace houses that often have no parking on site.

Houses that do have a premium based on the fact they have one or more car spaces could lose this value because it simply isn't a highly desirable characteristic anymore.

The concept of a garage could become a thing of the past, with more houses being built without one, and current garage spaces being turned into extra accommodation or storage. This would impact pricing substantially, or could allow for extra income streams for property owners who choose to "rent" out their converted garage bedroom on sites such as Airbnb.

In terms of inner city suburbs, there are usually areas within the suburb that are more valuable than others. This is based on the fact these more desirable areas are closer to amenity, allowing residents to easily walk to things like public transport and shops. The ease of accessing these services could become higher with autonomous vehicle use which could result in more uniform prices across the suburb, especially if car parking spaces were taken out of the pricing equation.

Proximity to public transport is an essential characteristic for many property owners. We know that there is a price premium for a property located within walking distance of public transport. If autonomous vehicle use replaces the desire to use public transport to a greater extent, then this price premium could become non-existent. It could also impact the rental return achieved for apartments located in public transport rich areas since it would likely reduce rents as well. Whether this happens or not will largely depend on how cheap autonomous vehicles are in comparison to public transport costs. It should also be noted that public transport centres are usually full of other shops, which is hard to detangle from the price premium.

The fact that autonomous cars will reduce the need for car parking space in our cities is very significant for property prices in our city centres. There will be more space to build apartment buildings here and for a period of time, there will be an even greater supply of apartments. This may mean that price growth could stall or decline slightly until demand picks up to meet the new supply. The cost of building could drop without the need to have basements as well, which means deflation in building costs.

Autonomous cars will perhaps have the greatest impact on the elderly.

If older generations choose to use them, this could mean that they can remain in their homes longer, even if they can no longer drive a car themselves. This will impact housing turnover rates and pricing, especially in some of the competitive inner suburbs of Melbourne.

Since autonomous vehicles would allow users to replace driving time with 'productive' time, longer commutes could become more acceptable for many. This combined with the affordability and size of housing in the outer suburbs, could create an increased demand for these areas and encourage more people to live further from city centres. This could result in more competition and slowly increase prices in the outer suburbs.

CONCLUSION

It is only a matter of time before autonomous vehicles become commonplace in our daily life. Without knowing how they will be regulated or how they will be utilised by consumers, it isn't possible to know for sure the extent to which they will affect property value.

This report has given some predictions only, which are based on our current understanding of the market and what people generally desire. The impact is likely to be large simply because driverless car proliferation has consequences for so many different things. These include how our cities and homes are designed, land use, where people choose to live and work as well as public transport and road infrastructure. Their use will likely change our lives just like the car did back when it became commonplace. ♦


REFERENCES

- C. F. Kerry, J. Karsten, "Gauging investment in self-driving cars", Oct. 2017.
- D. Galland, "10 Million Self-Driving Cars Will Hit The Road By 2020 -- Here's How To Profit", Mar. 2017.
- E. Finn, "Going Driverless in the City of Cars", Jul. 2018.
- J. Lemola, "Self-driving bus on Helsinki RoboBusLine goes to scheduled service", May. 2018.
- J. MacDonald-Evoy, "Chandler may become first U.S. city to tweak zoning rules for self-driving car", April. 2018.
- J. Phillips, "SF parklet proliferation raises concerns about restaurants' use of public space", Feb. 2019.
- MIT Technology Review, "Self-driving cars could make city congestion a whole lot worse", Feb. 2019.
- R. Clelow, G. Mishra "Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride Hailing in the United States", Oct. 2017.
- R. McDonald, "Why Driverless Cars May Make Cities Sprawl Even More", Apr. 2016.
- The Economist, "The New Autopia: A Chance to Transform Urban Planning", Mar. 2018.

SECRET

INSIDE PERSPECTIVE

AGENT



The Driverless World
Vol.80 May 2018

Words

Daniel Mellish
Jodie Walker

Design

Sheng Yi Lee

The data upon which this report is based was sourced from:
The Australian Bureau of Statistics (abs.gov.au/census),
REIV (reiv.com.au/property-data/auction-results),
The Department of Human Resources, Google Maps,
Land Victoria (land.vic.gov.au), realestateview.com.au,
realestate.com.au, domain.com.au, Fairfax, Residex, various
individual real estate agents operating in inner Melbourne, and
other specialised sources as noted in the content.

© 2018 Secret Agent HQ Pty Ltd. All rights reserved.
No reproduction, distribution or transmission is permitted
without the prior written permission of Secret Agent HQ Pty Ltd.

info@secretagent.com.au
(+61) 3 9349 4333