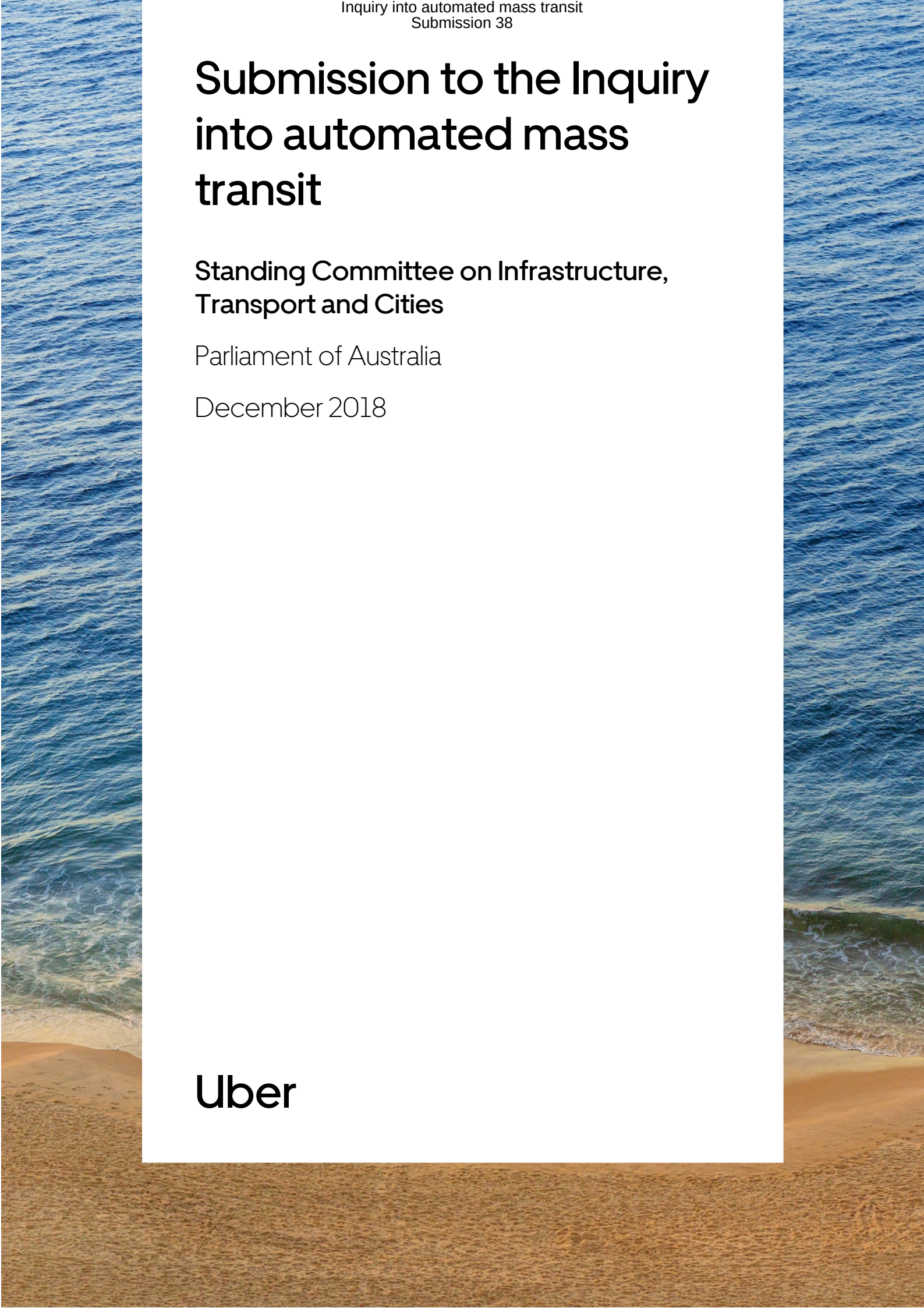
Submission to the Inquiry into automated mass transit

Standing Committee on Infrastructure, Transport and Cities

Parliament of Australia

December 2018



Uber

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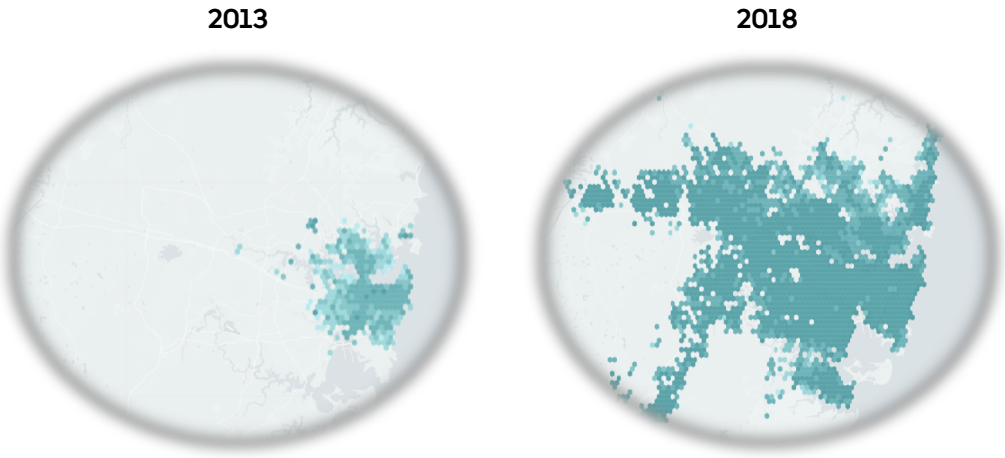
Introduction

Uber welcomes the opportunity to provide a submission to the *Inquiry into Automated Mass Transit*.

Uber is a technology company that provides a smartphone application to connect driver partners with people who need safe, reliable rides. Founded in 2009, Uber now serves over 600 cities, and facilitates more than fifteen million rides every day. Since our Australian launch in 2012, Uber is now available in 39 cities across the country, with around 3.8 million active riders.

Since launching the Uber app in Australia, ridesharing has changed the way people move around Australian cities. Through our innovative technology, we are working on a range of new products to help our cities move better. Uber Eats is now available in 18 cities across the nation, connecting thousands of restaurants in Australia with millions of customers.

Australia and New Zealand have led the world in openly regulating the point to point transport market, allowing for competition, complementarity and innovation between different types of point to point services. This open regulation also provides a platform for transport providers, users and regulators to innovate further to increase the efficiency and utility of the entire transport ecosystem.



Uber's journey in Australia

Data from Sydney for November 2018 and November 2013. The colour of each 'hex' indicates the average wait time for Uber pickups in that area (where a darker hex represents a shorter average wait time).

Uber

Executive summary

Uber's technology has the power to transform the way we think about transport, infrastructure and urban development, and improve urban mobility and the quality of life for people living in cities around the world.

This submission outlines some of the ways that technology is changing Australia's cities and transit networks. It outlines Uber's vision for the future of transport, and how governments can leverage technology to deliver better outcomes for Australians.

At Uber, we believe the best cities of the future will combine great public, active and shared modes of transport to develop integrated, optimised transit networks for communities. Ridesharing is already changing how our cities move, with technology like Uber's complementing and expanding the reach of public transport by getting more people into fewer cars.

Increasingly, companies like Uber are investing in new technologies that help people connect with the right mode of transport for the right journey. In this vision of the future, Australians will be able to choose the best modes for each journey, and the combination of a shared bike to the train station with an Uber Pool scheduled to pick you up at the other end can offer a better journey than choosing to drive yourself.

In the long term, Uber believes that the future of transport will be shared, automated and electric. However, governments have the potential to unlock tremendous benefits in the near term for cities and travellers by leveraging technology like Uber's.

These new technologies will be most effectively and efficiently deployed through shared fleets. This approach improves access to technology which is otherwise prohibitively expensive, thereby familiarising consumers and speeding adoption; encourages a shift away from private car ownership, thereby reducing the size of the vehicle fleet and space required for parking; and manages the risk of increased 'vehicle miles travelled' and related sprawl, congestion, and environmental impacts by combining trips and using infrastructure more efficiently.

In its deliberations on the future of automated mass transit, Uber encourages the Committee to:

1. Acknowledge the Federal Government's role in leading public debate on urban development and the future of transport;
2. Acknowledge the significant role that technology, including ridesharing and Uber, can play in improving the connectivity of cities;
3. Urge governments to direct state and federal regulators to embrace innovative technologies;
4. Explore opportunities to work within existing resources to achieve better outcomes for members of the travelling public; and
5. Urge all Australian governments to investigate innovative partnerships with third party organisations to deliver better transit solutions for Australian cities.

We look forward to working with the Committee to explore new, innovative ways to deliver better outcomes for the Australian public.

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Uber in Australia

Ridesharing and the future of cities

Uber's technology has allowed us to improve urban mobility and the quality of life for people in cities across the world.

Uber is able to access parts of cities where other means of transportation do not go. City transit systems provide important mobility options, but often do not cover all areas. This leaves many neighbourhoods underserved by affordable and reliable access. Uber is able to extend the reach of public transportation by providing reliable services for areas that are traditionally underserved.

In Los Angeles, a study found that on average, UberX rides in lower income neighbourhoods are less than half the price of taxis, and arrive in less than half the time.[1] In Mumbai, 34 per cent of Uber trips serve suburban areas, which traditionally have fewer transportation options available. Similarly, by meeting riders where they are located, ridesharing has created an entirely new transportation option, growing the whole category of point to point transportation services and complementing the transportation network as a whole.

By extending the reach of public transit and helping bridge the gap in areas typically underserved by transport, ridesharing is also able to help connect individuals to economic opportunities.

Uber's aim to get more people in fewer cars has the potential to have a dramatic impact on the global transport market. Uber's platform allows us to more efficiently utilise the cars that are already on the road. In the long run, we are working towards a world where every car on the road is shared. When this happens, the potential exists for enormous mobility benefits.

By getting more people into fewer cars, Uber can provide an affordable alternative to car ownership. In the United States, 10 per cent of riders under 30 say that they have either given up their car or are no longer planning to buy one. Similarly, in a recent YouGov poll in London, 28 per cent of Londoners who used to own a car say they longer do so because they can use alternatives like Uber instead. This rises to 42 per cent among recent Uber users. 1 in 5 Londoners say they are less likely to buy a car in the future because of alternatives like Uber.[2]

Increased adoption of ridesharing in Australian cities, which leads to higher utilisation of individual personal vehicles, should lead to lower rates of car ownership and have significant flow on benefits to urban environments.

Complementing public transport

Public transport is the mobility backbone of cities around the world. It is also an essential option for people without personal vehicles, an important alternative to driving for car owners, and an integral part of making cities more accessible and sustainable.

Ridesharing complements and extends the reach of public transport, and for the first time makes carpooling a reality at scale, helping to reduce congestion and emissions.

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[1] R. Smart, B. Rowe, A. Hawken, M. Kleiman, N. Mladenovic, P. Gehred & C. Manning, Faster and Cheaper: How Ride-Sourcing Fills a Gap in Low-Income Los Angeles Neighborhoods, BOTEC Analysis Corporation, July 2015.

[2] YouGov poll commissioned by Uber and conducted from 28 October to 1 November 2016.

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In Australia, over 60 per cent of Uber trips start or end in a public transport desert[3]. And almost half of all trips are one-way, implying that for some suburbs, for at least part of the day, public transport is unavailable to cover either the outbound or return leg. In this way, ridesharing complements public transport where reliable service is unavailable. Ridesharing provides a flexible and scalable solution to the 'last mile' problem, connecting riders from their door to a transport hub.

In London, 4 in 10 Uber trips start or end within 200 metres of a tube stop, and 20 per cent of Uber trips start or end in an area underserved by public transport.

Similarly, in London people are also combining the new Night Tube service and Uber to get home (see graphic below). In the six weeks following the launch of this service, a number of stations within Zone 1 saw a decline in pick-ups during Night Tube hours, while those outside Zone 1 starting near Night Tube stations rose by 63 per cent, and Uber trips starting within 200 metres of Night Tube stations increased by 22 per cent. This shows that people are using the Night Tube in London to get out of central areas in the early hours before relying on Uber to travel the last mile safely home.

[3] Deloitte Access Economics, Economic effects of ridesharing in Australia, July 2016.

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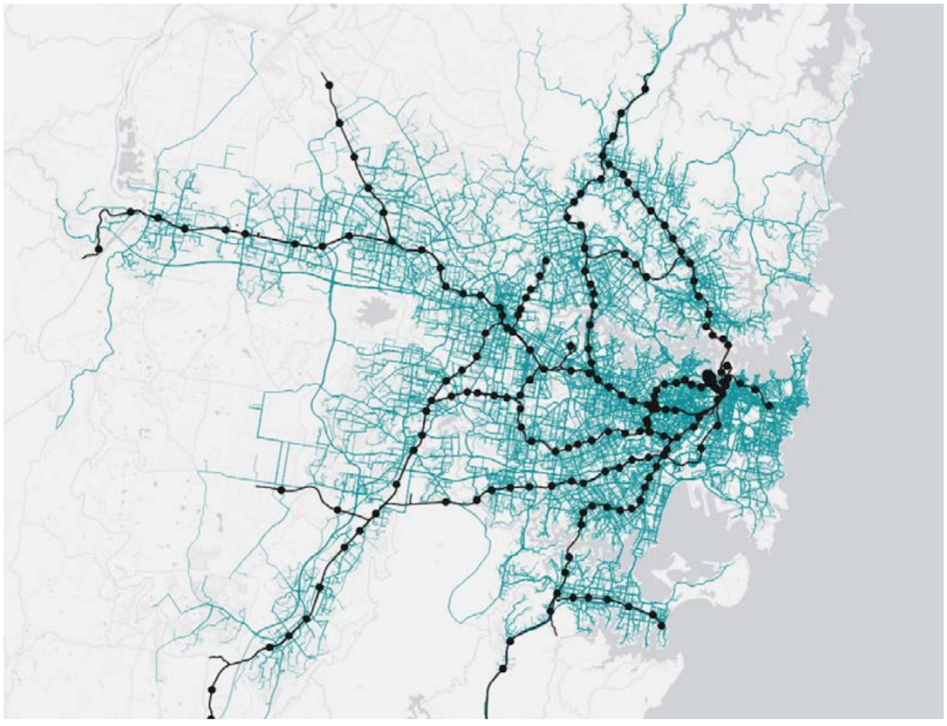
LONDONDERS USE UBER TO START THEIR MORNING COMMUTE

Lines indicated Uber trips start started in Outer London on weekdays between 5 and 10 in the morning, and ended at a train station.

- TRAIN STATIONS
- UBER TRIPS
- ZONES 1 & 2

Data from March 2016. Complete trips only. Points away from train stations have been jittered to preserve privacy



UBER EXTENDS EXISTING PUBLIC TRANSPORTATION IN SYDNEY

Lines represent Uber trips that began or ended near rail stations.

- RAIL STATION
- UBER TRIPS

Data from the city of Sydney between August 1st and August 7th, 2016. Completed trips only. Points have be jittered for privacy. Actual trip routes have been replaced by routes generated using open source routing process. Stations © OpenStreetMap contributors. For more visit http://www.openstreetmap.org/copyright

Uber

Advanced carpooling systems and Uber Pool

Perhaps most importantly, smartphones have made carpooling possible at scale for the first time. One of the products we have in placed in large cities, Uber Pool, makes it easy for people headed in the same direction at the same time to share the journey, getting more people in fewer cars.

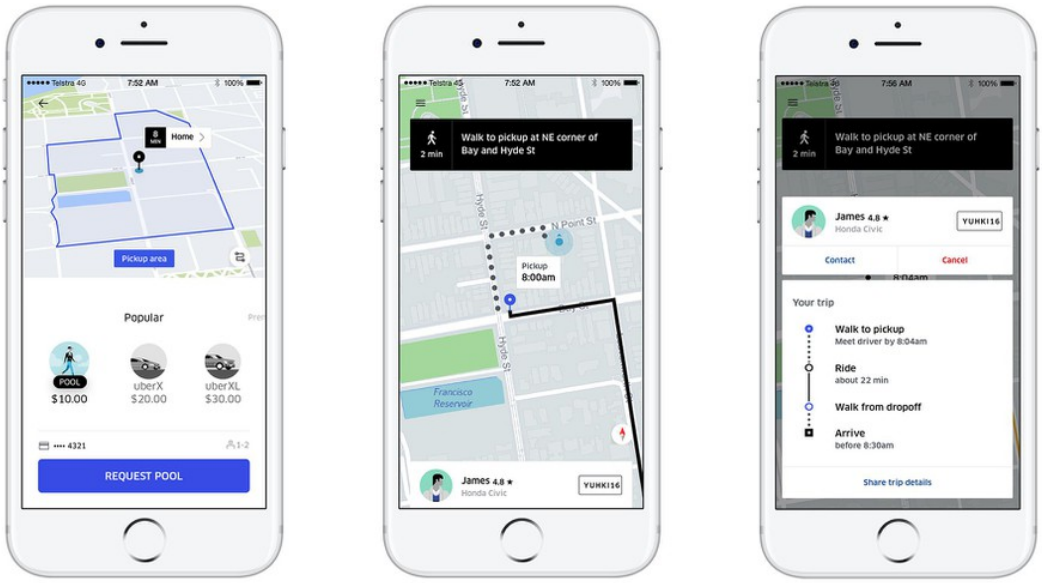
In cities where we have launched the option, 20 per cent of trips on Uber are now Uber Pool, saving millions of miles of car journeys that otherwise would have been taken. In San Francisco, that number is as high as 50 per cent. In just the first 7 months of 2016, if Uber riders had driven alone instead of sharing their rides using Uber Pool, we estimate that 312 million more miles would have been travelled, consuming more than 22 million extra litres of petrol and emitting 55,000 metric tons of carbon dioxide.

In Australia, Uber Pool is now available in parts of both Sydney and Melbourne.

A report conducted by the International Transport Forum - a research arm of the OECD - describes a future in which all trips are completed by a fleet of shared-use vehicles in a configuration similar to Uber Pool. The report predicted that such a model would result in congestion disappearing, a 33 per cent reduction in traffic emissions, and that the distance driven by shared cars would be 37 per cent less than today, even during peak hours.[4] This has now been used as a basis to develop shared mobility simulations for Auckland.[5]

Over time, these trips become a perpetual ride: a driver picks up one person, then another, then drops one off, then picks up another. It is on demand, hyper convenient and more affordable because the cost of the trip is shared. That makes it less expensive than owning a car and a real game-changer for cities - by providing a convenient, cost effective alternative to ownership, we can start to reduce the total number of cars.

Pooling technology is about using private cars for public good, because by getting more people in fewer cars, we can increase urban mobility and help reduce congestion and pollution over time, all within existing taxpayer resources.



[4] International Transport Forum (ITF), Shared Mobility: Innovation for Liveable Cities, May 2016.

[5] International Transport Forum (ITF), Shared Mobility Simulations for Auckland, Nov 2017.

Uber

Urban planning and Uber *Movement*

Over the past six and a half years, we have learned a lot about the future of urban mobility—and what it means for cities and the people who live in them. We have seen how more access to transportation and the use of private cars for public good can change both where and how we live for the better.

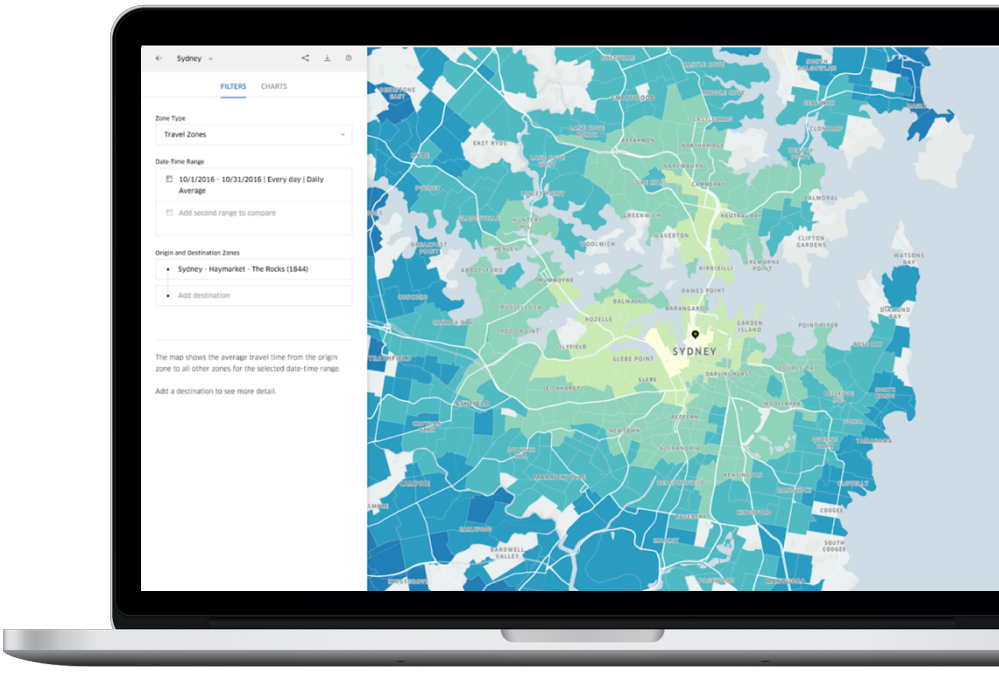
In select jurisdictions around the world – including Sydney, Melbourne, Brisbane and Perth – Uber has also launched *Movement*, a website that uses Uber's data to help urban planners make informed decisions about our cities.[6]

Uber trips occur all over cities, so by analysing a lot of trips over time we can reliably estimate how long it takes to get from one area to another. Since Uber is always available, we can compare travel conditions across different times of the day, days of the week, or months of the year, as well as how travel times are impacted by big events or road closures.

For city officials, *Movement* gives detailed historical insights to enable them to measure the impact of road improvements, major events, new transit lines and new traffic policies. For planners and policymakers, the tool enables them to conduct complex analysis on transportation patterns, which allows for better decision making around future infrastructure investments.

In October 2016, Uber and Infrastructure Partnerships Australia (IPA) first partnered to provide new insights on how our major cities move through the launch of the IPA Transport Metric. Leveraging *Movement* data, Uber and IPA monitored the impact of planning and infrastructure decisions on real journey times in Melbourne, Sydney, Perth and Brisbane.[7]

This is only the first step. City planners face a myriad of challenges, and we hope to help tackle more of them over time. We are excited to partner with city officials, urban planners and research organizations to continue building features that today's transportation planners need.



[6] Uber *Movement*.
[7] Infrastructure Partnerships Australia, Australian Travel Time Metric, 2017.

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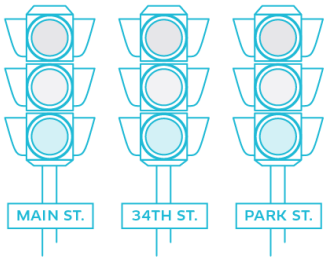
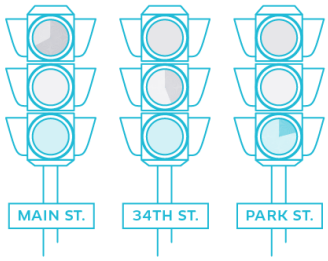
HOW CAN DATA HELP CITIES?

CHALLENGES | DATA | SOLUTIONS



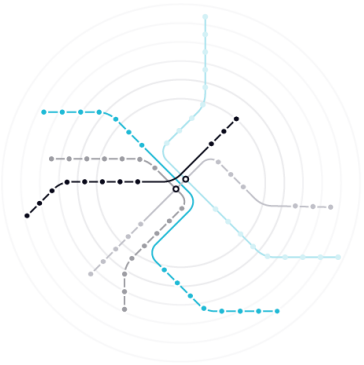
TRAFFIC JAM

How can we time the stoplights to improve traffic flow?



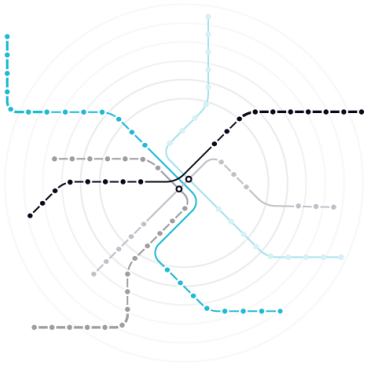
REDUCED CONGESTION

Data can help reduce congestion by evaluating traffic patterns.



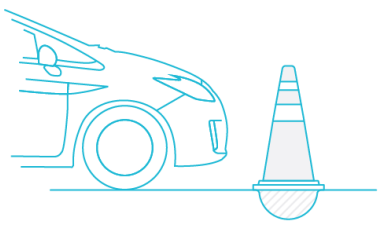
UNDERSERVED AREAS

Where should we add additional metro stops?



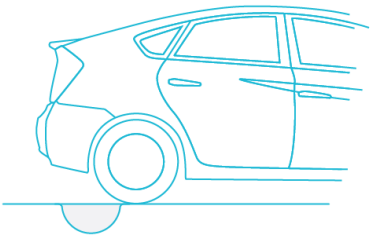
EXPANDING TRANSIT OPTIONS

Data can provide an informed approach to expand public transit lines.



POTHOLES

Which potholes should we fill first?



SAFER STREETS

Data can help improve city infrastructure and create safer streets.

Uber

Uber in the future: what's next?

Technology has changed the way we live. Take the smartphone – a tool that has made the previously impossible, possible.

Just eight years ago an iPhone lacked the battery power for a service like Uber to function. Today, over 60 per cent of all internet traffic comes from mobile, and half of that is driven by apps.

Urban transport has also experienced its own revolution, with ridesharing apps allowing riders to connect with drivers through an app by just pushing a button. Passengers no longer need to call and book, or stand on a street corner or queue in a taxi stand hoping a taxi will come along. Within an average of around four minutes in Australian metropolitan cities, you can now get ride from A to B at the touch of a button.

However, point to point transport is just the beginning.

Uber now has the opportunity to leverage existing technology to deliver more innovative and efficient solutions for members of the travelling public.

Uber is committed to unlocking multi-modal point to point transport to enhance the reach of the public transport 'spine' of the city to more citizens, at more times of the day and night. By embracing new modes of transport like eBikes, integrated Uber Pool solutions and beyond, governments will be able to offer a more efficient, sustainable transport network.

Mobility as a Service (MaaS)

Uber sees the future of transport as connected, integrated and seamless, with the ability to push a button and get from A to B using multiple transport offerings - all done by leveraging technology to make the experience as frictionless as possible. Imagine pressing a button to take an Uber Pool to a train station, get on a train, and take an eBike to get you the 'last mile' to the office - all arranged, scheduled and paid for using a single app.

Mobility as a Service (MaaS) is the aggregation of multiple transport mobility solutions into a unified service or app.

At its simplest level, MaaS offerings combine transportation services from public and private transportation providers through a single app - from point to point transport through to bike sharing, public transport integration and even urban aviation. This represents a shift away from individual, siloed, modes of transport toward a convenient, seamless point of activation for users.

Uber looks forward to continuing to work with governments across Australia to develop innovative, integrated solutions that put the consumer first.

Uber

New modalities and micro-mobility

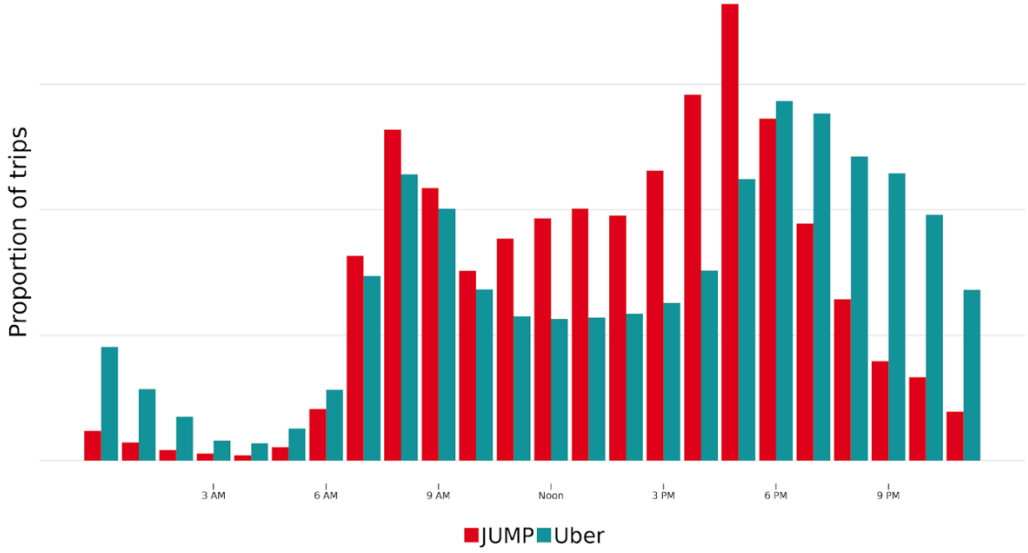
At Uber, our goal is to reduce personal car use by providing alternative ways to get around efficiently and sustainably. Until recently, Uber primarily meant a ridesharing and pooling. In February 2018, Uber expanded its focus to new modalities, with riders in San Francisco given the option to book a JUMP bike—an electric-assist smart bike—using the Uber app. For the first time, riders could choose seamlessly between two very different transportation modes in our app.

The results of offering micro mobility alternatives have been encouraging. Overall, trip frequency (Uber + JUMP trips) increased by 15 per cent after their first JUMP ride. The entire increase can be attributed to the use of JUMP Bikes; Uber trips actually declined by 10 per cent. During the workday (8am to 6pm, Monday to Friday) when congestion is at its worst, this decline in early adopters' Uber trips was even higher, 15 per cent.

To sum up, JUMP bikes were popular with these early adopters and some Uber trips, especially during congested periods, were replaced by JUMP trips. This is a promising early sign of the ability of eBikes to alleviate congestion and reduce car trips.

Under this multimodal suite of transport, passengers are able to switch seamlessly between modes and reliably get to their desired destination.

Uber is committed to working with government partners to explore JUMP bikes and micro-mobility solutions in Australia.



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First and last mile

In 2014 more than half (54 per cent) of Australians said that the reason they do not use public transport was that there was no service or none at the right time.[8] Moreover, existing and new public transport solutions may not be sufficient to meet future demands as Australian cities grow in geographical size and population.

In response, as an alternative to traditional remedies to the first/last mile problem like commuter carparks, some governments around the world have started turning to on-demand transport solutions that can flexibly adapt to commuter behaviour and provide a service that is tailored to individuals. Alternative solutions such as ridesharing services and mass-scale carpooling are often more cost effective and more efficient than investments in fixed infrastructure projects.

Uber sees 'first and last mile' solutions as an important part of the future transport mix. We envision a multi-modal transport ecosystem whereby passengers leverage point to point transport for first/last mile travel to complement their public transport journey.

This integrated transport model relies heavily on strong partnerships between governments and point to point transport providers.

For example, Uber has partnered with the transit authorities in Atlanta, Los Angeles and Minneapolis to provide a discount to commuters using Uber to complement public transport. Programs such as 'guaranteed ride home' in Washington DC offer commuters who regularly use pooling (twice a week) reimbursement for emergency travel outside of peak hours. In Malaysia, Grab (a regional rideshare company) partnered with the airport train service, KLIA Express, to offer discounts for passengers who use Grab to reach their final destination after disembarking from KLIA Express Station in the city.

In the UK, Uber has partnered with Mobicia, London's leading bus times app with almost one million users per month. Uber is now integrated into the Mobicia experience, enabling customers to order a ride via the Uber app to the nearest convenient bus stop for their onward journey, improving access to public transport, especially in areas that are beyond an easy walk to the bus.

In Australia, Uber has collaborated with Transport Canberra to provide Late Night Rapid passengers with $10 discount if they used Uber to travel to and from bus stops. This was launched over the 2016 New Year period and will operate for its third year at peak times over the New Year period in 2018.

In developing more collaborative public transport networks by utilising existing technologies and modalities, governments will be better positioned to implement automated technologies when they become available.

On-demand public transport (ODPT)

Uber has been considering mechanisms to leverage our pooling technology to make other forms of existing transport, for example bus networks, more dynamic and efficient. By applying our technology to existing bus services, we will see the development of On-demand public transport (ODPT) offerings - a way of travelling that is responsive and flexible, whereby customers can request and pay for a public transport trip via the Uber app.

[8] McCrindle Research, Getting to Work, February 2014.

These services can help governments provide better access to transport for more people in the community, in a cost-effective way. ODPT drives efficiency for riders and government through our matching technology, and is set at a comparable price to public transport (through government subsidies, but with a total fare comparable to or more competitive with traditional forms of public transport). It can also be provided with vehicles that were not traditionally part of the public transport ecosystem such as shuttles or sedans.

In Australia, some governments are already exploring how other models of shared transport can positively impact urban mobility. For example, the New South Wales Government has recently proposed an on-demand transport trial, with the Minister suggesting that "trials could include special bus services on suburban routes that respond to where and when extra buses are needed".[9]

At scale, on demand services like this have the capacity to dramatically increase the efficiency of existing public transport networks. We are excited to continue this conversation with governments around the country in order to activate these initiatives and improve public transport for all Australians.

Self-driving technology

At Uber we believe the future of mobility is increasingly sustainable, automated, and shared.

We are working with riders, partners, government, and industry bodies to create the safest possible self-driving vehicles and make them a reality on the Uber network. Currently, Uber's Advanced Technologies Group is focused on developing safe self-driving technology and bringing it to market in the United States.

We believe that automated driving technology can be:

- **Safer**: Self-driving vehicles have the potential to drive more safely than a human driver. Computers can look in all directions at once, and they don't get distracted, fatigued, or impaired.
- **More cost-efficient:** Operated in shared fleets at scale, self-driving cars can be cheaper to operate than human-driven cars, improving the economics of ridesharing relative to personal car ownership.
- **More time-efficient:** Riders who now spend time driving on congested freeways can reclaim this time for work or leisure. If sharing reduces congestion, these riders can also have shorter commutes.
- **More space-efficient:** As more people share rides, the number of parking spaces required could fall, parking lots could shift out of cities to make room for other uses, and curb space may need to be more efficiently allocated.
- **More equitable than existing transportation options:** Shared, automated mobility can work to extend the reach of public transit and bridge the first/last mile gap in areas typically underserved by transit systems, and for certain populations like people with disabilities, youth, and seniors.
- **Better for the environment:** When combined with automated driving technology, appropriate policies that incentivize sharing, improve fuel efficiency, and discourage driving without any passengers have the potential to take cars off the road.

Demand for reliable transportation continues to grow and, in order to be reliable, we believe ridesharing will be a hybrid for a long time — with rides provided by drivers and self-driving vehicles.

[9] NSW Government, On-Demand Transport Trial, November 2016.

Uber

As we think about bringing this technology to scale in shared fleets, we recognise the value of consistent regulation across state and, where possible, national boundaries, including clear and consistent roles for federal, state, and local government.

Uber Air and the future of urban aviation

The Uber Elevate team is transforming the world into one that is simultaneously safer and more efficient through aerial ridesharing at scale.

Uber Air is an initiative with the aim to create on-demand, urban aviation options via all-electric aircraft on the Uber network. Riders will push a button and get a flight via Uber Air. Uber Air will be a mass-market product serving daily and casual commuters as an alternative to driving into and out of congested urban areas.

Uber's goal is that from 2023, our customers will be able to utilise this service from a network of shared, electric vertical take-off and landing (eVTOL) aircraft.

To make this possible, Uber Air's ambition is to begin demonstrator flights from 2020 in three cities: Los Angeles, Dallas and a third international city. Earlier this year, Uber opened a call for cities to express interest in being the third Uber Air politics city, and in June members of our team visited Australia to discuss the potential in the region.

In November 2018, we were delighted to announce that Sydney and Melbourne were identified on our shortlist as ideal test cities.

On-demand aviation has the potential to change the way we think about urban transportation, and radically improve urban mobility by giving people back time lost in their daily commutes. UberAir represents a unique opportunity for Australia - including the local businesses Uber would partner with - to be part of the development of this innovative technology.

Uber

Conclusion

Technology has become a critical part of how people move from A to B, and will continue to play a key role in the future of transport around the world. Today ridesharing accounts for under 4 per cent of the miles driven globally, but by 2030, Morgan Stanley estimates that number will rise to more than 25 per cent.[10]

While automated technologies and digital innovation will challenge traditional mechanisms of transport, it is critical that governments bolster existing infrastructure and connectivity frameworks to unlock these opportunities.

By embracing shared modes of transportation, we can make all cities less congested and polluted – with more space for people and parks, where everyone, wherever they live and whatever their income, has access to affordable, reliable transportation.

Uber is uniquely positioned to work with governments to develop a national strategy to harness existing technologies, and provide the basis for new technologies to flourish. We believe Australians deserve a sophisticated transport network and are excited to contribute to this important national discussion.

[10] Morgan Stanley, Shared Mobility on the Road of the Future, June 2016.