T R A N S C R I P T

STANDING COMMITTEE ON THE ECONOMY AND INFRASTRUCTURE

Inquiry into electric vehicles

Melbourne — 9 November 2017

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Witness

Mr Scott Browning, Chief Executive Officer, Quickar.

The CHAIR — Thank you for joining us today. The committee is hearing evidence in relation to the inquiry into electric vehicles, and the evidence is being recorded. Welcome to the public hearings of the Economy and Infrastructure Committee. All evidence taken at this hearing is protected by parliamentary privilege. Therefore you are protected against any action for what you say here today, but if you go outside and repeat the same things, those comments may not be protected by this privilege. I invite you to state your name, your position, your company and the suburb or city in which you are based and then address the committee for five or 10 minutes, and we will then go to questions. Over to you; thank you.

Visual presentation.

Mr BROWNING — My name is Scott Browning. I am the chief executive officer of an automotive technology start-up. I am based in the Melbourne CBD. Probably to just give you some context of what we are involved with, my background is as a senior sales and marketing executive at the Eastman Kodak corporation in the late 1990s/early 2000s, and then my most recent proper job was as chief marketing officer of JB Hi-fi for 11 years. In that time frame I had a lot of experience with technology disruption in industries — not just technology, but social change — and how incumbent businesses and environments deal with those transitions. The guys this morning spoke a lot about unintended consequences, and there are both good and bad things that come from that and how incumbent businesses deal with that. I mean, the City of Melbourne is an incumbent business, so it is going to be affected by this.

Our start-up is based around things called Industry 4.0 technology, working through things like artificial intelligence. Industry 4.0 is a whole range of different technologies that is affecting the future of jobs, the future of mobility, transportation and the automotive industry, so it is all those things there that are coming together. In terms of the prism of the terms of reference of the inquiry around electric vehicles, you cannot actually talk about electric vehicles unless you are talking about all these issues as well and how they affect the economy, so to speak. Industry 4.0 is probably considered the biggest disruption to the way people work and get around and to cities since the second industrial revolution in the late 1800s, more so than the digital revolution of the last 25 years. So it is going to have a significant impact.

Even in Melbourne now we are already starting to see the prescient nature of that. We are seeing an enormous amount of employment growth moving back towards the urban centres but still population growth fuelled by anxiety around housing affordability pushing people further away. Cr Clarke from the Dandenong Ranges yesterday had a really good insight into that. They are only 25 kilometres from the CBD and already they are starting to experience huge inequality of services and opportunity. In that middle ring we are going to see an increased densification of the population, particularly in those middle ring suburbs, perhaps not unlike your electorates as well. We will start to see the pressures coming from densification in that model. The industry has seen a major inflection point around autonomous vehicles. There are a massive amount of commercial applications already that have been in place for over 10 years, and we are seeing a large number of miles driven by autonomous vehicles. So the context of what is called 'level 4 autonomous' is very real within the next five to six years in this city in terms of feasible technology.

For the automotive industry, there is significant consensus now. The traditional business model today is based around privately owned driver-driven vehicles. I think you cannot really talk about mobility without considering that everything seems to be working, particularly in Australia, through the paradigm of vehicle ownership. We have one of the highest levels of vehicle ownership in the world — and it is growing and our population is burgeoning — with nearly something like 650 to 700 vehicles per 1000 people. There is just not going to be enough room for the other 15 to 20 million people that arrive here in the next 20 years, and Melbourne and Sydney are really at the forefront of that problem.

There is no point it being 100 per cent autonomous. That is likely to be a disaster for cities. Even if it was electric and autonomous, it is still a disaster. There needs to be the consideration of how shared mobility fits into the equation. It is not a panacea for anything; it is just part of the puzzle, something in the future that is more integrated and coordinated. Particularly for cities like Melbourne and Sydney, by 2035 they need to be looking at opportunities for all three as a combined issue. So when you put all three of those things together, it looks very different in terms of the opportunities both for the economy, for more livable cities et cetera. Melbourne has more at stake than any other city now in the world with its livability.

What I was going to talk to you about today is the concept of something called free floating car sharing, the premise that car sharing will have a big impact on the uptake of electrical travel. Rather than think about electric

vehicles we think about vehicle kilometres travelled and how much of that is zero emission travel at the end point. There is a lot of talk about pushing that to the grid. At least it pushes the entire problem to the grid over time. Strategically the problem resides in one place. That is going to be the issue. It is more a long-term issue around emissions. The other side of the environmental coin is definitely pollution still; it is still a major issue. Probably one of the largest killers around the world in terms of the automotive industry is the pollution side of it. It is a bigger environmental factor, and that does not have to get locked into political ideologies around climate change and those types of things.

Free floating works on the basis that — you are probably familiar today with car sharing and that the very successful car sharing operations even in Melbourne and Sydney are station based — it is A to A. At the moment you have got to go, pick up a car, drive it and you have got to bring it back to where you found it, to a dedicated base. Free floating says, 'I go to a car, I find it, I go to point B, I leave it'. Think about sort of Uber meets car sharing: instead of the car coming to you, you go and find it within a certain radius.

The CHAIR — An expensive oBike.

Mr BROWNING — Yes, but you will not find them up trees and floating down the river under this model.

The CHAIR — Hopefully, yes.

Mr BROWNING — So station versus free floating: return to station, planned access — station-based is more a pre-chosen model. It is a bit like short-term car rental. That is the best way to think about it. It is a great solution for people without cars in the inner city, not so much for people in the suburbs. But it is an average of 6 to 8 hours per trip as a result of the model and less than 60 minutes is driving time in that space. You are paying a premium per kilometre, and it requires an enormous amount of station infrastructure to work through. Free floating uses the existing parking spaces available to the public in residential zones. You find that anywhere in the zone and you return that anywhere in the zone. That can be anywhere from a 100 to 200-square-kilometre home zone. It is spontaneous access, much like Uber is today, and the average trip time is about 25 minutes, about 7 to 8 kilometres. And it is really easy to deploy, because you do not need any station infrastructure to do it. See how this goes.

So right now free floating has in excess of 3 million users around the world. There are about 30 000 cars deployed in about 50 cities with free-floating services, in Europe, North America and now starting to move into Asia. The forecast is that this will grow to about 25 million users globally somewhere between 2020 and 2022. It has just exploded in the last three years in North America and Europe. It has been around for around eight years with Car2Go and DriveNow, but it is just really taking off. You are seeing companies like insurance companies who realise that private ownership is on the way out — and how does their business model change? They are becoming owners of these businesses. Even fuel companies are getting involved, and electric companies are starting to look at how they invest as operators of these types of services.

Of the top 10 cities at the moment, in Berlin there are about 3000 cars deployed, and Vancouver, a city of less than 500 000 people, in a central sense, has over 2200 free-floating vehicles. And really where all this fits into what is called the 'mobility ecosphere' is that people have tasks to do. Every trip that they make is fundamentally a choice they make about how they do it and what type of flexibility they want — so obviously the longer the distance, there is an impact on their choice and what type of flexibility they want. Station based works for longer, more pre-planned trips, but relative to private ownership, about 80 per cent of trips are less than 10 kilometres in most cases and about a quarter of those trips in private vehicles can actually be walked or ridden. What free floating does is actually pick up on the monopoly in certain denser urban areas that private ownership has, for starters. It complements the station-based environment quite successfully. So what you see around the world is really powerful station-based operators existing in the city — there might only be one — and then you will see three or four floating-point operators operating in different environments. The concept of peer-to-peer is where you share somebody else's car in that environment. Does that make sense?

Ms HARTLAND — Yes.

Mr BROWNING — In terms of the superior user experience, compared to station based, I am not trying to say that there is anything wrong with station based but for certain users there is an appeal for free floating as a real alternative to car ownership. Particularly the growth around the world has come from second-car suppression. These are people living in places like South Yarra or Prahran and they have decided not to get a

second car as a professional couple, and they will use a free-floating car-sharing service. And then there are people who do not own cars; they are actually forgoing a car purchase. So the amount of suppression is very similar to that of traditional station-based car sharing — 10 or 12 vehicles taken off the road for every one in the fleet.

On the benefit, it all comes down to cost at the end of the day. The variable in the future will be around cost-per-kilometre driven for mobility. So in the case of one-way sharing, in the top right-hand corner there, because you are only paying for the kilometres you are using at the time and you can drop it and leave it, you are not having to pay for insurance, you are not having to pay for parking. It is all covered by the operators with the cities. It is a much cheaper cost per kilometre. The average Australian travels about 15 000 kilometres, so that is not really suited to a 15 000, but once you get below 10 000 kilometres a year, the equation starts to look very much like that. The big cost of private ownership is the vehicle sitting idle on average for about 23 hours a day. In fact Australia has 13 million vehicles that sit idle for 23 hours a day. That is not very efficient as an asset.

Uber is very convenient, but it is very expensive on a cost-per-kilometre basis. Station based fits the bill, but it is not as convenient in the case of one-way trips and how people link between active mobility like bike and walking, public transport and Uber and taxi. It all fits together. But most people within a sort of 20-kilometre radius of the city could be fulfilled by these services.

The electric component of car sharing is quite impressive. There is a lot of research to be done, but certainly for anybody who uses a car-sharing service their likelihood to purchase an electric vehicle is much higher. Primarily people that use car-sharing services have a higher propensity for things like electric vehicles. What this research shows is that a large percentage of people that already had a precursor to buy their next vehicle as being internal combustion, there is a 24 per cent decline in intention for that and an increase in electric and hybrid.

Behyad yesterday, I think, spoke about the global penetration of electric vehicles. I think the number he quoted was about 1.35 per cent market share. I think that also includes what is called hybrid vehicles, like plug-in hybrids and Priuses. Around the world up until 2016, 14 cities accounted for 35 per cent of electric vehicle registrations. That is quite significant. The ones there I have circled in red all had big car-sharing environments. There are three types of environments there. China is going ahead full steam on sharing. That is because traditionally they have got such low vehicle ownership — less than 200. It is growing, but they do not have an existing private ownership infrastructure to worry about, so car sharing has just taken off. In California, there, the ones that are not circled, that is all government incentives that are equalising the capital price of electric vehicles, but they do not have a great sharing environment.

All of the other ones sit in between and are very actively promoting. You have got Oslo there with 27 per cent penetration of electric vehicles, and it has a massive car-sharing environment. In the Netherlands, Amsterdam and Utrecht have massive car sharing. Copenhagen is an interesting one there, at 3.7 per cent, but they are all battery electric. There are no hybrids involved, which is the ultimate outcome.

Obviously free floating is driving a lot of that in some of these European and North American cities now, simply because with station based you need contiguous charging environments. That means you need a charging station right next to the car where it is parked in the station, and then you need a lot of infrastructure. With floating point, the system uses what are called car jockeys to shuttle things around. They take care of the charging, they use hubs, and they re-spawn them in the hubs. It is a far easier way to spawn electric vehicles to the point. Infrastructure has time to keep up in that environment.

There is less range anxiety for users of these services because they are 7 or 8-kilometre trips on the whole. You can take one of these cars offline for users, and it has no impact on the network. In cities like Seattle, now for the first time in 20 years they are starting to see a decline in private ownership. That has been very successful. There are a lot of similarities between how car sharing evolved in that city and a city like Melbourne. Hamburg now is on the rise as one of the major cities. That is a big floating point city. Copenhagen, as I said, has 1000-plus battery electric and about three or four different operators. They integrate with public transport, so you can access the car-sharing service with your Myki to transition from one to the other.

One of the most successful deployments of an electric free-floating car-sharing fleet was in Madrid this year. A company owned by the Citroen group launched in Madrid with 250 battery electric vehicles and had

100 000 users within 100 days of operating, so it is really gaining momentum. The opportunity is for Melbourne to achieve that kind of result. In the submission that we have made there is a road map and a pathway for 1000 electric battery vehicles by 2026, which will remove somewhere between 12 000 and 15 000 combustion engine vehicles from the road that would have been there otherwise if this type of program was not in place.

The CHAIR — That is marvellous. Thank you. We have got a little bit of time left for questions. You gave an absolutely fascinating presentation. What has been the government attitude? In London, where, obviously, this has taken off in a fairly big way, did they need government support to get it off the ground?

Mr BROWNING — There are two things. London and Melbourne are very similar because you have the borough model with councils. To do a 100-square kilometre deployment in Melbourne there are 12 city councils that have to negotiate with. At the moment you cannot negotiate with any because of the current road safety law around permissive parking that makes this illegal. You cannot leave a car longer under law, under a certain section.

The road safety minister and Transport for Victoria are seriously considering this simple executive change that is of no cost, and then the councils will have to play ball. There are different attitudes amongst the councils towards the mythology around free floating, but the global scenario is just changing so rapidly that it is not going to be too hard. If we get the temporal freedom for permissive parking for these types of things, it is going to be very easy to make the next step. That sort of process is outlined in our submission. But we do need to stake the road safety minister with some form of executive assent to make an adjustment for the purposes of a five-year trial to get this type of project up and running.

The CHAIR — I would love to go into much greater detail about autonomous vehicles, but I suggest we will be here most of this week and next as well.

Ms HARTLAND — With the vehicles, I am thinking the logical reason for going for electric is that someone takes it to the parking spot and they just plug it in, and then the next person —

Mr BROWNING — No, the users do not need to do it. They are charged by the fleet management solutions. Because the vehicles have to be cleaned and attended to on a basis relative to their utility, the charging is done through hub-and-spoke charging environments, high-capacity charging, and then the vehicles are just spawned back into the network near the charging hub.

Ms HARTLAND — How are you aware that they need to be charged?

Mr BROWNING — All the cars are telemetrically linked to a system. They are taken offline, and then the fleet management solutions are alerted to that process.

Ms HARTLAND — In London you were saying there are 1000?

Mr BROWNING — Not in London. That north-east London floating point has only just taken off in one council area, in east London. But in cities like Copenhagen and Seattle, where they have got one city government controlling it — and it is slightly different in Australia — yes, free floating is just taking off.

Ms HARTLAND — In Copenhagen particularly, has it been a success there because people are used to not owning cars because they are very bike and public transport orientated?

Mr BROWNING — Yes. The ownership there has been relatively high historically because they have adopted this process. Scandinavian and Western European countries still had very high levels of car ownership similar to Australia, maybe six or seven years ago. I think probably because they have no vested interest in manufacturing, which is what we have had up until recently, they have had different approaches and cultural approaches to these things. I think it is just a timing issue.

Ms HARTLAND — I have just one more question. Could you also see this becoming part of the planning scheme, where when new apartment blocks are built and they are looking for exemptions on parking —

Mr BROWNING — There is a problem with planning at the moment, because they are taking cars off the street and putting them into buildings. With this model, it is the reverse. The vehicles need to be on the street so

people can access them, not inside buildings. It is adding enormous cost to apartments as well. That is another six days of discussion.

Mr LEANE — You mentioned there were 30 000 vehicles across North America and Europe. How many of them are electric cars?

Mr BROWNING — In our submission, city by city, it is very different. In Copenhagen it is 100 per cent; in Seattle and Portland it is 5 per cent or 10 per cent. We think the average is floating at about 10 to 15 per cent at the moment. With these programs, infrastructure can play catch-up in these environments. So these programs establish the infrastructure need over the next 10 years to make private adoption for those outer-ring suburbs more feasible because you get that economy of scale as technology improves to the point that the guys made this morning, which is that you do not want to do this too quickly. This is a way of getting a head start on infrastructure for when it is going to be really important.

Mr LEANE — So you would imagine there would be a mix of the vehicles, 1000-plus, by 2026?

Mr BROWNING — Yes, we could see a complete 100 per cent conversion by 2026 because there is also the autonomous factor in terms of these vehicles being able to acquire charging environments by themselves without having to roll that infrastructure out.

The CHAIR — Magnificent. Thank you very much indeed. You have added enormously to our thoughts on this and to our considerations. You will receive a transcript in about two or three weeks. If you could just check that for any small errors — not that there will be any, but if there are, please let us know. Thank you very much for coming in today. We do appreciate it.

Mr BROWNING — Thank you.

Witness withdrew.